

Communications par affiche

Biochimie et Biologie Moléculaire

Biochimie.....	103
&	103
Biologie moléculaire.....	103
C. Affiche n°:1.	104
COSEGREGATION OF THE M.1555A>G MUTATION IN THE MT-RNR1 GENE AND MUTATIONS IN MT-ATP6 GENE IN A FAMILY WITH DILATED MITOCHONDRIAL CARDIOMYOPATHY AND HEARING LOSS: A WHOLE MITOCHONDRIAL GENOME SCREENING	104
ALILA-FERSI OLFA ¹ , IMEN CHAMKHA ² , MOUNA TABEBI ³ , IMEN MAJDOUB ⁴ , LAMIA GARGOURI ⁴ , FAIZA FAKHFAKH ¹	104
C. AFFICHE N°:2.	104
DI (2-ETHYLHEXYL) PHTHALATE INDUCES NEPHROTOXICITY VIA INHIBITION OF THE Nrf2/HO-1 DEFENSE PATHWAY	104
AMARA INES ¹ , AMAL SALAH ¹ , EMNA ANNABI ¹ , RYM TIMOUMI ¹ , FADWA NEFFATI ² , MOHAMED FADHEL NAJJAR ² , SALWA ABID-ESSEFI ¹	104
C. AFFICHE N°:3.	105
IMPACT DE L'ATORVASTATINE ET DE LA SIMVASTATINE SUR LA DISTRIBUTION DES PHOSPHOLIPIDES DANS LES DIFFERENTES CLASSES DE LIPOPROTEINES CHEZ DES PATIENTS CORONARIENS	105
AOUA HANENE ¹ , ALI BEN KHALFALLAH ² , EZZEDINE AOUANI ¹	105
C. Affiche n°:4.	105
IDENTIFICATION, QUANTIFICATION OF PURIFIED PHENOLIC COMPOUNDS BY HPLC-DAD-ESI/MS OF TUNISIAN PISTACHIO (<i>PISTACIA VERA</i> L.) LEAVES	105
AOUADI MERIEM ^A , DURÁN BEGOÑA AYUDA ^B , GUENNI KARIM ^A , SALHI HANNACHI AMEL ^{A*} AND DUEÑAS MONTSERRAT ^B	105
C. Affiche n°:5.	106
EXTRACTION ET CARACTÉRISATION DE L'ULVANE À PARTIR DE <i>Ulva</i> sp.	106
BEN AMOR CYRINE, MOHAMED AMINE JMEL, RODRIGO VIEIRA, MME PASCALE CHEVALLIER, M DIEGO MANTOVANI, M ISSAM SMAALI	106
C. Affiche n°:6.	106
MICROBIOLOGICAL CHARACTERISTICS OF EL GUEDDID, A TRADITIONAL ALGERIAN DRIED SALTED MEAT	106
BENLACHEHEB RADHIA, SAMIRA BECILA, KAHINA HAFID, HIBA BOUDCHICHA, ABDELGHANI BOUDJELLAL.....	106
C. Affiche n°:7.	107
Mitochondrial DNA for identification of tuna species in fresh and canned tuna products	107
BESBES NADIA & SALOUA SADOK.....	107
C. Affiche n°:8.	107
NanoLC-MS/MS-based proteomic study of embryogenic and non-embryogenic calli during oat (<i>Avena sativa</i> L.) somatic embryogenesis	107
BORJI MANEL ¹ , BADRA BOUAMAMA-GZARA ¹ , AHMED MLIKI ¹ , ABDELWAHED GHORBEL ¹ , CAROLINE TEYSSIER ²	107
C. Affiche n°:9.	108
Synthesis and structural study of lanthanum coordination complex	108
BOUKHEMIS W. ¹ , L. BENDJEDDOU ²	108
C. Affiche n°:10.	108
SYNTHESIS AND STRUCTURAL STUDY OF EUROPUIM OXALATE	108
BOUSSAADIA AHLEM ^{A*} , ADEL BEGHIDJA ET CHAHRAZED BEGHIDJA.	108

C. Affiche n°:11.	109
Recherche d'enzymes d'intérêt biotechnologique, analyses biochimiques et moléculaires et évaluation des activités biologiques	109
DAGHMOURI HEND ,ABIDI FERID , MARZOUKI MED NEJIB	109
C. Affiche n°:12.	109
Association entre le polymorphisme rs2033178 du gène IGF-1 et le cancer colorectal en Tunisie	109
DHIFALLAH HAIFA ^{1*} , SANA AISSI ¹ , MANEL NJIM ² , ABDEFATTEH ZAKHAMA ² ET ABDERRAOUF KENANI ¹	109
C. AFFICHE N°:13.	110
EFFECT OF INCORPORATION OF THE DATE WASTES ON THE BIOCHEMICAL PROFILE OF OULED DJELLAL EWES	110
DJAALAB I ¹ .,ALLAOUI A ² ., HAFFAF S ² ., DJAALAB H ¹ ., RIACHI F ¹ ., BOUAZIZ O ¹	110
C. AFFICHE N°:14.	110
STATUT DU CUIVRE ET RELATION AVEC LES CARACTERISTIQUES ENVIRONNEMENTALES, ECONOMIQUES ET SOCIO-DEMOGRAPHIQUES CHEZ LES FEMMES TUNISIENNES EN AGE DE PROCREER	110
EL ATI-HELLAL MYRIAM ^A , RADHOUENE DOGGUI ^B , ABDERRAZEK HEDHILI ^A , PIERRE TRAISSAC ^C ,JALILA EL ATI ^B , FAYÇAL HELLAL ^D ,.....	110
C. AFFICHE N°:15.	111
L'effet du fumage à chaud sur le profil lipidique de <i>Scomberscombrus</i>	111
EL OUDIANI SALMA, SAHLI FATMA, MOUJAHED NIZAR	111
C. AFFICHE N°:16.	111
Phytochemical and biochemical characterization of a durum wheat (<i>Triticum durum</i>) fermented "el-Hammoum" an Algerian terroir product	111
GOURCHALA FREHA ¹ , MIHOUB FATMA ¹ , LAAREDJ HOCINE ¹ , HENCHIRI CHÉRIFA ²	111
C. AFFICHE N°:17.	112
THE EFFECTS OF AGE FACTOR ON SEMEN QUALITY, OXIDATIVE STATUS AND HORMONAL PROFILE IN INFERTILE POPULATION	112
HADJ ALI ASSILA ^{1, 2} , HAOUAS ZOHRA ² , AJINA TESNIM ^{1, 2} , AMMAR OMAYMA ^{1, 2} , ZIDI INES ^{1, 2} , MEHDI MERIEM ^{1, 2}	112
C. Affiche n°:18.	112
DETERMINATION OF BIOCHEMICAL PROFILE OF AMNIOTIC AND ALLANTOIC FLUIDS DURING DIFFERENTS STAGES OF PREGNANCY IN OULED DJELLAL EWES	112
HAFFAF SAMIA [*] (1)., DJAALAB IMEN (2)., ALLAOUI ASSIA (2). HAFFAF HADJIRA (3) BENALLOU BOUABDELLAH (4).....	112
C. AFFICHE N°:19.	113
Genetic of miscarriage : Interest of FISH and MLPA in the detection of aneuploidies and other chromosomal abnormalities	113
HAOUD KHADIDJA ^{*&**} , SARAH MELLALI ^{**} , MEZIANI SAMIRA ^{**} , LAETITIA GOUAS [*] , PHILIPPE VAGO [*] , SORAYA MOULESSEHOUL ^{**}	113
C. Affiche n°:20.	113
Molecular characterization and differentiation of three Algerian chicken ecotypes	113
MAHAMMI F. Z. ^{*1,2, 2,3} GAOUAR S. B. S., ^{2,4} TABET-AOULN., ⁵ LALOED., ⁶ FAUGERASR., ⁵ ROGNONX., ⁵ TIXIER-BOICHARD M. & ² SAIDI-MEHTARN.	113
C. Affiche n°:21.	114
Étude comparative de trois variétés d'huile d'olive et leurs couplages et coupage	114
MAHFOUDH SAFA ¹ , MAHJoubi MARWA ¹ , BELGHITH MOHAMED JAMEL ³ IMED RJIBA ^{1,2}	114
C. AFFICHE N°:22.	114
Preventive effect of grape seed and skin extract and Xenical against high fat diet-induced liver lipotoxicity in Wistar rats	114
MAHMOUDI MOHAMED ¹ , KAMEL CHARRADI ¹ , TAKWA BEDHIAFI ¹ , FERID LIMAM ¹ & EZZEDINE AOJANI ¹	114

C. AFFICHE N°:23.....	115
The protective effects of ginger supplementation on ammonium nitrate-induced toxicity in wistar rats:Biochemical and histological study.....	115
MESSAADIA AMIRA ^{1*} , KRIM MERIEM ² , OUACHRIA WASSILA ³ , SAKA SAAD ³	115
C. AFFICHE N°:24.....	115
L'EFFET DE SP600125 SUR LE CYCLE CELLULAIRE CHEZ LES CELLULES HeLa.....	115
MILI DONIA ^{1,2} , ABDERRAOUF KENANI ¹	115
C. AFFICHE N°:25.	116
Molecular characterization of the Ded1 protein from <i>Leishmania infantum</i>.....	116
MOKDADI MOLKA ^{1,2,3,4} , MOURAD BARHOUMI ³ , JOSETTE BANROQUES ^{2,4} , N. KYLE TANNER ^{2,4} AND IKRAM GUIZANI ¹	116
C. Affiche n°:26.	116
COMPARISON OF AIRWAY INFLAMMATORY MARKERS IN INDUCED SPUTUM BETWEEN SMOKERS AND NEVER SMOKERS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE.....	116
MRIZAK AMINA ^{1, 2*} , MERIAM DENGUEZLI ¹ , MONCEF MOKNI ³ , BADREDDINE SRIHA ³ , ZOUHAIR TABKA ¹	116
C. AFFICHE N°:27.....	117
IN VIVO ANTIDIABETIC ACTIVITY OF AN OLIVE OIL FROM THE « ROUGETTE » VARIETY OF THE SIKKDA REGION.....	117
NEGRECHE IKRAM ¹ , NORA BENRARACHOU ¹ & CHERIFA HENCHIRI ²	117
C. AFFICHE N°:28.....	117
MOLECULAR DETECTION OF ANAPLASMA SPP IN LICE FROM DOMESTIC ANIMALS IN NORTHEASTERN ALGERIA (PRELIMINARY RESULTS).....	117
RIGHI S ^{1.} , MEGUINI N ^{2.} , BOUCHEIKHCHOUKH M ^{1.} , LEULMI H ^{3.} , SADEDDINE R ^{1.} , ZAIDI R ^{1.} , BENAKHLA A ^{1.}	117
C. Affiche n°:29.	118
CARACTERISATION PHYSICO-CHIMIQUE ET BIOCHIMIQUE D'UN PRODUIT TRADITIONNELLEMENT FERMENTE.....	118
TABET RACHID, MECHAI ABDELBASSET	118
C. Affiche n°:30.	118
The benefic effect of ginger on renal biochemical parameters in diabetic rats fed zinc deficiency diet.....	118
TEBBOUB I. AND KECHRID Z.	118
C. Affiche n°:31.	119
Association of type 2 diabetes with hepatitis C virus infection in Algerian patients (area of Tebessa).....	119
TOUMI- HALAIMIA ¹ NASSIMA [*] , ASMA KHEIREDDINNE ¹ , SARA ALIA ¹ , TIDJANI ZOGHLAMI ² , FARIDA NOURI ²	119
C. Affiche n°:32.	119
State of health of pregnant women presenting a high pregnancy risk in Tebessa (Algeria).....	119
TOUMI- HALAIMIA NASSIMA [*] , AMINA BOUGHACHICHE, CHERIFA ROUABHIA.....	119
C. Affiche n°:33.	120
Phenylboronic Acid as an efficient and Eco-friendly Catalyst for the One-Pot Four-Component Dakin-West Synthesis of β-Acetamido Ketones.....	120
ZIADI CHIBANE A.; R. LAROUM ; A. DEBACHE	120
Biologie, Ecologie.....	121
&.....	121
Physiologie Animale.....	121
C. Affiche n°:34.	122
SELECTION GENETIQUE DES COLONIES D'ABEILLES RESISTANTE A VARROA DESTRUCTOR : COMPARAISON DU COMPORTEMENT DE NETTOYAGE DU COUVAIN CHEZ LES DEUX ABEILLES APIS MELLIFERA SAHARIENSIS ET INTERMISSA.....	122
ADJLANE NOUREDDINE ^{*1-2} , NIZAR HADDAD ³	122

C. AFFICHE N°:35.	122
EFFECT OF STREPTOZOTOCINE INJECTION ON TESTICULAR FUNCTION IN MALE ADULT RATS.	122
AIT SAI .THIRZI ¹ , HADJ BEKKOUCHE.F ¹	122
C. Affiche n°:36.	123
Retrospective investigation into the bovine fasciolose in the slaughter-houses of the wilaya of Algiers (Algeria).	123
AIZA ASMA, TAHRIKT SOFIANE, BOUAMRA NADIA, BEZZAZ AHLEM	123
C. Affiche n°:37.	123
DYNAMIC OF ECTOMYLOIS CERATONIAE ZELLER (LEPIDOPTERA : PYRALIDAE) IN CITRUS ORCHARDS	123
ALLOUI , RAFIKA SABRINE ATTIA & KAOUTHAR GRISSA-LEBDI	123
C. Affiche n°:38.	124
The defensive aphid symbiont <i>Serratia symbiotica</i> affects host quality for <i>Aphidoletes aphidimyza</i>	124
ATTIA SABRINE, THIERRY HANCE & KAOUTHAR GRISSA-LEBDI	124
C. Affiche n°:39.	125
EFFECT OF VITAMIN D DEFICIENCY ON THE METABOLIC SYNDROME	125
BEGGA ASMA ¹ ; SOLTANI.YACINE ¹ ; AZZOUG .SAID ²	125
C. Affiche n°:40.	125
Comparaison entre deux méthodes de diagnostic de L'infection à <i>Trypanosoma evansi</i> chez les chevaux dans la région Sud-ouest de l'Algérie	125
BENFODIL K. ¹ , S.ANSEL ¹ , A. MOHAMED CHERIF ¹ , ET KH. AIT-LOUDHIA ¹	125
C. Affiche n°:41.	126
CONCENTRATION OF PLASMA INSULIN AND GLUCOSE LEVEL AFTER TREATMENT WITH LEPTIN IN MALE WISTAR RATS PUBESCENT AND PREPUBESCENT	126
BOUCHEFA HANANE ¹ ; FATIMA HADJ-BEKKOUCHE ¹	126
C. Affiche n°:42.	127
DIVERSITY OF ICHTHYOPATHOGENIC BACTERIA STRAIN IN A LAKE ECOSYSTEM OF GUENITRA IN NORTHWEST ALGERIA.	127
BOUMERDASSI HANANE*, **, DJOUADI LYDIA*, KIAS FARID***, OUAR-KORICHI MOUNIRA***, OUZARI HADDA-IMENE**** & NATECHE FARIDA*.	127
C. Affiche n°:43.	127
CLINICAL CASE: RUPTURE OF OESOPHAGEAL VARICOSE VEIN, A RECIDISME COMPLICATION OF HEPATIC CIRRHOSIS	127
BOUSSAKTA MARWA ¹ , TALEB SALIMA ^{2,3}	127
C. Affiche n°:44.	128
Les antibiorésistances des souches <i>Escherichia coli</i> aviaires dans la région du centre d'Algérie	128
CARTELO.LEILA ,BEYAZ M, MESSAI CR , KHELEF DJ ET AIT OUDHIA K.....	128
C. Affiche n°:45.	128
Control biologique de <i>Tuta absoluta</i> (Meyrick, 1917) (Lepidoptera : Gelechiidae) par les Eulophides (Hymenoptera : Eulophidae) sur tomate sous- serre à l'est de la Mitidja	128
CHEKKAL HADJER *, BOUMCHEDDA ADEL * ET BENZEHRA ABDELMADJID *	128
C. Affiche n°:46.	129
Distribution of cockroaches in the Pinewood of Lehnaya region (El-Tarf, Algeria)	129
HABBACHI Wafa ¹ ; HABBACHI SARRA ¹ ; BENHISSEN SALIHA ² ; FARINE JEANPIERRE ³ ; TAHRAOUI ABDELKARIM ¹	129
C. Affiche n°:47.	129
ECOLOGY AND ENTOMOLOGY OF HOVERFLIES (ORDRE: DIPTERA) OF THE GUELMA DISTRICT WITH SPECIES NEW TO ALGERIA AND NORTH AFRICA	129
HAFFARESSAS ^{1*} BESMA, SAMRAOUI ² BOUDJEMA	129

C. Affiche n°:48.	130
IMPACT OF EASTERN MOSQUITOFISH, <i>GAMBUSIA HOLBROOKI</i>, ON TEMPORARY PONDS: INSIGHTS ON HOW PREDATION MAY STRUCTURE ZOOPLANKTON COMMUNITIES	130
HAIHAHEM DALAL ^{A,B} , LAID TOUATI ^{B,C} , NASSER BAAZIZ ^{B,C} , FARRAH SAMRAOUI ^{A,B} , BOUHALAZINE ^{B,E} , AHMED H. ALFARHAN ^D AND BOUDJEMA SAMRAOUI ^{B,E}	130
C. Affiche n°:49.	130
DIVERSITY OF SYRPHIDAE (DIPTERA) COMMUNITIES IN THREE ANTHROPISED ENVIRONMENTS IN "TEBESSA" NORTHEASTERN ALGERIA	130
MEBARKIA NADJOUA ¹ , SIHEM DJELLAB ¹ , SOUAD NEFFAR ¹	130
C. Affiche n°:50.	131
BREAST CANCER AND RELATIONSHIP BETWEEN VITAMIN D, INSULIN, IGF-1 AND ESTRADIOL IN PRE AND POST MENOPAUSAL WOMEN: IMPACT OF OBESITY	131
MEHAOUDI R- ¹ , ADANE S ² , SOLTANI Y ¹	131
C. Affiche n°:51.	131
BIODIVERSITE AVIFAUNESTIQUES DES ZONES HUMIDES ARTIFICIELLES (CAS DE BARRAGE BENI HAROUN ET BARRAGE SIDI KHELIFA) DE LA WILAYA DE MILA(ALGERIE)	131
MERZOUG SEYF EDDINE ; ABDI SOUMIA ; TABOUCHE KHALIDA BRAHMIA HAFID; LAICHAR MAHDI ET HOUHAMD MOUSSA.....	131
C. Affiche n°:52.	132
Incidence des pathologies de la reproduction & diagnostic du kyste ovarien chez vache	132
MIMOUNE NORA ¹⁻² , KAIDI RACHID ²⁻³ , BELKHIRI A ² , BENAÏSSA MOHAMED HOCINE ⁴ , & AZZOUC MOHAMED YASSINE ²	132
C. Affiche n°:53.	132
STUDY OF SEASONAL SEXUAL ACTIVITY VARIATIONS IN ALGERIAN REMBI RAMS	132
MORSLI AMIROUCHE ^{1*} , MOSTEFA GHALLAL ² , ABDERAHMAN BADACHE ³ , BILAL GHANAM ⁴	132
C. Affiche n°:54.	133
A CASE OF HERMAPHRODITISM IN THE COMMON EAGLE RAY <i>MYLIOBATIS AQUILA</i> (CHONDRICHTHYES: MYLIOBATIDAE), REPORTED FROM THE TUNISIAN COAST (CENTRAL MEDITERRANEAN)	133
RAFRAFI-NOUIRA SIHEM ¹ & CHRISTIAN CAPAPÉ ²	133
C. Affiche n°:55.	133
ETUDE DES EFFETS SECONDAIRES DE DEUX ACARICIDES (FLUVALINATE ET ACIDE OXALIQUE) SUR LA COMPOSITION BIOCHIMIQUE CHEZ <i>APIS MELLIFERA INTERMISSA</i>	133
ROUBI ASMA ¹ ; BOUCHEMA WIDED FELLA ² ; LOUCIF-AYAD WAHIDA ² & ACHOU MOHAMED ²	133
C. Affiche n°:56.	134
Intake of argan oil attenuates oxidative stress of rats with high-fat diet induced obesity	134
SADAQUI-SOUR SOUAD ^{1,2} , BELARBI MERIEM ²	134
C. Affiche n°:57.	134
SUBLETHAL AND LETHAL EFFECTS OF <i>Lavandula angustifolia</i> M. ESSENTIAL OIL ON ENERGY RESERVES AND BIOMARKERS OF STORED-PRODUCT PEST <i>Rhyzopertha dominica</i> (F.) (COLEOPTERA: BOSTRICHIDAE)	134
SAYADA NARDJES ^{1,2} , SAMIR TINE ^{1,2} & FOUZIA TINE-DJEBBAR ^{1,2}	134
C. Affiche n°:58.	135
Effet de l'alimentation sur la croissance pondérale et testiculaire chez les agneaux de race <i>Ouled Djellal</i> en phase pubertaire dans l'Ouest Algérien	135
ZINEDDINE ESMA. ^{1*} ET K. BEREKSI REGUIG ¹	135
C. Affiche n°:59.	135
Étude épidémiologique des infections et coïnfections par <i>Chlamydophila abortus</i> et <i>Coxiella burnetii</i> dans des exploitations bovines de la région de Jijel	135
ZINEDDINE RADJA* , GHALMI FARIDA ET HEZIL DJAMILA.....	135
C. Affiche n°:60.	136
BIOLOGICAL CONTROL OF MEDITERRANEAN FRUIT FLY, <i>CERATITIS CAPITATA</i> (WIEDEMANN, 1824) IN SOUTHWEST OF TUNISIA	136
ZOUGARI SAHAR, ANIS ZOUBA , SABRINE ATTIA & KAOUTHER GRISSA-LEBDI.....	136

Biologie, Ecologie.....	137
&	137
Physiologie Végétale.....	137
C. Affiche n°:61.	138
EFFECT OF SALT STRESS ON SEED GERMINATION OF ACACIA ALBIDA IN THE TAMANRASSET REGION AND CONSERVATION PROSPECT”	138
AISSAT AMINA, MEHDADI ZOHEIR	138
C. AFFICHE N°:62.	138
RT-PCR detection of <i>Allexivirus</i> in Tunisian garlic (<i>Allium sativum</i> L.) germplasm	138
AYED CHADHA ^{1*} , CHANTAL FAURE ² , THIERRY CANDRESSE ² , ARMELLE MARAIS ² , AND BOUTHAINA AL MOHANDES DRIDI ¹	138
C. AFFICHE N°:63.	139
CHARACTERISATION OF SOME BIOCHEMICAL FACTORS AFFECTING ALTERNATE BEARING IN THREE OLIVE CULTIVARS	139
BENJEDDOU HIND ¹ , CHEDLIA BEN AHMED ¹ AND BECHIR BEN ROUINA ²	139
C. AFFICHE N°:64.	139
TRIALS OF THE NATURAL REGENERATION OF THE SEEDS OF <i>RETAMA MONOSPERMA</i>, AN EXCELLENT PLANT OF THE FABACEAE FAMILY FIXING NITROGEN OF ALGERIAN COASTAL DUNES.	139
BOUREDJA NADIA ¹ , MEHDADI ZOHEIR ² & BOUREDJA MUSTAPHA ²	139
C. AFFICHE N°:65.	140
Vulnérabilité du Chêne Liège sous deux densités, quels ajustements fonctionnels?	140
ENNAJAH AMEL, LAAMOURI ABDELWAHED, ALOUI MARIEM, MEJRI JIHENE, ZOUHAIER NASR	140
C. AFFICHE N°:66.	140
EVALUATION DE LA CULTURE DE <i>JATROPHA CURCAS</i> POUR LA PRODUCTION D'HUILES VEGETALES DANS UN BUT ENERGETIQUE EN TUNISIE	140
HATTAB M. ^{A*} , F. GHARBI ^A , B. HANCHI ^A , A. BELAIFFA ^B , F. PERNICE ^C , R. MASSENTI ^C	140
C. AFFICHE N°:67.	141
CARACTERISATION MORPHOLOGIQUE D'UNE COLLECTION D'ACCESSIONS DE TOURNESOL (<i>HELIANTHUS ANNUUS</i> L.) CULTIVEE EN TUNISIE.	141
HOSNI TAOUIFIK ^{1-2*} , NOURA OMRI BENYOUSSEF ¹ , HAMADI BEN SALAH ¹ , MOHAMED KHARRAT ¹	141
C. AFFICHE N°:68.	141
Effet du chrome sur la germination de maïs : signalisation moléculaire par NO et H₂S	141
KHARBECH OUSSAMA ^{1,2*} , SOUMAYA LARBI ^{1,2} , LUIS ALEJANDRO MUR ² , ABDELILAH CHAOUI ¹	141
C. AFFICHE N°:69.	142
Effets de l'acide ascorbique et du diphénylène iodonium chez le fenugrec stressé par le cadmium.	142
LARBI SOUMAYA, KHARBECH OUSSAMA, MUR LUIS ALEJANDRO, DJEBALIWAHBI, CHAOUI ABDELILAH	142
C. AFFICHE N°:70.	142
OPTIMIZATION OF <i>DITTRISHIA VISCOSA</i> GERMINATION AND CONSERVATION PROSPECTS (OUED BERKECHE REGION, AIN TÉMOUCHENT PROVINCE)	142
MAACHOU LATIFA, BENYAHIA MOHAMED	142
C. AFFICHE N°:71.	143
Réponse de la photosynthèse à la lumière chez le haricot (<i>Phaseolus vulgaris</i> L.) traité par le manganèse	143
MAHJoubi YETHREB ¹ , RZIGUI TOUHAMI ² , BEN MASSOUD MAROUANE ¹ , LOUSSEIF NESSRINE ¹ , KHARBECH OUSSAMA ¹ , DJEBALI WAHBI ¹ , CHAOUI ABDELILAH ¹	143
C. AFFICHE N°:72.	143
BIOLOGICAL EVALUATION OF <i>HERTIA CHEIRIFOLIA</i> L. FLOWER EXTRACT AS POTENT α-GLUCOSIDASE INHIBITOR	143
MAJOUli KAOUTHER ¹ , ASSIA HAMD ² , ADDERRAOUF KENANI ¹	143

C. AFFICHE N°:73.	144
Tracking citrus leafminer predation under field conditions for later molecular analyses	144
MANSOUR DORRA. ^{1*} , A. URBANEJA ^{2*} AND M. BRAHAM ^{2*}	144
C. AFFICHE N°:74.	144
Etude de l'effet du changement climatique sur les plantes dans une forêt de Pin d'Alep de Tunis	144
NEFZI KHAOULA ^{1*} , MOKHTAR BARAKET ¹ , WALID JAOUADI ¹ , ZOUHAIER NASR ¹	144
Inlk.....	144
C. AFFICHE N°:75.	145
EFFECTS OF POLYCONTAMINATED SOIL ON THE MORPHOLOGY OF MAIZE ROOTS	145
ROMDHANE LEILA ¹ , LEILA RADHOUANE ¹ , TEOFILLO VAMERALI ²	145
C. AFFICHE N°:76.	145
REPONSES PHYSIOLOGIQUE ET BIOCHIMIQUE DE LA CORIANDRE VIS-A-VIS DU CUIVRE	145
ZAOUALI WAFI ^A , MAHMOUDI HELA ^A , ZARGOUNI HANENE ^A , BEN HAMIDA NESRINE ^A , HOSNI KARIM ^B & OUERGHUI ZEINEB ^A	145
Biotechnologie	146
C. AFFICHE N°:77.	147
THE STUDY OF THE ANTIOXYDANT EFFICIENCY OF THE COMPLEXION INCLUSION NITRONE β-CYCLODEXTRIN	147
ABDELHAI MOUFIDA ¹ , HOURIA TAIBI ¹	147
C. AFFICHE N°:78.	147
ASSESSMENT OF MAIN VARIATION FACTORS OF MILK PRODUCTION AND PHYSICO-CHEMICAL CHARACTERISTICS IN THE REGION OF BIZERTE	147
ATTIA K. ⁽¹⁾ , DAREJ C. ⁽¹⁾ , SADKAOUI G. ⁽²⁾ ET, MOUJAHED N. ⁽¹⁾	147
C. AFFICHE N°:79.	148
Effet de l'utilisation de l'huile essentielle de lentisque pistachier sur les performances et la qualité de viande du poulet fermier	148
BEN LARBI M. ^{1*} , S.SLIM ¹ , A.JEBBARI ¹ , J.ABIDI ¹ , A.HEDHLY ¹	148
C. AFFICHE N°:80.	148
Varietal behavior of cork subjected to water stress in non-soil cultivation: Comparative study between different provenances.	148
BENABDALLAH MAROUA ¹ , SOUIDI ZAHIRA ²	148
C. AFFICHE N°:81.	149
Antibacterial activity of essential oils of some of plants in the Algerian East	149
BENBRAHIM CHAHLA ¹ ; ZTOUT ASMA ² ; BARKA MOHAMED SALIH ¹ ; BENMAHDI LAHCENE ³ ; GHIDAOUI NOUR EL ISLAM ⁴	149
C. AFFICHE N°:82.	149
OPTIMAL CONDITIONS FOR LACTOSUCROSE PRODUCTION BY A LEVANSUCRASE FROM BACILLUS LICHENIFORMIS USING STATISTICAL APPROACH	149
BOUCHAËLA IMEN ¹ , MOHAMED GUEFALI ² , RANIA BREDAI ¹ , KARIMA SRIH BELGHITH ¹ , HAFEDH BELGHITH ²	149
C. AFFICHE N°:83.	150
DIALLEL HYBRIDIZATION AND BEHAVIORAL STUDY OF THREE BARLEY VARIETIES (<i>HORDEUM VULGARE</i> L.) GROWN IN EASTERN OF ALGERIA	150
BOUCHETAT F., ABDELMOUMEN L., ET RADJEH A.	150
C. AFFICHE N°:84.	150
AN EFFICIENT AND ENVIRONMENTALLY SYNTHESIS OF ACETAMIDOALKYL NAPHTHOLS	150
BOUDEBBOUS KHAWLA, BOUALIA IMENE, DEBACHE ABDELMADJID	150
C. AFFICHE N°:85.	151
Study of the different immune reactions of monocytic cells of <i>Thaumetopoea pityocampa</i> against parasites and nematodes	151
¹ BOUDJAHM I, ² BERCHI S	151

C. AFFICHE N°:86.	151
MICROWAVE IRRADIATION OF POLYVINYLALCOHOL CHITOSAN BELND.	151
BOUGUETTAYA NADIA, AMRI NEDJLA, ALIOUCHE DJAMEL.....	151
C. AFFICHE N°:87.	152
SAFETY ASPECT OF ENTEROCOCCUS FAECIUM FL31 STRAIN AND ANTIBACTERIAL MECHANISM OF ITS HYDROXYLATED BACTERIOCIN BACFL31 AGAINST LISTERIA MONOCYTOGENES.....	152
CHAKCHOUK-MTIBAA AHLEM, IMENSELLEM, SLIM SMAOUI, INES KARRAY- REBAI AND LOTFI MELLOULI	152
C. AFFICHE N°:88.	152
EVALUATION OF THE ANTIBACTERIAL ACTIVITY OF AN ALGERIAN MEDICINAL PLANT (PARONYCHIA ARGENTEA)	152
CHOHRA DJAWHARA, FERCHICHI LOUBNA	152
C. AFFICHE N°:89.	153
Assessment of the variation in milk quality at collection centers in Tunisia	153
DAREJ C. ⁽¹⁾ , TOUMI M.A ⁽¹⁾ , MGHANEM N. ⁽²⁾ , M'HAMDI N. ⁽¹⁾ , LOUHICHI R. ⁽³⁾ , MOUJAHED N. ⁽¹⁾ ..	153
C. AFFICHE N°:90.	153
Comparative study of ultrasounds and microwaves effects on the yield of total sugars extracted from Algerian common dates: Optimizations using Response Surface Methodology	153
DJAOUA KAHINA, LILA BOULEKBACHE-MAKHOLOUFA, HOCINE REMINIA, MYRIAM TAZAROURTEB, SAMIR HADJALB ET KHODIR MADANIA.....	153
C. AFFICHE N°:91.	154
Search for cleaningproduct residues in dairy products	154
ELGUECIER SARRA ^{1*} , AMALOU DJAMEL ¹	154
C. AFFICHE N°:92.	154
EFFET ANTI-OXYDANT DE L'EXTRAIT DE PEPINS DE MARCS DE RAISIN AU NIVEAU DE L'HIPPOCAMPE AU COURS DE L'ISCHEMIE/REPERFUSION CEREBRALE EXPERIMENTALE...	154
GHRIR SLIM 1,2, WASSIM BEN ABBES 1,2, SALEM ELKAHOUI 2, FERID LIMAM 2, EZZEDINE AOUANI 2,3.....	154
C. AFFICHE N°:93.	155
Valorisation of artichoks's by- products: Drying kinetics of artichoke waste generated during industrial agro processing	155
GUEMGHAR MENANAA, REMINI HOCINEA,B, BELHABIB-MAMOU KAHINAA, BOULEKBACHE-MAKHOLOUF LILAA, MADANI KHODIRA	155
C. AFFICHE N°:94.	155
EFFECT OF RUTA CHALEPENSIS L ESSENTIAL Oil ON WEIGH LOSS OF POTATO DURING STORAGE	155
LENGLIZ OLFA , ^{1,2} JAMEL MEJRI, ¹ MANEFABDERRABBA, ¹ RACHID KHALIFA, ³ AND MONDHER MEJRI ⁴	155
C. AFFICHE N°:95.	156
PHYSICO-CHEMICAL PROPERTIES AND STORAGE STABILITY OF MARGARINE CONTAINING PUNICA GRANATUM PEEL EXTRACT AS ANTIOXIDANT	156
MOUHOUBI KHOKHA ^{1*} , MAYOUF RAHMA ³ , CHIKHOUNE ANIS ² & MERZOUK HAFIDA ³	156
C. AFFICHE N°:96.	156
IMPROVEMENT OF THE KINETIC RESOLUTION OF (R,S)-2,2-DIMETHYL-1,3-DIOXOLAN-4-YL) METHANOL BY IMMOBILIZED CANDIDA RUGOSA LIPASE	156
SEMACHE N. ¹ , S. BOUNOUR ¹ , A. SBARTAI ¹ , F. BENAMIA ¹ AND Z. DJEGHABA ¹	156
C. AFFICHE N°:97.	157
PROTECTIVE ROLE OF FUCOIDAN ON HEPATIC COLD ISCHEMIA-REPERFUSION INJURY IN RAT	157
SLIM CHERIFA ¹ , ZAOUALI MA ² , HADJ AMMAR H ³ , MAJDOUB H ⁴ , BOURAOUI A ⁵ , BEN ABDENNEBI H ⁶	157

C. AFFICHE N°:98.	157
In Situ and in Vitro Sexual Propagation of the Tunisian spinescent <i>Opuntia ficus-indica</i> (L.) Mill.: polyembryony and morphogenetic abnormalities	157
STAMBOULI-ESSASSI SONDES ¹ , MARIEM ZAKRAOUI ¹ , SADOK BOUZID ¹ AND FETHIA HARZALLAH-SKHIRI ²	157
C. AFFICHE N°:99.	158
OPTIMIZATION BY MICROWAVE ASSISTED EXTRACTION OF PHENOLIC COMPOUNDS FROM LEMON VERBENA (<i>Aloysiatriphylla</i>)	158
TOUATI-NAIT-CHABANE ZOHRA, LILA BOULEKBACHE-MAKHLOUF GUEMGHAR MENANA, DJERRADA NABILA, MADANI KHODIR.....	158
C. AFFICHE N°:100.	158
PHYSICO-CHEMICAL, TECHNO-FUNCTIONAL, AND ANTIOXIDANT PROPERTIES OF A NOVEL BACTERIAL EXOPOLYSACCHARIDE IN COOKED BEEF SAUSAGE	158
TRABELSI IMEN ¹ , MEHDI TRIKI ² , NAOUREZ KTARI ³ , INTIDHAR BKHAIRIA ³ , SIRINE BEN SLIMA ¹ , AND RIADH BEN SALAH ¹	158
Environnement	159
C. AFFICHE N°:101.	160
THE EFFECTS OF TWO ECO-FRIENDLY SOLVANTS ON THE ACTIVITY OF LIPASES IN THE RESOLUTION OF RACEMIC ALCOHOLS	160
BELAFRIEKH ABDERAHMANE ¹ , SECUNDO FRANCESCO ² , DJEGHABA ZEINEDDINE ¹	160
C. AFFICHE N°:102.	160
Intérêt nutritionnel des feuilles de deux arbustes fourragers consommées par les caprins <i>Pistacialentiscus.L</i> et <i>Phillyrea media.L</i>	160
BENDEKOUM ISMAHENE, MEBIROUK-BOUDECHICHE LAMIA, LAHMAR AHLEM.....	160
C. AFFICHE N°:103.	161
Study of sorption of aromatic organic compounds by new Organo-Inorganic materials based on Algerian Montmorillonite	161
BENSID N. ¹ , Y.BOUTALEB ¹ , R. ZERDOUM ² , A. ALLAOUI ¹ , Z. HATTAB ¹ , A. BOULMOKH ¹	161
C. AFFICHE N°:104.	161
IMIDACLOPRID ENHANCES LIVER DAMAGE IN WISTAR RATS: BIOCHEMICAL AND HISTOLOGICAL ASSESSMENT	161
CHAKROUN SANA ¹ , INTISSAR GRISSA ¹ , LOBNA EZZI ¹ , OUMAIMA AMMAR ¹ , FADOUA NEFFATI ² , EMNA KERKENI ¹ , MOHAMED FADHEL NAJJAR ² , ZOHRA HAOUAS ¹ , HASSEN BEN CHEIKH ¹	161
C. AFFICHE N°:105.	162
Evaluation of the toxicity of a Fenitrothion Insecticide on the Snail: <i>Helix aspersa</i>	162
FARFAR KHADIDJA, KHEBBEB MOHAMED ELHADI, BERREBEH HOURIA, DJEBBAR MOHAMED REDA, YOUBI AMIRA, BELAID CHAHRAZAD.....	162
C. AFFICHE N°:106.	162
SSR marker-assisted screening of commercial tomato genotypes under salt stress	162
GHARSALLAH CHARFEDDINE ¹ , WERGHI CYRINE ¹ , AHMED BEN ABDELKRIM ¹ , HATEM FAKHFAKH ^{1,2} , AND FATEN GORSANE ^{1,2}	162
C. AFFICHE N°:107.	163
Removal of cationic dye from water using biomaterial fixed bed	163
HATTAB ZHOUR ¹ , RADIA. ZERDOUM ^{1,2} , NADIA. BENSID ¹ , ASSIA. ALLAOUI ¹ , WAHIBA. BESSASHIA ² , YAMINA. BERREDJEM ¹ , KAMEL. GUERFI ¹	163
C. AFFICHE N°:108.	163
THE POTENTIALITIES OF VALORIZATION OF COFFEE MARC AS ORGANIC AMENDMENT: STUDY IN CONTROLLED CONDITIONS	163
KHLIFI M, MAKTOUF S, SOUA AND GARGOURI K.....	163
C. AFFICHE N°:109.	164
AN EFFICIENT GREEN ONE-POT SYNTHESIS OF PYRANO [2,3-c] PYRAZOLES DERIVATIVES	164
LAROUM RIMA ¹ , ADIL ZIADI CHIBANE ¹ AND ABDELMADJID DEBACHE ¹	164

C. AFFICHE N°:110.	164
DENOMBREMENT ET CARACTERISATION DU PEUPLEMENT DES OISEAUX D'EAU URBAINS DE LA VILLE DE ANNABA	164
MANSRI MOSAAB ^{1,2} , BRAHMI CHEMSEDDINE ^{1,2} , BOUDEN MOHAMED CHAFIK ^{1,2} , BELABED-ZEDIRI HASSIBA ^{1,2} & BELABED ADNENE IBRAHIM ^{1,2}	164
C. AFFICHE N°:111.	165
Exposition de l'annélide polychète <i>Marphysa sanguinea</i> aux métaux traces et aux hydrocarbures aromatiques polycycliques (HAP) dans la lagune de Tunis, Tunisie	165
MDAINI ZIED, M'HAMED EL CAFSI, ET JEAN-PIERRE GAGNE	165
C. AFFICHE N°:112.	165
Impact of fishing activities on the resource and its environment: case of the ports of eastern Algeria (El kala, Annaba and Chétaibi)	165
MESSAADIA SAMIA, MERABET OUALID, SAIDANI NAILA, PR. DJEBAR ABDALLAH BORHANE ...	165
C. AFFICHE N°:113.	166
ELABORATION DE PROCEDES DE PRODUCTION DE BIO ENERGIE PAR LES MICRO-ALGUES	166
MHEDHBI EMNA, NADIA KHELIFI, SARRA AYADI, MUSTAPHA GUELAAOUI(1), ISSAM SMAALI ...	166
C. AFFICHE N°:114.	166
Variabilité ontogénique des ratios isotopiques ($\delta^{13}\text{C}$ et $\delta^{15}\text{N}$) et des concentrations de cadmium et de mercure des céphalopodes des côtes tunisiennes	166
RJEIBI MONCEF ^A , MARC METIAN ^B , PACO BUSTAMANTE ^B ET RAFIKA BEN CHAOUCHA- CHEKIR ^A	166
C. AFFICHE N°:115.	167
AN EFFICIENT AND SIMPLE APPROACH FOR THE SYNTHESIS OF SOME NOVEL HYBRIDIZED QUINOLEINE-PYRAN DERIVATIVES	167
SANDELI ABDELKARIM, SAIDA BENZERKA, NAIMA KHIRI-MERIBOUT AND ABDELMADJID DEBECHÉ.	167
C. AFFICHE N°:116.	167
Quaternary Ammonium Ionic Liquid as a Dual Solvent-Catalyst in Biginelli Reaction	167
TEBABEL IMANE, BOUMOUUD TAOUES, BOUMOUUD BOUDJEMAA AND DEBACHE ABDELMADJID	167
C. AFFICHE N°:117.	168
Impact of El-Matrouha Landfill on Oued El-Kebir (North East of Algeria)	168
ZAAFOUR MOHAMED DJALIL, SAMIR CHEKCHAKI, MOHAMED BENSLAMA.....	168
Génétique	169
&	169
immunologie	169
C. AFFICHE N°:118.	170
Clinical case studies of Autosomal dominant polycystic kidney disease (ADPKD) in Tunisia	170
ABDELWAHED MAYSSA ^{1*} , PASCALE HILBERT ² , ASMA AHMED ³ , HICHEM MAHFOUDH ⁴ , SALEM BOUOMRANI ⁵ , MOUNA DEY ³ , JAMIL HACHICHA ⁴ , HASSEN KAMOUN ⁶ , LEILA KESKES-AMMAR ¹ , NEÏLA BELGOUTH ^{1,6}	170
C. AFFICHE N°:119.	171
ENZYME IMMUNOASSAY DIAGNOSIS OF <i>TOXOPLASMA GONDII</i> INFECTIONS IN EWES IN THE CENTRAL-EASTERN REGION OF ALGERIA	171
ABED HNEAN ^{1,2} ; GHALMI F ¹ ; HAFSI F ¹ ; AZZAG N ¹	171
C. AFFICHE N°:120.	Erreur ! Signet non défini.
Association Study between Coronary Artery Disease and rs10757274 Polymorphism at 9p21.3 Locus in a Tunisian Population	171
ABID KAOUTHAR ^{1*} , MILI DONIA ¹ , MSOLLI MOHAMED AMINE ² , TRABELSI IMEN ³ , NOUIRA SEMIR ² ET KENANI ABDERRAOUF ¹	171
C. AFFICHE N°:121.	172
DETECTION D'UNE NOUVELLE MUTATION MITOCHONDRIALE DANS LE GENE ND1 CHEZ UN PATIENT PRESENTANT UNE CYTOPATHIE NEUROSENSORIELLE	172
AMMAR MARWA ^A , EMNA MKAOUAR-REBAI ^A , MOUNA TABEBI ^A , LAMIA SFAIHI ^B , OLFA ALILA-FERSI ^A , MARWA MAALEJ ^A , RAHMA FELHI ^A , LEILA KESKES ^C , MONGIA HACHICHA ^B , FAIZA FAKHFAKH ^A ...	172

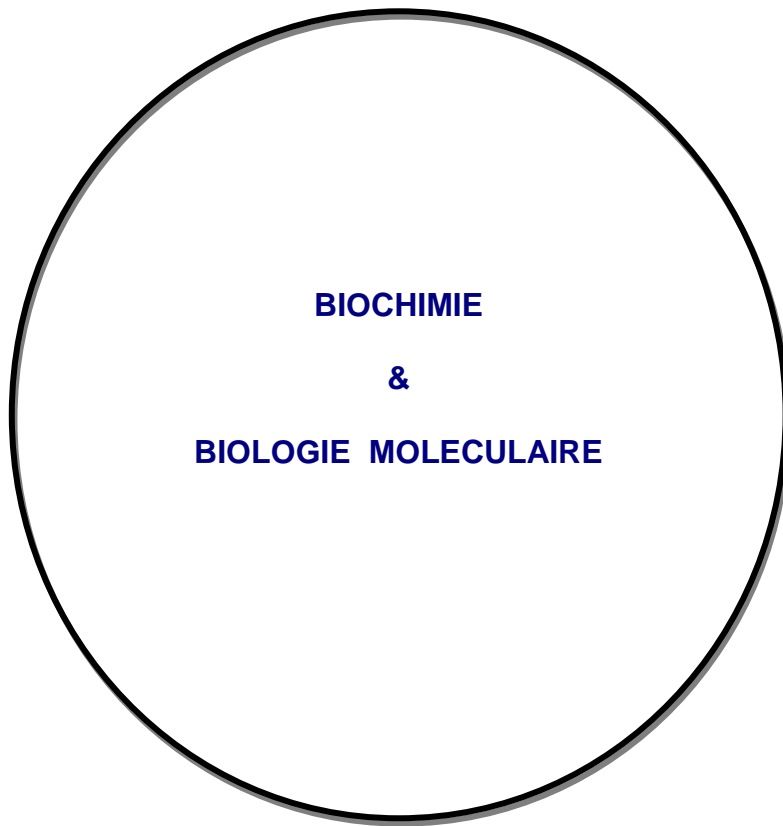
C. AFFICHE N°:122.	173
Profil Moléculaire et Génétique des tumeurs à cellules géantes osseuses dans une population tunisienne	Erreur ! Signet non défini.
AMRI RAJA 1, SLIM CARFI 3, MOURAD AOUI 1, LEILA KESKES 2, HASSIB KESKES 1	173
C. AFFICHE N°:123.	173
Assessment of TNF alpha gene expression in infertile men of Tunisian population	173
ATTIA HANA ¹ , MEHDI M ¹ , BALERCIA G ² , LAZINI R ² , ZIDI I ¹ ,AJINA T ¹ , AMAR O ¹ , HAJALI A ¹ , HADDAD ANIS ¹ , ZOHRA H ¹ , DI PRIMIO R ²	173
C. AFFICHE N°:124.	174
Evolution et diversité génétique du TLR2 (toll-like receptor 2) chez les lièvres de Tunisie	174
AWADI ASMA ¹ , FRANZ SUCHENTRUNK ² ET MOHAMED MAKNI ¹	174
C. AFFICHE N°:125.	174
Does morphology data can to draw a taxonomic Key for Tunisian plum species (<i>PRUNUS.spp</i>)?	174
BARAKET GHADA 1, DONIA ABDALLAH 1, SANA BEN MUSTAPHA 1, AMEL SALHI-HANNACHI 1	174
C. AFFICHE N°:126.	175
Novel mutations in the <i>CDKL5</i> gene in complex genotypes associated with West syndrome with variable phenotype:First description of somatic mosaic state	175
BEN JDILA MARWA ^{A,B} , CHAHNEZ TRIKI ^{B,C} , BOCHRA BEN RHOUMA ^C , RIHAB BEN JOMAA ^{B,C} , ABIR BEN ISSA ^{A,D} , LEILA AMMAR-KESKES ^D , FATMA KAMOUN ^{B,C} , FAIZA FAKHFAKH ^A	175
C. AFFICHE N°:127.	175
SELECTION NATURELLE AU NIVEAU DES GENES MITOCHONDRIAUX ATP6 ET ND2 CHEZ LES LIEVRES DE TUNISIE	175
BEN SLIMEN HICHEM ¹ , ASMA AWADI ¹ , FRANZ SUCHENTRUNK ² & MOHAMED MAKNI ¹	175
C. AFFICHE N°:128.	176
THE EFFECT OF LEUKOCYTOSPERMIA ON THE OXIDATIVE STRESS PROFILE AND SPERM MITOCHONDRIAL DNA IN INFERTILE MEN	176
DERBEL RIHAB ¹ , AHLEM BEN SLIMA ² , RIM SAKKA ¹ , ILYES MKADDEM ³ , GDOURA RADHOUE ² , LEILA AMMAR KESKES ¹	176
C. AFFICHE N°:129.	176
First retrospective analysis of EGFR, KRAS mutations and ALK rearrangements in Non-Small Cell Lung Cancer NSCLC in TUNISIA	176
DHIEB DHOHA ^A , IMENBELGUTH ^A , WAJDIAYEDI ^B , TAHYABOUDAWARA ^C , LEILA KESKES ^A	176
C. AFFICHE N°:130.	177
APPORT DE LA CYTOGENETIQUE DANS LE DIAGNOSTIC DES ANOMALIES CHROMOSOMIQUES ASSOCIEES AUX CARDIOPATHIES CONGENITALES	177
DJEBAILI CHAHINEZ	177
C. AFFICHE N°:131.	177
GENETIC DIVERSITY ANALYSIS USING MORPHOLOGICAL PARAMETERS IN TUNISIAN <i>OPUNTIA</i> GENUS	177
ELHANI AMANI ¹ , BEN SALEM HICHEM ² , SALHI-HANNACHI AMEL ¹ , BARAKET GHADA ^{1*}	177
C. AFFICHE N°:132.	178
MITOCHONDRIAL DNA ANALYSIS IN TOW TUNISIANS PATIENTS WITH MITOCHONDRIAL NEUROMUSCULAR DISORDERS	178
FELHI RAHMA A, EMNA MKAOUAR-REBAI A, * MARWA AMMAR A, , MOUNA TABEBI A, OLFA ALILA-FERSI A, MARWA MAALEJ A, FATMA KAMMOUN C, LEILA KESKES B, MONGIA HACHICHA C, FAIZA FAKHFAKH A	178
C. AFFICHE N°:133.	178
A putative disease-associated haplotype within the <i>SCN1A</i> gene in Dravet syndrome	178
FENDRI-KRIAA NOURHENE (A), SALMA BOUJILBENE (B), FATMA KAMMOUNB (B), EMNAMKAOUAR-REBAI (A), INES HSAIRI (B), AHMED REBAI (C), CHAHNEZTRIKI (B), FAIZA FAKHFAKH (A).....	178

C. AFFICHE N°:134.	179
ETUDE MORPHOLOGIQUE DES ACCESSIONS MALES DE PALMIER DATTIER TUNISIEN (PHOENIX DACTYLIFERA L.)	179
HACHEF AFIFA ¹ , EMIRA CHERIF ^{1,2} , MOHAMED BEN SALAH ² , AMEL SALHI-HANNACHI ¹ , SALWA ZEHDIAZOUZI ^{1*}	179
C. AFFICHE N°:135.	179
THE RS727088 POLYMORPHISM IN 3'UTR CD226 AND THE SUSCEPTIBILITY TO CELIAC DISEASE IN TUNISIAN POPULATION	179
JEMNI FERIEL, KERKENI EMNA, EL MEHERZI AHMED, BEN HRIZ MONJI, EL MARWENI RIDHA, EL MONASTIRI KAMEL ET BEN CHEIKH HASSEN	179
C. AFFICHE N°:136.	180
Comparison of in silico prediction and experimental assessment of ABCB4 variants identified in patients with biliary diseases	180
KHABOU BOUDOUR ^{A,B} , ANNE-MARIE DURAND-SCHNEIDER ^A , JEAN-LOUIS DELAUNAY ^A , TOUNSIA AÏT-SLIMANE ^A , VERONIQUE BARBU ^{A,C} , FAIZA FAKHFAKH ^B , CHANTAL HOUSSETA ^C , MICHELE MAURICE ^A	180
C. AFFICHE N°:137.	180
FOUNDER TUNISIAN MUTATION OF ABHD5 GENE IN THE LARGEST SERIES OF PATIENTS WITH CHANARIN-DORFMAN SYNDROME SHOWING UNUSUAL CLINICAL FINDINGS	180
LOUHICHI ¹ NACIM, S MARRAKCHI ² , H BEN OTHMAN ³ , CH TRIKI ³ , K ALOULOU ⁴ , L TRABELSI ⁵ , N MAHFOUTH ⁶ , Z AYADI-MNIF ⁷ , L KESKES ¹ , F FAKHFAKH ⁸ , H TURKI ²	180
C. AFFICHE N°:138.	181
IDH1 and IDH2 mutations in AML Tunisian patients; frequency, clinical impact and prognostic significance	181
MECHAAL AMAL ^{1,2*} ; SAFRA INES ¹ ; ZOUARI BECHIR ⁴ ; BARMAT MBARKA ¹ ; FOUZAI CHAKER ¹ ; MNIF SAMIA ¹ ; ABBES SALEM ¹	181
C. AFFICHE N°:139.	181
MUTATIONAL ANALYSIS IN PATIENTS WITH NEUROMUSCULAR DISORDERS: DETECTION OF MITOCHONDRIAL DELETION AND DOUBLE MUTATIONS IN THE MT-ATP6 GENE	181
MKAOUAR-REBAI EMNA ^A , RAHMAFELHI ^A , LAMIASFAIHI-BEN MANSOUR ^B , OLFAALILA-FERSI ^A , MOUNATABEBI ^C , BOCHRA BEN RHOUMA ^C , MARWA AMMAR ^A , MONGIAHACHICHA ^B , FAIZAFKHFACH ^C	181
C. AFFICHE N°:140.	182
USE OF GENETIC FINGERPRINTING: IDENTIFICATION OF PATERNAL LINEAGE	182
ROMDHANE SAFA ¹ , SIHEM BEN FADHEL ¹ , HAMZA DALLALI ² , LILIA ROMDHANE ^{2,3} , AMIRA AMMAR ⁴ , RADHIA AMMI ⁴ , CHEDLY TAYARI ⁵ , SAMIR BOUBAKER ¹ , SONIA ABDELHAK ¹ AND RYM KEFI ¹	182
C. AFFICHE N°:141.	182
Fruit morphological study of Kerkennah Islandsinsular Tunisian date palm (Phoenix dactylifera.L)	182
SAFFAR WEJDENE ¹ , EMIRA CHERIF ^{1,2} , AFIFA HACHEF ¹ , ET SALWA ZEHDIAZOUZI ^{1*}	182
C. AFFICHE N°:142.	183
Correlation between VEGFR2 expression and RAS mutational status in Tunisian patients with metastatic colorectal cancer.	183
YAICHE HAMZA (1,2), NADIA BEN JEMII (1,2), AMIRA JABALLAH (1,2), HAIFA TOUNSI-KETTITI(1,2), INES BEN AYED (1,2), AFIFA MAALLOUL(1) ESSIA HABBACHI (1), SALSABIL ATTAFI(1,2), CHAYMA BEN FAYALA (1), NAJLA MEZGHANNI (1,2), SONIA ABDELHAK(2), MOHAMED SAMIR BOUBAKER (1,2).	183
Microbiologie	184
&	184
Virologie	184
C. AFFICHE N°:143.	185
Extending cooked sausages shelf life under vacuum chilled storage using rosemary residues combined or not to linseed in cull ewes' diet	185
BEN ABDELMALEK YOMNA ^{1,2} , ESSID INES ² , SMETTI SAMIR ¹ ET ATTI NAZIHA ¹	185

C. AFFICHE N°:144.	185
MOLECULAR EPIDEMIOLOGY of group a ROTAVIRUS STRAINS detected in tunisian children (January 2015 - April 2017).	185
BENNOUR HAIFA ^{1,2} , FODHA IMENE ^{1,2} , BOUAZIZI ASMA ¹ , JERBI AMIRA ^{1,2} , LAKHAL SAMIA ^{1,2} , BEN HADJ FREDJ MOUNA ¹ , BEN HAMIDA-REBAI MERIEM ^{1,2} , KALLALA OUAFA ^{1,2} , KACEM SAOUSSEN ^{1,2} , FKIH ZOUHOUR ¹ , BEN REJEB NEILA ³ , ABDELKHALEK SANA ³ , MILI AKILA ³ , BOUJAARFAR NOUREDDINE ² , TRABELSI ABDELHALIM ^{1,2}	185
C. AFFICHE N°:145.	186
EVALUATION OF THE PREBIOTIC EFFECTS OF CRATAEGUS AZAROLUS FRUITS POLYSACCHARIDES ON THREE LACTOBACILLUS SPECIES	186
BENSACI.NARIMEN; ABDI.A ;AOUADI.S ; TILILI.M ET SELMI.H.....	186
C. AFFICHE N°:146.	186
EVALUATION DE L'ACTIVITE ANTIBACTERIENNE DE DIFFERENTS ECHANTILLON DE MIEL VIS A VIS DES SOUCHES DU GENRE PSEUDOMONAS ET STAPHYLOCOCCUS	186
BOUDIAR. INES; ABDI.A; BOUHAOUH. M; ZERDAZI. K	186
C. AFFICHE N°:147.	187
Serological Study of Abortive Chlamydiosis at Small Ruminants in the Center of Algeria.	187
BOUKHALFA NABILA., DOUIFI M., METREF A., MARDJA S., AIZA A. , HAKEM H., BOUYOUCHEF A.187	187
C. AFFICHE N°:148.	187
Emergence of <i>Staphylococcus aureus</i> Vancomycin (R), Fucidic Acid (R) in superficial infections of the diabetic foot	187
BOUKOUCHA MOURAD ¹ , NADIA BOUGUERRA ² , ZINA ZERFAOUI ¹ , MOUFIDA ABBAD ¹	187
C. AFFICHE N°:149.	188
Molecular epidemiology of Enterobacteriaceae strains isolated from patients with infected diabetic foot ulcers in an Algerian University Hospital.	188
DJAHMI NASSIMA. ¹ , S. NEDJAI ¹ , A. ABDERRAHIM ¹ , A ADJABI ¹ , A.OTMANE ¹ ,A. BENALI ¹ , A.MERAH ¹ , M. DEKHIL ¹ , AND J.-P. LAVIGNE ^{2,3}	188
C. AFFICHE N°:150.	188
PHENOTYPIC AND GENOMIC CHARACTERISTICS OF A NOVEL ATYPICAL MYCOBACTERIA SPECIES RELATED TO THE MYCOBACTERIUM FORTUITUM COMPLEX	188
GHARBI RIM ¹ , VARUN KHANNA ² , BESMA MHENNI ¹ , ROLAND BROSCH ³ , HELMI MARDASSI ¹ ...	188
C. AFFICHE N°:151.	189
ANTIMICROBIAL ACTIVITY AND DFT STUDIES OF ORGANO-METALLIC SCHIFF BASE COMPLEXES CONTAINING SULFONYL MOIETY	189
GUIBEDJ DOUNIA ^{1*} , KADRI MEKKI ¹	189
C. AFFICHE N°:152.	189
Study of the prevalence of salmonella Dublin in cows in the region of Algiers	189
HEZIL DJAMILA. BENSEGHIR HASSEN..TENNAH SAFIA.ZAIDI SARAH. ZIENELDINE RADJA. CHADI HAFIDHA. GHALMI FARIDA	189
C. AFFICHE N°:153.	190
Molecular characterization of respiratory syncytial virus detected in Tunisian hospitalized infants (2016-2017)	190
JERBI AMIRA ^{1,2} , FODHA IMENE ^{1,2} , BENNOUR HAIFA ^{1,2} , LAKHAL SAMIA ^{1,2} , BEN HADJ FREDJ MOUNA ¹ , KACEM SAOUSSEN ^{1,2} , KALLALA OUAFA ^{1,2} , HAMROUNI NAJOUA ¹ , BOUSSADIA SOUMAYA ¹ , BEN HAMIDA-REBAI MERIEM ^{1,2} , BRINI INES ³ , BOUSSETTA KHADIJA ³ , JRAD TAOUFIK ⁴ , KHLIFA MONIA ⁴ , SBOUI HASSEN ⁵ , MATHLOUTHI JIHEN ⁵ , BOUSSOFARA RAOUTHA ⁶ , ABROUG SAOUSSEN ⁷ , BOUJAARFAR NOUREDDINE ² , TRABELSI ABDELHALIM ^{1,2}	190
C. AFFICHE N°:154.	190
Surveys by informal interviews of veterinarians on vaccination practices for the prevention of Gumboro diseases in poultry farming.	190
LADJEL THINHINANE., AND K. RAHAL.	190
C. AFFICHE N°:155.	191
Detection of Epstein-Barr virus in Tunisian patients with Glioblastoma multiforme.	191
LIMAM SARRA ^{1*} , YACOUBI MOHAMED TAHAR ¹ , MOKNI MONSEF ¹ , SELMI BOULBABA ²	191

C. AFFICHE N°:156.	191
Chemical Composition and Antimicrobial Activity of the Essential Oil of Thyme (<i>Thymus vulgaris L.</i>) and Rosemary (<i>Rosmarinus officinalis</i>) against Avian <i>Escherichia coli</i> Strains	191
MANSOURI NARIMENE ^A , LEILA AOUN ^A , NABILA DALICHAOUCHE ^B , HADRI DOUNIAZED ^C	191
C. AFFICHE N°:157.	192
analyses physicochimique et microbiologique d'un fromage artisanal « Jben »	192
MECHAI ABDELBASSET ⁰¹ , DEBABZA MANEL ⁰¹ AND THABET RACHID ⁰²	192
C. AFFICHE N°:158.	192
Mise en évidence du potentiel en molécules bioactives produites par un nouveau taxon bactérien d'une sebkhia Algérienne.	192
MOHAMED SARA ^{1*} , ADDOU N., QUADRI ¹ ., SELAMA O ¹ ., BOUMEHIRA A.A ¹ ., HADJ RABIA Y ¹ .,AMEUR A ¹ .ET HACENE HOCINE ¹	192
C. AFFICHE N°:159.	193
Isolation and identification of bacteria from dog saliva	193
RAZALI KAHINA ¹ ; MENOUEIRI M.N ¹	193
Toxicologie,	194
&	194
Pharmacologie	194
C. AFFICHE N°:160.	195
Larvicidal effect of methanolic extract of <i>Laurus nobilis</i> against <i>Culex pipiens</i> (Diptera: Culicidae)	195
AOUATI AMEL & BERCHI SELIMA	195
C. AFFICHE N°:161.	195
CITRULLUS COLOCYNTHIS (CUCURBITACEAE) EFFECTS ON BIOCHEMICAL PARAMETERS IN FEMALE RATS (WISTAR STRAIN)	195
BEKHAKHECHE MANEL ; HABBACHI Wafa ; MASNA FATIHA; TAHRAOUI ABDELKRIM.....	195
C. AFFICHE N°:162.	196
EFFETS DES ANTIOXYDANTS DANS LA RÉDUCTION DE TOXICITÉ INDUITE PAR LE CHLORURE MERCURIQUE CHEZ LE RAT WISTAR	196
BENKERMICHE SABRI ^{1*} ; AMRI NAZIHA ¹ ; BENABED MOHAMED LAMINE ¹ ; TAHRAOUI ABDELKRIM ¹ 196	
C. AFFICHE N°:163.	196
BIOCHEMICAL STUDY OF HEPATOTOXICITY BY TITANIUM DIOXIDE AND THE PROTECTIVE EFFECT OF AQUEOUS EXTRACT OF TURMERIC (CURCUMA LONGA) IN WISTER ALBINOS RATS	196
BOUTERAA ZINA ¹ , R.ROUABHI ¹ , S.HENINE ¹ , L.LMITA ¹ ,S.BOUSSEKINE ¹ , N.TOUALBIA ¹ , A.YOUSFI ¹ , A.SALMI ¹	196
C. AFFICHE N°:164.	197
Oxidative stress induced by glyphosate (GLP) in rat testis: Attenuation by Zinc Sulfate	197
DJABER NESRINE., ROUAG M., BERROUAGUE S., BOUMENDJEL A. & MESSARAH M.	197
C. AFFICHE N°:165.	197
CONTRIBUTIION OF THE STUDY OF THÉRAPEUTIC EFFECTS OF ESSENTIEL OIL "SYZYGIUM AROMATICUM" ON WISTARS RATS EXPOSED FOR LEAD.	197
GRELE. KARIMA ¹ , ADLI. D.E.H ² , AMMAM. A ³ , KAHLOULA. K ⁴ , SLIMANI. M ⁵	197
C. AFFICHE N°:166.	198
Direct toxic effects of <i>Cleome arabica</i> (Capparidaceae) on mortality and development of <i>Drosophila melanogaster</i> (Diptera; Drosophilidae)	198
HABBACHI SARRA ¹ ; AMRANI SALIHA ¹ ; BENHISSEN SALIHA ² ; HABBACHI Wafa ¹ ; REBBAS KHELLAF ² ; TAHRAOUI ABDELKRIM ¹	198
C. AFFICHE N°:167.	198
ALLELIC AND GENOTYPIC FREQUENCIES OF CYP3A4*22 POLYMORPHISMS IN TUNISIAN POPULATION	198
HANNACHI IBTISSEM ^{1,2*} , ZOHRA CHADLY ² , EMNA KERKENI ² , AMAL CHAABANE ² , NADIA BEN FREDJ ² , NACEUR A. BOUGHATTAS ² , KARIM AOUAM ²	198

C. AFFICHE N°:168.	199
NANOTOXICITY OF Fe₃O₄ ON THE PARAMETERS OF OXIDATIVE STRESS OF AN ALTERNATIVE CELL MODEL PARAMECIA.	199
HENINE SARRA ¹ , ROUABHI RACHID ¹ , BOUTERAA ZINA ¹ , LEMITA LOUBNA ¹ , BOUSSEKINE SAMIRA ¹ , TAIB CHAHINEZ ¹ , CHENIKHER HADJER ¹	199
C. AFFICHE N°:169.	199
ETUDE DE L'ACTIVITE INSECTICIDE DES FEUILLES ET DES GRAINES D'UNE EUPHORBIACEAE (MERCURIALIS ANNUA L.)	199
JABBERI MARWA ¹ , MADIOUNI BEN JEMÂA JOUDA ³ , KHOUJA MED LARBI ² ET EL FERCHICHI OUARDA HELA ^{1,2}	199
C. AFFICHE N°:170.	200
PEPTIDOMIC ANALYSIS OF BIOACTIVE PEPTIDES IN ZEBRA BLENNY (SALARIA BASILISCA) MUSCLE PROTEIN HYDROLYSATE EXHIBITING ANTIMICROBIAL ACTIVITY OBTAINED BY FERMENTATION WITH BACILLUS MOJAVENSIS A21	200
JEMIL INES ¹ , LETICIA MORA ² , MARÍA-CONCEPCIÓN ARISTOY ² , FIDEL TOLDRA ² AND MONCEF NASRI ¹	200
C. AFFICHE N°:171.	200
DEVELOPPEMENT DE SOLUTIONS ANTI-INFLAMMATOIRES ALTERNATIVES EN MEDECINE VETERINAIRE A BASE D'HUILE ESSENTIELLE DE CUPRESSUS SEMPERVIRENS	200
LAGHOUATI AMEL ^{1,2} ; ZAOUANI MOHAMED ^{1,2} BENMAHDI H.M ^{1,2}	200
C. AFFICHE N°:172.	201
ETUDE DU POUVOIR ANTI-INFLAMMATOIRE DE L'EXTRAIT METHANOLIQUE DE LA PLANTE GLADIOLUS SEGETUM	201
MARREF SALAH EDDINE ¹ , BENKIKI NAIMA ¹ , MELAKHESSOU MOHAMED AKRAM ¹	201
C. AFFICHE N°:173.	201
ACTION ANTIULCEREUSE DE L'EXTRAIT BUTANOLIQUE DE LA PLANTE ATRACTYLIS FLAVA	201
MELAKHESSOU MOHAMED AKRAM ¹ , BENKIKI NAIMA ¹ , MARREF SALAH EDDINE ¹	201
C. AFFICHE N°:174.	202
PROTECTIVE EFFECT OF COBALT CHLORIDE IN AMELIORATING GLUCOSE CONCENTRATION IN ALLOXAN DIABETIC RATS.	202
MELLAHI LAMIA ¹ AND BOUZERNA NOUREDDINE ²	202
C. AFFICHE N°:175.	202
STUDY OF ANTIDIABETIC POTENTIAL EFFECT OF GLIMEPIRIDE AND ZYGOPHYLLUM CORNUTUM COSS EXTRACT COMBINATION TREATMENT IN ALLOXAN-INDUCED DIABETIC RATS.	202
RAHAL LYNDA ¹ , MERYEM OUAZOUAZ ² & CHÉRIFA HENCHIRI ²	202
C. AFFICHE N°:176.	203
EFFECTS OF ESSENTIAL OIL OF <i>Lavandula dentata</i> ON THE ADULT INSECT <i>Tribolium confusum</i> (HERBST) (COL., TENEBRIONIDAE)	203
TINE SAMIR ^{1,2} ; OULDMESSAOUD LYNDA ¹ ; BOUDIAR RAMZI ¹ & TINE-DJEBBAR FOUZIA ^{1,2}	203
C. AFFICHE N°:177.	203
MOSQUITO LARVICIDAL ACTIVITIES OF <i>Mentha pulegium</i> ESSENTIAL OIL AGAINST <i>Culex pipiens</i> (L.) (DIPTERA : CULICIDAE).	203
TINE-DJEBBAR FOUZIA ^{1,2} , RAJA GUENEZ ¹ , SAMIR TINE ^{1,2} , NOUREDDINE SOLTANI ²	203





C. AFFICHE N°:1.

COSEGREGATION OF THE M.1555A>G MUTATION IN THE MT-RNR1 GENE AND MUTATIONS IN MT-ATP6 GENE IN A FAMILY WITH DILATED MITOCHONDRIAL CARDIOMYOPATHY AND HEARING LOSS: A WHOLE MITOCHONDRIAL GENOME SCREENING

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Mitochondrial disease refers to a heterogeneous group of disorders resulting in defective cellular energy production due to dysfunction of the mitochondrial respiratory chain, which is responsible for the generation of most cellular energy. Because cardiac muscles are one of the high energy demanding tissues, mitochondrial cardiomyopathies is one of the most frequent mitochondrial disorders. Mitochondrial cardiomyopathy has been associated with several point mutations of mtDNA in both genes encoded mitochondrial proteins and mitochondrial tRNA and rRNA. We reported here the first description of mutations in MT-ATP6 gene in two patients with clinical features of dilated mitochondrial cardiomyopathy. The mutational analysis of the whole mitochondrial DNA revealed the presence of m.1555A>G mutation in MT-RNR1 gene associated to the m.8527A>G (p.M>V) and the m.8392C>T (p.136P>S) variations in the mitochondrial MT-ATP6 gene in patient 1 and his family members with variable phenotype including hearing impairment. The second patient with isolated mitochondrial cardiomyopathy presented the m.8605C>T (p.27P>S) mutation in the MT-ATP6 gene. The three mutations p.M1V, p.P27S and p.P136S detected in MT-ATP6 affected well conserved residues of the mitochondrial protein ATPase 6. In addition, the substitution of proline residue at position 27 and 136 effect hydrophobicity and structure flexibility conformation of the protein.

Key words : Dilated mitochondrial cardiomyopathy, Hearing loss, m.1555A>G, m.8605C>T, m.8527A>G, m.8932C>T.

C. AFFICHE N°:2.

DI (2-ETHYLHEXYL) PHTHALATE INDUCES NEPHROTOXICITY VIA INHIBITION OF THE NRF2/HO-1 DEFENSE PATHWAY

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Environmental toxicants such as phthalates have been implicated in the promotion of multiple health disorders including renal diseases. Oxidative and cytotoxic damage plays an important role in nephrotoxicity caused by phthalates specially the di (2-ethylhexyl) phthalate (DEHP), one of the most used phthalate, but informations regarding mechanisms of nephrotoxicity is lacking. The transcription factor nuclear factor erythroid 2-related factor 2 (Nrf2) coordinates expression of genes required for free radical scavenging, detoxification of xenobiotics, and maintenance of redox potential.

The aim of the present study was to assess the propensity of DEHP to cause renal damage in mice. Twenty four male Balb/c mice were divided into four equal groups; first group was used as a control and given corn oil intraperitoneally (i.p). Groups from 2–4 were treated with DEHP at different concentrations (5, 50 and 200 mg/kg body weight, i.p) respectively. 30 days after DEHP injection, we assessed the effect of DEHP on renal injury using biochemical profile such as LDH, creatinin and urea levels, parameters related to renal oxidative stress such as malondialdehyde (MDA) level and protein carbonyl (PC) concentration. In addition, we evaluated enzymatic antioxidant status by measuring the catalase (Cat) activity. Western blot was used to measure the expression of Nrf2 and its downstream effector HO-1. Our results showed that DEHP induced a significant elevation of renal injury serum markers, increased lipid peroxidation, protein carbonyl levels and perturbate the antioxidant status by the increase of the catalase activity in the kidney in a dose-dependent manner. In addition, DEHP significantly inhibited the Nrf2 signaling pathway, as demonstrated by the decreased expression levels of Nrf2 and HO-1 in a dose-dependent manner. These findings suggest that Nrf2 repression by DEHP is responsible for inducing oxidative stress in mice kidney, and also suggest that DEHP-induced nephrotoxicity is dependent on the inhibition of the Nrf2/HO-1 pathway.

Key words : Di (2-ethylhexyl) phthalate, Nephrotoxicity, Oxidative stress, Nrf2/HO-1 pathway.



C. AFFICHE N°:3.

IMPACT DE L'ATORVASTATINE ET DE LA SIMVASTATINE SUR LA DISTRIBUTION DES PHOSPHOLIPIDES DANS LES DIFFERENTES CLASSES DE LIPOPROTEINES CHEZ DES PATIENTS CORONARIENS

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Les phospholipides (PL) sont des constituants majeurs des membranes cellulaires et représentent environ 20% de chacun des diverses classes de lipoprotéines sériques. Les niveaux plasmatiques et la distribution de certains PL entre les classes de lipoprotéines pourraient être utilisés pour le diagnostic de l'athérosclérose ou de pathologies associées. Le but de notre travail est d'analyser la distribution des PL dans les classes de lipoprotéines au cours de la maladie coronarienne ainsi que l'effet de deux statines à savoir l'atorvastatine et la simvastatine.

Les sujets ont été divisés en deux populations, une population (A) incluant 96 sujets divisés en 2 groupes (48 témoins et 48 patients coronariens) et une population (B) incluant 96 patients coronariens divisés en 2 groupes: 54 patients coronariens soumis à un traitement de 18 mois avec l'atorvastatine à 40 mg et 42 patients coronariens soumis à un traitement avec la simvastatine à 40 mg. La détermination des phospholipides sériques a été effectuée par méthode colorimétrique enzymatique.

Nos résultats montrent que le profil lipidique des patients coronariens atteste d'une élévation des niveaux sériques de PL totaux ainsi que dans la fraction (VLDL+LDL) ($p < 0.0001$) et une diminution significative de la fraction HDL-PL ($p = 0.01$) en comparaison avec le groupe témoin. Nous montrons également que l'atorvastatine et la simvastatine ont considérablement diminué le niveau des PL totaux ($p = 0.03$) et de la fraction (VLDL+LDL) liée aux PL ($p < 0.001$). Par contre les deux statines ont augmenté significativement la fraction HDL-PL ($p = 0.008$ et $p = 0.01$) dans le groupe atorvastatine et le groupe simvastatine respectivement.

En conclusion, les phospholipides pourraient être considérés comme un marqueur du risque coronarien et le traitement à long terme par statine semble moduler leur distribution.

Key words: atorvastatine, maladie coronarienne, phospholipides, simvastatine

C. AFFICHE N°:4.

IDENTIFICATION, QUANTIFICATION OF PURIFIED PHENOLIC COMPOUNDS BY HPLC-DAD-ESI/MS OF TUNISIAN PISTACHIO (*PISTACIAVERA* L.) LEAVES

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The phenolic profile of Pistacia vera. L leaves from three region of Tunisian was investigated using HPLC-DAD-ESI/MS. Thirty-seven phenolic compounds were identified: glycosides of flavonol and gallic acid derivatives. The flavonol compounds are the major compounds identified in pistachio (*Pistaciavera* L.) leaves. Some compounds were identified for the first time in genus Pistacia. The amount of phenolic compounds varies according to the geographic origin of varieties. In fact, the "Mateur" variety from El Guettar Gafsa gave the highest amount of phenolic compounds (25.95 mg/g of fresh weight) and total flavonols (19.02 mg/g of fresh weight) followed by the variety "Mateur" from Sidi Aich Gafsa (20.66mg/g of fresh weight).

Keywords: Pistaciavera L; phenolic compounds; HPLC-DAD-ESI/MS;



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C. AFFICHE N°:5.

EXTRACTION ET CARACTÉRISATION DE L'ULVANE À PARTIR DE *ULVA SP.*

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L'extraction du polysaccharide l'ulvane a été réalisée à partir de macroalgue verte *Ulvasp.* Une caractérisation d'ulvane a été réalisée à l'aide de la méthode spectrométrie infrarouge IR. La comparaison des différents spectres IR respectivement d'algue *Ulva SP*, d'ulvane et de cellulose a montré l'effet des différentes étapes d'extraction sur la composition obtenue. Une analyse par la Spectrométrie de photon X (XPS) nous a permis de détecter le taux de sulfate en surface dans l'ulvane qui est de l'ordre de 1.9%, cette quantité est beaucoup plus faible dans la cellulose de l'ordre de 0.5%. D'autre part, une analyse Thermogravimétrique (TGA) a montré la pureté du polysaccharide extrait ainsi que le suivi de sa dégradation thermique en fonction de la température. Ensuite, une optimisation de l'extraction d'ulvane a été réalisée : Des séries d'extractions ont été effectuées pour déterminer le type de solvant, la quantité d'algue utilisé, la durée d'extraction, la quantité d'acide oxalique ajouté, la durée d'élimination des lipides et chlorophylle par soxhlet, la durée d'extraction (min). Le meilleur rendement été de l'ordre de 8% en utilisant le soxhlet comme première étape pour l'élimination des lipides et chlorophylle et une durée de deux heures d'extraction et 5% d'acide oxalique.

Key words: Algues, Ulvane, polysaccharides, caractérisation, optimisation

C. AFFICHE N°:6.

MICROBIOLOGICAL CHARACTERISTICS OF EL GUEDDID, A TRADITIONAL ALGERIAN DRIED SALTED MEAT

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Traditional foods represent a cultural heritage that connects the past of a country to the present. El Gueddid is a typical meat product of the Maghreb countries (Algeria, Tunisia and Morocco). The preparation of this product is variable from one country to another. In Algeria, this product is still widely used and appreciated. It is prepared from lamb meat, beef, or goat meats. The meat is cut into pieces then salted and dried by hanging. El Gueddid can be stored at room temperature for more than a year. It is used as an ingredient in various dishes.

In this study, samples of El Gueddid, prepared in the region of Constantine (North East of Algeria) by a maker using the traditional manner, were collected and analyzed at different times to follow up the microbiological properties. Microbiological determinations included the Standard Plate Count, Coliforms, Staphylococci, Lactic Acid Bacteria, Yeasts and Moulds. Results showed that microbial profiles were elevated for all the studied micro-organisms. Coliforms, were found in low numbers in fresh meat, then being eliminated after 3 days. Staphylococci and Lactic Acid Bacteria were the most abundant micro-organisms in the product. Compared to moulds, results showed a strong predominance of yeasts.

Key words: Microbiological characteristics, Traditional meat products, El Gueddid.



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C. AFFICHE N°:7.

MITOCHONDRIAL DNA FOR IDENTIFICATION OF TUNA SPECIES IN FRESH AND CANNED TUNA PRODUCTS

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Traceability has become a key issue for both the food industry and the consumer. The modifications induced by processing make species identification by visual inspection difficult and hinder the enforcement of the legislation on traceability. In this context, the main aim of our work is the molecular identification of both fresh and processed tuna by the DNA extraction and the amplification of the cytochrome b gene sequence by PCR. The quantity and quality of DNA extracted were evaluated using the ratio A260/A280. DNA extraction from fresh Tuna and from 23 canned tuna was followed by a PCR method that specifically amplifies a 358 bp fragment of the cytochrome b gene. The new sequences were blasted against a nucleotide sequence database (GenBank) and phylogenetically analyzed with the MEGA software. Multiple alignments of 4 analyzed reference samples belonging to tuna species was performed versus the canned samples. A phylogenetic tree was constructed, and the calculated bootstrap values (BP, 78-99%) were used as indicators of the correct assignment of unknown canned samples to reference species. The present study provides useful genetic information to discriminate all *thunnus* species in canned tuna.

Key words: tuna, species identification, mtDNA sequence, PCR.

C. AFFICHE N°:8.

NANOLC-MS/MS-BASED PROTEOMIC STUDY OF EMBRYOGENIC AND NON-EMBRYOGENIC CALLI DURING OAT (AVENA SATIVA L.) SOMATIC EMBRYOGENESIS

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The development of somatic cells into embryogenic cells occurs in several stages and leads to somatic embryo formation, though most of these biochemical and molecular changes have not been yet to be elucidated in oat (*Avena sativa* L.). Somatic embryogenesis is a relevant biotechnological tool for *in vitro* selection and improvement of plants; it is also an important model for fundamental studies of molecular physiology of plant embryo development. During oat induction stage, embryogenic callus (EC) and non embryogenic callus (NEC) are observed, sharing the same origin arise from mature caryopses in the presence of 2,4-D. This is the first study to evaluate proteomic changes that occur during oat somatic embryogenesis induction. The goal of our work is to investigate differences in competence acquisition between oat embryogenic and non embryogenic calli. In this study, proteins were identified using nanoLC-MS/MS technique, which allows the identification of a large number of proteins in complex samples and constitutes a qualitative and quantitative analysis. Our results show that 463 proteins statistically ($p < 0.05$, ratio 2, FDR at 0.00025) differ in their abundances between oat embryogenic and non embryogenic calli; 237 proteins are overexpressed in EC and 226 in CNE that were classified into 8 biological categories which are metabolic process, cellular process, cellular component organization or biogenesis, localization, response to stimulus, biological regulation, developmental process and developmental process. Functional analysis of EC showed that proteins regulating cell development and primary metabolism are more abundant in that stage. While, NEC proteins related to carbohydrate and energy metabolisms are rather over-represented. These results provide new insights into the characterization and understanding of oat somatic embryogenesis at proteome level and offer a better understanding of the molecular mechanism involved in this process.

Key words Somatic embryogenesis, *Avena sativa* L., proteomic study, nanoLC-MS/MS.



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C. AFFICHE N°:9.

SYNTHESIS AND STRUCTURAL STUDY OF LANTHANUM COORDINATION COMPLEX

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1H-Benzimidazole-5-carboxylic acid is one of the carboxylic derivatives that are among the heterocyclic compounds. It is a polyfunctional molecule of pharmacological and chemical interest [1]. In coordination chemistry, this molecule chelates the metal through the two oxygen atoms of the -CO₂ group of the carboxylic function and the nitrogen atom of the imidazole ring so it is a multidentate ligand. These modes of coordination are observed in all the 1H-benzimidazole-5-carboxylic polymers mentioned in the literature [2]. Lanthanide metal coordination frameworks with carboxylic derivatives are of increasing interest in recent years because of their potential applications in magnetism, luminescence, catalysis, optics [3].

For this purpose we have succeeded in synthesizing under hydrothermal conditions and its characterization by single-crystal X-ray diffraction, a new lanthanum coordination polymer, namely, poly [aqua-μ₃-1H-benzimidazole-5-carboxylato di-μ₂-1H-benzimidazole-5-carboxylato lanthanum (III)]. The lanthanum (III) atom adopts a tricapped distorted trigonal prism geometry.

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C. AFFICHE N°:10.

SYNTHESIS AND STRUCTURAL STUDY OF EUROPIUM OXALATE

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The recent exponential development in the synthesis and characterization of new solids with purely inorganic[1] or organic-inorganic hybrid open-framework[2], that may contain guest organic entities and/or water molecules, have revealed the diversity of such materials in terms of structure, topology and composition, particularly in the presence of amines as templates[3,4]. In such compounds, organic moieties act as spacer or linker between metal blocks. In this field, the use of oxocarbon entities, as polycarboxylates, has greatly increased providing spectacular examples of how the organic ligand symmetry, as well as the metal geometry, can be exploited for conceiving novel architectures for such materials[2] with a view to exploiting interesting properties such as magnetism, porosity or ion-exchange ability. In the following, special attention will be given to rare earth oxalates or similar ones with more flexible aliphatic dicarboxylates as succinates glutarates[5,6-8].

A novel Europium oxalate compound, [Eu^{III}(H₂O)(C₂O₄)₂]_n·NH₄, was synthesized by hydrothermal method. The crystal structure was determined from X-ray single-crystal data. It crystallizes in the monoclinic space group P2/c, with a = 7.7930(5) Å, b = 6.1280(5) Å, c = 12.2600(5) Å, β = 128.980 (2)°, V = 455.1(5) Å³, Z = 2. The asymmetric unit is formed by a europium atom coordinated with a molecule of water and two oxalate ligand and a counterion ammonium, the latter is located on a binary axis, the molecule forms via covalent bonds a two-dimensional network.

Key-words: Coordination polymer, ligand oxalate, lanthanides, X-ray diffraction.

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ASSOCIATION TUNISIENNE DES SCIENCES BIOLOGIQUES
29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:11.

RECHERCHE D'ENZYMES D'INTERET BIOTECHNOLOGIQUE, ANALYSES BIOCHIMIQUES ET MOLECULAIRES ET EVALUATION DES ACTIVITES BIOLOGIQUES DAGHMOURI HEND, ABIDI FERID, MARZOUKI MED NEJIB

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L'hydrolyse chimique des molécules se fait dans des conditions drastiques : elle est améliorée en augmentant la température et la pression. Elle est de ce fait difficile à contrôler. De nos jours, plusieurs travaux visent la substitution des méthodes chimiques par les méthodes biologiques moins toxiques et plus écologiques. Les voies enzymatiques sont les plus envisageables parce qu'elles permettent un certain contrôle de la réaction et de ses produits d'hydrolyse. Actuellement, l'industrie des enzymes est en pleine progression et son chiffre d'affaires global croît à un rythme accéléré. Les protéases et les amylases font partie des classes d'enzymes les plus utilisées dans plusieurs industries dont l'application dépend des propriétés physiologiques des organismes sources. Dans le cadre du présent travail, notre intérêt porte sur la production, la purification et la caractérisation biochimique des protéases et des amylases issues par des champignons phytopathogènes vu qu'elles sont caractérisées comme étant une sources potentielles d'enzymes.

En premier lieu, nous avons pu optimiser la production de ces enzymes par une étape de screening ayant pour but de choisir la souche fongique hyperproductrice de protéases et d'amylases et le meilleur substrat inducteur. Cette étape nous a permis de récupérer l'extrait enzymatique produit par la culture de *Sclerotium rolfsii* en milieu liquide enrichi par des inhibiteurs tels que plumes et épiluchures de pommes de terre. La caractérisation biochimique de protéase et d'amylase a montré qu'elles ont respectivement des températures optimales de 50°C et 60°C et des pHs optimums de 9 et 7. D'autres analyses ont été effectuées afin de vérifier la stabilité des enzymes produites vis-à-vis des métaux lourds, de la température et du pH. Les enzymes seront par la suite testées par électrophorèse afin de vérifier leur état de pureté et leur poids moléculaire. D'autres analyses microbiologiques et protéomiques sont envisageables dans le but d'orienter l'application des enzymes produites dans les différents secteurs industriels.

Key words : Protéase, amylase, champignons phytopathogènes, substrats, production.

C. AFFICHE N°:12.

ASSOCIATION ENTRE LE POLYMORPHISME RS2033178 DU GENE IGF-1 ET LE CANCER COLORECTAL EN TUNISIE

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Introduction: Le cancer colorectal (CRC) est un problème de santé publique dans le monde et en Tunisie. Il constitue la deuxième cause de décès par cancer (694,000 décédés en 2012). L'IGF-1 (Insulin-like Growth Factor 1) est un facteur de croissance de structure proche de l'insuline produit par le foie et le tractus intestinal et responsable de la prolifération, la différenciation, la survie et l'invasion cellulaire.

Objectif: Déterminer la relation entre le polymorphisme ou mutation rs2033178 situé au niveau de l'intron de l'IGF1 et la prédisposition au CRC.

Matériels et Méthodes: 108 échantillons de tissus inclus dans des blocs de paraffine (108 tissus tumoraux et 108 tissus sains) ont été collectés au laboratoire d'Anatomie Pathologiques du CHU Fattouma Bourguiba de Monastir et colligés sur 11 ans (2006 à 2016). L'ADN a été extrait à l'aide d'un kit ReliaPrep™ gDNA. Le polymorphisme rs2033178 (T/C) a été déterminé par PCR-RFLP.

Résultats: Les fréquences génotypiques du rs2033178 du gène IGF-1 ont été conformes à l'équilibre de Hardy-Weinberg. Les OR ont été calculés en utilisant l'allèle sauvage homozygote comme référence. Les fréquences génotypiques de TT, TC et CC sont de 5,6%, 25% et 69,4% respectivement dans les tissus cancéreux et de 35,2%, 39,8% et 25% respectivement dans les tissus sains. Les variations des différents génotypes ont montré des différences statistiquement significatives entre les tissus tumoraux et sains. La fréquence des génotypes TC et CC a déterminé un risque élevé pour la progression de la tumeur (OR=3,98 et 17,59, p<0,001, respectivement) par rapport au génotype homozygote TT. La fréquence de l'allèle muté de ce polymorphisme a été significativement plus élevée (p=0,0001) dans les tissus tumoraux (81,94%) que chez les tissus sains (43,06%). **Conclusion:** Nos résultats plaident en faveur de l'association entre la mutation rs2033178 au niveau du gène IGF1 et la prédisposition au CCR.

Mots clés : cancer colorectal, IGF-1, rs2033178.



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ASSOCIATION TUNISIENNE DES SCIENCES BIOLOGIQUES
29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:13.

EFFECT OF INCORPORATION OF THE DATE WASTES ON THE BIOCHEMICAL PROFILE OF FOULED DJELLAL EWES

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The increase of the nutritive needs in ewes at the end of pregnancy, period where the feeding has a determinant action on the strength of lambs and on the preparation of ewes to lactating, imposes a food complementation particularly on extensive system.

In order to determine the effect of supplementation of date wastes on the variation of energetic and nitrogenic metabolism parameters, 45 pregnant ewes were distributed randomly in three groups; two experimental groups (25%R and 50%R) received during the last two months of pregnancy, a complementation after grazing based mainly on date wastes whereas the control group (0%R) does not receive any complementation. During the incorporation of date wastes at 25% mixed with concentrate, the females showed high plasmatic level of cholesterol ($p < 0.001$) and triglycerides ($p < 0.001$) and a low level of glucose ($p < 0.001$) comparatively to the group 50%R and to the control group 0%R that did not vary significantly. However, the low plasmatic levels of total proteins ($p < 0.0001$), of albumin ($p < 0.001$) and of urea ($p < 0.01$) were observed in females receiving a complementation of 50%. The date wastes remain protein's deficient, which could be corrected by a simple protein intake making them interesting in their incorporation in animals feed. The replacement of date wastes to concentrate classically used would be of an economical interest.

Key words: Biochemical parameters, end of pregnancy, ewes, wastes date, rate of incorporation.

C. AFFICHE N°:14.

STATUT DU CUIVRE ET RELATION AVEC LES CARACTERISTIQUES ENVIRONNEMENTALES, ECONOMIQUES ET SOCIO-DEMOGRAPHIQUES CHEZ LES FEMMES TUNISIENNES EN AGE DE PROCREER

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Le cuivre est quantitativement le troisième oligo-élément essentiel présent dans le corps humain après le fer et le zinc. Il participe au métabolisme du fer et fait partie de plusieurs métalloenzymes qui réduisent l'oxygène moléculaire comme la céruloplasmine, la dopamine oxygénase et la superoxyde dismutase. La carence en cuivre chez l'homme est rare, mais lorsqu'elle survient, elle peut entraîner une anémie. L'intoxication aiguë par le cuivre engendre des effets gastro-intestinaux caractérisés par des douleurs abdominales, crampes, nausées, diarrhée et vomissements. L'objectif de cette étude est d'établir la relation entre le statut du cuivre et les caractéristiques environnementales, économiques et socio-démographiques des femmes tunisiennes en âge de procréer.

L'analyse du cuivre a été réalisée dans le plasma de 1689 femmes tunisiennes non enceintes, d'âge moyen égal à 36 ans, par spectrométrie d'absorption atomique à la flamme. Une régression multiple a été réalisée pour évaluer la variation des teneurs en cuivre en fonction de l'âge, l'indice de masse corporelle (IMC), l'état matrimonial, la parité, la ménopause, le niveau d'éducation, l'activité professionnelle, le niveau économique et le milieu.

La concentration moyenne de cuivre chez les femmes tunisiennes était de $100,9 \pm 2,4 \mu\text{g dL}^{-1}$ avec une gamme de 18-267 $\mu\text{g dL}^{-1}$. De plus, 22 % des femmes étaient déficientes en cuivre. Cette carence peut être attribuée à la consommation limitée de nutriments riches en cuivre (foie, huîtres, noix, chocolat noir et grains entiers). L'analyse univariée a montré une association des concentrations moyennes de cuivre avec toutes les variables d'étude excepté la ménopause. Après ajustement pour toutes les variables, l'activité professionnelle et la parité ont montré une corrélation significative avec les teneurs plasmatiques de cuivre.

Key words : statut, cuivre, femmes tunisiennes, analyse de régression.



ATSB

ASSOCIATION TUNISIENNE DES SCIENCES BIOLOGIQUES
29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:15.

L'EFFET DU FUMAGE A CHAUD SUR LE PROFIL LIPIDIQUE DESCOMBERSCOMBRUS

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Le fumage est un ancien procédé de conservation de la chair des poissons. Il consiste à soumettre la chair des poissons à l'action de la fumée provenant de la combustion du bois. Il a été depuis longtemps considéré comme étant une technique de préservation des aliments. Mais aujourd'hui, il est beaucoup plus utilisé pour son rôle aromatisant et colorant que pour son rôle de conservation ; par ailleurs il confère aux produits une saveur et un visuel spécifiques.

Ce procédé connaît un regain et un fort développement en raison de l'accroissement de la consommation des produits de luxe issu du fumage, l'exemple le plus présent sur le marché est celui du saumon fumé dont la production s'accroît d'année en année en réponse à la demande. Raison pour laquelle ces aliments sont choisis pour leurs caractères nutritifs et principalement leurs contenus en acides gras polyinsaturés de la famille des oméga 3.

C'est dans ce cadre que s'insère le présent travail à fin d'étudier l'effet du fumage à chaud sur les acides gras polyinsaturés de la chair de Scomberscombruscapturé à partir de la région nord de la Tunisie : Bizerte.

L'identification des acides gras présents dans l'extrait lipidique de Scomberscombrusà été effectuée par chromatographie en phase gazeuse.

Les résultats obtenus montrent qu'après fumage, les teneurs des AGS est de 41.8%, celles des MUFA est de 16.2%, celle des PUFA n-3 est de 31.7% alors que les PUFA n-6 est de 6.7%. Le rapport omega-3/omega-6 est de 4.9.

Key words :Scomberscombrus, fumage à chaud, acides gras.

C. AFFICHE N°:16.

PHYTOCHEMICAL AND BIOCHEMICAL CHARACTERIZATION OF A DURUM WHEAT (*TRITICUM DURUM*) FERMENTED "EL-HAMMOUM"ANALGERIAN TERROIR PRODUCT

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In Algeria, El Hammoum, durum wheat (*Triticum durum*) fermented resulting from storage in underground silos "matmoras" in some rural areas; it is appreciated for its organoleptic properties and is mostly consumed by diabetics.

This study aims to phytochemical and biochemical characterization of the terroir product.

Compared to non-fermented wheat, the fermented wheat "el-Hammoum" showed an increase of 3.46% in water content ($p < 0.001$), 4.9% of proteins ($p < 0.001$) and 29.6% of total polyphenols ($p < 0.05$), antioxidants having beneficial effects on health. TKW (Thousand Kernel Weight) and SW(specific weight)showed reductions of 17.3% and 23.4% respectively($p < 0.05$).Total sugars, starch and gliadin (protein involved in celiac disease) were reduced to 44.4% ($p < 0.01$), 34.2% ($p < 0.01$) and 20%, respectively.

Thechanges observed for the different components confer to el-Hammoum beneficial effects for health.

Key words: El Hammoum, *Triticum durum*, fermented wheat, polyphenols.



C. AFFICHE N°:17.

THE EFFECTS OF AGE FACTOR ON SEMEN QUALITY, OXIDATIVE STATUS AND HORMONAL PROFILE IN INFERTILE POPULATION

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The recent trend toward delayed parenthood raises major safety concerns because of the adverse effects of aging on couple fertility. Studies have demonstrated that aging clearly affects female fertility, but it's shown that it can also affect male fertility. Although several theories have been proposed the exact mechanisms responsible for the observed age-related decline in male fertility remain to be elucidated. In this context, we attempt to investigate the effects of male aging on semen quality, oxidative status and hormonal profile in infertile patients.

Semen samples of 100 infertile patients and 30 men with proven fertility as control group were analyzed according to WHO guidelines. The mean age of patients and control respectively was 38.8 ± 5.97 years and 35.5 ± 4.3 years, there was no statistically significant difference between the ages of two groups. Seminal plasma antioxidant activity of SOD, GPx, CAT and zinc concentration were measured using colorimetric methods. All patients and controls underwent a measurement of total testosterone (T), follicle-stimulating hormone (FSH) and luteinizing hormone (LH). In the patient group, semen volume, vitality and morphology of spermatozoa decreased with age, while sperm concentration showed no statistically significant change with age. Seminal plasma antioxidant activity of SOD, GPx, CAT and zinc concentration showed a significant decline with age. For hormonal analysis, we observed a statistically significant increase in FSH and LH levels in the patients group and a significant decrease of serum testosterone level. In the control group, conventional semen parameters as well as antioxidant activity and hormonal profile did not show any statistically significant difference with age. In conclusion, aging in infertile group is associated with significant perturbation of hormonal levels which interfere with fertility as well as a decline in semen volume, morphology and vitality of spermatozoa.

Key words: male infertility, age, oxidative status, hormonal profile

C. AFFICHE N°:18.

DETERMINATION OF BIOCHEMICAL PROFILE OF AMNIOTIC AND ALLANTOIC FLUIDS DURING DIFFERENT STAGES OF PREGNANCY IN OULED DJELLAL EWES

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Foetal fluids are important in preventing mechanical shock to the developing fetus during entire gestation. Amniotic and allantoic fluids are actively involved in constant exchange of biochemical substance between fetus and maternal circulation. Hence the knowledge regarding changes in the composition of the fetal fluid is important for understanding fetal metabolism and diagnosis of pathological conditions during gestation. The purpose of the present investigation was to determine the biochemical composition of the fetal fluids during different stages of pregnancy. The amniotic and allantoic fluids collected from gravid uteri of ewes in the beginning, mid and late pregnancy were subjected to biochemical analysis of glucose, cholesterol, triglyceride, total protein and urea. The levels of glucose and triglyceride in fetal fluids decreased significantly with advancement of pregnancy. The levels of total protein and urea increased significantly with advancement of pregnancy. Cholesterol concentrations of fetal fluids were higher in advanced pregnancies when compared with the earlier gestations.

It was concluded that the concentrations of glucose, cholesterol and triglycerides in fetal fluids of pregnant ewes may be changed with advancing the gestation stages. Based upon the evaluation of some metabolites, it may be possible to detect the early aberrations in metabolism and thereby appropriate corrections could be made to overcome the metabolic disturbances during pregnancy.

Key words: Amniotic fluid, Allantoic fluid, biochemical parameters, ewes.



ATSB

ASSOCIATION TUNISIENNE DES SCIENCES BIOLOGIQUES
29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:19.

GENETIC OF MISCARRIAGE : INTEREST OF FISH AND MLPA IN THE DETECTION OF ANEUPLOIDIES AND OTHER CHROMOSOMAL ABNORMALITIES

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Spontaneous abortion (SA) is the loss of the conceptus before 22 weeks of gestation when fetal weight is less than 500 g. The genetic etiology accounts for more than two third of SA, and autosomal aneuploidies alone account for up to 70% fetal loss. The aim of this study was to highlight the most common chromosomal causes of fetal loss. In this study, 220 products of abortion and *in utero* fetal death were analyzed by using FISH (AneuVysion™) on interphase nuclei from chorionic villus and by using MLPA (SALSA P036, P070 and P245 kits) on DNA extracted from fetal tissues. The gestational age ranged from the 7th to the 38th week of gestation. Of a total of 220 samples analyzed by using FISH, 10 chromosomal abnormalities were observed: four trisomies 21 (one of them was mosaic), a trisomy 18, a trisomy 13, three triploidies and one monosomy X (Turner). From the additional 69 samples analyzed by using MLPA, two anomalies were found: two monosomies X (Turner). FISH and MLPA are simple, rapid and sensitive tools for the detection of chromosomal aneuploidies. Avoiding the cell culture step necessary for karyotyping, they represent very interesting alternative methods to diagnose genomic disorders in products of abortion in which poor sample quality often leads to cell culture failure.

KEYWORDS Spontaneous abortion; Aneuploidy; FISH; MLPA

C. AFFICHE N°:20.

MOLECULAR CHARACTERIZATION AND DIFFERENTIATION OF THREE ALGERIAN CHICKEN ECOTYPES

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Introduction:The objectives of this study were to characterize the genetic variability of village chickens from three agro-ecological regions of western Algeria: coastal (CT), inland plains (IP) and highlands (HL), to reveal any underlying population structure, and to evaluate potential genetic introgression from commercial lines into local populations.

Methods:A set of 233 chickens was genotyped with a panel of 23 microsatellite markers. Geographical coordinates were individually recorded. A genetic diversity analysis was conducted both within and between populations. Multivariate redundancy analyses were performed to assess the relative influence of geographical location among Algerian ecotypes. **Results:** The results showed a high genetic variability within the Algerian population, with 184 alleles and a mean number of 8.09 alleles per locus. The values of heterozygosity (H_e and H_o) ranged from 0.55 to 0.62 in Algerian ecotypes. Although the structuring analysis of genotypes did not reveal clear subpopulations within Algerian ecotypes, the supervised approach using geographical data showed a significant ($p < 0.01$) differentiation between the three ecotypes which was mainly due to altitude.

Conclusion:the genetic diversity of Algerian ecotypes may be under the influence of two factors with contradictory effects: the geographical location and climatic conditions may induce some differentiation, whereas the high level of exchanges and gene flow may suppress it.

Keywords: local chickens, genetic diversity, molecular characterization, microsatellites.



C. AFFICHE N°:21.

ÉTUDE COMPARATIVE DE TROIS VARIÉTÉS D'HUILE D'OLIVE ET LEURS COUPLAGES ET COUPAGE

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L'huile d'olive est le produit gras méditerranéen par excellence, obtenue à partir du fruit de l'olivier et par des moyens d'extraction exclusivement mécaniques. Dans le présent travail nous avons évalué la qualité physicochimique et organoleptique de l'huile des principaux cultivars tunisiens et étrangers ainsi que leurs coupages.

La qualité des composés antioxydants, la composition en acide gras, teneur en polyphénols totaux, ainsi que les paramètres de qualité (acidité, indice de peroxyde, extinction spécifique...) ont été déterminées. Des différences significatives ont été observées dans la composition majeure et mineure des huiles de variétés et des coupages étudiés. Les résultats obtenus indiquent que les variétés et coupages étudiés présentent des teneurs élevées en composés antioxydants. Chetoui est la plus riche en polyphénols totaux (250.66±1.52 mgkg⁻¹), alors que la variété chemlali présente le taux le plus élevé en β-carotène (3.365 mg kg⁻¹) et en chlorophylle (8.678mgkg⁻¹), le profil en acide gras le plus riche en acides gras mono insaturés (66,28 ± 0,38 %) et le plus faible en acides gras saturés (11.8±1.75 %) a été observée pour la variété chetoui.

Les résultats obtenus montrent un bon potentiel antioxydant de ces variétés ce qui les rend particulièrement intéressants sur le plan nutritionnel et économique par l'implication de ces composés dans de nombreux processus thérapeutiques.

Mots-clés: Olea europaea, Huile d'olive, polyphénols, β-carotène, antioxydants

C. AFFICHE N°:22.

PREVENTIVE EFFECT OF GRAPE SEED AND SKIN EXTRACT AND XENICAL AGAINST HIGH FAT DIET-INDUCED LIVER LIPOTOXICITY IN WISTAR RATS

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Obesity prevalence is on the rise worldwide. It can increase the risk of oxidative stress in liver. For that we studied the ability of Xenical (Xe) and grape seed and skin extract (GSSE) from a Tunisian cultivar to mitigate high fat diet (HFD)-induced liver disorders in rats. Adult Wistar rats were subdivided into 8 groups (SD, SD+Xe, SD+GSSE and SD+Xe+GSSE, HFD, HFD+Xe, HFD+GSSE and HFD+Xe+GSSE). Rats were rendered obese after three months of HFD regime, then treated or not with GSSE (4g/kg bw) and/or Xe (2 mg/kg bw) or the combination GSSE+Xe for three other months. After sacrifice HFD-induced liver oxidative stress status was evaluated. Differences between groups were statistically analyzed by statistica. Data showed that HFD treatment induced oxidative stress into the liver according to several biomarkers, as evidenced by increased lipoperoxidation (MDA) as well as inhibition of antioxidant enzyme activities as catalase (CAT), superoxyde dismutase (SOD) and glutathione peroxydase (GPx). We also approached the putative mechanism of action of HFD-induced liver oxidative stress (free iron, H₂O₂ and ionizable calcium). Collectively our data indicate that GSSE and Xe acted in concert to alleviate body weight gain and liver lipotoxicity, at least partly by preventing HFD-induced oxidative stress through increased antioxidant enzymes. The combination Xe-GSSE should be used as a safe anti-steatosis agent that could find potential clinical applications.

Keywords: Grape seed and skin extract; Obesity; Oxidative stress; Liver; HFD; Xenical



ATSB

ASSOCIATION TUNISIENNE DES SCIENCES BIOLOGIQUES
29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:23.

THE PROTECTIVE EFFECTS OF GINGER SUPPLEMENTATION ON AMMONIUM NITRATE-INDUCED TOXICITY IN WISTAR RATS: BIOCHEMICAL AND HISTOLOGICAL STUDY

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Objective: the present study was designed to evaluate the capacity of ginger to restore metabolic disorders induced by ammonium nitrate. **Materials and Methods:** 40 male rats (Albinos wistar) were divided into 4 groups; they underwent an oral treatment of ammonium nitrate NH_4NO_3 and/or 2 % of ginger diet (N mg/kg body weight + G) during 30 days. Group 1 served as control (0+0) ; group 2 received a diet with 2 % of ginger (0+G) ; group 3 received a toxic dose of ammonium nitrate (400 mg/kg) and normal diet (N+0) ; group 4 received a toxic dose of ammonium nitrate and a diet containing 2 % of ginger (N+G) ;

Results: the treatment by ammonium nitrate was found to elicit a rise in blood biochemical parameters: glucose, uric acid, urea, creatinine, cholesterol, triglycerides, total lipids, aminotransferase, alkaline phosphatase, lactate dehydrogenase, total and direct bilirubin. Note also a disorder in the complete blood count and an increase in methemoglobin. In addition, the involvement of ammonium nitrate in oxidative stress was indicated by an increase in MDA level, and decrease in glutathione level, in the studied organs. Histological study revealed alteration in hepatocytes and severe tubular and vascular impairment accompanied by degeneration of renal glomerulus. Feeding ginger supplemented diets restored all the parameters compared to the controls group.

Conclusion: the ginger is considered as a medicinal plant with several beneficial effects: hypoglycemic, lipid- lowering, hepatoprotective, nephroprotective and especially antioxidant.

Key words : Ammonium nitrate, toxicity, oxydative stress, ginger, antioxydant, rats

C. AFFICHE N°:24.

L'EFFET DE SP600125 SUR LE CYCLE CELLULAIRE CHEZ LES CELLULES HELA

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Le SP600125, une drogue anti-mitotique, inhibe fortement la prolifération cellulaire dans de nombreuses lignées cancéreuses humaines en bloquant la prolifération du cycle cellulaire

Au cours de cette étude, nous avons investigué les effets de SP600125 sur le cycle cellulaire, et sur l'assemblage du fuseau mitotique in vitro.

Le traitement des cellules HeLa avec trois concentrations de SP600125 induit un arrêt significatif du cycle cellulaire à G2/M,

SP600125 induit également des aberrations significatives du fuseau mitotique. Des concentrations élevées de SP600125 (20 μM) induisent la polymérisation aberrante des microtubules in vitro.



C. AFFICHE N°:25.

MOLECULAR CHARACTERIZATION OF THE DED1 PROTEIN FROM *LEISHMANIA INFANTUM*.

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The Ded1/DDX3 subfamily of proteins are part of the DEAD-BOX family of SF2 RNA helicases. This subfamily is found in all eukaryotes, and these proteins have important roles in RNA metabolism and particularly in the regulation of translation initiation of mRNAs. This functionality is highly conserved as all the previously tested genes complement a yeast strain deleted for the endogenous—and essential—*DED1* gene. Therefore, the aim of this study is to find and characterize orthologous protein in *Leishmania infantum*. This parasite is the main etiological agent of zoonotic visceral leishmaniasis (VL) in the Mediterranean region and Latin America. *Leishmania* is a unicellular digenetic parasite, existing in two distinct forms, the flagellated promastigotes in the gut of their sand-fly vectors and the aflagellated amastigotes in the mammalian host.

Using bioinformatics tools, three different *DED1* homolog genes were identified *in-silico* and amplified using PCR. The amplified genes were then cloned into yeast expression vectors to determine whether the identified genes were able to complement a yeast strain deleted for the endogenous *DED1* gene. In parallel, these genes were cloned into the bacterial *pET-22b* cloning vector and expressed in *Escherichia coli* bacteria in order to study and compare the biochemical properties of these genes: RNA dependent ATPase and RNA helicase. Additional constructions will be made containing mutations in the ATP binding site that will function as negative controls.

The expressed proteins are being purified and biochemically characterized in order to optimize their activities, to define their functions and to determine their ATPase and helicase activities.

Key words: Leishmania, DEAD box proteins, Ded1, ATPase, RNA helicase, Genetic complementation.

C. AFFICHE N°:26.

COMPARISON OF AIRWAY INFLAMMATORY MARKERS IN INDUCED SPUTUM BETWEEN SMOKERS AND NEVER SMOKERS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE

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Smoking is by far the most important documented cause for COPD. Nevertheless, COPD can still be recorded among a good percentage of non smoker patients, due to other different causes. We aimed to investigate the differences in total, differential inflammatory cells counts and the levels of interleukin-8 (IL-8) and tumor necrosis factor-alpha (TNF- α) in the induced sputum between current smokers and never smokers with COPD. Induced sputum samples were collected and processed in 40 subjects with COPD (21 smokers and 19 never smokers) and 28 healthy never smokers. Differential cell (neutrophils, macrophage, lymphocyte, eosinophils and epithelial cells) numbers were expressed as a percentage of nucleated cells. Induced sputum levels of studied biomarkers were measured in ELISA. Our major finding is that even when smoking is totally absent, subjects with COPD continue to show increased numbers of inflammatory cells and higher levels of IL-8 and TNF- α compared to healthy nonsmoking subjects. Nonetheless, inflammation in never smoking COPD subjects is of less intensity to that observed in current smokers with COPD without the disease indicating continuing inflammation in the symptomatic never smokers. Indeed, never smokers with COPD have significantly less total number of sputum cells, less differential numbers of neutrophils and lymphocytes, higher numbers of macrophages and lower levels of IL-8 in comparison to smokers with COPD. However, no significant difference in the levels of TNF- α was noticed between smokers and never smokers with COPD. The inflammatory profiles of never smoking with COPD differ from those seen in smoking with COPD suggesting the benefits of the absence of tobacco smoking.

Keywords: Chronic obstructive pulmonary disease, induced sputum, airway inflammation, smoking



ATSB

ASSOCIATION TUNISIENNE DES SCIENCES BIOLOGIQUES
29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:27.

IN VIVO ANTIDIABETIC ACTIVITY OF AN OLIVE OIL FROM THE « ROUGETTE » VARIETY OF THE SKIKDA REGION

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Olive oil is the Mediterranean product par excellence. It is the main source of fat in the Mediterranean diet, which is well known for its beneficial effects on health.

The aim of this study is to evaluate the antihyperglycemic activity of an olive oil resulting from the "Rougette" variety of eastern Algeria. Albinos *Mus musculus* mice, made diabetic by peritoneal injection of a streptozotocin dose (55 mg / kg) were treated per os with 1 ml of this oil and with a control drug: metformin (12.14 mg / kg).

The results obtained showed that this oil has improved body weights, decreased blood glucose levels and cholesterol in diabetic mice than metformin, a marketed drug. It can be deduced that this oil can play a preventive role in the development of diabetes mellitus by improving carbohydrate and lipid metabolism by lowering the bad cholesterol (LDLc). These results deserve to be confirmed.

Keys word: induced diabetes, streptozotocin, olive oil, antidiabetic, cholesterol.

C. AFFICHE N°:28.

MOLECULAR DETECTION OF ANAPLASMA SPP IN LICE FROM DOMESTIC ANIMALS IN NORTHEASTERN ALGERIA (PRELIMINARY RESULTS)

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Animals lice can play a very important role as vectors of many pathogens. Thus, this study was conducted in two regions in northeastern Algeria, in order to highlight the vectorisation of *Anaplasma* spp., *Rickettsia* spp. and *Bartonella* spp. by harvested lice from domestic animals. The number of lice analysed was 174 collected on 19 cattle, 11 goats, 10 sheep and 4 equine. The results of the morphological identification revealed the presence of 8 species of lice: *Damalinia bovis*, *D. caprae*, *D. ovis*, *D. equi*, *Haematopinus eurysternus*, *Linognathus vituli*, *L. africanus*, *L. ovis*.

The qPCR analysis of lice collected for vectorised pathogens revealed the presence of *Anaplasma* spp (10.9%) and all tested lice were negative for the other pathogens tested. The sequencing results revealed the identification of *Anaplasma phagocytophilum*, *A. marginale* and *Candidatus Neohrlichia* sp.

Keywords: Lice, *Anaplasma* spp, Domestic animals, Algeria



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ASSOCIATION TUNISIENNE DES SCIENCES BIOLOGIQUES
29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:29.

CARACTERISATION PHYSICO-CHIMIQUE ET BIOCHIMIQUE D'UN PRODUIT TRADITIONNELLEMENT FERMENTE

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Neuf échantillons de fromage frais traditionnel (*Jben*). Fabriqués à partir du lait de vache, ont été collectés à partir de trois régions différentes : Khenchela, Oum El Bouzghi et Tebessa, sont soumis à différentes analyses physico-chimique et biochimique afin d'évaluer leur stabilité et leur constance en ce qui concerne leurs caractéristiques nutritionnelles et organoleptiques, ce qui vise à la caractérisation de ce fromage.

Les analyses physico-chimiques ont montré que les pH et la densité sont presque les mêmes pour le *Jben* de la même région alors que l'acidité diffère d'une région à l'autre, mais ils sont tous dans les normes.

Alors que Les analyses biochimiques montrent que les fromages collectés ont une teneur moyenne en extrait sec total de 45.47g/100g de fromage, et une teneur moyenne en matière grasse de 35.63 g/100g de fromage pour les trois régions, ainsi le taux protéique présent dans le *Jben* à une moyenne de 16.83 g/100g de fromage. Alors que la teneur moyenne des cendres est de l'ordre de 6.21g/kg ; ces paramètres diffèrent d'une région à l'autre en raison de plusieurs facteurs, y compris : la composition initiale du lait, le type d'alimentation données aux animaux...

Mots clés : *Jben*, fromage traditionnel, physico-chimique, biochimique

C. AFFICHE N°:30.

THE BENEFIC EFFECT OF GINGER ON RENAL BIOCHEMICAL PARAMETERS IN DIABETIC RATS FED ZINC DEFICIENCY DIET

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Aim: Zinc plays a key role in the regulation of insulin production in pancreatic tissue. There are several reasons for suspecting that an abnormal zinc metabolism could play a role in the pathogenesis of diabetes mellitus and its complications. Spices which show hypoglycemic and antioxidant activities may have a role in the treatment of diabetes and its complications. Thus this study was carried out to investigate the potential effects of ginger on some renal biochemical parameters in streptozotocin diabetic rats fed low zinc diet.

Material and Methods: Female albino Wistar diabetic rats were divided into three groups: The first group fed adequate zinc diet (54 mg Zn/kg diet). The second group was given inadequate zinc diet (1 mg Zn/kg diet). The third group fed inadequate zinc diet and treated with ginger 3% of diet. On day 28 animals were sacrificed. Glucose, creatinine and urea were determined and a fresh pancreas tissue was excised and fixed in 10% formalin for histological examination.

Results: The results indicated that untreated diabetic groups exhibited hyperglycemia accompanied with an increase in creatinine and urea levels. Meanwhile, zinc deficiency caused more augmentation in the previous parameters. However, treatment with ginger restored these parameters. The histopathological findings showed also that kidney tissues in both adequate and inadequate zinc diabetic groups had marked degeneration of glomeruli and tubules with dilatation of tubules, but the observed changes were decreased as a result of ginger treatment.

Conclusion: These results indicated that treatment with ginger was effective in lowering serum glucose, creatinine and urea levels, and protected the renal tissue from diabetic oxidative stress. So it may be concluded that ginger has a powerful effect, which is due to its potential anti-oxidant.

Key words: diabetes, rats zinc deficiency, renal parameters, ginger.



ATSB

ASSOCIATION TUNISIENNE DES SCIENCES BIOLOGIQUES
29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:31.

ASSOCIATION OF TYPE 2 DIABETES WITH HEPATITIS C VIRUS INFECTION IN ALGERIAN PATIENTS (AREA OF TEBESSA)

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Aim : To investigate the prevalence of type 2 diabetes in Algerian patients with chronic hepatitis C virus (HCV) infection and in a control group.

Methods: the study involved 140 patients with HCV and 80 patients with HBV (control group) attending the infectious service of the hospital *Bouguerra Boulaares*. Both sexes are included. Patients with co-infection (HCV-HBV) were excluded. Thus, the subjects reported having had diabetes before hepatitis.

Results: the prevalence of DM was higher in HCV-infected patients in comparison with HBV-infected patients (22.86% vs 7.5%, $P < 0.01$). The statistical analysis showed that HCV infection [odds ratio (OR) 3.09, 95% CI: 1.34-7.15], metabolic syndrome (OR 18.45, 95% CI: 4.04-84.35), family history of diabetes (OR 0.11, 95% CI: 0.06-0.22) and increased hepatic enzymes (OR 2.6, 95% CI: 1.29-5.24) were independently related to DM in these patients.

Conclusion: our study established an epidemiological association between hepatitis C and diabetes

The high prevalence of diabetes in HCV-infected patients suggest that screening for glucose abnormalities should be indicated in these patients.

Keys words: prevalence, Hepatitis C virus; Diabetes mellitus; Algeria

C. AFFICHE N°:32.

STATE OF HEALTH OF PREGNANT WOMEN PRESENTING A HIGH PREGNANCY RISK IN TEBESSA (ALGERIA)

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Pathological pregnancy is a pregnancy in which an event occurs that presents a risk to the mother and/or child. This work aims to study the various factors responsible of high-risk pregnancy for Tebessa's pregnant women.

Our observational study was conducted from January 17th to April 14th, 2016 at the maternity hospital of Tebessa. The survey is conducted by exploiting the medical records of 100 patients admitted in the high-risk pregnancy service of motherhood, and 100 pregnant women with no risk; and using an information sheet obtained by asking women, the latter was filled through a questionnaire; a blood test was made to analyse some haematological and biochemical parameters of pregnant women. Sociodemographic, obstetric and anthropometric data and biological balance of the two women's groups were compared and analysed using Minitab software in its French version 13.0 with significance level $p \leq 0.05$.

Among the hospitalized patients, there are 41% of cases suffering from hypertension, 10% diabetes and women with a scarred uterus and 9% with an amniotic sac crack. Other reasons for hospitalization were a minority. The major risk factors were: genetic history for 22%, overweight with 55% of the studied population; low social level in 80% of pregnant women and a low level of education in 57% women at risk. It is noteworthy that 60% of women are aged over 31 years.

Direct awareness and early management of women remain the safest way to minimize the prevalence of high-risk pregnancies in Tebessa region

Keys words: Women , Pregnancy, risk factors, biochemicals parameters, Tebessa



ATSB

ASSOCIATION TUNISIENNE DES SCIENCES BIOLOGIQUES
29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:33.

PHENYLBORONIC ACID AS AN EFFICIENT AND ECO-FRIENDLY CATALYST FOR THE ONE-POT FOUR-COMPONENT DAKIN-WEST SYNTHESIS OF β -ACETAMIDO KETONES

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One of the important goals in organic chemistry is the development of new methodologies for the synthesis of functionalized biologically active compounds with structural diversity from simple and readily available precursor molecules¹.

Multicomponent reactions play a key role in organic chemistry because highly complex structures can be formed in a simple one-pot process. MCRs contribute to the requirements of an environmentally friendly process by reducing the number of synthetic steps, energy consumption and waste production².

Acetamido Ketone derivatives are versatile intermediates in the synthesis of important biological and pharmacological organic compounds such as the natural nucleoside antibiotics nikkomycins, neopolyoxines, and several antibiotic drugs³. The best known route for the synthesis of these compounds is the Dakin-west reaction⁴. Which involves the condensation of α -amino acid with acetic anhydride in the presence of a base to afford the β -acetamido Ketones.

In this work we have reported a simple new catalytic method for the synthesis of β -amino carbonyl compounds by one-pot four-component Dakin-west reaction of acetophenone, aromatic aldehydes and nitriles in the presence of 10 mol % Ph(OH)₂ and a stoichiometric amount of acetyl chloride at room temperature to form the corresponding β -acetamido Ketones in very good yields.

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ATSB

ASSOCIATION TUNISIENNE DES SCIENCES BIOLOGIQUES
29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

BIOLOGIE, ECOLOGIE
&
PHYSIOLOGIE ANIMALE



C. AFFICHE N°:34.

SELECTION GENETIQUE DES COLONIES D'ABEILLES RESISTANTE A VARROA DESTRUCTOR : COMPARAISON DU COMPORTEMENT DE NETTOYAGE DU COUVAIN CHEZ LES DEUX ABEILLES APIS MELLIFERA SAHARIENSIS ET INTERMISSA

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L'abeille est un élément indispensable de l'équilibre environnemental dans le monde, elle présente aussi d'autres intérêts comme la production du miel et autres produits de la ruche. L'abeille est menacé par plusieurs pathologies, la varroase constitue l'une des maladies les plus dangereuses, elle est provoquée par un acarien parasite *Varroa destructor*. Les apiculteurs utilisent pour lutter contre ce parasite essentiellement les méthodes de lutte chimique. Sans aucun doute, la nécessité des traitements continus pourrait anéantir la rentabilité de l'apiculteur. C'est pourquoi les recherches dans la lutte contre le varroa ne doivent pas seulement consister à mettre au point ces nouveaux remèdes chimiques de plus en plus efficaces, il faut aussi et surtout développer des méthodes basées sur la sélection des colonies résistantes à Varroa. Le comportement hygiénique est l'un des critères de résistance des abeilles contre varroa. Le but de cette étude est d'évaluer ce critère chez nos deux races d'abeille locale *Apis mellifera sahariensis* et *intermissa*. Le protocole expérimental consiste à sélectionner dans des ruches différentes, une zone du couvain operculé de 10 cm * 5 cm, comptée et congelée (couvain mort). Après 24 h, ces sections du couvain sélectionnées sont observées afin d'en noter le nombre de cellules du couvain éliminée et nettoyée par les abeilles.

Les résultats obtenus montrent une grande capacité de nettoyage chez certaines colonies d'abeilles, l'efficacité du nettoyage varie entre 65 à 100 %. On a enregistré aussi ce comportement est variable en fonction de la saison. Les mêmes colonies présentent toujours le comportement le plus intense. L'abeille tellienne a présenté une intensité de nettoyage plus importante. Ces résultats préliminaires constituent un début pour la sélection des abeilles résistantes à la varroase, d'autres essais sont nécessaires pour pouvoir confirmer ces résultats et tracer un plan de sélection pour notre race d'abeille locale.

C. AFFICHE N°:35.

EFFECT OF STREPTOZOTOCINE INJECTION ON TESTICULAR FUNCTION IN MALE ADULT RATS

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Diabetes mellitus is a major endocrine disorder amended by elevated blood glucose concentration caused by insulin deficiency. It also causes sexual dysfunction in males.

The aim of this study is to investigate the effect of Streptozotocine (STZ) injection on insulin plasma levels and testicular function in male adult rats.

Our animals were divided into two groups of 13 rats. Treated animals received a single intraperitoneal dose of STZ (120mg/kg body weight). The control animals received the same volume of NaCl 9%. After 11 days blood was collected by decapitation in 1% EDTA tubes, then centrifuged. Testes were fixed in 10% formalin for the histological study. Our results show a no significant increase in insulin plasma levels for treated animals compared to control ones ($p > 0.05$) while a decrease in testosterone plasma levels is observed in treated animals compared to control animals ($p > 0.05$). Histological sections of control testis showed that the seminiferous tubules appeared normal with a normal spermatogenic cell. A loss of germ cells, abnormality of germinal epithelium and abnormal sperm concentration were observed in testicular sections of treated animals. A treatment with STZ by a single intraperitoneal injection for 11 days can increase insulin plasma level but decreases testosterone plasma levels and causes sexual dysfunction in adult male rats.

Keywords: streptozotocine, diabetes mellitus, insulin, testosterone, wistar rats.



ATSB

ASSOCIATION TUNISIENNE DES SCIENCES BIOLOGIQUES
29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:36.

RETROSPECTIVE INVESTIGATION INTO THE BOVINE FASCIIOLOSE IN THE SLAUGHTER-HOUSES OF THE WILAYA OF ALGIERS (ALGERIA).

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The fasciolose is a parasitic pathology due to Fasciolahepatica which prevails in an endemic way in our country. It causes very important economic losses. Moreover, It represents a danger to the public health (zoonoses). It is a retrospective epidemiological investigation to estimate the prevalence of the fasciolose in the cattle in the slaughter-houses of the wilaya of Algiers (El Harrach, Brook, Eucalyptus and Rouïba). With this intention, we analyzed the data recorded, on the level of the national institute of the veterinary medicine of El-Mohammadia, over one period being spread out from January 2011 to December 2015. The results of our investigation showed a prevalence of 1.8%. This trend varies according to the season when the more important rate is recorded in winter (1.38%). The seizures of the livers for the fasciolose were estimated at 13988.5 kilogrammes is an average figure of 13,988.500 DA. The fasciolose occupies the third place (18%) among the major reasons for the seizure of the liver.

Keywords : Fasciolose, cattle, retrospective investigation, slaughter-houses, wilaya of Algiers.

C. AFFICHE N°:37.

DYNAMIC OF ECTOMYLOIS CERATONIAE ZELLER (LEPIDOPTERA : PYRALIDAE) IN CITRUS ORCHARDS

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Ectomylois ceratoniae Zeller (Lepidoptera: Pyralidae) is already present in Tunisia and causes damage on pomegranates and dates; however during the last years, it has successfully invaded the oranges (« Thomson » variety) to become quite harmful causing economic losses. The populations dynamic of this pest was established by pheromone traps in citrus orchards in Khlidya (Gouvernorate of Ben Arous, Tunisia). Our results indicated the occurrence of six generations of adults from May until beginning of November during 2017.

Trap catches during this period were 1 and 2 adults per trap on 17th and 31st may 2017 respectively. The 3rd, the 4th and the 5th generations were caught on 28th june, 30th august and 20th september respectively. This catches increased steadily to 8 adults per trap on 25th October in parallel with the increasing of the temperature value.]

Keywords: Tunisia, Ectomylois ceratoniae, citrus, Thomson variety, monitoring.



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ASSOCIATION TUNISIENNE DES SCIENCES BIOLOGIQUES
29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:38.

INVESTIGATION ON THE ORIGIN OF SPERM MORPHOLOGICAL DEFECTS: OXIDATIVE ATTACKS, CHROMATIN IMMATURITY AND DNA FRAGMENTATION

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DNA fragmentation can be deleterious on spermatozoa morphology but the pathogenesis of teratozoospermia associated with DNA breaks is not fully understood, even oxidative attacks and defects in chromatin maturation are hypothesized. Therefore this study is one of the first to clarify on the underlying hypothesizes behind such observations. The objectives of our study were to assess the role of oxidative attacks in DNA damage pathogenesis in ejaculated spermatozoa from patients with isolated teratozoospermia. We aimed to assess the correlation of DNA breaks with morphologically abnormal spermatozoa, as well as, ROS level and impairment chromatin condensation. A total of 90 patients were divided into two groups men with isolated teratozoospermia (n=60) and men with normal semen parameters (n = 30) as controls. DNA fragmentation was evaluated by TUNEL assay, chromatin immaturity was studied using Acridine Orange and Toluidine Blue staining. We evaluated the ability of spermatozoa to produce reactive oxygen species with NBT staining. Patient with teratozoospermia when compared to fertile men showed significantly higher rates of semen ROS production, sperm hypocondensated chromatin, denaturated DNA and fragmented DNA. All these parameters were positively correlated with abnormal sperm morphology. The studied DNA integrity markers were also correlated with ROS production. Fragmented DNA is the main pathway leading to morphology defects in the sperm. In fact impaired chromatin compaction may induce DNA breaks and free radicals, which can break the DNA backbone indirectly, by reducing protamination and disulphide bond formation, as oxidative attack appears to be the major cause of poor semen morphology.

Key words: spermatozoa, teratozoospermia, DNA damage, oxidative attacks

C. AFFICHE N°:39.

THE DEFENSIVE APHID SYMBIONT *SERRATIA SYMBIOTICA* AFFECTS HOST QUALITY FOR *APHIDOLETES APHIDIMYZA*

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Species respond in different ways to climate change. Variation in the distribution, phenology, and abundance of species will lead to inevitable changes in species interactions and communities structuring. These changes impose a high threat to population viability. Few studies addressing the impacts of climate change on crop yield have incorporated the effects of endosymbionts of crop pests. However, mutualisms with facultative, non-essential heritable microorganisms influence the biology of many insect species and among them, aphids, harbour facultative bacterial endosymbionts which affect important characteristics such as insecticide resistance, natural enemy resistance, thermal resistance, reproduction and development. The relationship between aphids and secondary endosymbionts and their variations in function of climate and landscape characteristics remains unclear. Until present there is no information about their general effect on thermal resistance and predator resistance.

Serratia symbiotica is a species of bacteria that lives as endosymbiont of aphids. Our study showed that the secondary symbiont provides strong protection against predators, suggesting that the ability to protect their host against natural enemies may evolve readily in multiple species of endosymbiotic bacteria.

Keywords: *Serratia symbiotica*, secondary symbiont, natural enemies, aphids



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ASSOCIATION TUNISIENNE DES SCIENCES BIOLOGIQUES
29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:40.

EFFECT OF VITAMIN D DEFICIENCY ON THE METABOLIC SYNDROME

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Introduction: Obesity and type 2 diabetes are associated with a very high risk of vitamin D deficiency, major public health problems.

Purpose: This study aims to investigate the relationship between hypovitaminosis D and metabolic syndrome.

Materials and Methods: This is a cross-sectional study involving 143 patients with clinical and anthropometric data. 25 (OH) D assayed by Radioimmunoassay. Statistical analyzes of the study of the correlation between hypovitaminosis D and metabolic syndrome criteria were performed (by R software).

Results: Average age is 52, 89% of whom are women. The average concentration of 25 (OH) D is

14.25 ng / ml. It is significantly higher in patients with metabolic syndrome compared to patients without MS. Hypovitaminosis is significantly elevated with BMI, waist circumference. Vitamin D deficiency significantly related with low HDLchol and highTG PAS (p <0.05) and weakly significant with PAD, LDLchol and Cholt (p> 0.05).

Conclusion: Our study shows a very high relationship between vitamin D deficiency and metabolic syndrome criteria such as glycemic and lipid disruption. This shows the importance of controlling vitamin D in obese and diabetic patients

Key words: vitamin D, metabolic syndrome, deficiency, relationship

C. AFFICHE N°:41.

COMPARAISON ENTRE DEUX METHODES DE DIAGNOSTIC DE L'INFECTION A TRYPANOSOMA EVANSI CHEZ LES CHEVAUX DANS LA REGION SUD-OUEST DE L'ALGERIE

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Trypanosoma evansi est un protozoaire flagellé, extra cellulaire du sang. Ce parasite est à distribution mondiale affectant de nombreuses espèces animales. *Trypanosoma evansi* provoque de l'anémie, l'avortement, l'immunosuppression et des troubles nerveux ce qui le rend une véritable menace pour les chevaux. Des cas humains de trypanosomose à *T. evansi* ont été déclarés dans différentes régions du monde. L'objectif de cette étude est de faire une contribution à la connaissance de la prévalence de l'infection à *T. evansi* chez les chevaux par deux méthodes de diagnostic.

Notre étude a été réalisée durant le mois de mars 2016. 177 échantillons de sang de chevaux ont été prélevés au niveau de la wilaya d'El-Bayadh. Des frottis sanguins ont été confectionnés sur place à partir de sang veineux pour chaque animal. Le test sérologique utilisé dans cette étude (CATT/T .evansi) est un test de référence de l'OIE. Il permet de mettre en évidence les immunoglobulines M (IgM) dirigées contre un type prédominant d'antigène externe de *T.evansi*, Rotat 1 .2, par agglutination visible de trypanosomes colorés au bleu de coomassie. Les frottis sanguins ont été colorés au MGG. Aucune forme sanguine de *Trypanosoma evansi* n'a été retrouvé après l'observation des frottis sous microscope optique..Le test d'agglutination sur carte CATT/ *Trypanosoma evansi* a révélé une séroprévalence globale de 45 ,19 % avec un IC à 95% de (37.9- 52.5) %. Ce travail nous a permis d'identifier quelques facteurs pouvant favoriser l'infection des chevaux par *Trypanosoma evansi* tels que le genre, la présence de dromadaires en contact avec les chevaux, la présence de points d'eau à proximité et la zone des hautes plaines.

Notre étude nous a permis de mettre en évidence des anticorps de *Trypanosoma evansi* chez les chevaux. *Trypanosoma evansi* sévit sous forme d'enzootie chez les chevaux dans la région d'El-Bayadh.

Mots clés : *Trypanosoma evansi*, infection, CATT, chevaux, Algérie.



C. AFFICHE N°:42.

METHOMYL L'IMPACT D'UNE MIXTURE DE DEUX NANOPARTICULES D'OXYDE MÉTALLIQUE « FE₂O₃ ET ZNO » SUR UN BIO-INDICATEUR DE POLLUTION TERRESTRE : HELIX ASPERSA

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Les nanoparticules métalliques (NPs) occupent une place de plus en plus importante, tant dans les procédés industriels que dans la recherche biomédicale. Néanmoins, les données sur leur toxicité potentielle pour les organismes vivants restent insuffisantes.

Dans cette étude, les escargots adultes *Helix aspersa* ont été utilisés pour estimer l'effet d'une mixture de deux NPs « Fe₂O₃ et ZnO » sur l'échange des paramètres biochimiques et histologiques dans l'hétopancréas de ce gastéropode avec un traitement de quatre semaines. Pendant cette période, les escargots ont été exposés par ingestion et par toucher à la farine de blé contenant la poudre de cette mixture aux doses de : 0, 1, 2 et 3 mg/g de farine de blé.

Les résultats obtenus des dosages biochimiques des métabolites nous révèlent une augmentation significative du taux des protéines totales, ainsi, qu'une diminution du taux des lipides et des glucides totaux. L'étude histologique montre que cette mixture des NPs d'oxyde de fer et d'oxyde de zinc provoque des atteintes tissulaires très graves d'une manière dose dépendante surprenants avec nécrose, dégénérescence du tissu conjonctif, des membranes tubulaires, des cellules digestives aussi tant et une lyse des différentes cellules tubulaires.

Mots clés : *Helix aspersa*, mixture, nanoparticules, oxyde de fer nanométrique «Fe₂O₃», oxyde de zinc nanométrique «ZnO», bio-accumulateur, bio-indicateur.

C. AFFICHE N°:43.

CONCENTRATION OF PLASMA INSULIN AND GLUCOSE LEVEL AFTER TREATMENT WITH LEPTIN IN MALE WISTAR RATS PUBESCENT AND PREPUBESCENT

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The interaction between leptin and the various endocrine glands is the subject of several studies including the relationship between leptin and the endocrine pancreas. This work aims to analyze the effect of leptin on the activity of the endocrine pancreas in male Wistar rats of different ages.

Our study was performed on 2 groups of Wistar rats: 40-days and 60-days old. 8µg / 100g body weight of leptin is injected intraperitoneally and control rats have received the same volume of 0.9% NaCl. The experiment lasted 5 days; the sacrifice is done by decapitation, blood is immediately collected into EDTA 1% tubes then centrifuged. Plasma is used for the determination of biochemical parameters by the colorimetric-enzymatic method and the dosage of insulin by RadioImmunoAssay (RIA).

Our results show a decrease in plasma insulin level compared to controls. The same results were observed for glycemia. These preliminary results suggest that injection of leptin has no effect on the endocrine pancreas in male Wistar rats for 40-days and 60-days old.

Keywords: Leptin, insulin, glycemia, Wistar rats.



C. AFFICHE N°:44.

DIVERSITY OF ICHTHYOPATHOGENIC BACTERIA STRAIN IN A LAKE ECOSYSTEM OF GUENITRA IN NORTHWEST ALGERIA.

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The biodiversity of lake ecosystems is important. Especially the ichthyofauna which plays a role in the trophic chain by controlling the dynamics of certain aquatic communities. Based on the bibliographic information about the ichthyofauna of the Algerian continental waters, a complete inventory of 67 species has been reported in recent years. Several cases of massive fish mortality or a decrease in production in some dams have been reported. This study focuses on freshwater fish, which are continually exposed to a wide range of microorganisms present in their environment, including opportunistic bacteria. For this, the dam of Sekkak (Tlemcen, Algeria) was chosen. Water withdrawals of Sekkak dam were performed in sterile glass vials in a depth of 10 to 15 cm. Ichthyofauna were fished using fishing nets with different meshes then transported aseptically to the laboratory where fish were dissected to remove internal organs and gills. Numerous specific and selective media which enable the growth of ichthyopathogenic bacteria were used for the isolation process which were incubated at 22°C to 37°C for 24 to 48 hours, depending on the aimed bacteria. The isolated ichthyopathogenic bacterial strains were identified by the Apigallerys. Some of them are also identified by molecular identification using the PCR technique and sequencing of the 16S ARN gene. We tested also the resistance of bacteria to 20 different antibiotics.

The results showed the presence of some ichthyopathogenic species (*Enterobacter sp*, *Pseudomonas aeruginosa*, *Pseudomonas fluorescens*, *Providencia rettgeri*, *Proteus sp*, *Aeromonas hydrophila*, *Vibrio alginolyticus* ... etc). The bacterial strains presented a considerable multi-resistance to antibiotics. So, it is important to closely monitor this biotope in order to allow for healthier growth and production of freshwater fish.

Keywords: Ichthyopathogenic bacteria, Fish, Biodiversity, Sekkak dam.

C. AFFICHE N°:45.

CLINICAL CASE: RUPTURE OF OESOPHAGEAL VARICOSE VEIN, A RECIDIVISM COMPLICATION OF HEPATIC CIRRHOSIS

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Upper gastrointestinal bleeding, mainly by rupture of oesophageal varicose vein (OV), is one of the major causes of mortality in cirrhotic patients. It rises to at least 30% and is less dependent on bleeding than on the severity of cirrhosis. On the other hand, it is increased by the occurrence of an early recurrence. Finally, overall mortality by VO failure is close to 60%. T.A., 68 years old presents at medical emergencies for melena. His notable medical history is type 2 diabetes insulin, hepatic cirrhosis diagnosed in 2014, and ligation of the RVO (rupture of esophageal varicose vein) without a family history and toxic. The clinical examination showed an alteration of the general condition on a cirrhotic liver and melena of great abundance. At the para-clinical examinations, the biological analyzes revealed a positive inflammatory balance and a disturbed hepatic assessment with a high bilirubin and a high Gamma-Glutamyl Transferase (GGT). Morphological examination in ultrasound reveals an uncomplicated cirrhotic liver and FOGD: ruptures of esophageal varices. The patient is referred to gastroentero-hepatology in 18/05/2017 for the management of melena and ligation of oesophageal varices. The treatment of reference of haemorrhage by rupture of VO remains today the therapeutic endoscopy. Pharmacological treatments have long seemed to be considered a substitute choice when the use of endoscopy proved impossible, especially in cases of heavy bleeding.

Key words: Cirrhosis, rupture, esophageal, varicose vein



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ASSOCIATION TUNISIENNE DES SCIENCES BIOLOGIQUES
29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:46.

LES ANTIBIORESISTANCES DES SOUCHES *ESCHERICHIA COLI* AVIAIRES DANS LA REGION DU CENTRE D'ALGERIE

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La colibacillose aviaire est une maladie très fréquente dans les élevages avicoles, surtout chez le poulet de chair l'émergence de cette dernière est surtout due à des pratiques non contrôlées sur le terrain algérien.

L'objectif de cette étude est d'isoler la bactérie *Escherichia coli* de poulets de chair présentant des lésions de colibacillose, d'évaluer la fréquence d'antibiorésistance de ces souches vis-à-vis de 11 molécules d'antibiotiques ainsi que le pourcentage des multirésistances, et de déterminer des antibiogrammes. Pour cela, à partir de 40 foies et rates d'animaux malades, nous avons isolé 30 souches d'*E. coli* sur gélose Mac Conkey après enrichissement sur milieu BHIB. Nous les avons ensuite identifiées biochimiquement sur milieu TSI et Urée- Indole et à l'aide du système Api 20 E. l'antibiogramme a été effectué selon la méthode de diffusion de disques sur gélose Muller Hinton selon les normes du NCCLS recommandées par l'OMS.

Nos résultats montrent des taux élevés pour les tétracyclines avec un taux de (96.66), l'Acide nalidixique , l'Ampicilline, l'Amoxicilline/ Acide clavulanique, l'Enrofloxacin, la Triméthoprime/ Sulfaméthoxazole avec un taux de (76.66). des pourcentages moyens sont retrouvés pour la Néomycine et le Nitrofurane, et de faibles fréquences de résistance pour le Chloramphénicol , la Gentamicine, et la Colistine. Il existe qu'une seule souche qui ne soit résistante à aucun antibiotique. Toutes les souches sont résistantes à au moins 1 antibiotique alors que 53.35% d'entre celles-ci sont résistantes à au moins 6 antibiotiques. Plus de la moitié des souches sont résistantes à 8 antibiotiques. Nous avons isolé 16 antibiogrammes différents, dont 7 sont présents de manière significative et présentent de larges phénotypes de résistance. Ces résultats élevés peuvent être expliqués par l'utilisation abusive et anarchique des antibiotiques, sans recours préalable à l'antibiogramme.

En conclusion, il ressort de cette étude que les antibiotiques sont de moins en moins efficaces contre les colibacilles. Il est plus que jamais nécessaire de systématiser l'antibiogramme avant chaque traitement afin de prescrire la molécule de choix, et de penser à des alternatives aux antibiotiques.

Mots clés : colibacillose, antibiotiques, multirésistances, *Escherichia coli*, poulets de chair.

C. AFFICHE N°:47.

CONTROL BIOLOGIQUE DE *TUTA ABSOLUTA* (MEYRICK, 1917) (LEPIDOPTERA : GELECHIIDAE) PAR LES EULOPHIDES (HYMENOPTERA : EULOPHIDAE) SUR TOMATE SOUS- SERRE A L'EST DE LA MITIDJA

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Le contrôle de la prédation et du parasitisme des déprédateurs des cultures par les ennemis naturels est un travail essentiel sert à la maximisation de la protection biologique des plantes et de minimiser l'utilisation brutale des produits chimiques. Le présent travail met en évidence une étude des interactions entre un ravageur redoutable de la tomate *Tuta absoluta* (Meyrick, 1917) et deux ennemis naturels *Necremnus artynes* (Walker, 1839) et *Diglyphus isaea* (Walker, 1838) (Hymenoptera : Eulophidae) sur la tomate sous- serre dans la Mitidja. *N. artynes* est un ectoparasite des larves des lépidoptères, il a montré une efficacité contre *T. absoluta* dans plusieurs pays méditerranéens, il a été considéré comme le premier ennemi naturel du ravageur. *D. isaea* est un ectoparasite important des mouches mineuses appartenant au genre *Liriomyza* (Diptera : Agomyzidae) et il peut parasiter les larves des Gelechiidae. Le travail a été réalisé dans la région de Boudouaou El Baheri située à l'est d'Alger dans la partie orientale de la Mitidja, nous avons repiqué 900 plants de tomate dans une serre de 600 m² et nous avons contrôlé les attaques de *T. absoluta* sur la tomate et les attaques des parasites hyménoptères *N. artynes* et *D. isaea* sur les larves de *T. absoluta*, le travail a été commencé dès le repiquage jusqu'à la fin de la récolte pendant une période de 6 mois (de 15 février au 22 juillet 2017). Les échantillonnages ont été réalisés trois fois par mois pendant la période hivernale et quatre fois par mois pendant les périodes printanière et estivale. Le taux des attaques de *T. absoluta* sur la tomate est de 42,92 % et les attaques les plus sévères sont enregistrées en mois de juin et juillet, *N. artynes* est l'ectoparasite le plus abondant, il attaque seulement les larves de premier et de deuxième stades du ravageur avec des taux de parasitisme de 27,20 % et 19,89 % respectivement, l'ectoparasite *D. isaea* n'a attaqué que les larves du deuxième et du troisième stade avec des taux de 19,64 % et 20,93 % respectivement. Le taux de parasitisme général des Eulophides sur les larves de *T. absoluta* est de 25,09 %, les Eulophides ont réussi à limiter les dégâts du ravageur pendant la période de février à mi-mai mais dès la fin mai les attaques de *T. absoluta* ont explosé et les ectoparasites Eulophides ne peuvent plus contrôler la situation en mois de juin et juillet.

Mots- clés : *Tuta absoluta*, *Necremnus artynes*, *Diglyphus isaea*, Mitidja, Eulophides, parasitisme.



ATSB

ASSOCIATION TUNISIENNE DES SCIENCES BIOLOGIQUES
29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:48.

DISTRIBUTION OF COCKROACHES IN THE PINWOOD OF LEHNAYA REGION (EL-TARF, ALGERIA)

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Cockroaches, Dictyoptera insects, appeared more than 400 million years ago. Insects very resistant, they have adapted to all environments. More than 4000 species of cockroaches are known to date and a number of them are considered harmful.

In this work, we made a faunistic inventory of the main species of cockroaches that could be found in Lehnaya pine forest (El-Tarf). We were able to identify 9 species and one group of larvae. The results show that *Ectobius* and *Loboptera* genus are the most abundant in forest (42.56% to 27%).

Keywords: forest cockroaches, inventories, pinewood, *Ectobius*, *Loboptera*.

C. AFFICHE N°:49.

ECOLOGY AND ENTOMOLOGY OF HOVERFLIES (ORDRE: DIPTERA) OF THE GUELMA DISTRICT WITH SPECIES NEW TO ALGERIA AND NORTH AFRICA

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Abstract: The loss of biodiversity is increasing and unprecedented in the history of our planet, and the long-term consequences are not known precisely

The dipteral are one of the most abundant orders and more diversified orders. Hoverflies are found in various habitats they occupy almost all backgrounds and they play a fundamental role in the functioning of ecosystems. Insects are an important component of biodiversity, but despite their number and the ecosystem services they deliver, they have so far in terms of conservation efforts been relatively neglected. One family of Diptera, the hoverflies (Syrphidae), is chiefly known for the habits of adults to visit and hover above flowers and to exhibit numerous mimics of wasps, bees and bumblebees. Hoverflies exploit a wide spectrum of habitats and ecological niches, and are useful indicators of the ecological integrity of ecosystems. The Syrphidae of Algeria are poorly known and available data (specimens and literature) are widely disseminated and not easily accessible.

Our work provides a taxonomic and ecological study (abundance, distribution and phenology) of hoverflies (Diptera) in the region of Guelma. We started in 3 sites each site divided in 16 stations distributed along an altitudinal gradient. Inventory was made mainly by the use of a type of trap (Malaise trap) in the 16 stations from the year 2011 until the year 2013. The results have identified 31 species with new to Algeria. Of these, three species are also new additions to the entomofauna of North Africa. The objective of this study was to determine the species richness, distribution, and phenology of Syrphidae in Guelma region.

Keywords: La biodiversité, Syrphidés, piège Malaise, Altitude, Richesse spécifique.



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ASSOCIATION TUNISIENNE DES SCIENCES BIOLOGIQUES
29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:50.

IMPACT OF EASTERN MOSQUITOFISH, *GAMBUSIA HOLBROOKI*, ON TEMPORARY PONDS: INSIGHTS ON HOW PREDATION MAY STRUCTURE ZOOPLANKTON COMMUNITIES

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Ecological and evolutionary processes can conveniently be explored through the simplified communities of temporary ponds. In order to investigate the potent roles of predation in structuring zooplankton communities, we used a manipulative study to analyze the impact of eastern mosquitofish, *Gambusia holbrooki*, on a set of 24 temporary ponds. Fish were introduced at different densities (0, 8, 16 and 80 mosquitofish), and zooplankton assemblages were monitored monthly between January and May. Fish predation decreased markedly the overall abundance of zooplankton. Large crustaceans (Anostraca and Calanoida) were rapidly eliminated, while Cyclopoida and Cladocera peaked in March before in turn disappearing in the later stages of the hydroperiod. These results are congruent with the theory supporting the influence of both predation and competition as major interacting forces shaping freshwater communities.

KEYWORDS: Competition; *Gambusia holbrooki*; predation; fish; temporary ponds; zooplankton

C. AFFICHE N°:51.

DIVERSITY OF SYRPHIDAE (DIPTERA) COMMUNITIES IN THREE ANTHROPISED ENVIRONMENTS IN "TEBESSA" NORTHEASTERN ALGERIA

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Background and aim: Syrphidae play a special role in ecosystems, by providing many ecosystem services, especially as pollinators. Most studies on the syrphidae family have focused on natural environments. The current study has been conducted in three anthropised environments (two amusement parks and a garden of high school) located in Tebessa City (North-eastern Algeria), from April to July 2012.

Methods: Using an entomological net, the specimens were caught regularly every week during three (03) hours in the morning (8h-11h). Several diversity parameters were observed: composition, species richness, occurrence, diversity and similarity.

Results: The results identified 1384 individuals attached to 27 species divided into two subfamilies: Syrphinae and Eristalinae, with the predominance of Syrphinae. The months of May and June recorded the highest number of individuals. The Species: *Syrirta pipiens* and *Sphaerophoria scripta* were more abundant respectively in Family Golden Park, the garden of High school Malek ben Nabi and in Thevest Park. All stations are diversified and balanced ($H' = 3.40$ bits, $E = 0.77$). Two new species in the region are reported: *Melangyna triangulifera* and *Epistrophe grossulariae*.

The species *Episyrphus balteatus*, *Eumerus strigatus*, *Syrirta pipiens*, *Paragus strigatus*, *Eupeodes corollae* and *Metasyrphus luniger* appeared early (April). Other species appeared later (late May to early June), including *Sphaerophoria rueppellii*, *Helophilus trivittatus*, *Eristalinus taeniops* and *Melanostoma mellinum*. The flight period of *Syrirta pipiens* spreads throughout the months. In general, the majority of species at the two stations appears in May.

Conclusion: This study allowed having an idea on the diversity of syrphidae in these three semi-natural environments, although actually the intervention of human is minimal, since it is limited to the plantation of some trees and the absence of weeding. These gardens are invaded by the wild and spontaneous plants, which bring them closer to natural environments.

Keywords: Syrphidae, Tebessa, anthropic environments, biodiversity.



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ASSOCIATION TUNISIENNE DES SCIENCES BIOLOGIQUES
29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:52.

BREAST CANCER AND RELATIONSHIP BETWEEN VITAMIN D, INSULIN, IGF-1 AND ESTRADIOL IN PRE AND POST MENOPAUSAL WOMEN: IMPACT OF OBESITY

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Introduction: Hypovitaminosis D, in the form of deficiency or severe deficiency of vitamin D3 (25 (OH) D3), is associated with obesity and proliferation of cancer cells, including breast carcinomas. This study aims to analyze the levels of vitamin D (25 (OH) D3), insulin and IGF-1 as well as estradiol in post menopausal (PoBC) and premenopausal (PrBC) breast cancer patients compared to healthy women (control) according to their body size.

Material and Methods: 81 women were recruited, among them 54 were breast cancer patients (29 PrBC and 25 PoBC) treated with chemotherapy and 27 healthy (17 PrC and 10 PoC) and classified according to their body mass index (BMI). Serum lipidemia and CRP are analyzed, with plasma levels of 25(OH)D3, insulin, IGF-1, HOMA index and estradiol.

Results: Obesity (BMI > 30) is prevalent among 50% in PoBC vs 25% in PrBC patients, associated with dyslipidemia and inflammatory status in obese PoBC patients. 25(OH) D3 insufficiency (10-30 ng / ml) is lower (p < 0.05) in overweight PrBC patients vs Obese PoBC while deficiency (<10ng/ml) is represented by 6% in breast cancer patients.

Insulin is higher (p < 0.05) in obese PrBC women than overweight patients, inversely to the IGF-I profile. E2 decreases (p < 0.01) in PoBC overweight vs PrBC patients.

Conclusion: These results suggest that increased levels of insulin and IGF1 were linked to low levels of 25OHD3 in obese and overweight patients. A consistent supplementation with vitamin D adjuvant chemotherapy, in combination with a physical activity, would contribute to decrease BMI, improve insulin sensitivity, and increase the percentage of remission in obese and overweight patients.

Keywords : Breast cancer, Vitamin D, HOMA-IR, Obesity.

C. AFFICHE N°:53.

BIODIVERSITE AVIFAUNESTIQUES DES ZONES HUMIDES ARTIFICIELLES (CAS DE BARRAGE BENI HAROUN ET BARRAGE SIDI KHELIFA) DE LA WILAYA DE MILA(ALGERIE)

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Ce travail caractérise la détermination et la comparaison de la richesse spécifique et la biodiversité avifaunistiques des zones humides artificielles de la wilaya de Mila cas de barrage Beni Haroun 5328 Ha et Barrage Sidi Khelifa 263 Ha. La position stratégique des deux sites d'étude au nord des zones humides des hautes plaines de l'est algérien lui confèrent une importance écologique pour l'avifaune aquatique surtout durant la période d'hivernage. Dans ce travail pionnier nous présentons les résultats recueillis à travers des campagnes mensuelles de dénombrement des oiseaux d'eau s'étalant de septembre 2016 à avril 2017. Au total 28 espèces d'oiseaux d'eau appartenant à 11 familles, ont été observés dans le barrage de Beni Haroun, alors que 27 espèces d'oiseaux d'eau appartenant aussi à 11 familles, ont été observés dans le barrage de Sidi khelifa. Ce dernier est mieux équilibré par rapport au barrage de Beni Haroun. Il accueille une moyenne de 2875 individus avec une densité de 10,72 ind/ha laquelle densité nettement plus importante que celle de barrage Beni Haroun qui est de l'ordre de 1,19 ind/ha avec un effectif moyen de 6344 individus. L'étude de la connaissance du fonctionnement de quartier d'hiver dans les sites d'études qui devient un outil nécessaire à une politique de conservation de cette populations d'oiseaux d'eau et des écosystèmes aquatiques artificiels qui les accueillent dans la période d'hivernage.

Mots clés : avifaunistiques, dénombrement, barrage, espèces, capacité d'accueil, quartier d'hiver



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ASSOCIATION TUNISIENNE DES SCIENCES BIOLOGIQUES
29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:54.

INCIDENCE DES PATHOLOGIES DE LA REPRODUCTION & DIAGNOSTIC DU KYSTE OVARIEN CHEZ VACHE

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Le but de notre étude était d'étudier les caractéristiques macroscopique et microscopique de 240 KO récoltés à partir de 2025 vaches abattues à l'abattoir d'El-Harrach en Algérie en notant aussi les différentes lésions affectant l'appareil génital. L'histologie a été effectuée en concomitance avec la réalisation du dosage radio-immunologique des O2 stéroïdes majeurs dans le liquide kystique : Progesterone (P4) et œstrogènes (E2) afin de mieux diagnostiquer les types du KO. Les résultats obtenus ont montré que sur les 2025 vaches, 16.85% étaient gestantes réformées. Les anomalies de l'utérus ont été réparties comme suit : infection utérine (15.11%), cervicite (3.28%), mucomètre (0.98%), col double (0.76%), col triple (0.1%), utérus unicorne (0.1%), malformation cornuelle (0.1%), tumeurs (0.1%). Les anomalies de l'oviducte se répartissaient comme suit : salpingite (05.69%), adhérences (1.53%), pyosalpinx (3.39%), hydrosalpinx (1.64%). Les anomalies relevées sur l'ovaire étaient par ordre de fréquence décroissant : KO (12.16%), adhérence ovaro-bursale (4.60%), ovaires petits et lisses (3.50%), ovarite (0.32%), tumeurs (0.32%), Kystes parovariens (0.11%). Suite à l'étude histologique des KO, le pourcentage des kystes folliculaires (KF) et celui des kystes lutéaux étaient respectivement : KF : 76 % et KL : 24% (P<0.05). Les résultats du dosage de la P4 et de l'E2 par R.I.A, étaient conformes avec l'histologie et les données bibliographiques, malgré l'impossibilité de mettre en évidence des valeurs seuils permettant de classer les différents types du KO.

MOTS-CLÉS : Utérus – Oviducte –Kyste Ovarien –Vache – Dosage-Histologie.

C. AFFICHE N°:55.

STUDY OF SEASONAL SEXUAL ACTIVITY VARIATIONS IN ALGERIAN REMBI RAMS

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This study focuses on the determination of seasonal effect on two main sexual activity parameters within adult rams of Rembi breed from Algeria for a period of one year. The experiment involved a monthly measurement of scrotal circumference and body weight in order to know the main testicular activity. The purpose of this experiment was to assess better the characteristics of the reproductive activity of rams and to define the variations and interactions between the two parameters during each season. Data shows no statistically significant effect of season on the body weight but showed a significant effect on scrotal circumference. Seasonal variations of the studied parameters showed a higher values during spring and autumn and lower values during summer and winter.

Although the Algerian Rembi rams are sexually active throughout the year, their testicular and body sizes undergo seasonal variations, spring and autumn are the periods most favorable to the reproduction, whereas the choice of the adult subjects is essential for a better fertility of the animals.

Keywords: Rembi, ram, scrotal circumference, body weight, season, Algeria.



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ASSOCIATION TUNISIENNE DES SCIENCES BIOLOGIQUES
29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:56.

A CASE OF HERMAPHRODITISM IN THE COMMON EAGLE RAY *MYLIOBATIS AQUILA* (CHONDRICHTHYES: MYLIOBATIDAE), REPORTED FROM THE TUNISIAN COAST (CENTRAL MEDITERRANEAN)

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A common eagle ray *Myliobatis aquila* (Linnaeus, 1758) exhibiting abnormal male and female traits on the left side of the genital apparatus was captured off the north-eastern Tunisian coast. As the specimen could not be considered a functioning adult male and/or female, it was classified as an abnormal hermaphrodite. This is the latest of the 16 hermaphrodite batoid specimens known to date.

Key words: Chondrichthyes, *Myliobatis aquila*, abnormal hermaphrodite, north-eastern Tunisian coast

C. AFFICHE N°:57.

ETUDE DES EFFETS SECONDAIRES DE DEUX ACARICIDES (FLUVALINATE ET ACIDE OXALIQUE) SUR LA COMPOSITION BIOCHIMIQUE CHEZ *APIS MELLIFERA INTERMISSA*

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L'abeille domestique (*Apis mellifera*) est essentielle à la vie sur terre et constitue un modèle privilégié pour les scientifiques. Son étude permet de répondre à de nombreuses questions d'intérêt général, mais également de mieux connaître la contribution de cet insecte sur le plan écologique et économique. L'abeille présente en effet un intérêt économique indéniable: nous pensons bien évidemment aux produits de la ruche, mais aussi et surtout à son rôle fondamental dans la pollinisation des cultures entomophiles en participant à leur pérennité et donc au maintien d'une biodiversité essentielle pour les écosystèmes. L'utilisation des pesticides en agriculture et le parasitisme sont des facteurs qui perturbent gravement le développement des insectes pollinisateurs provoquant ainsi une perte économique importante en apiculture. Le parasite de l'abeille, *Varroa destructor* est à l'origine de la maladie de la varroase qui cause de sérieux dégâts au sein des colonies d'abeille, les énormes pertes qu'elle entraîne et le besoin de sauvegarder le cheptel apicole, ont poussés les apiculteurs à l'utilisation des acaricides pour contrôler la prolifération de ce parasite. De ce fait, notre étude a été entreprise afin d'obtenir des informations sur les éventuels effets secondaires de deux acaricides, le Fluvalinate (le nom commercial: Apistan) et l'acide oxalique sur des Abeilles ouvrières adultes, en mesurant l'activité enzymatique de deux biomarqueurs, l'acétylcholinestérase (AChE) et la glutathion S-transférase (GST) et aussi en analysant les principaux métabolites (Protéines, Glucides et Lipides) dans le corps entier des abeilles. Les résultats obtenus ont montré que le Fluvalinate entraîne une diminution significative dans l'activité spécifique de l'AChE et une augmentation significative dans l'activité de la GST chez les groupes d'abeilles traitées comparativement aux groupes témoins. Aussi, le Fluvalinate entraîne des perturbations biochimiques au niveau du corps entier des abeilles. En effet, une réduction a été enregistrée dans les teneurs et les concentrations des protéines, glucides et lipides. Cependant, l'acide oxalique ne semble pas en général affecter les quantités des principaux métabolites et également ne semble pas avoir un effet toxique ou neurotoxique sur les abeilles adulte.

Mots clés : *Apis mellifera*, *Varroa destructor*, Fluvalinate, Acide oxalique, Biomarqueurs, Métabolites



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ASSOCIATION TUNISIENNE DES SCIENCES BIOLOGIQUES
29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:58.

INTAKE OF ARGAN OIL ATTENUATES OXIDATIVE STRESS OF RATS WITH HIGH-FAT DIET INDUCED OBESITY

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Argan oil is a vegetable oil rich in oleic and linoleic acid. Considering its chemical composition, we investigated the effect of argan oil supplementation on blood oxidant- antioxidant status of rats fed high-fat diet (HFD)-induced obesity compared with rats fed normal diet (ND). Our findings showed that high-fat diet induced a significant increase in body weight, relative adipose tissue weights and plasma glucose levels compared to normal diet rats. Administration of argan oil resulted in a significant decrease in body weight, relative adipose tissues weights and glucose in normal rats. Plasma total antioxidant capacity (ORAC), erythrocyte catalase (CAT) and superoxide dismutase (SOD) activities were lower, whereas plasma hydroperoxide and TBARS were increased in obese rats compared with normal rats. Administration of argan oil resulted in a decrease in hydroperoxide and TBARS, and an increase in CAT and SOD activities. In conclusion, oxidant/antioxidant status is altered in obesity. However, administration of argan oil resulted in reduced elevation of lipid peroxidation and increased CAT and SOD activity suggested that argan oil supplementation appeared to protect obese rats against oxidative stress by enhancing the antioxidant defense system.

Keywords: Argan oil, high-fat diet, oxidant/antioxidant status, obesity.

C. AFFICHE N°:59.

SUBLETHAL AND LETHAL EFFECTS OF LAVANDULA ANGUSTIFOLIAM. ESSENTIAL OIL ON ENERGY RESERVES AND BIOMARKERS OF STORED-PRODUCT PEST RHYZOPERTHA DOMINICA (F.) (COLEOPTERA: BOSTRICHIDAE).

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Insects are considered as the basis of problems in agricultural stored products since they affect the quality and quantity of these products. The lesser grain borer, *Rhyzoperthadominica*F. is a major insect pest of stored grain. The continuous application of synthetic insecticides causes development of resistance, adverse effects on environmental quality and non-target organisms including human health. Application of active toxic agents from plant extracts as an alternative pest control strategy was available from ancient times.

In this study conducted under laboratory conditions, we assessed the efficacy of *Lavandulaangustifolia*M. essential oil against adult of *Rhyzoperthadominica*. The essential oils were isolated with hydrodistillation method by Clevenger apparatus and the chemical composition was determined by gas chromatography-mass spectrometry (GC-MS). The sublethal and lethal effects of essential oil (LC₂₅ and LC₅₀) were examined on the biochemical composition and enzymatic activities in *R. dominica* adults.

Our results showed that essential oil of *L.angustifolia* contains 56 compounds with Linalool (20.48%), Linalyl acetate (13.24%), Camphor (13.15%), and 1,8 Cineole (12.96%) as the major compounds, with 3.2 ± 0.15 % of yield relative to the dry matter. The enzymatic measurements performed in LC₂₅ and LC₅₀ treated adult revealed a neurotoxic activity and a stimulation of the detoxification system as evidenced by an inhibition of AChE and an increase in GST activity, respectively. Moreover, it reduces significantly the body contents of proteins, carbohydrates and lipids of the stage studied. Overall, our results indicate that *L. angustifolia* essential oil has potential for the development of new and safe control products against stored-product pest.

Keywords: *Rhyzoperthadominica*, *Lavandulaangustifolia*, Chemical composition, Biochemical components, Enzymatic activities.



C. AFFICHE N°:60.

EFFET DE L'ALIMENTATION SUR LA CROISSANCE PONDERALE ET TESTICULAIRE CHEZ LES AGNEAUX DE RACE OULED DJELLAL EN PHASE PUBERTAIRE DANS L'OUEST ALGERIEN

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L'objectif principal est d'évaluer l'effet du niveau alimentaire sur les paramètres morphobiométriques de 20 agneaux de race *Ouled Djellal*, âgées de 3 à 4 mois tout en suivant l'évolution de la croissance pondérale et testiculaire ainsi que la testostéronémie chez ces animaux destinés au remplacement comme futurs reproducteurs, depuis le sevrage jusqu'à la période de puberté. Nos résultats indiquent une croissance pondérale significativement plus élevée en faveur des agneaux du lot Haut comparé à celui des agneaux du lot Bas (33 ± 1.02 vs 37 ± 1.65 Kg ; $p < 0.001$). Ces valeurs tendent à être progressivement augmentées avec l'avancement de l'âge des animaux ($r = 0.97$ vs $r = 0.98$). Les testicules des agneaux montrent une croissance continue et graduelle jusqu'à l'âge moyen de 163 ± 12 jours où une différence significative se creuse entre les valeurs obtenus chez les animaux des deux lots Bas et Haut respectivement jusqu'à la fin de l'expérience (96.27 ± 13.33 vs 110.85 ± 1.08 Cm³ ; $p = 0.05$). Toutefois, il existe une forte corrélation entre le volume testiculaire, l'âge ($r = 0.90$ vs $r = 0.91$) et le poids vif ($r = 0.92$ vs $r = 0.88$) respectivement chez les agneaux du lot Bas et Haut. En revanche, La testostéronémie totale des agneaux du lot Haut et Bas (0.65 ± 0.43 vs 0.58 ± 0.44 ng/ml) est relativement dans les normes et elle est fortement corrélés à l'âge ($r = 0.77$ vs $r = 0.75$), au volume testiculaire ($r = 0.74$ vs $r = 0.75$) et au poids vif ($r = 0.74$ vs $r = 0.75$). A l'âge de 8.60 ± 0.39 mois, les agneaux du lot Haut ont exprimé leur comportement sexuel avec un coït complet avec un taux de testostérone de 1.34 ± 0.35 ng/ml alors que ceux du lot Bas ont obtenu une testostéronémie de 1.32 ± 0.42 ng/ml mais l'expression de leur activité copulatoire est légèrement retardée avec un décalage de 15.8 ± 6.01 jours soit vers l'âge de 8.15 ± 0.24 mois. En conclusion, les performances de croissance des agneaux de race *Ouled Djellal* et la testostéronémie semblent influencés à différentes échelles par la complémentation énergétique de haut niveau. Cette dernière a amélioré les performances de croissance des agneaux depuis le sevrage jusqu'à l'apparition de la puberté tout en augmentant la qualité de l'expression du comportement sexuel des futurs reproducteurs.

Mots-clés : agneaux, race *Ouled Djellal*, puberté, niveau alimentaire, poids vif, testostérone, volume testiculaire.

C. AFFICHE N°:61.

ÉTUDE EPIDEMIOLOGIQUE DES INFECTIONS ET COÏNFECTIONS PAR *CHLAMYDOPHILA ABORTUS* ET *COXIELLA BURNETII* DANS DES EXPLOITATIONS BOVINES DE LA REGION DE JIJEL

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La chlamydia abortive bovine et la fièvre Q sont deux zoonoses omniprésentes partout dans le monde. *Chlamydia abortus* et *Coxiella burnetii* sont deux bactéries gram négatives, entités pathologiques reconnues pour leur action abortive chez les ruminants et chez l'être humain présentant ainsi un danger sanitaire et économique considérable pour l'élevage bovin et une menace à prendre au sérieux pour l'être humain.

Dans la wilaya de Jijel, région nord-est d'Algérie, une enquête séroépidémiologique rétrospective, portant sur 184 bovins, a révélé une prévalence de 16 % des avortements chez les bovins ainsi qu'une séropositivité de 1,08% pour *Chlamydia abortus* et de 15.76% pour *Coxiella burnetii*, avec un taux de co-infection de 0,54%. Ces résultats indiquent que les infections par *Chlamydia abortus* et *Coxiella burnetii* sont bien présentes dans l'élevage bovin de la région de Jijel. L'étude des facteurs de risque a révélé la non association statistique de l'infection par *Chlamydia abortus* et *Coxiella burnetii* avec la race, l'état d'embonpoint et le nombre de gestations.

En effet, par leurs portages asymptomatiques, les bovins jouent un rôle important de réservoir pour *Chlamydia abortus* et *Coxiella burnetii* constituant ainsi un danger potentiel de contamination pour les autres espèces des ruminants domestiques et pour l'être humain.

Mots clés : *Chlamydia abortus*- *Coxiella burnetii*-Jijel- bovins



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ASSOCIATION TUNISIENNE DES SCIENCES BIOLOGIQUES
29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:62.

BIOLOGICAL CONTROL OF MEDITERRANEAN FRUIT FLY, *CERATITIS CAPITATA* (WIEDEMANN, 1824) IN SOUTHWEST OF TUNISIA

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The mediterranean fruit fly, *Ceratitis capitata* (wiedmann, 1824), is one of the most damaging pest in Tunisia; it causes highly economic losses in several fruit crops (citrus, peach, apricot) and vegetable crops (pepper) with an infestation rate that can exceed 90%.

Many chemical products have been used against this pest in order to reduce infestation in orchards. However, *C. capitata* developed resistance for some pesticides used for its control.

On another side, some efforts have been made to substitute chemical treatments by environment respectful methods. The objective of this study was to assess the effectiveness of mass trapping against this pest on several varieties of apricot in the biotopes of Chebika, Tamerza and Mides from the governorate of Tozeur during 2017.

To reach this goal, biological control against this pest was focused on mass trapping through food traps combined with an insecticide with two densities: 30 and 40 traps / ha.

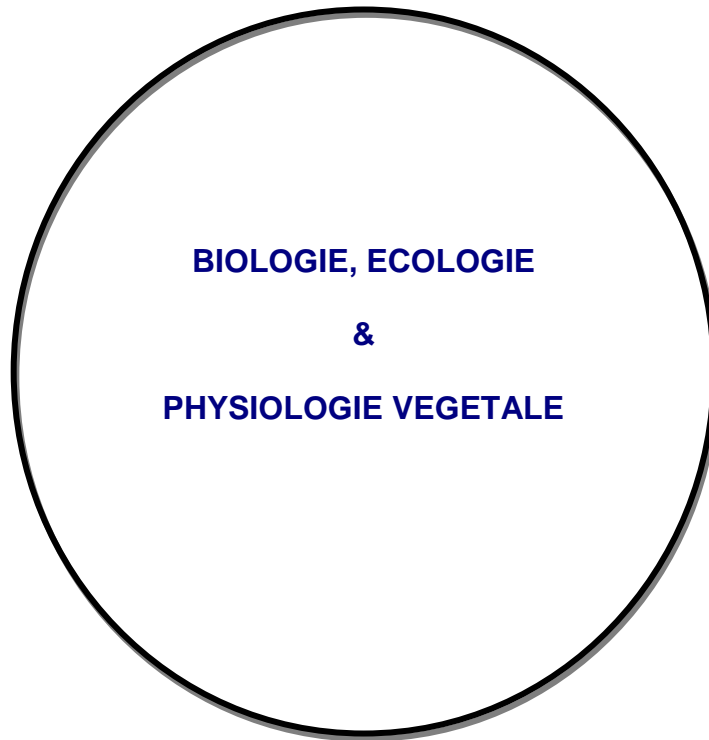
Our results showed that these two densities can reduce significantly the infestation of *C. capitata* on apricot culture in the Sahara oasis of south Tunisia

Keywords: Mediterranean fruit fly, *Ceratitis capitata*, biological control, apricot, mass trapping



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29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE





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29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:63.

EFFECT OF SALT STRESS ON SEED GERMINATION OF ACACIA ALBIDA IN THE TAMANRASSET REGION AND CONSERVATION PROSPECT

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In arid and semi-arid areas, salinity is one of the main factors responsible for the degradation and reduced productivity of plants. By their excessive salt concentration, the saline soils constitute an unfavorable environment for the growth of most legumes. The study was conducted in laboratory conditions in the dark, in an oven set at 25°C. Different seeds batches were subjected to NaCl salt solutions at different concentrations: 0g/l, 2g/l, 4g/l, 6g/l, 8g/l, 10g/l, 12g/l, 14g/l, 16g/l, 18g/l, 22g/l, 26g/l, and 30g/l. According to the statistical analysis of variances show that the increase of NaCl concentrations reduces significantly the seeds germination capacity. At these concentrations of NaCl, we recorded the best coefficients of velocity (64.29% à 68.52%) for concentrations of NaCl (6g/l, 4g/l), the maximum germination capacity (90 % to 100 %), the times of the shorter latencies (1 to 2 days) are raised at low concentrations (0 - 4 g/l). The capacity and the average speed of germination decrease as the salinity increases in the medium. The tolerance to salinity seeds of *Acacia albida* is of the order of 22g / l NaCl. Beyond this concentration, the germination has not occurred.

Keywords: *Acacia albida*; seeds; NaCl ; salinity; germination; conservation.

C. AFFICHE N°:64.

RT-PCR DETECTION OF ALLEXIVIRUSES IN TUNISIAN GARLIC (*ALLIUM SATIVUM* L.) GERmplasm

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Garlic (*Allium sativum*L.) is an important crop of high traditional culinary interest. Tunisian growers use their self-produced garlic cloves and/or those from other farmers and there are no local commercialized cultivars with registered names, all of which facilitate the accumulation and transmission of viruses. Several viruses belonging to the *Potyvirus*, *Carlavirus*, and *Allexivirus* genera are known to infect garlic. Our study aimed to detect the presence of *Allexiviruses* [Garlic Virus A (GarvA), Garlic Virus B (GarvB), Garlic Virus C (GarvC), Garlic Virus D (GarvD) and Garlic Virus X (GarvX)] in Tunisian garlic germplasm by RT-PCR assay employing virus-specific primer pairs. The results indicate a high prevalence of mixed infections. GarvA showed the highest infection rate (87.9%), followed by GarvC, D and X, which were identified in 85% of samples. On the contrary, GarvB was detected in only a few samples. This research presents the first report of detection of *Allexiviruses* in Tunisian garlic.

Keywords: *Allium sativum*, *Allexivirus*, Garlic viruses, RT-PCR, Tunisia.



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29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:65.

CHARACTERISATION OF SOME BIOCHEMICAL FACTORS AFFECTING ALTERNATE BEARING IN THREE OLIVE CULTIVARS

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Alternate bearing habit is a phenomenon prevalent in olive tree. The terms 'alternate' or 'biennial' bearing are used by horticulturists to designate the production of a heavy fruit crop one year followed by a light crop during the following year. This study was carried out in an olive orchard (*Olea europaea* L., varieties Chemlali, Koroneiki and Arbosana) located in Sfax, Tunisia, during two consecutive years (2014-2015). The aim was to explore the alternate bearing in the three olive cultivars by following and determining some biochemical factors likely involved in this physiological phenomenon. Alternate bearing provoked good fruit and oil productions in the ON year (2014), followed by poor crops in the OFF year (2015). For all the three cultivars, leaves of olive plants in the OFF year generally showed reduced pigments, and their abscisic acid (ABA) homeostasis was disrupted. The choice of these studied factors could interact in determining the intensity of alternate bearing in the olive trees and its effects on fruit/oil yield, plant physiological status and oil quality. This knowledge could help to understand how to reduce or mitigate alternate bearing in olive, a way for increasing fruit and oil production.

Keywords : *Olea europaea* L., alternate bearing, pigments, abscisic acid.

C. AFFICHE N°:66.

TRIALS OF THE NATURAL REGENERATION OF THE SEEDS OF *RETAMA MONOSPERMA*, AN EXCELLENT PLANT OF THE FABACEAE FAMILY FIXING NITROGEN OF ALGERIAN COASTAL DUNES.

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The legume family is one of the largest dicotyledons. It is the plant family that provides the greatest number of species useful to man, whether food, industrial or medicinal. The agronomic interest of legumes originates primarily from their ability to associate with soil bacteria (Rhizobiaceae), to form root symbiotic organs "nodules" in which these bacteria transform atmospheric nitrogen into an assimilable form for the plant.

In Algeria, three species of the genus *Retama* are reported: *Retama monosperma*, *Retama retam* and *Retama sphaerocarpa*. Their ecological interest lies in the stabilization of dunes, the fixation of soils and the reconstitution of the vegetation cover of semi-arid and arid ecosystems. The seeds of *Retama monosperma* are affected by a tegumentary inhibition that seems to be in the same way as other fabaceae preventing their germination. This germination is triggered after chemical scarification by pure sulfuric acid.

The results show that chemical scarification by pure sulfuric acid is an effective method for the elimination of the tegumentary inhibition affecting the seeds of *Retama monosperma* and consequently the initiation of germination. These data will be used for the preservation of the species and for the ex-situ production of seedling and littoral dunes and atmospheric nitrogen.

Keywords: *Retama monosperma* - germination - chemical scarification - tegumentary inhibition.



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29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:67.

VULNERABILITE DU CHENE LIEGE SOUS DEUX DENSITES, QUELS AJUSTEMENTS FONCTIONNELS?

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Notre étude s'intègre dans la mise en évidence de l'importance des forêts tunisiennes, plus particulièrement les forêts de chêne liège en Kroumirie, dans la lutte contre les changements climatiques. Le chêne liège est une des essences les plus importantes en Tunisie. Elle joue un grand rôle au niveau économique, environnemental et paysager. Les observations montrent que les forêts de *Quercus suber* sont très touchées par les dépérissements à l'heure actuelle. Les prédictions sur l'évolution du climat (augmentation de la fréquence des sécheresses extrêmes et accroissement constant du stress hydrique) font que les populations de *Quercus suber* actuellement favorables ne le seront plus à long terme. Dans ce contexte, ce travail est centré sur l'impact de l'aménagement forestier sur les paramètres photosynthétiques et morphologiques chez le chêne liège. Nous avons essayé d'évaluer sous climat Méditerranéen l'importance du mode de gestion (aménagement) sur une forêt de chêne liège localisée à Bellif située au gouvernorat de Beja. Deux sites ont été choisis (un site aménagé en 2016 et un non aménagé) dans lesquelles plusieurs paramètres ont été mesurés : paramètres morphologiques (hauteur, diamètre, surface foliaire, LMA) et échanges gazeux (photosynthèse nette, conductance stomatique, transpiration foliaire et conductivité foliaire). Les résultats indiquent qu'une pratique d'aménagement peut améliorer les réponses éco physiologiques et morphologiques pour le chêne liège. L'aménagement pratiqué dans la forêt de Bellif par enlèvement d'une partie des arbres s'est traduit par des changements microclimatiques qui ont entraîné des modifications notables dans le fonctionnement éco physiologique des arbres, au niveau des phénomènes de photosynthèse et de transpiration et au niveau de la croissance.

L'avenir du chêne liège en Tunisie n'est pas radieux. Cependant, nous disposons d'outils d'aide à la décision afin d'anticiper et agir face au phénomène de changement climatique.

Mots clés : *Quercus suber*, changement climatique, aménagement

C. AFFICHE N°:68.

EVALUATION DE LA CULTURE DE JATROPHA CURCAS POUR LA PRODUCTION D'HUILES VEGETALES DANS UN BUT ENERGETIQUE EN TUNISIE

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Le travail objet de cette étude consiste à évaluer la provenance indienne de *Jatropha curcas* dans un but énergétique. La culture a été effectuée dans la station expérimentale d'El Haouaria dans les conditions naturelles. Les trois traitements appliqués consistent à montrer l'effet de la densité, de la mycorhization et du stress hydrique sur la croissance de *Jatropha curcas*. Les résultats ont montré que dans les conditions climatiques du site d'El Haouaria, la mycorhization, la densité et le régime hydrique n'ont aucune influence sur la croissance en hauteur, la croissance radiale et l'évolution du nombre de feuilles de *Jatropha curcas*. Par ailleurs, la densité qui correspond à un écartement 2 m x 4 m et l'irrigation à 50 % de la capacité au champ, ont un effet positif sur l'évolution du nombre de feuilles. Par ailleurs, la réduction de la surface foliaire de la plante au-delà de sa période de croissance, représente une forme d'adaptation à la sécheresse. La mesure de la production de matière fraîche a montré que la croissance pondérale est plus élevée en absence de mycorhization pour tous les organes de la plante. Ainsi, le meilleur rendement de *Jatropha curcas* fait en absence de mycorhization, en présence d'une irrigation moyenne et avec un écartement moyen de 2 m x 4 m. Les fruits issus de cette culture ont été utilisés pour l'extraction et l'analyse des huiles végétales. Les résultats ont montré que l'huile extraite des plantes testées est un bon biodiesel dont les caractéristiques sont conformes aux normes en vigueur.

L'étude de la composante climatique a montré que les températures et l'humidité élevées ainsi que la faible pluviométrie, ont un effet favorable sur la culture de *Jatropha curcas*. Ainsi, le climat aride de la Tunisie semble favorable à la culture de *Jatropha curcas* pour la production des huiles végétales dans un but énergétique.

Mots clés : *Jatropha curcas*, croissance, mycorhization, densité, irrigation, huiles, biocarburant.



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ASSOCIATION TUNISIENNE DES SCIENCES BIOLOGIQUES
29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:69.

CARACTERISATION MORPHOLOGIQUE D'UNE COLLECTION D'ACCESSIONS DE TOURNESOL (*HELIANTHUS ANNUUS L.*) CULTIVEE EN TUNISIE.

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Le présent travail a porté sur l'étude de la variabilité morphologique d'une population composée de 33 accessions de tournesol (*Helianthus annuus L.*) dont 26 sont collectées dans les zones de cultures du nord de la Tunisie et 7 étrangères. L'évaluation a porté sur 16 paramètres quantitatifs selon les descripteurs de l'Union des Protections des Obtentions Végétales (UPOV). Les analyses de la variance ont montré des différences hautement significatives entre les différentes accessions de tournesol pour tous les caractères étudiés. L'analyse en composantes principales (ACP) a révélé que les deux premières composantes absorbent 54,43 % de la variabilité totale et définissent au mieux les relations génétiques entre les accessions étudiées. La projection des accessions sur ces deux axes, a permis de définir cinq groupes distincts et a révélé une grande hétérogénéité entre les accessions. Les accessions ayant montré les meilleures valeurs pour plusieurs caractères pourraient offrir une grande possibilité de choix de géniteurs pour la création de variétés améliorées de tournesol plus performantes.

C. AFFICHE N°:70.

EFFET DU CHROME SUR LA GERMINATION DE MAÏS : SIGNALISATION MOLECULAIRE PAR NO ET H₂S

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L'oxyde nitrique (NO) et le sulfure d'hydrogène (H₂S) jouent un rôle important dans la signalisation et l'acquisition de tolérance aux stress métallique chez les végétaux. NO (500µM) et H₂S (500 µM) sont additionnés au milieu de germination de maïs (*Zea mays L.*), contenant le chrome (Cr ; 200 µM), par l'intermédiaire de deux donneurs artificiels : nitroprussiate de sodium (SNP) et hydrogénosulfure de sodium (NaHS), respectivement. La co-application "Cr+SNP" et "Cr+NaHS" est capable de contrecarrer la production accrue des espèces réactives de l'oxygène (comme l'anion superoxyde, O₂•⁻) induite par Cr. Cependant, l'augmentation des niveaux endogènes de NO et H₂S est susceptible d'interagir avec O₂•⁻ générant, ainsi, un stress nitrosatif, alors que les combinaisons «Cr+effecteurs» (1) ont réduit la production des dérivés de NO, notamment; le peroxyde nitrite (-ONOO), les S-nitrosothiols (SNO) et la nitrosylation des protéines (Try-NO₂) mais (2) ont augmenté le niveau du nitrosogluthatione (GSNO), et ce pour maintenir la réserve en NO.

Mots-clés : chrome, oxyde nitrique, sulfure d'hydrogène, stress nitrosatif



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29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:71.

EFFETS DE L'ACIDE ASCORBIQUE ET DU DIPHENYLENE IODONIUM CHEZ LE FENUGREC STRESSE PAR LE CADMIUM.

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Des graines de fenugrec sont mises à germer sur des milieux contenant : H₂O (témoin) ou 200 µM cadmium (Cd) en association ou non avec 2 mM acide ascorbique (ASB) ou 1 µM diphénylèneiodonium (DPI). Les résultats obtenus montrent que les combinaisons "Cd+ASB" et "Cd+DPI" sont capables d'atténuer certains indicateurs du stress oxydant au niveau racinaire attesté par la détection histochimique de l'anion superoxyde (O₂⁻) et le peroxyde d'hydrogène (H₂O₂). L'application de ASB et DPI dans le milieu de germination induit également une augmentation des teneurs en métabolites à pouvoir antioxydant (ascorbate et glutathion) ce qui pourrait contribuer à une meilleure homéostasie cellulaire en condition de stress par le Cd.

Mots-clés: cadmium, acide ascorbique, diphénylène iodonium, stress oxydant, fenugrec.

C. AFFICHE N°:72.

OPTIMIZATION OF *DITTRISHIA VISCOSA* GERMINATION AND CONSERVATION PROSPECTS (OUED BERKECHE REGION, AIN TÉMOUCHENT PROVINCE)

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The objective set in the present work is to know the influence of temperature on the germination capacity and to find the optimum temperature of the seeds of this species in order to contribute to the conservation of this species.

After harvest, the seed germination tests were carried out after a period of two months (to eliminate the phenomenon of pre-dormancy) subjected to several temperatures: 5°C, 10°C, 15°C, 20°C, 25°C, 30°C and 35°C.

The monitoring parameters of the germination tests are: germination capacity, germination rate or velocity coefficient, latency time and average germination time.

Our results show that the sprouting speed of seeds germinated at 25 ° C has a better result by adding to other temperatures.

This capacity increases to give the maximum at 25 ° C but decreases from 30 ° C, and that our seeds give no reaction at 5 ° C; this means that cold storage significantly decreases the germination rate of *Dittrishia viscosa*.

Key words: *Dittrishia viscosa*, seed viability, germination capacity



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29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:73.

REPONSE DE LA PHOTOSYNTHESE A LA LUMIERE CHEZ LE HARICOT (*PHASEOLUS VULGARIS* L.) TRAITE PAR LE MANGANESE

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La phytotoxicité du manganèse (Mn) a été étudiée chez des plantes de haricot (*Phaseolus vulgaris*, var. Coco-blanc) traitées pendant 19 jours par différentes concentrations en MnCl₂ (0, 10, 100 et 300 µM). La réponse de la photosynthèse à différentes intensités lumineuses incidentes montre qu'un excès de Mn entraîne une réduction de la capacité photosynthétique maximale (A_{max}), de la conductance stomatique (g_s) et de la transpiration (E). Simultanément, une augmentation du rendement quantique apparent (ϕ) et du point de compensation à la lumière (LCP) est observée. En revanche, l'efficacité de l'utilisation de l'eau (EUE) est presque similaire pour les différents traitements quel que soit l'intensité lumineuse appliquée. Ceci laisse suggérer qu'un excès de Mn ne présente pas d'impact négatif sur l'efficacité photochimique.

Mots-clés : manganèse, haricot, photosynthèse.

C. AFFICHE N°:74.

BIOLOGICAL EVALUATION OF *HERTIA CHEIRIFOLIA* L. FLOWER EXTRACT AS POTENT α -GLUCOSIDASE INHIBITOR

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Postprandial glucose control has been proven to be important for prevention of diabetic complications. One therapeutic approach to treat diabetes is to retard the absorption of glucose by inhibition of α -glucosidase. The aim of the present study is to investigate the extracts effect of the flowers of the endemic North African plant *Hertia cheirifolia* L. on α -glucosidase. The flowers of the plant were extracted with hydro-methanolic solvent and dried using rotary vapor under reduced pressure. The dried extract was further subjected to an extraction with petroleum ether, ethyl acetate and butanol. It was found that the petroleum ether extract inhibited α -glucosidase in a non competitive manner with IC₅₀ value of 0.242 ± 0.02 (mg/mL). The presented results revealed that the extract could be a useful natural source in the development of a novel α -glucosidase inhibitory agent against diabetic complications.

Keywords: *Hertia cheirifolia* L., α -glucosidase, non competitive inhibition.



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29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:75.

TRACKING CITRUS LEAFMINER PREDATION UNDER FIELD CONDITIONS FOR LATER MOLECULAR ANALYSES

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The citrus leafminer, *Phyllocnistiscitrella* Stainton (Lepidoptera; Gracillariidae), is a serious pest native to Southeast Asia which threatened the citrus industry in the Mediterranean region upon its introduction in 1993. In this study, we aim to evaluate the relative importance of generalist predators as biological control agents in regulating *P. citrella* populations by frequent sampling in three orchards located in the major citrus-growing area of Spain. Predation was the main mortality factor (35.4%), followed by parasitoid host feeding (20.3%) and parasitism (16.9%), with predation exerting earlier and more sustained pressure than parasitism. Preliminary field observations showed that *Chrysoperla carnea*, *Pilophorus perplexus*, spiders and ladybugs, which were very common in all three orchards, were probably responsible for the high rates of predation. Besides, predation showed no relationship to host availability but did so to flushing pattern in one of the orchards. This first essay has given us the chance to become aware of the existence of an important guild of unidentified generalist natural enemies and their conservation should be taken into account when planning any citrus IPM strategy.

Key Words: generalist predators, *Phyllocnistiscitrella*; biological control; predation, citrus.

C. AFFICHE N°:76.

ETUDE DE L'EFFET DU CHANGEMENT CLIMATIQUE SUR LES PLANTES DANS UNE FORET DE PIN D'ALEP DE TUNIS

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Les forêts qui sont aujourd'hui en régénération auront à faire face aux conditions climatiques qui séviront durant plusieurs décennies, voir plus d'un siècle. Ces écosystèmes terrestres jouent un rôle important dans la lutte contre l'augmentation des GES dans l'atmosphère et donc dans la prévention du changement climatique.

Les changements climatiques modifient sensiblement la réponse écophysologique des arbres et affectent profondément les écosystèmes. Ce travail vise à comparer le statut hydrique des arbres de trois sites de pin d'Alep originaire de différents étages bioclimatiques, Djebel Zaghuan, Djebel Mansour et Djebel Sarj, en se basant sur la continuité sol-plante-atmosphère. L'approche expérimentale est basée sur le suivi de comportement hydriques des sols, les échanges gazeux et la conductivité hydraulique avec les variabilités climatiques.

La provenance DZ a montré un statut hydrique et une physiologie tolérable aux effets de changements climatiques par rapport aux deux autres provenances DM et DS, elle a été classée la plus performante en termes d'adaptation avec une faible moyenne d'ET₀ (3.2 mm/j) tandis que DM et DS ont enregistré 5.3 et 5.5 mm/j respectivement.

De plus Djebel Zaghuan s'est montré une humidité relative importante dans le sol de l'ordre de 26% et une conductivité xylémienne avec 16.3% d'embolisme en la comparant à DM et DS qui présentent les plus forts pourcentages en relation avec l'augmentation du tarissement.

Mots clés : Pin d'Alep, changements climatiques, échanges gazeux, conductivité, Statut hydrique, tolérable.



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ASSOCIATION TUNISIENNE DES SCIENCES BIOLOGIQUES
29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:77.

EFFECTS OF POLYCONTAMINATED SOIL ON THE MORPHOLOGY OF MAIZE ROOTS

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Worldwide, plants which grow in heavy metal polluted–soils show changes in their physiology by causing stress symptoms, reduction in growth and productivity. The aim of this work is to demonstrate the influence of the combined metals interaction (Cu, Zn, Co, Cd and Pb) on the root system of Naudi maize hybrid in a pot experiment.

The study was performed in the experimental farm of Agripolis Padova (NE-Italy). The experimental design was a randomized block with 4 replicates vs. controls (untreated). The soil was artificially contaminated by adding a mixture of cadmium, cobalt, copper sulphates and lead acetate at levels representing 10 times the admitted soil concentrations according to Italian Guideline Values (Zn: 150, Cu:120, Ni:120, Co:20, Cd:2, Pb:100 mg/kg).

Results showed that the root fresh and the dry weights decreased significantly under metal treatment, (-71.70%) and (-71.84%) respectively. Regarding the root parameters, the mean diameter, the root volume, the % of total length and the % of surface area with diameter < 0.25 mm revealed significant reductions, (-95.65%), (-93.21%), (-84.73%) and (-70.34%), respectively whereas, the root branching index, the % of total length and the % of surface area with diameter > 0.25mm increased significantly, (+189.31%) (+51.24%), and (+16.94 %), respectively.

This study demonstrated that metal contaminated (Cd, Pb, Co, Zn, and Cu) soil severely affected the root growth (length and volume) of maize hybrid. This can hinder its cultivation in areas heavily contaminated by metals.

Key words: soil, metal contamination, roots parameter, maize.

C. AFFICHE N°:78.

REPONSES PHYSIOLOGIQUE ET BIOCHIMIQUE DE LA CORIANDRE VIS-A-VIS DU CUIVRE

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Dans ce travail on s'est intéressé à l'étude des réponses physiologiques et biochimiques de la coriandre vis-à-vis du cuivre. L'analyse des résultats a montré que le cuivre a réduit la croissance des différents organes des plantes de la coriandre par comparaison aux plantes témoin. Par ailleurs, cette réduction est accompagnée d'une nécrose et une chlorose intense des feuilles et un brunissement racinaire en cas de déficience en Cu (0 µM) ou en présence de 25 ou 50 µM Cu.

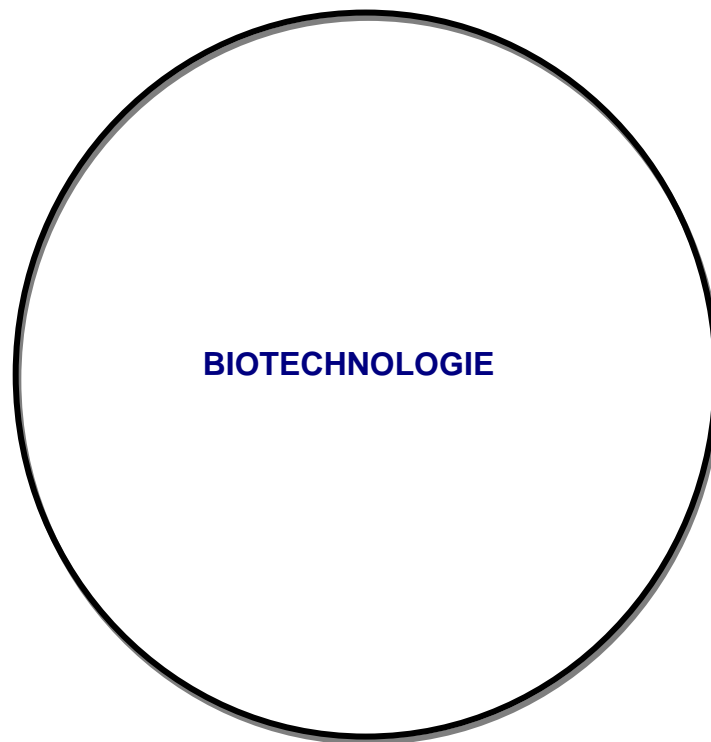
Le cuivre en cas de déficience (0 µM) ou en cas d'excès (25 et 50 µM), a entraîné une augmentation du contenu en MDA dans les parties aériennes et les racines des plantes, ce qui suggère un état de peroxydation lipidique et la génération d'un stress oxydatif. Par ailleurs, l'augmentation des groupements thiols, qui sont les acteurs principaux de la lutte antioxydante, pourrait suggérer que la plante de la coriandre a créé un système de défense contre le stress oxydatif par la production de molécules antioxydantes.

Mots clés: coriandre, croissance, stress oxydatif, groupements thiols, cuivre



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29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE





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29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:79.

THE STUDY OF THE ANTIOXYDANT EFFICIENCY OF THE COMPLEXION INCLUSION NITRONE B-CYCLODEXTRIN

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Cyclodextrins have found many applications in organic synthesis, this is due to their ability to form inclusion complexes with insoluble molecules such as nitrones to promote solubility and increase their bioavailability in the medium.

The aim of our work is the study of the complexation by the inclusion of a series of nitrones in the hydrophobic cavity of the β -cyclodextrins to improve their antioxidant activity. The uv-visible spectrophotometric (UV), FT-IR infrared spectroscopy and mass spectrometry (MS) analyzes of the prepared inclusion complexes enabled us to confirm the stoichiometry of the complex and to identify the existence of nitrone-binding bonds. β -cyclodextrin in the inclusion complexes obtained. The most important peaks in FT-IR infrared spectroscopy analysis showed the bands at 1157.08 cm^{-1} , 3375.78 cm^{-1} and 2922.59 cm^{-1} , which are characteristics of cyclodextrin (C-O-C). These same bands are observed on the spectrum of the inclusion complex, while the band at 1543.74 cm^{-1} is a characteristic of the C = N group of the nitrone. These peaks confirmed the inclusion of nitrones in the cavity of β -cyclodextrins.

The antioxidant activity of these nitrones in their free and complexed forms by the bleaching of β -carotene method showed that the complexes (1/2) are more effective. This was attributed to the fact that the nitrone function in the latter is in direct contact with the solution, while in the complex (1/1) this function is completely included in the β -cyclodextrin cavity.

Keywords : Nitrone, β -cyclodextrin, inclusion complexe, antioxidant activity .

C. AFFICHE N°:80.

ASSESSMENT OF MAIN VARIATION FACTORS OF MILK PRODUCTION AND PHYSICOCHEMICAL CHARACTERISTICS IN THE REGION OF BIZERTE

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The aim of this study was to assess the main variation factors of milk yield and physicochemical characteristics in the region of Bizerte (North-eastern region of Tunisia). The main studied factors were the year and the month. The investigation concerned X small and medium dairy cattle farmers using rations composed of dried fodder (straw and/or hay), green fodder and concentrate. Enquiry and milk sampling were carried out during three-months (March, April and May) representing 930 observations of milk control during 2 successive years (2016 and 2017).

Results showed that, mean milk production (MP) reached 16.7kg/cow/day and milk composition indicated that the mean levels (g/l) of fat (F), protein (P) and lactose (L) contents were respectively 34.85, 30.16 and 46.93g/l and the Milk/Concentrate ratio (MCR) attended 2.25. The effect of year on milk chemical composition indicated that milk of 2017 contained higher levels of fat and lactose respectively by 8% and 9% as compared to 2016. This result was associated to lower percentage of concentrate (38.3% vs 42.02%, $P < 0.0001$) and higher percentage of fodder (49.53 vs 49.53, $P < 0.0001$) in the ration in 2016. Also, milk production recorded for 2017 was higher by almost 30% ($P < 0.0001$) comparatively to milk production of 2016. However, no difference between the 3 months was noted for fat level, milk production and MCR.

At this stage of investigation, it could be concluded that the parameters of the milk composition are higher than the national averages values and reached milk acceptance standards in Tunisia. This study is being progressed in our laboratory in order to cover all the seasons of the year.



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29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:81.

EFFET DE L'UTILISATION DE L'HUILE ESSENTIELLE DE LENTISQUE PISTACHIER SUR LES PERFORMANCES ET LA QUALITE DE VIANDE DU POULET FERMIER

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L'activité antimicrobienne des huiles essentielles est connue de façon empirique depuis l'Antiquité. Les huiles essentielles sont connues de longue date sur un plan clinique et les publications scientifiques sont innombrables pour démontrer leur efficacité, en particulier leur potentiel anti-infectieux. Dans ce contexte, une étude a été faite pour étudier les effets du traitement à la base des extraits de plante lentisque pistachier (deux différentes doses 100 ppm et 50ppm) sur les paramètres zootechniques des poulets fermiers. Les poulets sont élevés dans des conditions favorables au développement des maladies. Un effectif de 36 poulets de la souche « géant génoise » a été utilisé, réparties de façon aléatoire sur trois lots, chaque lot contient 12 poulets : Un lot témoin sans traitement d'huile essentielle, et deux autres lots traités avec l'huile essentielle « 100 ppm » et « 50ppm » pendant toute la durée de l'expérience (de 15 semaines d'âge jusqu'à 9 semaines d'âge). Il faut noter que les paramètres zootechniques ont été évalués chaque semaine sur la base de la qualité organoleptique de la viande. En effet, Le traitement à base d'huile essentielle de lentisque a une influence significative sur le poids globale des poulets appartenant au lot du « 100ppm » : La diminution de l'indice de consommation par rapport au lot témoin présente en quelque sorte un profit pour les éleveurs, d'où une diminution de la charge alimentaire afin d'avoir une amélioration du rendement de la carcasse chez les femelles. On a aussi observé une différence significative au niveau de la couleur, de la jutosité et du goût de la viande.

Mots clés : huile essentielle, lentisque pistachier, performance zootechnique, qualité de viande, poulet fermier.

C. AFFICHE N°:82.

VARIETAL BEHAVIOR OF CORK SUBJECTED TO WATER STRESS IN NON-SOIL CULTIVATION: COMPARATIVE STUDY BETWEEN DIFFERENT PROVENANCES.

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Our work aims at a comparative study between two origins of cork oak Bissa forest city of Chlef and Nesmoth forest city of Mascara. After sowing under greenhouse, the study of plants cork in water stress conditions allowed us to identify some physiological and morphological indicators involved in the susceptibility of plants to withstand water deficit. Plants were exposed to different levels of water stress, with control plants. Measuring the average size of the plants, the mean number of leaves and the average duration of germination varies from studied provenances. The results showed that the forest has Bissa most important morphological criteria than Nesmoth which contributed to the adaptation of plants under stress. The germination rate is low for both origins, although that of Bissa is more important than Nesmoth. The Nesmothseedings seem more sensitive to water stress than Bissa.

Keywords: cork, water stress, origin, germination, adaptation, Algeria's western region.



C. AFFICHE N°:83.

ANTIBACTERIAL ACTIVITY OF ESSENTIALS OILS OF SOME OF PLANTS IN THE ALGERIAN EAST

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Background: For many years, a variety of different chemical and synthetic compounds has been used as antimicrobial agents in food to inhibit spoiling and pathogenic microorganism. However, the widespread indiscriminate use of chemical preservatives has led to a number of ecological and medical problems which in addition to the economic considerations, make it necessary to adopt strategies that are accessible, simple in application, and nontoxic to humans and plants.

The Rosmary or *Rosmarinus officinalis* (family of *Lamiaceae*), the g n vri r or *Juniperus phoenicea* (family of *Cupressaceae*) and the oregano or *Origanum glandulodum* (family of *Lamiaceae*) are plants common in the Algerian East.

Recent studies showed that essential oil and their leaves present an important potential as antimicrobial agents in several domains. The aim of this study was therefore to determine the antimicrobial activity of essentials oils of this three plants against a selection of seven microorganisms of food contamination

Materials/Methods: Leaves were air dried for 1 month in the absence of light at room temperature

Dried aerial parts were subjected to steam distillation for 3 h using a Clevenger-type apparatus and the disc diffusion method was used to determine the antibacterial activity of the essentials oils.

Results: The results (profits) obtained on our origins (stumps) showed various profiles of activities for our essentials oils.

Conclusion : This study shown that *Rosmarinus officinalis*, *Juniperus phoenicea* and *Origanum glandulodum* can be used as natural antimicrobial agents in several domains which can suggest of new application.

C. AFFICHE N°:84.

OPTIMAL CONDITIONS FOR LACTOSUCROSE PRODUCTION BY A LEVANSUCRASE FROM BACILLUS LICHENIFORMIS USING STATISTICAL APPROACH

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Levan saccharase (E.C.2.4.1.10) is a fructosyl transferase that catalyzes three reactions depending on fructosyl acceptor molecule, including polymerisation, transfructosylation and hydrolysis. As a key biocatalyst in the synthesis of levan and levan-type fructooligosaccharides. Another important point that attracts much attention is the wide substrate specificity of levansucrase toward monosaccharides, disaccharides and trisaccharides, especially, lactosucrose (4(G)-beta-D-galactosylsucrose) is an oligosaccharide consisting of galactose, glucose, and fructose. It is an important bioactive derivative of both lactose and sucrose. Lactosucrose is a nondigestible and low-caloric oligosaccharide with prebiotic properties.

In this study, to improve lactosucrose production by levansucrase from *Bacillus Licheniformis*, we used the statistical design techniques of Plackett-Burman and response surface methodology (RSM). Plackett-Burman design with eight variables viz. Sucrose, lactose, ratio of sucrose to lactose, initial pH, Temperature, enzyme activity, time of reaction and agitation velocity were performed to screen the best factors that significantly affect lactosucrose production. The variables sucrose, pH, time and agitation showed above 90% confidence levels for lactosucrose production and were considered as significant factors for optimization using response surface methodology. 2⁴-central composite design was used for RSM optimization. The experimental results were fitted to a second-order polynomial model which gave a coefficient of determination R²=0.92. The optimum conditions of lactosucrose production were 370 g/l sucrose, initial pH 6.8, time of reaction is 18.5 hours and an agitation at 180 rpm that gave a production of lactosucrose at 50g/l.

Key words: Levansucrase, Lactosucrose, *Bacillus Licheniformis*, RSM



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29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:85.

DIALLEL HYBRIDIZATION AND BEHAVIORAL STUDY OF THREE BARLEY VARIETIES (*HORDEUM VULGARE* L.) GROWN IN EASTERN OF ALGERIA

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In Algeria, barley (*Hordeum vulgare* L.) is often considered a secondary cereal, unlike wheat, especially durum wheat; since it has potential neighbors it gained a privileged place in the local agricultural tradition. Indeed, treated like wheat, barley can give equivalent yields. With a view to promoting this crop, a varietal trial of three barley genotypes was carried out. The local Tichedrett genotype and two introduced varieties were grown in the northern zone of the Mila (Eastern of Algeria).

During the campaign, a study of some agronomic parameters and a crossbreeding diallel plan were carried out. Medium plowing in a superficial manner was made to prepare an adequate seedbed. The culture was set up after calculating the seeding dose according to an experimental design of a complete random block design with four replicates. The testing was done on a regular basis. Weeding and cover fertilizing were done in a timely manner.

The results obtained indicate that the best plant stand per square meter, the best height of the plants at flowering and the best length of the ears are given by the autochthonous Tichedrett variety. On the other hand, the best tillering is recorded in the Fouara variety. Regarding the cross-breeding program, the total number of hybrid seeds obtained exceeds 1000 seeds, which will be more than enough for the sowing of F1.

Keywords: Barley (*Hordeum vulgare* L.), diallel crossbreeding, behavior, Tichedrett.

C. AFFICHE N°:86.

AN EFFICIENT AND ENVIRONMENTALLY FRIENDLY SYNTHESIS OF ACETAMIDOALKYL NAPHTHOLS

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Amidoalkyl-2-naphthols as synthetic intermediates play an important role in medicinal chemistry¹. They are the vital synthetic building blocks^{2,3} and used as precursors for the synthesis of many important derivatives which have attracted strong interest to their potentially numerous biological and pharmacological activities¹ including antirheumatic, antibiotic, antitumor, antipsychotic, antimalarial, antianginal, analgesic, anticonvulsant, antihypertensive and antibacterial properties.

In this work we report a simple and efficient green protocol for one-pot preparation of amidoalkyl naphthols, using ecofriendly and green catalyst by a three-component condensation reaction of β naphthol, aryl aldehyde, amide under thermal solvent-free was described.

The operational simplicity of the procedure, shorter reaction times, simple workup, environmental friendliness, good to excellent yield and cost-effective recovery are also attractive.

Key words: 1-amidoalkyl 2-naphthol, multicomponent reaction, solvent-free, green chemistry.



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29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:87.

STUDY OF THE DIFFERENT IMMUNE REACTIONS OF MONOCYTIC CELLS OF THAUMETOPOEA PITYOCAMPA AGAINST PARASITES AND NEMATODES

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In insects, immune resistance to diseases and infections is characterized by different adaptive responses such as: phagocytosis, encapsulation, melanization and coagulation. Haemocytes are the main elements of immunity presented by cells in insects. In particular, we investigated the immune response of *Thaumetopoea pityocampa* haemocytes against parasites, focusing on the ability of the parasite to affect the possibility of host hemocytes to recognize and encapsulate the intruder. As well as the hemocyte formula of the caterpillar by identifying the hemocyte cells existing in the hemolymph and quantifying their number in the different stages of larval development of the caterpillar.

After centrifugation, the haemolymph was recovered in culture medium and incubated for one day. The cells have been identified since the 2nd and 3rd instar stages. The main cells observed are prohemocytes, granulocytes and plasmatocytes as well as several forms of debris. The number of cells varies from one cell to another and from one stage to another. Humoral and cellular encapsulation phenomena were also observed.

In the 4th stage, most cell types and their aggregation have been creatively identified. By adding the nematode *Steinernema feltiae*, more forms of encapsulation, phagocytosis, and nodulation were observed under the microscope. During an immune reaction, the haemocytes devote their capacity to react and encapsulate the nematode, and surround it by aggregation in the form of cellular encapsulation.

The immune system of Lepidoptera is composed of several elements, hemocyte cells react more in case of infection and participate in eliminating parasites by different reactions.

Key words: *Thaumetopoea pityocampa*, Immune system, Haemocytes, Encapsulation, *Steinernema feltiae*. Hemolymph, prohemocytes, granulocytes, plasmatocytes.

C. AFFICHE N°:88.

MICROWAVE IRRADIATION OF POLYVINYLALCOHOL CHITOSAN BELND.

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The microwave-irradiation approach as a tool to manipulate biopolymer composites, with the precise control over the composites under microwave irradiation, can be a powerful strategy for the development of valuable derivatives with tailor-made properties. In this study The possibility of dehydration (cross-linking) of polyvinyl alcohol/ Chitosane upon microwave irradiation of thin polymer films was examined, blended films were prepared from Poly (Vinyl) alcohol (PVA) and Chitosan (Cs) with varying concentrations by casting method (Bahrami, Kordestani et al. 2003). Samples were irradiated in microonde (Petrova, Evtushenko et al. 2005). The main objective of this work was to study the influence of irradiation microwave on the physical and mechanical properties of poly (vinyl) alcohol and chitosan membranes were investigated by X-Ray Diffraction. The results obtained show a slight improvement of the blend mechanical properties with increase in the TS suggests that a cross-linking occurred as a result of electron beam, a good reticulation was observed for the whole of the membranes with microwave irradiation.

Key Words: Blend, Chitosan, Irradiation, Poly (vinyl) alcohol. Réticulation.

Bahrami, S. B., et al. (2003). "Poly (vinyl alcohol)-chitosan blends: preparation, mechanical and physical properties." Iranian Polymer Journal 12: 139-146.

Petrova, N., et al. (2005). "Effect of microwave irradiation on the cross-linking of polyvinyl alcohol." Russian journal of applied chemistry 78(7): 1158-1161.



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29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:89.

SAFETY ASPECT OF *ENTEROCOCCUS FAECIUM* FL31 STRAIN AND ANTIBACTERIAL MECHANISM OF ITS HYDROXYLATED BACTERIOICIN BACFL31 AGAINST *LISTERIA MONOCYTOGENES*

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Evaluation of probiotic properties and safety of the *Enterococcus faecium* FL31 strain shows that this lactic acid bacterium was susceptible to all tested antibiotics, free of haemolytic, gelatinase, DNase and lipase activities and did not harbor virulence genes. Combined SYTOX green dye and UV absorbing experiments along with released extracellular potassium and transmembrane electrical potential measurements allowed us to conclude that pure *Enterococcus faecium* FL31 bacteriocin (BacFL31) at a concentration of 1 X MIC (50 µg/mL), could damages cytoplasmic membrane of the pathogen *Listeria monocytogenes*, causes the leakage of its intracellular constituents and leads to the destruction of this pathogenic microorganism.

Keywords: *Enterococcus faecium* FL31, BacFL31, *Listeria monocytogenes*, Antibacterial mechanism, membrane damage, destruction

C. AFFICHE N°:90.

EVALUATION OF THE ANTIBACTERIAL ACTIVITY OF AN ALGERIAN MEDICINAL PLANT (*PARONYCHIA ARGENTEA*)

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Medicinal and aromatic plants are used on a large scale in medicine against drug-resistant bacteria, which are considered one of the most important reasons for the lack of success of treatment in infectious diseases. Medicinal plants are the major sources of new medicines and may constitute an alternative to the usual drugs. In this work we are interested to study the chemical composition and the antimicrobial activity of an Algerian medicinal plant *Paronychia argentea*.

The plant was subjected to a phytochemical screening followed by a determination of total polyphenols and total flavonoids. The antimicrobial activity of hydromethanolic extract (7/3 MeOH / H₂O) of the plant against four bacterial strains (*Escherichia coli*, *Pseudomonas aeruginosa*, *Staphylococcus aureus*, *Klebsiella*) was tested using the disk diffusion method.

The polyphenol content was determined spectrophotometrically using the Folin-Ciocalteu method. The polyphenol content is 456.05 mg equivalents Gallic acid (GAE) / 100 g dry matter. The flavonoid content was determined using the aluminum chloride method and the content of the flavonoids is 423.20 mg equivalents of Catechin (EC) / 100 g of dry matter.

Regarding the antimicrobial activity, the hydromethanolic extracts of the plant has an excellent inhibitory action against *Staphylococcus aureus*, *Pseudomonas aeruginosa* and a low activity against *Klebsiella*, while *Escherichia coli* shows resistance against the extract. We also determined the MIC for strains that show sensitivity to the extract. MICs are respectively 40 mg / ml, 60 mg / ml and 100 mg / ml for *Staphylococcus aureus*, *Pseudomonas aeruginosa* and *Klebsiella*.

Key words: *Paronychia argentea*, antimicrobial activity, gallic acid, polyphenols, flavonoids.



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29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:91.

ASSESSMENT OF THE VARIATION IN MILK QUALITY AT COLLECTION CENTERS IN TUNISIA

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The purpose of the study was to evaluate the physico-chemical quality of the raw milk delivered to the milk collection center. The study concerns 65 collection centers serving the Vitalait® dairy plant over nine governorates. Milk sampling were carried out during five-year period (2011-2015) representing 11721 observations of milk control.

The results showed that the highest fat and Dornic acidity are recorded in the northern regions (respectively 35.11g / l and 14.93 ° D). However, the southern regions contained the highest levels of protein, lactose and total solids (28.76, 48 and 83.59g / l, respectively). The highest density (D) is noted in the governorate of Kairouan (1,032), the highest Dornic acidity and fat were noted in the governorate of Bizerte (respectively 14.95 ° D and 35.25 g / l). However, Gafsa governorate had the highest protein (28.85g / l), Lactose (48.18g / l) and total solid (83.83g / l). The effect of year on milk chemical quality indicated the highest Protein and Total Solid (29.99 and 48.12 g / l respectively) and lowest value of AcD 14.7 ° D in 2015. Autumn and Winter showed the lowest levels of Fat and Protein (31.01 and 28.07 g / L, respectively) and the lowest level of lactose (47.68 g / L). The least significant Dornic acidity is recorded in Winter (14.81 ° D). This study revealed that milk quality is relatively unstable and varies between regions and throughout the year.

Key words: Milk quality, collection center, Bizerte.

C. AFFICHE N°:92.

COMPARATIVE STUDY OF ULTRASOUNDS AND MICROWAVES EFFECTS ON THE YIELD OF TOTAL SUGARS EXTRACTED FROM ALGERIAN COMMON DATES: OPTIMIZATIONS USING RESPONSE SURFACE METHODOLOGY

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Currently the possibilities of biomass valorization by technological processes represent a solution of choice for the use of agricultural products of low commercial value. In this work, an optimization of date sugars extraction by ultrasound-assisted (UAE) and microwave-assisted extractions (MAE) was carried out using the Surface Response Methodology (RSM) by the Box-Behnken experimental design, then the analysis of the individual sugars in both date juices was performed by using High Performance Liquid Chromatography (HPLC). The factors X₁-Ultrasonic Temperature, X₂-Treatment time and X₃-Solid-Liquid ratio for UAE and X₁-Microwave power, X₂-Irradiation time and X₃-Solid-Liquid ratio for MAE, significantly influenced the concentration of juices in Total Sugar Content (TSC). A contents of 202.037 ± 3.401 g/L and 233.796 ± 1.898 g/L of sugars were obtained under optimum conditions, an ultrasonic temperature of 60 °C, a treatment time of 68.10 min and a solid-liquid ratio of 1:10 g/mL for UAE and a microwave power of 530 W, an irradiation time of 1.99 min and a solid-liquid ratio of 1:10 g/mL for MAE, a values close to that predicted by the software which are 202.889 ± 5.797 g/L and 233.248 ± 3.594 g/L for UAE and MAE successively. HPLC analysis has revealed a big difference in the sugar composition of date juices obtained by UAE: 0.00 % sucrose, 46.94 % glucose and 53.06 % fructose and MAE: 60.11% sucrose, 16.64% glucose and 23.25% fructose. The results of this work allowed us to conclude that MAE is the best method that allows the extraction of TSC based on the lower extraction time. This approach leads to the use of MAE in the production of date juice on an industrial scale.

Key words : Common date juice, ultrasound-assisted extraction, microwave-assisted extraction, RSM, HPLC.



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ASSOCIATION TUNISIENNE DES SCIENCES BIOLOGIQUES
29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:93.

SEARCH FOR CLEANING PRODUCT RESIDUES IN DAIRY PRODUCTS

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Ensuring food safety and safety at all stages of the food chain and one of the most important tasks in modern food production in accordance with strict hygiene regulations and the proper functioning of agri-food units, the application and observance of hygienic rules and the maintenance of premises and equipment in a good state of cleanliness, physicochemical, and the control of the factors which influence the quality of the food must be the major concern of the producers.

Our study was done for this purpose, starting with an application and monitoring of a plan for cleaning and disinfection of equipment that will be in contact with the food by the use of different concentrated chemicals and some additives and then a search for residues of these products in intermediate and final rinsing waters, semi-finished products and finished products and finally a study of the impact of residues of these products on the quality of the three dairy products «pasteurized milk, cheese fresh and processed cheese ».

The results obtained showed the residues of the cleaning products used in the analyzed samples on everything in the finished products which mainly due to the short time of the final rinse is insufficient to eliminate these residues and to the concentrations not respected by the manipulators because of the absence of injection systems and automatic concentration control.

Key words: Hygiene, cleaning products, residues, foodstuffs.

C. AFFICHE N°:94.

EFFET ANTI-OXYDANT DE L'EXTRAIT DE PÉPINS DE RAISIN AU NIVEAU DE L'HIPPOCAMPE AU COURS DE L'ISCHEMIE/REPERFUSION CEREBRALE EXPERIMENTALE

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L'ischémie/reperfusion cérébrale (I/R) est un problème de santé publique pour lequel il n'existe à l'heure actuelle aucune prophylaxie. Il est bien établi que l'extrait de pépins de raisin (*grape seed extract*, GSE) possède des effets bénéfiques sur la santé grâce à son contenu riche en polyphénols. Dans cette étude, nous avons examiné si le GSE pouvait limiter le stress oxydant provoqué par l'I/R dans l'hippocampe de rats Wistar mâles adultes. Pour ce faire, nous avons d'abord procédé à l'administration du GSE (2,5 g/kg dissout dans l'éthanol 10 %) en bolus intrapéritonéal chaque jour pendant une semaine. Ensuite, nous avons induit 30 min d'ischémie par occlusion bilatérale des artères carotides communes, suivie de 60 min de reperfusion. Les résultats montrent que, dans les conditions physiologiques et pathologiques, le GSE permet d'inhiber la carbonylation des protéines, de réduire le niveau du fer libre et du peroxyde d'hydrogène, et de stimuler l'activité de la superoxyde dismutase et de la catalase. Nous pouvons conclure que le GSE est une stratégie thérapeutique prometteuse pour la prévention du stress oxydant engendré par l'I/R au niveau de l'hippocampe. Des études supplémentaires sont prévues afin de connaître son effet sur d'autres mécanismes cellulaires et sur des conséquences tissulaires de cette pathologie.

Mots clés : ischémie/reperfusion cérébrale, extrait de pépins de marcs de raisin, stress oxydant



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ASSOCIATION TUNISIENNE DES SCIENCES BIOLOGIQUES
29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:95.

VALORISATION OF ARTICHOKE'S BY- PRODUCTS: DRYING KINETICS OF ARTICHOKE WASTE GENERATED DURING INDUSTRIAL AGRO PROCESSING

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Globe artichoke (*Cynarascolymus* L.) is a perennial plant originating from the Mediterranean region and grown for its edible flower buds. During the industrial processing of artichokes, about 80–85 % of the total plant biomass is discarded and turned into a solid waste. This material consists mainly of the stems and the external parts of the flowers, commonly known as bracts. In recent years, following the general trend towards the reuse of agro-industrial wastes, attempts have been made to find a use for this waste but these residues are very perishable products that are difficult to manage because of environmental problems in the industries. The drying reduces the mass and volume of food and facilitates their storage and transport. Various methods of processing of fruits and vegetables have been adapted to their conservation, among these methods, drying by air, oven, and microwave are the methods used since ancient times. The application of microwaves has been of increasing interest in processing of foods and bio-commodities over past two decades. The present work is carried out to compare two drying techniques, conventional (in oven) and microwave of artichokes waste (stems and external bracts). For both types of drying, the mass is followed periodically up to have a constant value for all powers (100,200,300,400,500,600,700,800,900 Watt) tested in microwave and for all temperatures (40, 60, 80, 100 °C) tested in oven. The results recorded for drying time of stem by microwave were: 103.5±04, 42± 04, 25.5±3, 20±2.5, 18.5 ±2.5, 18.5±2.5, 17±2, 15.5±1.5, 14±1.5 min, for all powers and 1650±40, 660±20, 280±12, 195±7 min by oven for all temperatures, the obtained results for external bracts were: 143±4, 73± 3, 48±2.5, 38±2, 31±1.5, 25±1.5, 20±1, 14±1, 13±1 min and 1440±120, 900±60, 260±30, 225±15 min by microwave and oven respectively. The results showed that the drying time obtained by microwave is much less than the conventional drying (oven) for both stem and external bracts of artichokes.

Key words: artichoke wastes, drying Kinetics, microwave.

C. AFFICHE N°:96.

EFFECT OF RUTA CHALEPENSIS L ESSENTIAL OIL ON WEIGH LOSS OF POTATO DURING STORAGE

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This work pointed out the effect of *Ruta Chalepensis* L essential oil on the weigh loss of potato during storage. In fact, a novel technique was successfully implemented to apply this essential oil on potatoes with different emulsions concentrations. The evolution of potato tubers weight loss was evaluated during a storage period of six weeks under three RCEO different treatments (2%, 4%, and 6%). The sprout final weight was also computed. Indeed, final sprout weight of untreated samples was 4.66%, while 6% treated samples scored 0.98%. For the total weight loss, we recorded a total weight loss of 11.88% for the control sample, while it was only 6.02% for the treatment 6%.



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ASSOCIATION TUNISIENNE DES SCIENCES BIOLOGIQUES
29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:97.

PHYSICOCHEMICAL PROPERTIES AND STORAGE STABILITY OF MARGARINE CONTAINING *PUNICA GRANATUM* PEEL EXTRACT AS ANTIOXIDANT

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This work is part of the valorization of one variety of pomegranate (*Punica granatum*), called *Quares*, and it aims to study the impact of the substitution of tocoblend (synthetic antioxidant) by phenolic extracts of pomegranate peel on the conservation of margarine produced by CEVITAL SPA. Phenolic extract of pomegranate peel has been the subject of a set of phytochemical analyzes; determination of the content of total polyphenols (TP), flavonoids, hydrolysable (HT) and condensed tannins (CT), as well as the evaluation of antioxidant activity by the reducing power and the antiradical test of the ABTS radical. Margarine formulation test with phenolic extracts of pomegranate peel was tested. The margarine thus produced was the subject of physicochemical characterizations and a Rancimat test, as well as a comparison to a control margarine (with tocoblend). The different assays revealed the richness of this variety in phenolic compounds including TP, HT and flavonoids for which the recorded values were in the order of 227.10 mg AGE / g DE, 116.64 mg ATE / g DE and 36.47 mg QE / g DE, respectively. It has also proved a powerful antioxidant power, related to its high reducing power (EC₅₀ = 34.09 µg / ml) and a high percentage inhibition of ABTS radical (66.61%). Physicochemical characteristics of the elaborate margarine are in accordance with the pre-established recipe. As regards its oxidation stability, Rancimat test made it possible to characterize it and gave satisfactory results. The results obtained in this study, shows the interest of tocoblend substitution by pomegranate extracts on the conservation of margarine.

Key words: *Punica granatum*, phenolic compounds, antioxidant power, margarine, Rancimat test.

C. AFFICHE N°:98.

IMPROVEMENT OF THE KINETIC RESOLUTION OF (R,S)-2,2-DIMETHYL-1,3-DIOXOLAN-4-YL) METHANOL BY IMMOBILIZED CANDIDA RUGOSA LIPASE

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Biotransformation currently is one of the most methodologies used by the chemist to access many compounds in a variety of fields. Lipases are widely used as versatile biocatalysts in organic synthesis, because they are not expensive and easy to manipulate.

This work describes the kinetic resolution of (R,S)-(2,2-Dimethyl-1,3-dioxolan-4-yl) methanol (solketal) which is one of several derivatives of glycerol. This derivative is involved in different organic synthesis of therapeutic molecules. The main objective of this work is improved the enantioselectivity of *Candida rugosa* lipase via optimization of the experimental conditions of the reaction.

The obtained results showed a significant enhancement in the enantioselectivity of the biocatalyst when it is supported on calix[4]arène as support of immobilization compared to the native form. The E-value of lipase increase from E = 2 to E > 15.

In conclusion the immobilization of *Candida rugosa* lipase helps to improve the stability of the enzyme which enhance its enantioselectivity.

Key words: *Candida rugosa* lipase, Enantioselectivity, Solketal, Immobilization.



C. AFFICHE N°:99.

PROTECTIVE ROLE OF FUCOÏDAN ON HEPATIC COLD ISCHEMIA-REPERFUSION INJURY IN RAT

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Ischemia reperfusion (I/R) injury inherent to cold storage remains a risk factor for liver graft outcome after transplantation. The necessity to increase graft quality has obliged physicians to improve preservation solutions by the use of pharmacological additives. Recent data suggest a protective role of fucoidan in liver following warm I/R injury. However, its impact during liver graft preservation remains unclear. Here, we evaluated the effect of fucoidan as additive to IGL-1 (Institut Georges Lopez) preservation solution. Livers from Wistar rats were preserved for 24 h at 4 °C in IGL-1 solution enriched or not with fucoidan (100 mg/L). Thereafter, livers were subjected to reperfusion (2 h, 37 °C) using an isolated perfused rat liver model. Fucoidan addition to IGL-1 solution reduced hepatic injury (AST, ALT) and improved liver function (Bile flow, BSP clearance, vascular resistance) when compared to those preserved in IGL-1 alone. In addition, we noted a significant phosphorylation of AMPK, Akt protein kinase and its direct substrate, GSK3-β leading to a reduction in VDAC phosphorylation, apoptosis (caspase 3) and GLDH release (mitochondrial damage). Parallely, fucoidan reduced significantly lipid peroxidation (MDA production) and protein oxidation (carbonyl proteins). This was consistent with a major activation of antioxidant enzymes (SOD, Cat, and GPx activities) and high levels of GSH and PSH. All these results were correlated with decreased endoplasmic reticulum (ER) stress markers, including GRP78, p-PERK, ATF-6, XBP-1 and CHOP. In conclusion, IGL-1 supplementation with fucoidan improves liver graft quality through the prevention of ER stress and mitochondrial dysfunction. These effects implicate the prevention of oxidative stress. Fucoidan could be considered a novel therapeutic agent to alleviate liver I/R injury.

Keywords: Liver, ischemia-reperfusion injury, fucoidan, IGL-1 preservation solution, mitochondria, endoplasmic reticulum.

C. AFFICHE N°:100.

IN SITU AND IN VITRO SEXUAL PROPAGATION OF THE TUNISIAN SPINESCENT OPUNTIA FICUS-INDICA (L.) MILL.: POLYEMBRYONY AND MORPHOGENETIC ABNORMALITIES

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The most common means of *Opuntia ficus-indica* (L.) Mill. propagation is through the use of asexually methods. However, seeds are important units to be considered for maintaining the species genetic variability. With the aim to understand the morphogenetic polymorphism deployment of the Tunisian spinescent *Opuntia ficus-indica* from the juvenile to the advanced stages, during seven years (2009-2015), we search *in situ* and *in vitro*, firstly, the optimal conditions permmetting to ensure the highest germination rate during the shortest period with sulphuric acid scarification in ten levels time of dipping. The best germinated rate (68.0%) is reached within 30 min of treatment exposure. Some germinated seeds showed polyembryony phenomenon. The highest rate (29.3%) was recorded after 25 and 30 min of pretreatment. Occurrence of morphogenetic abnormalities; mainly tricotyledony (15.9%) was also reported. Secondly, the morphogenetic tracking of *Opuntia ficus-indica* allowed us to report the seedling growth (vertical succession of varying numbers of basal cladodes, future plant trunk formation, development and arrangement of secondary cladodes in the space), the spinescence polymorphism and the first flowering and fruiting.

Keywords: *Opuntia*, germination, polyembryony, tricotyledony, morphogenetic tracking



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ASSOCIATION TUNISIENNE DES SCIENCES BIOLOGIQUES
29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:101.

OPTIMIZATION BY MICROWAVE ASSISTED EXTRACTION OF PHENOLIC COMPOUNDS FROM LEMON VERBENA (*ALOYSIATRIPHYLLA*)

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Medicinal plants represent an inexhaustible source of bioactive substances such as phenolic compounds. These phytochemicals are very powerful antioxidants and can protect biological systems against free radicals. The aim of this study is the optimization of extraction conditions of these compounds using microwave-assisted extraction (MAE) method, and the evaluation of some antioxidant activities from *Alloysiatriphylla* leaves. The optimal conditions for extraction of total phenolic compounds (TPC) have been realized by a preliminary study followed by an experimental plan. The influence of extraction parameters was modeled by using response surface methodology (RSM). The optimal conditions were: particle size of 125 µm, 40% ethanol as extraction solvent, 40:1 mL/g of solvent solid ratio, 188 s and 600 W for irradiation time and microwave power, respectively. Under the optimized conditions, the recovery of TPC was 67.86±0.92 mg gallic acid equivalent/g dry weight (DW), approximating the predicted content (67.87±1.61 mg GAE/g DW), while the extract obtained with a conventional extraction showed a content of 34.55±0.91 mg GAE/g DW. The recovery of flavonoids and condensed tannins under optimal conditions were 8.44±0.31 mg quercetin equivalent of dry weight and 1,826 ± 0.402 mg Cyanidin / 100 g dry matter, respectively.

The extract shows an IC₅₀ value of 119.65 µg / ml for DPPH and 99.88 ± 0.0021 mg / 100 g Ms for the phosphomolybdate assay. With regard to the reducing power, compared with gallic acid where the concentration 42.4 µg / ml shows an almost total reduction (OD = 0.993 ± 0.125), the hydroethanolic extract gave a very low absorbance (OD = 0.308 ± 0.016). The ABTS + test revealed an IC₅₀ of 177.21 µg / ml.

Keywords: *Alloysiatriphylla*, optimization, phenolic compounds, microwave- assisted extraction, antioxidant activities.

C. AFFICHE N°:102.

PHYSICO-CHEMICAL, TECHNO-FUNCTIONAL, AND ANTIOXIDANT PROPERTIES OF A NOVEL BACTERIAL EXOPOLYSACCHARIDE IN COOKED BEEF SAUSAGE

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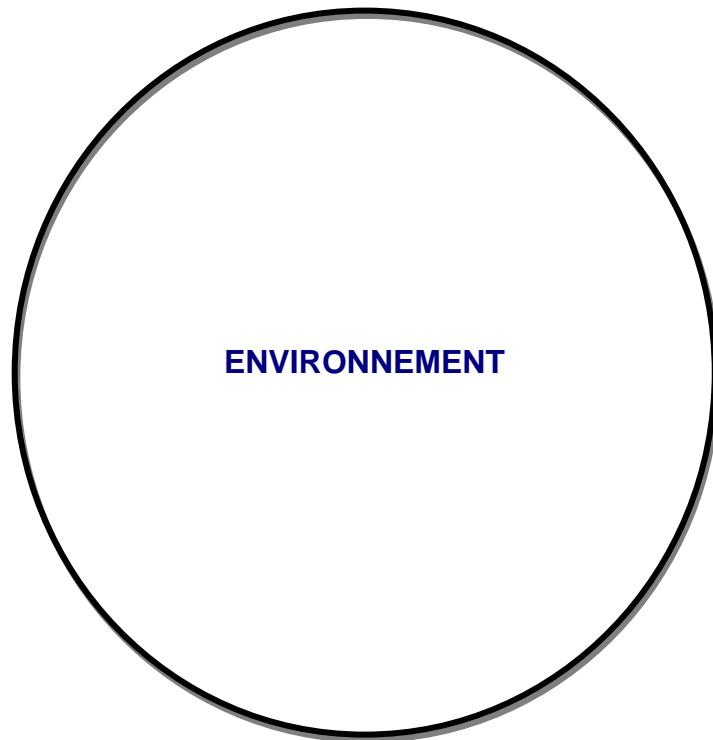
This work investigates the effects of partial replacement of vitamin C (Vit C) with a purified exopolysaccharide (EPS-Ca6) produced by *Lactobacillus* sp. Ca6, on the antioxidant activities of cooked beef sausages during refrigerated storage. The physicochemical, techno-functional and viscosity properties of EPS-Ca6 were also studied. Functional properties of EPS-Ca6 were determined based on Water Holding Capacity (WHC), Oil Holding Capacity (OHC), emulsification activity, and foaming ability. EPS-Ca6 demonstrated excellent emulsifying and emulsion stabilizing properties. It was able to emulsify several food-grade oils and hydrophobic compounds, particularly corn oil and diesel with emulsification indexes of 90 and 100%, respectively at a concentration of 0.5%. The effect of EPS-Ca6 on oxidative processes in cooked beef sausages during storage up to 12 days at 4°C was evaluated. The obtained results showed a high rate (p<0.05) of oxymyoglobin (OxyMb) and low lipid oxidation. Overall, our finding provided evidence that EPS-Ca6 could be used as a natural additive for maintaining storage stability of cooked beef sausages, and could replace synthetic polymer in several industrial applications.

Mots clés : Exopolysaccharide (EPS-Ca6); physicochemical properties; cooked beef sausages.



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ASSOCIATION TUNISIENNE DES SCIENCES BIOLOGIQUES
29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE



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ASSOCIATION TUNISIENNE DES SCIENCES BIOLOGIQUES
29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:103.

THE EFFECTS OF TWO ECO-FRIENDLY SOLVENTS ON THE ACTIVITY OF LIPASES IN THE RESOLUTION OF RACEMIC ALCOHOLS

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Among industrial enzymes, the group of lipases is one of the most important for the preparations of enantiomerically pure compounds. The use of organic solvents for these biocatalysts as reaction media offer many advantages such as the possibility to solubilize water-insoluble substrates and the possibility to increase the enzyme thermal stability. A prerequisite for the application of biocatalysts at the level of large scale is the sustainability and low environmental impact, reducing the detrimental effects of the developed industrial process and of the used chemicals on the environment. In this perspective the use of solvents derived from renewable resources (bio-solvents) and environmentally friendly (green solvents) is a necessity. Recently, solvents like 2-methyltetrahydrofuran (MeTHF), a biomass-derived solvent, and cyclopentyl methyl ether (CPME) have been reported as promising media for biocatalysis reactions due to their favorable characteristics. In the present study, we investigated the enzymatic kinetic resolution of some industrially interesting racemic alcohols, carried out with some largely used lipases, comparing the outcome with that previously obtained using the most common used organic solvents. Results showed that the activity of lipases in CPME was similar to that observed in other largely employed organic solvents [toluene and tert-butyl methyl ether (MTBE)], and was slightly lower in MeTHF. However, for the most of lipases tested, the enantioselectivity was higher in the green solvents.

Key words: lipases, eco-friendly solvents, enantioselectivity, acylation, racemic alcohols.

C. AFFICHE N°:104.

INTERET NUTRITIONNEL DES FEUILLES DE DEUX ARBUSTES FOURRAGERS CONSOMMEES PAR LES CAPRINS *PISTACIA LENTISCUS.L* ET *PHILLYREA MEDIA.L*

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Les arbustes fourragers spontanés peuvent constituer une importante source alimentaire pour les caprins surtout en période de disette. La composition chimique du feuillage de deux arbustes fourragers dominants du cortège floristique de la zone humide du Nord-Est algérien: *Pistacia lentiscus* et *Phillyrea media* a été évaluée dans le but d'envisager leur plantation afin de palier le problème de disponibilités fourragères auquel fait face l'Algérie.

Leurs composants organiques majeurs ont été déterminés (matières sèche, minérale, azotée et organique), tandis que les composés secondaires ont été analysés par colorimétrie (tanins et phénols totaux et tanins condensés). Les feuilles de la filaire intermédiaire s'avèrent être riches en minéraux (20,75 vs 13,68% MS), de même qu'en protéines brutes comparativement au pistachier lentisque (15,4 vs 13,3% MS), cependant, leurs teneurs élevées en phénols et tanins totaux (90,07 et 72,5 g équivalent acide tannique/kg MS respectivement) risquent d'en diminuer la digestibilité des protéines vu leur affinité pour ces composants. Ainsi, l'ajout dans les rations alimentaires des caprins d'éléments pouvant contrecarrer l'effet des phénols et tanins est une opportunité pour valoriser les protéines des deux arbustes. *Phillyrea media* et *Pistacia lentiscus* présentent des valeurs nutritionnelles qu'il faudrait exploiter afin d'en faire un fourrage de choix pour les caprins, surtout en période de soudure.

Mots clés : arbustes fourragers, composition chimique, composants secondaires, alimentation, caprins.



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C. AFFICHE N°:105.

STUDY OF SORPTION OF AROMATIC ORGANIC COMPOUNDS BY NEW ORGANO-INORGANIC MATERIALS BASED ON ALGERIAN MONTMORILLONITE

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The aim of this study was to apply a local bentonite (Algeria) purified and intercalated with a surfactant namely dodecyltrimethylammonium bromide (DTMAB) as an adsorbent to remove benzoic acid (BA) and salicylic (SA) which could be present in wastewaters. This intercalation process leads to improve the porous texture of materials that allows adsorbing efficiently organic compounds. Clay samples purified and intercalated were characterized by various analytical techniques: XRD, IR, TG-DTA and SEM . The effect of various experimental parameters was investigated using a batch adsorption technique. The equilibrium adsorption data were well described by the Freundlich and Langmuir isotherms. The adsorption kinetics of both acids could be considered as pseudo-first order with internal diffusion. The capacity of DTMA–bentonite for Benzoic acid and Salicylic acid was found to be around 5 and 3.5 times respectively higher than that of Na–bentonite at 45°C. The thermodynamic study showed that the adsorption is not spontaneous and endothermic.

Key words: Bentonite, Intercalation, Characterization, Adsorption, Benzoïque Acid and Salicylic Acid.

C. AFFICHE N°:106.

IMIDACLOPRID ENHANCES LIVER DAMAGE IN WISTAR RATS: BIOCHEMICAL AND HISTOLOGICAL ASSESSMENT

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In this current study we investigated the potential adverse effects of imidacloprid on biochemical parameters and liver damage induced in the rat by oral sub-chronic imidaclopride exposure.

Rats were received three different doses of imidacloprid (1/45, 1/22 and 1/10 of LD₅₀) given through gavage for 60 days. Two dozen of male Wistar rats were randomly divided into four experimental groups. Liver damage was determined by measuring aspartate aminotransferase (AST), alanine aminotransferase (ALAT), alkaline phosphatase (ALP) and lactate dehydrogenase (LDH) leakages.

The relative liver weight was significantly higher than that of control and other treated groups at the highest dose 1/10 of LD₅₀ of imidacloprid. Additionally, imidacloprid treatment enhances liver damage as evidence by sharp increase in the liver enzyme activities of AST, ALAT, ALP and LDH. These results were also confirmed by histopathology.

In light of the available data, it is our thought that imidacloprid sub-chronic exposure might affect the function of the liver which caused biochemical and histopathological alteration.

Keywords: Imidacloprid, Biochemical parameters, Hepatotoxicity, Neonicotinoids



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29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:107.

EVALUATION OF THE TOXICITY OF AFENITROTHION INSECTICIDE ON THE SNAIL: HELIX ASPERSA.

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In this study, we were interested in the evaluation of the toxicity of an insecticide organophosphate with Fenitrothion (ASPIDION), on an organism's bio-accumulators and bio-indicators of pollution: the snails *Helix aspersa*.

After four weeks of treatment, the main obtained results show on one hand that the presence of the insecticide provokes physiological disturbances to the treated snails, in particular a decrease of the body weight of animals.

On the other hand, the biochemical dosages of biomarkers reveal a significant decrease of the rate of AChE, also a decrease of the rate of GSH. However, our results shows a significant increase of MDA.

Keywords: *Helix aspersa*, insecticide, biomarkers, oxidative stress, bio-accumulator, bio-indicator.

C. AFFICHE N°:108.

SSR MARKER-ASSISTED SCREENING OF COMMERCIAL TOMATO GENOTYPES UNDER SALT STRESS

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Salt stress was applied to tomato commercial genotypes to study adverse effects on their phenotypic traits. Three were saline tolerant (San Miguel, Romelia and Llanero), two were mildly tolerant (Perfect peel HF1 and Heinz 1350) whereas the remaining were sensitive. Genotyping cultivars using 19 polymorphic SSRs out of 25 tested produced a total of 70 alleles with an average of 3.68 alleles per locus and PIC values ranging from 0.22 (SSR 26, 92, 66 and TG35) to 0.82 (SSR 356). Principal component analysis (PCA) showed two contrasting panels discriminating tolerant and sensitive groups and one panel with scattered genotypes. STRUCTURE analysis clustered genotypes within three groups in accordance with their salt stress behavior. The success of tomato salt-tolerance breeding programs can be enhanced through molecular characterization of diversity within commercial cultivars that adapt differently to stress conditions. To this end, we combined phenotypes and SSR marker-genotypes to seek sources of salt tolerance that might be tomato species-specific. We integrated and represented genotype-phenotype associations from multiple loci into a multilayer network representation. It is a systemic view linking discriminating genotypes to salt stress phenotypes, which may guide strategies for the introgression of valuable traits in target tomato varieties to overcome salinity.

Key Words: salt stress, SSRs, Tunisian tomato varieties, network.



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29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:109.

REMOVAL OF CATIONIC DYE FROM WATER USING BIOMATERIAL FIXED BED

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This study was carried out to investigate the use of fixed bed adsorption column for the removal of Safranin O a cationic dye from aqueous solution using a natural biomaterial eggshell membrane. The sorption of Safranin O was found to vary with flow rate, bed height, initial dye concentration, ionic strength and solution pH (2-10). The results show that the increase of bed height (adsorbent mass) led to improve the sorption performance. The Eggshell membrane (ESM) bed capacity was found to increase with the increase bed height and initial concentrate. The Safranin O removal efficiency increases as ionic strength increases from 0.01 to 0.1 N. A maximum uptake of 70.87 mg.g⁻¹ for Safranin O adsorption by ESM was found at 2 mL.min⁻¹ flow rate, 10 mg.L⁻¹ initial dye concentration, 20 mm bed height and 0.1N NaCl. Several models were applied to experimental data obtained from dynamic studies to predict the breakthrough curves and to determine the column kinetic parameters. The dynamic behavior of the column was predicted by Bohart-Adams, Thomas, Dose response and BDST. Dose response and BDST models were successfully used for predicting breakthrough curves for Safranin O removal using different flow rates, concentrations and ESM bed depth. The application of the BDST model at 20%, 40% and 60% of breakthrough point gave satisfactory results with an R²> 0.98.

Keywords: Eggshell membrane; Safranin O; fixed bed; Modeling.

C. AFFICHE N°:110.

THE POTENTIALITIES OF VALORIZATION OF COFFEE MARC AS ORGANIC AMENDMENT: STUDY IN CONTROLLED CONDITIONS

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The sustainability of production represents a major challenge of agricultural activity. This condition is based particularly on the organic fertility of the soil which depends mainly on its richness in organic matter. To improve this fertility there is use of the use of organic amendments among other household waste including coffee grounds. The present work focuses on the valorization of coffee Marc as an organic amendment for certain plants. This will improve soil fertility, productivity and sustainable waste management. The preliminary study concerned two aspects, namely the impact of the addition of coffee Marc on bare soil under controlled conditions and the impact of its addition on the germination capacity of two species: tomato and lettuce. We were then able to show an increase in the organic carbon content directly related to the increase in the dose of MC. In addition, the monitoring of soil respiration in the mixtures showed the presence of bacterial communities resistant to phenolic compounds. Germination and growth tests have shown that the germination rate for lettuce is higher than in tomato. In fact, the germination index is 1800% for the 10% MC dose. It should be noted here that the 100% MC dose allowed the two plants to germinate although the index still remains below the control. These results suggest the effectiveness of coffee grounds as an amendment. These studies need to be further developed by studying the effect of coffee grounds on plant growth and test its effect on a larger scale by studying, among other things, its effect on olive trees..

Mots clés : Spent ground coffee, amendment, germination, environnement.



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29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:111.

AN EFFICIENT GREEN ONE-POT SYNTHESIS OF PYRANO [2,3-C] PYRAZOLES DERIVATIVES

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The pyranopyrazole derivatives are fused heterocyclic compounds which possess numerous biological and pharmaceutical properties, such as antibacterial, anticoagulant, spasmolytic, diuretic, insecticidal, as well as anticancer. They also find an application as biodegradable agrochemical ingredients. For these reasons and other yet, the synthesis of pyrazolone derivatives has aroused great interest in medicinal chemistry and organic synthesis.

Therefore, as part of our ongoing efforts to develop new synthetic methods and in the context of multi-component reactions, we have developed a new, highly efficient procedure for the synthesis of pyranopyrazoles. The present work is a continuation of the condensation reaction leading to the pyrano [2,3-c] pyrazole unit. The reaction was carried out with four components, aromatic aldehyde, hydrazine hydrate (or phenylhydrazine), malononitrile and ethyl benzoylacetate in a single step.

C. AFFICHE N°:112.

DENOMBREMENT ET CARACTERISATION DU PEUPELEMENT DES OISEAUX D'EAU URBAINS DE LA VILLE DE ANNABA

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Cette étude a été réalisée du mois de Janvier jusqu'au mois de Mai de l'année 2017 dans la mare de Lalaaligie (Site urbain de la ville de Annaba, nord-est algérien). Les objectifs étaient de réaliser un inventaire et un dénombrement régulier des oiseaux, suivre l'occupation et l'utilisation de la mare par les oiseaux d'eau et caractériser leur peuplement. Dans ce site et pendant cette étude nous avons dénombré 09 Familles représentées par 18 espèces. La famille la plus représentée est la famille des Anatidae avec 05 espèces rencontrées, la liste exhaustive des familles et espèces est la suivante : Podicipedidae (Grèbe castagneux) ; Phalacrocoracidae (Grand Cormoran) ; Ardeidae (Héron cendré, Aigrette garzette, Héron garde bœuf) ; Ciconiidae (Cigogne blanche) ; Threskiornithidae (Ibis falcinelle) ; Anatidae (Sarcelle d'hiver, Canard Colvert, Canard Souchet, Fuligule Milouin, Fuligule Nyroca) ; Rallidae (Foulque macroule, Poule d'eau) ; Recurvirostridae (Echasse blanche) ; Scolopacidae (Bécassine des marais, Chevalier guignette et Sylvain). L'évolution mensuelle des effectifs totaux de ce plan d'eau montre que le mois de Mars est le plus abondant avec 918 individus sur les 2022 enregistrés durant toute l'étude. Le mois de Mai quant à lui est le moins abondant avec seulement 51 individus. Du point de vue spécifique, la richesse présente la même tendance que l'abondance, montrant ainsi que le maximum est atteint lors du mois de Mars avec 16 espèces et le mois de Janvier est le moins abondant avec seulement 03 espèces.

La variation temporelle de l'indice de diversité de Shannon-Weaver (H') nous montre la valeur la plus élevée pendant le mois d'Avril avec une valeur de 1,459 bit, correspondant à une richesse spécifique de 16 espèces pour un effectif de 918 individus, la valeur la plus faible est enregistrée pendant le mois de Janvier avec 0,7337 bit pour une richesse spécifique de 03 espèces et 175 individus. L'indice d'équitabilité a connu un maximum de 0,7776 durant le mois de Mai et un minimum de 0,4676 durant le mois de Février. L'indice de dominance est au maximum durant le mois de Janvier (0,5886) et au minimum durant le mois de Mars (0,1972).

Mots clés :Oiseaux d'eau ; Peuplement ; Urbain ; Annaba ; Algérie.



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29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:113.

EXPOSITION DE L'ANNELIDE POLYCHETE *MARPHYSA SANGUINEA* AUX METAUX TRACES ET AUX HYDROCARBURES AROMATIQUES POLYCYCLIQUES (HAP) DANS LA LAGUNE DE TUNIS, TUNISIE

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La lagune de Tunis se situe à l'est de la capitale Tunis en Tunisie. Cette lagune est devenue en janvier 2013 un nouveau site de la Convention relative aux zones humides d'importance internationale de l'ONU. La réalité est que ce milieu subit une pollution anthropique et industrielle. Des études récentes menées sur la biocénose de ce milieu montrent une contamination du milieu par des métaux traces et quelques polluants organiques dont le benzo [a] pyrène.

L'objectif de cette recherche est d'évaluer la contamination de la lagune par les métaux traces et les hydrocarbures aromatiques polycycliques (HAP), en utilisant l'annelide polychète *Marphysa sanguinea*. Nous utiliserons deux approches. La première quantifiera les polluants dans le polychète et dans les sédiments. La seconde approche évaluera le stress subit par cette espèce à l'aide de biomarqueurs. Nous avons échantillonné 11 stations dans la lagune de Tunis en 2013 et 2014. Les résultats indiquent l'omniprésence de métaux traces dans les sédiments superficiels de la lagune de Tunis, ainsi qu'au niveau de l'annelide *Marphysa sanguinea*. Le potentiel indicateur de cette espèce commence à être révélateur pour les métaux traces ainsi que l'état environnementale de la lagune devant la contamination par ces polluants.

Mots clés : Lagune de Tunis, pollution, métaux traces, HAPs, *Marphysa sanguinea*

C. AFFICHE N°:114.

IMPACT OF FISHING ACTIVITIES ON THE RESOURCE AND ITS ENVIRONMENT: CASE OF THE PORTS OF EASTERN ALGERIA (EL KALA, ANNABA AND CHÉTAIBI)

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The evaluation and the modelling of the halieutic resources and the fisheries as well as a better understanding of the ecosystems became essential tools for the decision-making support of the administrators today. The abundance of stocks is estimated by direct methods according to a plan of checked sampling. Annaba and Chétaibi as well as 3 fishing port of Skikda adds us to us interested during inquiries made in 4 fishing ports El Kala, Has an analysis over 10 years (2006-2015) of the landings of fishes and activities of peach with the aim of an evaluation of the levels of exploitation of these resources in their ecosystem. The staff of the marine collective of wilayas (Annaba, El Tarf, Skikda) register (record) a respective evolution of 40 %, 59 % and 88 % during the last years. However the fishing flotilla underwent a considerable average increase considered at 39 % during the same period in 7 east ports (bearings) in eastern Algeria (Skikda, Annaba and El Tarf). The wilaya of El Tarf records an increase of 83 % in the sinned quantity, on the other hand a respective decrease of 26 % and 20 % during the decade of study in wilayas (Annaba, Skikda), followed by a fluctuation in the prices during the period of study.

It would be interesting to complete our results by a reliable evaluation of the halieutic resources in eastern Algeria, hence the need for modeling by using the Ecopath With Ecosim version software 4.0 α . (EWE) based on a hypothesis of preservation of the biomasses.

Key words: Fishing harbor, Annaba, Chétaibi, El Kala, Ecosystems, Ecopath With Ecosim.



C. AFFICHE N°:115.

ELABORATION DE PROCÉDES DE PRODUCTION DE BIO ENERGIE PAR LES MICRO-ALGUES

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La *Nannochloropsis* souche algale a été testée pour le traitement des eaux usées industrielles ayant une forte capacité de réduire essentiellement du phosphate et de nitrates. En cette faveur, cette espèce a été étudiée aux seins des cellules microbiennes photosynthétiques de carburant (PMFC), a suscité à fournir non seulement un environnement riche en oxygène, mais aussi pour éliminer le CO₂ à partir du compartiment cathodique par l'activité photosynthétique des algues.

Outre que l'abattement de l'eau, des petites quantités d'oxygène à la cathode fournie par les micro-algues ont abouti à la PMFC de générer une intensité de courant importante.

Travaillant avec une seule chambre de PMFC, pour deux types d'eaux usées (urbaines et industrielles), cela nous a permis de produire différentes tensions de courant aux bornes des électrodes (cathodes et anodes) avec un voltage d'une moyenne de 80mV qui pour l'eau usée industrielle demeure importante à celle des eaux urbaines de l'ordre de 30mV.

La production de courant varie en fonction de la nature des eaux usées et par la présence des bactéries qui d'après notre expérience indique une différence de voltage de l'ordre de 20-30 mV entre l'eau usée autoclavées et non autoclavées.

Mots clés : micro-algues, cellules microbiennes photosynthétiques de carburant, voltage, eau usée.

C. AFFICHE N°:116.

VARIABILITE ONTOGENIQUE DES RATIOS ISOTOPIQUES ($\Delta^{13}\text{C}$ ET $\Delta^{15}\text{N}$) ET DES CONCENTRATIONS DE CADMIUM ET DE MERCURE DES CEPHALOPODES DES COTES TUNISIENNES

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Les isotopes stables sont très largement utilisés en écologie trophique et leur emploi a connu un développement exponentiel depuis une dizaine d'années. Le couplage des données analytiques apportées par les isotopes stables et les éléments traces est susceptible de fournir des informations sur les habitudes alimentaires des organismes marins, ainsi qu'au cheminement des contaminants dans les écosystèmes. Toutefois, ces traceurs écologiques sont régis par plusieurs facteurs qui peuvent varier leurs valeurs. L'objectif de ce travail est d'étudier l'influence des effets ontogéniques sur les signatures isotopiques du carbone et de l'azote ($\delta^{13}\text{C}$ et $\delta^{15}\text{N}$) et sur les concentrations du cadmium (Cd) et du mercure (Hg) chez trois espèces de céphalopodes (*Loligo vulgaris*, *Octopus vulgaris* et *Sepia officinalis*) provenant de trois sites des côtes tunisiennes (Bizerte, Monastir et Sfax). Pour chaque individu, les dosages des isotopes stables et du Hg ont été réalisés dans le muscle manteau, tandis que celles du Cd ont été effectuées dans la glande digestive. Les résultats ont montré que l'utilisation combinée des ratios isotopiques ($\delta^{13}\text{C}$ et $\delta^{15}\text{N}$) a permis la ségrégation entre les espèces suivant leurs régimes alimentaires. Une diminution des valeurs $\delta^{13}\text{C}$ suivant la taille a été mise en évidence chez *O. vulgaris* et *S. officinalis*, qui est en faveur d'une diète côtière qu'hauturière en fonction de la croissance. Ceci est probablement lié à la migration de ces espèces vers les milieux de faibles profondeurs pour se reproduire. En revanche, les valeurs de $\delta^{15}\text{N}$ sont positivement corrélées avec la taille chez *L. vulgaris* et *S. officinalis*, ce qui suggère une évolution des types de proie recherchés tout au long de l'ontogénèse. Les concentrations de Hg, comprises entre 0,06 et 4,50 $\mu\text{g/g}$ de poids sec, augmentent également en fonction de la taille chez *L. vulgaris* et *S. officinalis*. Par contre, les concentrations de cadmium, variant entre 1,13 et 177,58 $\mu\text{g/g}$ de poids sec dans la glande digestive, décroissent avec l'accroissement de la taille uniquement pour le calmar *L. vulgaris*. Ce résultat est lié à la physiologie de l'espèce par comparaison aux seiches et aux poulpes.



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ASSOCIATION TUNISIENNE DES SCIENCES BIOLOGIQUES
29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:117.

AN EFFICIENT AND SIMPLE APPROACH FOR THE SYNTHESIS OF SOME NOVEL HYBRIDIZED QUINOLEINE-PYRAN DERIVATIVES

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Quinolines are an important class of heterocyclic compounds. Several compounds of this class have been screened for biological activities; among these are 2-chloroquinoline-3-carbaldehydes which occupy an important position.

In addition, the synthesis of 4*H*-pyran derivatives has attracted strong interest due to their different applications in medicinal chemistry. 4*H*-pyran derivatives bearing a free amine group at the 2-position and a nitrile group at the 3-position are very effective precursors for accessing Tacrine analogue derivatives on one hand and pyranopyrimidine-4 (5*H*) derivatives on the other hand.

In this work, novel hybridized quinoline-4*H*-pyran compounds, highly functionalized and differently substituted, have been synthesized. The use of various activated heterocyclic methylene compounds has made it possible to introduce different groups of the 4*H*-pyran ring linked to the quinoleic unit.

C. AFFICHE N°:118.

QUATERNARY AMMONIUM IONIC LIQUID AS A DUAL SOLVENT-CATALYST INBIGINELLI REACTION

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In the past decades and in the direction of development and employment of more environmentally green procedures, many new synthetic methodologies have been reported such as MCR (multi-component reaction) approach, aqueous medium reactions, solvent-free reactions, use of ionic liquids (ILs) as dual solvent-catalysts and phase transfer catalysis, as well as analytical techniques such as solid phase synthesis, ultrasonication, microwave irradiation, grinding and micellar catalysis.

Multi-component reactions (MCRs) utilizing unconventional solvents like ionic liquids have become a new research direction that has emerged as an important facet of green chemistry. The present work deals constructively with the MC one pot synthesis of 4-aryl-5-ethoxycarbonyl-3,4-dihydro-6-methylpyrimidin-2(1*H*)-ones using L-valine sulfate 1:1 [H-Val][HSO₄], a cheap, non-corrosive, and eco-friendly ionic liquid as a dual solvent-catalyst.

Keywords: DHPMs, ionic liquid, Multi-component reactions, MCRs, L-valine sulfate.



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ASSOCIATION TUNISIENNE DES SCIENCES BIOLOGIQUES
29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:119.

IMPACT OF EL-MATROUHA LANDFILL ON OUED EL-KEBIR (NORTH EAST OF ALGERIA)

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The Landfill of El Matrouha is located in El-Tarf town (extreme north east of Algeria), the Landfill is present as a gigantic wild dump. This waste dump occupies an area of over four hectares, tons of rubbish that is sent daily are scattered over kilometers, reaching farmland located west of the town, the landfill is close to a temporary Oued, which supply Oued Guergour the last tributary Oued El Kebir. The landfills are causing serious environmental damage, following the infiltration of leachates, which contribute to the degradation of water quality, in the context of this problem, the purpose of the work is focused on assessing the impact of this landfill on Oued El-Kebir, for this a series of sampling and analysis of the soil and water of this Oued was performed; The results show that the soil collected reveal the sandy texture facilitating infiltration and percolation of leachate from the landfill; the physicochemical analysis of the quality of the river water reveals high levels of sulfates in fact this element is one of the essential constituents of the mineral fraction of the waste presenting a risk of pollution by this element, The recorded values for nutrients are sub-standard, for trace elements analysis shows very low metal load on the river except for lead, which is present at high concentrations exceeding all standard.

Key words: Algeria, landfill, leachates, Oued El-kebir



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C. AFFICHE N°:120.

HOW DO NEW SPECIFICITIES ARISE IN GAMETOPHYTIC SELF-INCOMPATIBILITY SYSTEM IN PRUNUS GENUS?

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Gametophytic self-incompatibility system (GSI) is the most common system, and it has been described in more than 60 families of flowering plants. The GSI recognition reaction is genetically determined by single and multiallelic locus named the S locus, encoding two linked genes that determine the pistil and pollen phenotypes. The pistil and pollen GSI components are S-RNase and F-box genes, respectively. The self-incompatible reaction occurs when products of these two genes encoded by the same S allele, meet in the style after germination of the pollen tube. One of the major questions concerning the GSI system is: How do new specificities arise? In fact, it is unclear whether new pollen and pistil specificities arise by point mutations only, as postulated by some models for the generation of new GSI specificities, or whether intragenic recombination also plays a role. Moreover, it is still unclear how many SFB amino acid sites contribute to specificity determination. This issue can be addressed if it is assumed that the sites identified as being positively selected (PSS) are those likely to be responsible for defining pollen specificities. Belonging to diploid (2n=16) and hexaploid (2n=48) plums, thirty six SFB alleles were amplified and sequenced. These sequences corresponded to nineteen different specificities. Hence, the rate of new S-specificity appearance (RNS) for each species, the divergence time (Tdiv) between alleles and sites identified as being positively selected (PSS) were calculated for each specificity. In combination with the MK χ^2 G-test results, a positive correlation was found between the nucleotide polymorphism of SFB alleles and Tdiv, PSS number and RNS. Furthermore, the role that plays recombination can not be ruled out, since a rate of 0.08 recombination event per polymorphic sites was identified at Prunus SFB gene

To conclude, an important scenario of new specificity emergence in GSI system was evocated. However, the exact understanding of self-incompatibility system remains a puzzling issue and is far to be resolved.

Key words: Gametophytic Self-Incompatibility, SFB, Positively Selected Sites, intragenic recombination, divergence time, Plums, Prunus

C. AFFICHE N°:121.

CLINICAL CASE STUDIES OF AUTOSOMAL DOMINANT POLYCYSTIC KIDNEY DISEASE (ADPKD) IN TUNISIA

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Introduction: Autosomal Dominant Polycystic Kidney Disease (ADPKD) is the most frequent genetic kidney disease in the world. ADPKD is genetically heterogeneous with two genes identified: PKD1 (16p13.3, 46exons) and PKD2 (4q21, 15exons). It is also characterized by a phenotypic variability. The PKD1 gene is estimated to be responsible for 85% of ADPKD cases. However, mutation analysis is not routinely implemented for family investigations in a clinical setting, because of the large size and complexity of the PKD1 gene. In addition, very few data are known about the genetic variation and clinical features among Tunisian populations. **Methods:** In this study, exons and flanking intron regions of PKD1 gene were performed by LR-PCR followed by sequencing analysis in nine patients with ADPKD. **Results:** Family history of ADPKD was found in 88.88% of patients. Patients shared clinical features including hypertension 66.66%, hematuria 44.44%. Deafness and hyperthyroidism were also observed in 11.11%. Molecular genetic testing found five single nucleotide polymorphisms previously reported. It was two synonymous single nucleotide polymorphisms in exon 15 (rs75510884 and rs71385734) and two non-synonymous single nucleotide polymorphisms (rs116092985, exon 15, rs9935834, exon 15 and rs77028972, exon 25). **Conclusion:** Our data showed that there is phenotypic heterogeneity among patients. We concluded that these substitutions were not disease-causative mutations which support the characteristic of the PKD1 gene as a highly polymorphic gene. Genetic testing for PKD2 gene or for a deletion in both PKD genes will be performed to search for a causative disease mutation.



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Keywords: Autosomal Dominant Polycystic Kidney Disease; clinical features; PKD1 gene; single nucleotide polymorphisms.

C. AFFICHE N°:122.

ENZYME IMMUNOASSAY DIAGNOSIS OF TOXOPLASMA GONDII INFECTIONS IN EWES IN THE CENTRAL-EASTERN REGION OF ALGERIA

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T. gondii is an obligate intracellular parasite that infects humans as well as a wide variety of warm-blooded vertebrates with Felidae as definitive hosts. Among the intermediate hosts, sheep are more likely to contract the infection resulting in heavy economic losses associated with abortions. The aim of this work is to study the seroprevalence of *T. gondii*, the risk factors associated with exposure to this parasite, as well as the combination of this parasite to abortions observed in ewes. To do this, a total of 184 ewe's sera were analyzed using indirect ELISA. The results showed that 49% (IC 95% 41.6-56.3%) sera were positive for *T. gondii*. Analysis of risk factors that may influence the risk of exposure to *T. gondii* has highlighted an association between the presence of cats on the farms and the seropositivity vis-a-vis of *T. gondii*. The epidemiological study case-control showed a positive association between the occurrence of abortion in ewes and seropositivity vis-a-vis of *T. gondii*. In view of all these results, we can conclude that *T. gondii* is widely distributed in the study area, hence the necessity to take adequate therapeutic and prophylactic measures to eradicate the disease both in animals and humans.

Mots clés : *T. gondii*, Ewes, ELISA, Algeria.

C. AFFICHE N°:123.

ASSOCIATION STUDY BETWEEN CORONARY ARTERY DISEASE AND RS10757274 POLYMORPHISM AT 9P21.3 LOCUS IN A TUNISIAN POPULATION

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Objective: Coronary artery disease (CAD) is a multi-factorial and heterogenic disease with atherosclerosis plaques formation in internal wall of coronary artery. Plaque formation results to limitation of the blood reaching to myocardium leading to appearance of some problems, such as ischemia, sudden thrombosis veins and myocardial infarction (MI). Several environmental and genetic factors are involved in prevalence and incident of CAD as follows: hypertension, high low density lipoprotein-cholesterol (LDL-C), age, diabetes mellitus, family history of early-onset heart disease and smoking. According to genome wide association studies (GWAS), five polymorphisms in the 9p21.3 locus seem to be associated with the CAD. We aimed to evaluate the remarkable association of one polymorphism at 9p21.3 locus, rs10757274, with CAD.

Materials and Methods: The collected blood samples belonging to 170 CAD patients (case group) and 100 healthy individuals (control group) were analyzed by tetra-primer amplification refractory mutation system (ARMS)-polymerase chain reaction (PCR) technique. The results were analyzed using software package used for statistical analysis (SPSS; SPSS Inc., USA) version 16. A value of $p < 0.05$ and an odd ratio (OR) with 95% confidence intervals (CI) were considered significant. Results: The frequencies of AA, AG and GG genotypes for rs10757274 in CAD patients were 8.1, 57.4 and 34.2%, while in controls, the related values were 34, 62 and 2%, respectively. GG Genotype in rs10757274 polymorphism in CAD patients was found more than control cases (OR: 0.013, 95% CI: 0.002-0.064, $p=0.0001$).

Conclusion: The rs10757274 polymorphism reveals a significant association with CAD. This variant may help the identification of patients with increased risk for coronary artery disease.

Keywords: CAD, 9p21.3, Polymorphism



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29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:124.

DISTRIBUTION OF ALLELIC AND GENOTYPIC FREQUENCIES OF NAT2 VARIANTS IN TUNISIAN POPULATION

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Introduction: Isoniazid is a first line anti tuberculosis drug. It is subjected to personalized medicine to improve the efficacy and minimize the toxicity. N-acetyltransferase 2 (NAT2) is considered the major way of isoniazid metabolism. Significant interethnic variation in the expression of NAT2 is caused by single nucleotide polymorphisms (SNPs) which affect the metabolic activity of this enzyme. The objective of our study is to describe the allelic and genotypic polymorphisms distribution of NAT2 in a sample of Tunisian tuberculosis patients.

Patients and methods: This study included 118 patients diagnosed with tuberculosis. Five milliliters of venous blood sample was collected and DNA extracted using the salting-out method. The verification of the purity and concentration measurement of the DNA samples were made using the Nanodrop 1000 spectrophotometer. The NAT2 genetic polymorphisms were evaluated simultaneously using polymerase chain reaction and Restriction Fragment Length Polymorphism (PCR-RFLP) technique. For the detection of NAT2 gene polymorphisms, PCR products are treated by four different restriction enzymes: KpnI, TaqI, BamHI and DdeI to detect the mutations NAT2*5 (C481T), NAT2*7 (G590A), NAT2*6 (G857A) and NAT2*12 (A803G) respectively. The wild-type allele is the NAT2*4. NAT2*5, *7 and *6 alleles are responsible for slow NAT2 activity while NAT2*12 is responsible for rapid NAT2 activity.

Results and discussion: In the 118 patients, the ganglionic form of tuberculosis is the most common (48%). The allelic frequencies of NAT2 variants *4, *5, *6, *7 and *12 were 19, 42, 29, 5 and 5%, respectively. The slow acetylator phenotype deduced from NAT2 genotyping study was predominant (56.78%) followed by intermediate phenotype (38.98%) and rapid phenotype (4.24%).

Conclusion: We have shown that the half of our Tunisian Tuberculosis patients has a slow NAT2 acetylator profile. The distribution of the acetylation phenotypes deduced from the genotyping study was trimodal with predominance of the "slow" group. Our results help to optimize isoniazid therapy by a pharmacogenetic approach in the context of personalized medicine.

Key words: Pharmacogenetic, Antituberculosis, Isoniazid

C. AFFICHE N°:125.

DETECTION D'UNE NOUVELLE MUTATION MITOCHONDRIALE DANS LE GENE ND1 CHEZ UN PATIENT PRESENTANT UNE CYTOPATHIE NEUROSENSORIELLE

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Les maladies mitochondriales sont des maladies métaboliques dues à un déficit au niveau de la chaîne respiratoire mitochondriale productrice d'ATP. La présentation clinique des maladies mitochondriales est principalement neuromusculaire et/ou neurosensorielle. La perte auditive est un trouble congénital très commun qui touche 1 nouveau-né sur 1000. Dans la population pédiatrique, la surdité a une prédisposition génétique avec un mode de transmission autosomique dominant, autosomique récessive, liée à l'X, ou à l'ADN mitochondrial. Jusqu'à présent, plus que 200 mutations dans l'ADN mitochondrial sont rapportées dans la base de données MITOMAP. Ces mutations ont été associées à une surdité syndromique ou non syndromique touchant en particulier l'ARN12S et les gènes des ARN de transfert. Dans ce cadre, notre étude a porté sur 6 patients tunisiens présentant des cytopathies neurosensorielles. La recherche de mutations et de polymorphismes au niveau des gènes mitochondriaux associés à la surdité a montré la présence des polymorphismes connus ainsi que de nouvelles variations. En effet, nous avons détecté une nouvelle variation m.3861A>C au niveau de la sous-unité ND1 qui est absente chez 100 témoins. Cette substitution retrouvée à l'état hétéroplasmique a des effets pathogènes prédits à partir des programmes bioinformatiques et serait probablement responsable d'un déséquilibre du gradient électrochimique des protons affectant le transfert des électrons du complexe I au coenzyme Q et engendrant par conséquent une diminution de l'activité de la chaîne respiratoire. Nous avons aussi repéré 2 variations m.12350C>A (T5N) et m.14351T>C (E108G) à l'état hétéroplasmique au niveau de la sous-unité ND5 et la sous-unité ND6 respectivement, mais les prédictions bioinformatiques suggérant que ces changements semblent être bénins et auraient donc des effets neutres au niveau protéique.

Mot clés : mtDNA, surdité, tRNA, 12S rRNA, hétéroplasmie.



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ASSOCIATION TUNISIENNE DES SCIENCES BIOLOGIQUES
29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:126.

GIANT CELL TUMOR OF BONE : IDENTIFICATION OF FACTORS INFLUENCING RECURRENCE AND AGGRESSIVENESS

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Giant Cell Tumor of Bone (GCTB) is a rare tumour usually benign and locally aggressive but may undergo malignant transformation and metastasize to the lung in 5% of cases. Moreover, GCTB usually occurs in patients between 20 and 40 years old with a rate slightly higher (1.5 to 1 ratio) in women than men. The main proliferative factors in GCTB are the receptor activator of nuclear factor-κB (RANK) and its ligand (RANKL); they are negatively regulated by the osteoprotegerin (OPG) which binds to RANKL and inhibit its binding to RANK. GCTB are expressing the RANK receptor while the stromal cells are expressing its ligand (RANKL). RANK and RANKL have a bone tissue specific expressed but encountered in the majority of solid tumours; their expression was attributed to bone metastasis contribution. RANKL was considered as a therapeutic target in bone metastasis in order to inhibit osteoclastogenesis and osteoclast-mediated bone destruction. In this study, we sought to identify genes differentially expressed in GCTB, thus building a molecular profile of this tumor. We performed immunohistochemistry to identify genes that are putatively associated with GCTB. We hope to elucidate specific markers determining the recurrence of the giant cell tumor of bone (GCTB).

Univariate analysis showed that pathological fracture, Campanacci grade, histological grade "Jaffe-Lischtensein" and the surgical method were associated with recurrence. Immunohistochemical analysis revealed that RANKL and Ki67 are expressed in GCTB with (30%) and 65%, respectively. While OPG is less-expressed in GCTB. In addition, patients with strong RANKL and Ki67 expression are grade 3 radiologically and histologically. All the patients of strong expression RANK and RANKL, are of grade III (p=0,039).

Our results suggest that Campanacci grade, histological grade are risk factors for GCTB recurrence, which is also affected by the surgical method used and pathological fracture. We found that the expression of RANK, RANKL, and OPG in osteoclast-like giant cells differed significantly according to the disease progression. Increased RANKL and RANK expression is related to tumour migration and metastasis of lung cell.

C. AFFICHE N°:127.

ASSESSMENT OF TNF ALPHA GENE EXPRESSION IN INFERTILE MEN OF TUNISIAN POPULATION

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Male infertility is a growing concern in modern societies. Contemporary andrology is focusing on analyzing idiopathic male infertility problems on the basis of cellular and subcellular mechanisms. In fact, it has been reported that an increased concentration of proinflammatory cytokines in seminal plasma, such as TNF-alpha, has been associated with poor semen quality and male infertility as well as recurrent pregnancy loss. Therefore, we aimed in this study to look at the molecular aspects of male infertility and particularly to analyze the TNF alpha gene expression profile in selected groups of infertile men. Our study focused on 9 semen samples obtained by masturbation in the laboratory after 3-5 days of sexual abstinence. We included patients with azoospermia (n = 3) oligozoospermia (n = 3) and men with good sperm characteristics (n = 3) who served as controls. We evaluated the total concentration of RNA by the Nanodrop and we analyzed the level of TNF alpha gene expression in the seminal fluid by the RT-PCR and Q-PCR. The relative amount of each mRNA was calculated using the comparative threshold (Ct) method with $DCt=Ct(mRNA)-Ct(GAPDH)$ and the relative quantification of mRNA expression was measured with the 2^{-DDCT} method.

Results: Seminal expression level of TNF alpha in oligozoospermic men was higher(0.36)than the means of relative expression level in fertile men (0.25±0.29).In addition, Seminal expression level of TNF alpha in azoospermic men was lower (0.18±0.08) compared to the means of relative expression level in fertile men(0.25±0.29).

Conclusion: We noted that TNF alpha gene in seminal plasma is over expressed in oligospermic group and less expressed in azoospermic group compared to the control group. The molecular expression of TNF alpha appears to be involved directly or indirectly in the alteration of spermatogenesis. These are the preliminary results of our ongoing study which look promising so far; so we are aiming to expand our study population for further impact of the obtained results.



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ASSOCIATION TUNISIENNE DES SCIENCES BIOLOGIQUES
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C. AFFICHE N°:128.

EVOLUTION ET DIVERSITE GENETIQUE DU TLR2 (TOLL-LIKE RECEPTOR 2) CHEZ LES LIÈVRES DE TUNISIE

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Le système immunitaire inné constitue la première ligne de défense de l'hôte après une agression pathogène. Parmi les récepteurs de ce système, la famille des TLR (toll-like receptor) est la plus étudiée. Les membres de cette famille de récepteurs sont caractérisés par un domaine intracytoplasmique, un domaine extracellulaire, et le domaine TIR (Toll/IL-1 Receptor), qu'ils partagent avec les récepteurs de la famille de l'interleukine-1 (IL-1R). Ce dernier domaine a été suggéré comme étant hautement conservé suite à l'action d'une forte sélection purifiante.

Dans la présente étude, nous avons analysé un fragment de 372 pb du domaine TIR du gène TLR2 chez 110 lièvres (*Lepus capensis*) provenant de différentes localités en Tunisie, dans le but d'estimer le niveau de diversité génétique ainsi que d'évaluer l'ampleur de la sélection naturelle au niveau de ce gène. Au total, 25 allèles ont été détectés avec vingt positions nucléotidiques variables, dont 7 étaient des substitutions non synonymes. Les lièvres du Sud ont montré une diversité génétique inférieure à celle enregistrée chez les lièvres du Nord et du Centre de la Tunisie. De tels résultats n'ont pas été observés auparavant par l'analyse d'autres marqueurs. Ceci suggère que la région TIR pourrait être plus affectée, par rapport aux autres marqueurs, par la dérive génétique et/ou que ces profils de diversité étaient le résultat de différentes pressions sélectives dans différentes conditions écologiques. Cependant, les analyses moléculaires suggèrent que les substitutions au niveau du domaine TIR sont neutres ou sous une sélection purifiante.

Mots clés : lièvres, Tunisie, TLR2, diversité, sélection

C. AFFICHE N°:129.

DOES MORPHOLOGY DATA CAN TO DRAW A TAXONOMIC KEY FOR TUNISIAN PLUM SPECIES (*PRUNUS.SPP*)?

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Plums are cultivated for their fruits and consumed both in their fresh and processed forms). Plums consist of 20 species characterized by variations in morphological and pomological traits. In Tunisia, despite a considerable varietal richness of plum as well as its economic importance, the plum sector shows however a significant regression. In fact, Tunisian plum accessions are well known and appreciated. 23 Tunisian Plum samples were used in this study. These varieties represent a very appreciate plum in Tunisia with an important economic values. Twelve morphological traits were studied and partitioned in qualitative and quantitative traits. PCA was performed using only 7 discriminative criteria (Table 3). This analysis has shown that 85.28% of the total variation was explained by the first three principal components. The dispersion of *Prunus* varieties on the bi-plot of PCA (76.25%) revealed clear differentiation between the hexaploid and diploid plum groups. In addition, the ACP shows the divergence of three samples THP, CID and CID2. This result may be explained by flesh color exception. In fact, THP has a whitish flesh and CID and CID2 are characterized by orange flesh. Overall, among twenty-three Tunisian plum varieties, 17 belong to diploid *P. salicina*, one belongs to diploid *P. simonii* and five belong to wild hexaploid *P. insititia*. Thus, the morphological characters allow drawing a taxonomic key to look for plum species.

Key words: *Prunus*, Tunisia, PCA, hexaploid, diploid plum, taxonomic key.



C. AFFICHE N°:130.

NOVEL MUTATIONS IN THE CDKL5 GENE IN COMPLEX GENOTYPES ASSOCIATED WITH WEST SYNDROME WITH VARIABLE PHENOTYPE:FIRST DESCRIPTION OF SOMATIC MOSAIC STATE

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Introduction: West syndrome is a rare epileptic encephalopathy of early infancy, characterized by epileptic spasms, hypsarrhythmia, and psychomotor retardation beginning in the first year of life.

Methods: The present study reports the clinical, molecular and bioinformatic investigation in the three studied West patients.

Results: The results revealed a complex genotype with more than one mutation in each patient including the known mutations c.1910 C>G (P2, P3); c.2372A>C in P3 and c.2395C>G in P1 and novel variants including c.616 G>A, shared by the three patients P1, P2 and P3; c.1403G>C shared by P2 and P3 and c.2288A>G in patient P1. Conclusions: All the mutations were at somatic mosaic state and were de novo in the patients except ones (c.2372A>C). To our knowledge; the somatic mosaic state is described for the first time in patients with West syndrome. Five identified mutations were located in the C-terminal domain of the protein, while the novel mutation (c.616 G>A) was in the catalytic domain. Bioinformatic tools predicted that this latter is the most pathogenic substitution affecting 3D protein structure and the secondary mRNA structure. Complex genotype composed of different combinations of mutations in each patient seems to be related to the phenotype variability.

Key words: CDKL5 gene; West syndrome (WS); Somatic mosaic; Novel mutations

C. AFFICHE N°:131.

SELECTION NATURELLE AU NIVEAU DES GENES MITOCHONDRIAUX ATP6 ET ND2 CHEZ LES LIEVRES DE TUNISIE

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L'ADN mitochondrial (ADNmt) est le marqueur moléculaire le plus utilisé en génétique des populations, en phylogénie et en phylogéographie. La majorité des études considèrent implicitement que l'ADNmt évolue de façon neutre et sa variabilité est habituellement interprétée comme étant le résultat des effets de flux génique et de la dérive aléatoire, alors que les changements moléculaires ne sont pas censés avoir une valeur adaptative. Cependant, des études récentes ont suggéré une adaptation des gènes mitochondriaux due principalement aux variations environnementales.

Nous nous sommes intéressés à l'étude de la sélection naturelle au niveau des gènes mitochondriaux ATP6 et ND2 chez les lièvres de Tunisie (*Lepus capensis*) où les conditions climatiques et les conditions d'habitat varient énormément depuis le nord humide au Sahara aride. Notre objectif était d'identifier les acides aminés sous une sélection positive. Nous avons également essayé d'associer le polymorphisme au niveau des acides aminés aux variations climatiques en utilisant des méthodes statistiques.

La sélection positive a été suggérée par l'ensemble des tests statistiques appliqués, ainsi que par la distribution des séquences des acides aminés obtenues au niveau des trois groupes de populations considérées. De plus, la distribution des deux protéines les plus fréquentes au locus ATP6 était significativement influencée par la température annuelle moyenne alors que les deux protéines les plus fréquentes au locus ND2 étaient influencées par la température minimale moyenne du mois le plus froid. Ceci suggère un effet de la température dans l'adaptation des populations de lièvres en Tunisie.

Mots clés : ADNmt, sélection positive, variations climatiques, lièvres, Tunisie



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29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:132.

THE EFFECT OF LEUKOCYTOSPERMIA ON THE OXIDATIVE STRESS PROFILE AND SPERM MITOCHONDRIAL DNA IN INFERTILE MEN

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Infertility, classically defined as the inability to achieve pregnancy after 12 months of sexual relations without the use of contraceptives, affects around 15% of couples in reproductive age; the male partner is responsible for up to 50% of these cases. Leukocytospermia (leukocytes concentration in the semen $\geq 10^6/\text{ml}$) is present in about 20% of infertile men and is often associated with impaired mobility and quality of sperm DNA and with the production of highly toxic reactive oxygen species (ROS). The objective of our study is to determine the effect of leukocytospermia on sperm parameters, on mitochondrial sperm DNA and on oxidative stress status in Tunisian infertile men. Our study included sperm samples belonging to 108 Tunisian infertile men; samples were subdivided according to the spermogram result into two groups: leukocytospermic (n = 63) and non-leukocytospermic (n = 45). Molecular analysis of the mitochondrial DNA (COXI-III, ND3-4, ATPase 6-8 genes) was made by PCR followed by automatic sequencing. The oxidative stress profile was assessed by the measurement of MDA level and antioxidant enzymes (SOD, GSH and Catalase) in the seminal plasma. The data obtained from this work showed that MDA was significantly higher in leukocytospermic patients ($p=0,002$) and CAT was significantly lower in patients with leukocytospermia with a p value ($p=0,049$). Leukocytospermia was negatively correlated with mobility ($r = -0.19, p = 0.03$) and vitality ($-0,28, p = 0.02$), and positively correlated with MDA ($r = 0.570, p < 0.001$) and GSH ($r = 0.475, p = 0.006$). Vitality was negatively correlated with GSH ($r = 0.36, p = 0.043$) and positively correlated with CAT ($r = 0.45, p = 0.009$). The analysis of mitochondrial sperm DNA in 53 leukocytospermic patients and 20 non-leukocytospermic patients, showed numerous SNP variations (n = 137), most of them in leukocytospermic patients (n = 120), with the identification of three new variations in the COXIII gene in three leukocytospermic patients. These results confirm the harmful effect of leukocytospermia on sperm parameters and on the quality of sperm mitochondrial DNA and suggest that these effects are exerted via the oxidative stress.

C. AFFICHE N°:133.

FIRST RETROSPECTIVE ANALYSIS OF EGFR, KRAS MUTATIONS AND ALK REARRANGEMENTS IN NON-SMALL CELL LUNG CANCER NSCLC IN TUNISIA

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The majority of newly diagnosed patients with lung cancer present with late metastatic stage that is inoperable and resistant to therapies. Identification of the mutations that drive lung cancer provided new targets for non-small cell lung cancer (NSCLC) treatment and led to the development of targeted therapies such as tyrosine kinase inhibitors that can be used to combat the molecular changes that promote cancer progression. Biomarkers identified from gene analysis can be used for early lung cancer detection, determine patient's prognosis and response to therapy, and monitor disease progression. The aim of this study was to analyze the mutational status in a representative cohort of patients in Tunisia with lung adenocarcinomas and to correlate it with clinical data.

Evaluation of EGFR and KRAS mutations was performed on 47 FFPE samples of patients with lung adenocarcinoma, using direct sequencing, pyrosequencing, or MassARRAY (Sequenom, SanDiego, CA). For the analysis of ALK rearrangement we perform Immunohistochemistry using the D5F3 clone and fluorescence in situ hybridization (FISH).

Results: Our preliminary findings showed that among the 47 patients analyzed: 2.1% showed an ALK rearrangement and 8.51% had an EGFR mutation: 50% had an exon 19 deletion, 25% had E709K mutation in exon 18 and 25% had exon 21 point mutation L858R. For KRAS mutations, 6.38% showed a mutation: G12C (66.6%) and G13C (33.3%). In our analysis, driver mutations were found in 12% of NSCLC Tunisian patients. This rate is near the frequency reported in the European population for patients with lung adenocarcinoma.

Conclusion: The mutational analysis of EGFR, KRAS and ALK in NSCLC patients in Tunisia shows an important role for the future of treatment and follow-up of these patients in terms of targeted and personalized therapies. A prospective study in larger patient cohorts is needed in order to confirm these results with a statistical significance.



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ASSOCIATION TUNISIENNE DES SCIENCES BIOLOGIQUES
29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:134.

APPORT DE LA CYTOGENETIQUE DANS LE DIAGNOSTIC DES ANOMALIES CHROMOSOMIQUES ASSOCIEES AUX CARDIOPATHIES CONGENITALES

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Les cardiopathies congénitales sont parmi les malformations les plus fréquentes. Un retard de diagnostic est responsable d'une augmentation de morbidité et de mortalité. Nous présentons cette étude rétrospective réalisée au Centre Pierre et Marie Curie (CPMC) d'Alger au niveau du laboratoire de cytogénétique effectuée sur 91 patients présentant des signes évoquant une cardiopathie congénitale. Pour chaque cas, nous avons révélé les renseignements épidémiologiques et les signes cliniques suivie d'une étude cytogénétique par l'établissement d'un caryotype standard complété ou non d'une FISH (Fluorescent in situ hybridation). Cette étude consiste à réaliser une culture lymphocytes à partir d'un prélèvement de sang total recueilli sur tube héparine qui va aboutir à l'obtention des chromosomes en métaphase, suivie d'une analyse par microscope doté d'un logiciel de traitement d'image. La Trisomie 21 était au premier plan des anomalies chromosomiques (23%), suivis du syndrome de Turner (14%), syndrome de DiGeorge (10%). Parmi les 91 patients on a observé 49 cas de sexe féminin et 42 cas de sexe masculin soit un sexe ratio de 0,85. La tranche d'âge présentant une fréquence élevée de cardiopathies congénitales est celle inférieure à 5 mois avec 36% des cas.

Le but de notre travail est de trouver une stratégie facile et efficace pour détecter les anomalies chromosomiques et de savoir l'apport que porte la cytogénétique dans le diagnostic de ces anomalies. Chez chaque patient, la prise en charge des cardiopathies congénitales dépend du type et de la gravité de cette dernière et devra être personnalisé selon l'impact que la malformation a sur lui.

Mots clés : cardiopathies congénitales, anomalies chromosomiques, caryotype, FISH.

C. AFFICHE N°:135.

GENETIC DIVERSITY ANALYSIS USING MORPHOLOGICAL PARAMETERS IN TUNISIAN OPUNTIA GENUS

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Among Cactaceae, Opuntia is the most diverse and widely distributed genus in the Americas, adapted perfectly to arid zones and contributes in saving crops for both humans and animals especially in times of drought. In central and south Tunisia, Opuntia plantations provides a large amount of fodder for livestock and play a key role in soil conservation. With the aim of studying the morphological diversity and looking for discriminating morphological parameters, forty-eight ecotypes belonging to four species of Opuntia genus (Opuntia ficus-indica, Opuntia engelmannii, Opuntia tomentosa and Opuntia undulata), were collected from collection of the INRA of Tunisia. Ecotypes were characterized using 63 phenotypic parameters that comprised 31 quantitative and 32 qualitative traits recorded to Opuntia trees, cladodes, flowers and fruits. Based on morphological data, the PCA analysis showed four discriminating parameters: the mean number of seeds per fruit (Ngrfr), the mean number of areolas per cladode (Nma/r), the mean number of areolas at the cladode border (Nma/b) and Fruit mean weight (Pfr). Indeed, constructed dendrogram grouped the different ecotypes into three groups independently from their geographical origins. In conclusion, very high levels of morphological variability were found within all studied Opuntia ecotypes. This result reflects the good choice of morphological parameters used in this study that will be very useful for genetic breeding and conservation programs.

Key words: Opuntia, morphologic variability, Tunisia.



C. AFFICHE N°:136.

MITOCHONDRIAL DNA ANALYSIS IN TOW TUNISIANS PATIENTS WITH MITOCHONDRIAL NEUROMUSCULAR DISORDERS

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Mitochondrial diseases are a heterogeneous group of disorders caused by the impairment of the mitochondrial oxidative phosphorylation system which have been associated with various mutations of the mitochondrial DNA (mtDNA) and nuclear gene mutations. The clinical phenotypes are very diverse and the spectrum is still expanding. As brain and muscle are highly dependent on OXPHOS, consequently, neurological disorders and myopathy are common features of mtDNA mutations. Mutations in mtDNA can be classified into three categories: large-scale rearrangements, point mutations in tRNA or rRNA genes and point mutations in protein coding genes. In the present report, we screened mitochondrial genes of complex I, III, IV and V in tow patients (P1, P2) with mitochondrial neuromuscular disorders. The results showed the presence the pathogenic heteroplasmic m.9157G>A variation (A211T) in the MT-ATP6 gene in the first patient. We also reported the first case of triplication of 9 bp in the mitochondrial NC7 region in Africa and Tunisia, in association with the novel m.14924T>C in the MT-CYB gene in the second patient with mitochondrial neuromuscular disorders. Mitochondrial DNA deletions/insertions were performed by Long-PCR and the result revealed an eventual insertion or others duplications in patient 2 and the absence of any mtDNA ins/del in to patient 1. The mitochondrial depletion was tested by Q-PCR in the blood of two patients; it's about decreased or increased of copy number of mtDNA. The result of this technique showed a decreased of mtDNA contents in both patients compared to controls range but it was not very significative. In fact, it is from a reduction of 30% of the mtDNA that we will have a pathogenic depletion.

Keywords: Mitochondrial mutations, mtDNA, m.9157G>A, m.14924T>C, Mitochondrial duplication, mitochondrial depletion.

C. AFFICHE N°:137.

A PUTATIVE DISEASE-ASSOCIATED HAPLOTYPE WITHIN THE SCN1A GENE IN DRAVET SYNDROME

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Dravet syndrome (DS) is one of the most severe forms of childhood epilepsy. DS is caused by a mutation in the neuronal voltage-gated sodium channel alpha-subunit gene (*SCN1A*). However, 25–30% of patients with DS are negative for the *SCN1A* mutation screening, suggesting that other molecular mechanisms may account for these disorders. Recently, the first case of DS caused by a mutation in the neuronal voltage-gated sodium-channel beta-subunit gene (*SCN1B*) was also reported. In this report we aim to make the molecular analysis of the *SCN1A* and *SCN1B* genes in two Tunisian patients affected with DS. The *SCN1A* and *SCN1B* genes were tested for mutations by direct sequencing. Inference of haplotype frequencies was performed using Phase. The prediction of a hypothetical polyadenylation site was carried out using the PolyA_SVM program (version 2.2). The data of the hapmap project and haploview program were used to know if SNPs belonged to a linkage disequilibrium block. Eleven known single nucleotide polymorphisms were identified in the *SCN1A* gene in patients with DS phenotype. In addition, according to the hapmap project data, these SNPs belong to a linkage disequilibrium block extending 37.426 kb and covering 16 exons of *SCN1A* gene. This haplotype of SNPs was in a homozygous state in these two patients with DS and was considered as a putative disease-associated haplotype. One of the two patients with putative disease-associated haplotype in *SCN1A* had also one known single nucleotide polymorphism in the *SCN1B* gene.

In conclusion, the sequencing analyses of the *SCN1A* gene revealed the presence of a putative disease-associated haplotype in two patients affected with Dravet syndrome.

Key-words: Dravet syndrome, *SCN1A*, *SCN1B*, Haplotype.



ATSB

ASSOCIATION TUNISIENNE DES SCIENCES BIOLOGIQUES
29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:138.

ETUDE MORPHOLOGIQUE DES ACCESSIONS MALES DE PALMIER DATTIER TUNISIEN (PHOENIX DACTYLIFERA L.)

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Résumé :En Tunisie, le palmier dattier est une espèce fruitière jouant un rôle majeur dans l'agriculture oasienne. Largement cultivée dans le sud, cette plante présente d'énormes intérêts socio-économiques et écologiques dans ces régions. Cette espèce est dioïque avec des pieds femelles produisant des fruits et des pieds mâles appelés «Dokkars» donnant le pollen. Ce dernier a un effet direct sur la qualité et la quantité des dattes produites même aussi sur sa période de maturité. Cependant, cette richesse génétique mâle n'est pas encore prise en considération. De ce fait, les travaux de recherches sur ces géniteurs mâles deviennent de plus en plus nécessaires pour sélectionner et conserver ce patrimoine génétique. Dans ce contexte, ce travail a été mené pour l'étude de la variabilité morphologique de l'organe reproducteur d'une collection de pieds mâles dans la région de Djerid. Cette étude a été réalisée par le biais de 13 traits morphologiques relatifs à la spathe. Les résultats montrent une grande diversité génétique des mâles étudiés qui reflète la richesse de ces ressources phoenicioles nécessitant ainsi la gestion de leur utilisation et leur conservation.

Mots clés : Palmier dattier, Dokkars, Géniteurs mâles, Traits morphologiques, Diversité génétique.

C. AFFICHE N°:139.

THE RS727088 POLYMORPHISM IN 3'UTR CD226 AND THE SUSCEPTIBILITY TO CELIAC DISEASE IN TUNISIAN POPULATION

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Celiac disease (CeD) is an autoimmune disorder with many genetic factors predisposing to disease susceptibility. Polymorphisms in the CD226 gene have been associated with many autoimmune diseases. The aim of our study was to investigate association between single nucleotide polymorphism (SNP) (rs727088) in the 3'-untranslated region (3'-UTR) of CD226 gene and the risk for developing celiac disease in Tunisian population. This case-control study included a total of 220 subjects 105 cases and 115 controls from Tunisia. The genotyping of the rs727088 SNP in the CD226 gene was performed using the polymerase chain reaction and restriction fragment length polymorphism method. Statistical analyses were performed using SPSS. Observed and expected genotype frequencies were evaluated for Hardy-Weinberg equilibrium (HWE) using Pearson's chi-square test. Odds ratio (OR) adjusted for GG, GA, AA, in celiac patients and controls, along with 95% confidence interval (CI), was determined by logistic regression. While Student's t-test was applied to compare quantitative variables, P value more than 0.05. In this first genetic association study, our results demonstrated no association between the CD226 rs727088 SNP and risk for developing CeD.

Keywords: CD226, Polymorphism, Celiac disease, Autoimmunity.



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ASSOCIATION TUNISIENNE DES SCIENCES BIOLOGIQUES
29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:140.

COMPARISON OF IN SILICO PREDICTION AND EXPERIMENTAL ASSESSMENT OF ABCB4 VARIANTS IDENTIFIED IN PATIENTS WITH BILIARY DISEASES

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Genetic variations of the phosphatidylcholine transporter, ABCB4 cause several biliary diseases. The large number of reported variations makes it difficult to foresee a comprehensive study of each variation. To appreciate the reliability of in silico prediction programs, we confronted them with the assessment in cell models of two ABCB4 variations (E528D and P1161S) identified in patients with low phospholipid-associated cholelithiasis (LPAC). Then, we extended the confrontation to 19 variations that we had previously characterized in cell models. Four programs (Provean, Polyphen-2, PhD-SNP and MutPred) were used to predict the degree of pathogenicity. The E528D and P1161S variants were studied in transfected HEK293 and HepG2 cells by immunofluorescence, immunoblotting and measurement of phosphatidylcholine secretion. All prediction tools qualified the P1161S variation as deleterious, but provided conflicting results for E528D. In cell models, both mutants were expressed and localized as the wild type but their activity was significantly reduced, by 48% (P1161S) and 33% (E528D). These functional defects best correlated with MutPred predictions. MutPred program also proved the most accurate to predict the pathogenicity of the 19 ABCB4 variants that we previously characterized in cell models, and the most sensitive to predict the pathogenicity of 65 additional mutations of the Human Gene Mutation Database. These results confirm the pathogenicity of E528D and P1161S variations and suggest that even a moderate decrease (by less than 50%) of phosphatidylcholine secretion can cause LPAC syndrome. They highlight the reliability of in silico prediction tools, most notably MutPred, as a first approach to predict the pathogenicity of ABCB4 variants.

Keywords : Cholestasis, MDR3, Genetic disease, MutPred prediction

C. AFFICHE N°:141.

FOUNDER TUNISIAN MUTATION OF ABHD5 GENE IN THE LARGEST SERIES OF PATIENTS WITH CHANARIN-DORFMAN SYNDROME SHOWING UNUSUAL CLINICAL FINDINGS

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Chanarin-Dorfman syndrome (CDS, MIM # 275630) (neutral lipid storage disease with ichthyosis) is a rare syndromic autosomal recessive disease related to accumulation of triacylglycerol in most organs. Congenital ichthyosiformerythroderma may be associated with liver, eyes, ears, skeletal muscle and central nervous system (CNS). Mutations in ABHD5/CGI58 gene are associated with CDS. Objectives: Investigate a large series of CDS patients with thyroid function impairment. Methods: we performed a molecular analysis in 15 patients belonging to 10 families in whom thyroid, liver, ocular, kidney, skeletal muscle and neurological involvement were explored. Results: We report the largest series of CDS ever described in the literature and for the first time thyroid function impairment in the disease. Thyroid loss of function is probably an unknown clinical feature of CDS that could gradually develop with age. Audiogram was carried out in 8 of our patients. All audiograms were abnormal, even though only 2 patients suffered from clinical hypoacusia. So we advise for systematic hearing investigation in CDS patients. We also demonstrated that kidney could be a more commonly involved organ than previously reported in the literature. A poorly differentiated kidney parenchyma is a common feature in our series. All patients carried the same founder mutation c.773(-1)G>A in the ABHD5 gene. Conclusion: We reported previously unreported thyroid dysfunction in CDS patients, due to the lipid infiltration of the thyroid parenchyma. We also described previously unreported ultrasonographic aspects of the kidneys and of cerebral MRI in these patients.



ATSB

ASSOCIATION TUNISIENNE DES SCIENCES BIOLOGIQUES
29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:142.

IDH1 AND IDH2 MUTATIONS IN AML TUNISIAN PATIENTS; FREQUENCY, CLINICAL IMPACT AND PROGNOSTIC SIGNIFICANCE

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Background: Acute myeloid leukemia (AML) is a complex and heterogeneous hematopoietic neoplasm. Several molecular markers have been described that help to classify AML patients into risk groups. Isocitrate dehydrogenase 1 and 2 (IDH1/2) metabolic genes encode enzymes that catalyze the oxidative decarboxylation of isocitrate into α -ketoglutarate. Mutations in IDH can be involved in prognosis and in therapy protocol in AML cases. Methods: In the present study, 211 newly diagnosed AML patients were analyzed, diagnosed for IDH1/2 mutations, and their associations with clinical, molecular markers, prognosis and response to treatment. Genes were screened by PCR and direct sequencing. Results: The prevalence of IDH1/2 mutations was 20% and 15%, respectively. In IDH1, we described R132 and rs11554137, 2 other mutations. In IDH2, we described the R140Q, and 4 new mutations. Mutations in IDH1/2 genes were more frequent in younger adult male patients. These mutations were associated with a normal karyotype, M0 and M5 FAB subtypes. Furthermore, IDH1/2 mutations were associated with high risk of consolidation therapy failure. IDH1 mutations were associated with a shorter progress and worse EFS in comparison with IDH1 Wt. IDH1/2 in association with FLT3-ITD seemed to affect EFS. IDH1mut in combination with IDH2mut has been associated with high risk of death. Conclusion: Overall, 35% de novo AML patients had alterations of IDH genes. A significant association among prognostic and response to treatment was observed. IDH may have unfavorable impact on clinical outcome in younger adults AMLs de novo.

C. AFFICHE N°:143.

MUTATIONAL ANALYSIS IN PATIENTS WITH NEUROMUSCULAR DISORDERS: DETECTION OF MITOCHONDRIAL DELETION AND DOUBLE MUTATIONS IN THE MT-ATP6 GENE

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Mitochondrial diseases encompass a wide variety of pathologies characterized by a dysfunction of the mitochondrial respiratory chain resulting in an energy deficiency. The respiratory chain consists of five multi-protein complexes providing coupling between nutrient oxidation and phosphorylation of ADP to ATP. In the present report, we studied mitochondrial genes of complex I, III, IV and V in 2 Tunisian patients with mitochondrial neuromuscular disorders. In the first patient, we detected the m.8392C>T variation (P136S) in the mitochondrial ATPase6 gene and the m.8527A>G transition at the junction MT-ATP6/MT-ATP8 which change the initiation codon AUG to GUG. The presence of these two variations in such an important gene could probably affect the ATP synthesis in the studied patient. In the second patient, we detected several known variations in addition to a mitochondrial deletion in the major arc of the mtDNA eliminating tRNA and respiratory chain protein genes. This deletion could be responsible of an inefficient translation leading to an inefficient mitochondrial proteinsynthesis in P2.

Keywords: Neuromuscular disorders; ATP6 synthase gene; mitochondrial mutations, mtDNA; mitochondrial deletion



ATSB

ASSOCIATION TUNISIENNE DES SCIENCES BIOLOGIQUES
29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:144.

USE OF GENETIC FINGERPRINTING: IDENTIFICATION OF PATERNAL LINEAGE

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DNA typing is a technique used to identify DNA fingerprinting specific to each individual. Since 1984, DNA profiling has been applied in many fields such as parental testing and forensic science. In Tunisia, the use of DNA typing for parental testing began in 1998, following the Law No. 98-75 on the patronymic naming of children born out marriage as well as in case of marital conflict. In our laboratory, DNA profiling is performed only in the frame of judicial context and currently used to include or exclude paternity or to confirm the person identity. We are also requested to perform DNA tests using the paternal lineage to confirm relationship between male individuals in the absence of the presumed father. In the present work, we present the typology analysis of requisitions sent to our laboratory during 2017. We report also two cases of kinship confirmation in the absence of the father. Therefore, DNA was extracted from blood samples of individuals, their respective biological mothers and other presumed relatives from the paternal side as brothers, uncles and/or cousins. The amplification of 16 STR was carried out using the kit "AmpFLSTR Identifier Plus PCR Amplification" (Applied Biosystems), on ABI 3130 Sequencer. In addition, the Y-STR markers of the kit "AmpFLSTR Y-Filer Plus PCR Amplification" (Applied Biosystems) were also used to define the genetic profile following the paternal lineage. The typology analysis of the requisitions showed that, as usual, the highest request concerns those linked to marital conflicts with a rate of 62% followed by requests for identity confirmation (27 %). Children born out of marriage cases represent only 10 % of the requisitions. We confirmed the relationship kinship for our cases. In perspective, we are working on the development of effective methods using modern technology and software to resolve more cases of human identification and presumed relatives.

Key-words: Fingerprinting, paternal lineage, Y-STR

C. AFFICHE N°:145.

FRUIT MORPHOLOGICAL STUDY OF KERKENNAH ISLANDS INSULAR TUNISIAN DATE PALM (*PHOENIX DACTYLIFERA*.L)

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Abstract : The breeding of crop species relies on the valorisation of ancestral or wild varieties to enrich the cultivated germplasm. The date palm (*Phoenix dactylifera* L.) is considered among the oldest fruit trees, widely cultivated in North Africa and the Middle East; it's a widespread species in southern Tunisia where its culture plays an important socioeconomic role. However, this important fruit crop is currently endangered due to the severe genetic erosion resulting from the predominance of the elite Deglet Nour cultivar and the global warming leading to cultivar loss. This requires the set up of a breeding program and the selection of adapted varieties. In order to achieve this aim, it was necessary to evaluate the currently unexploited genetic diversity in uncultivated natural date palm population located on the Kerkennah islands. The date palms of this archipelago are characterized by a different use than in the continental oases, given that the most important parts of the trees are not the fruits but the palm themselves, and there is no notable anthropogenic pressure. Furthermore, most of the accessions are spontaneously sexually propagated by seeds, without any selection being made. From this fact, we have conducted a morphological study to evaluate the potential of the spontaneous insular resources of the Kerkennah islands. Statistical analyses have established preliminary genetic relations between the studied genotypes. This study provided us with an understanding of insular genetic diversity and its distribution and provides a basis for further research.

Key words : *Phoenix dactylifera*, Kerkennah, morphological traits.



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ASSOCIATION TUNISIENNE DES SCIENCES BIOLOGIQUES
29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:146.

CORRELATION BETWEEN VEGFR2 EXPRESSION AND RAS MUTATIONAL STATUS IN TUNISIAN PATIENTS WITH METASTATIC COLORECTAL CANCER.

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Background and objectives: Angiogenesis is a complex process in cancer progression and metastasis development. It is mediated by proangiogenic factors including the Vascular Endothelial Growth Factor (VEGF) and his receptor VEGFR2. These biomarkers involved in most morphogenetic events during angiogenesis, control migration, proliferation and survival of endothelial cells.

Therefore, RAS/MAPK signaling pathway increases downstream VEGFR2 signaling pathway and represses negative regulators of angiogenesis. Actually, patients with RAS activating mutations do not benefit from anti-EGFR therapies. This leads to evaluate angiogenic biomarkers to more stratificate patients for anti-VEGF antibodies. This study aims to assess the expression degree of VEGFR2 and to evaluate and eventual correlation with the RAS status in Tunisian metastatic colorectal cancer patients.

Methods: This study enrolled 34 formalin-fixed paraffin-embedded metastatic colorectal cancer cases at the same stage and grade. These cases were divided into 17 RAS wild type (WT) and 17 RAS mutated. To evaluate VEGFR2 expression we investigated immunohistochemistry using anti-VEGFR2 (SC- 6251). A score of 0–1 was considered as low VEGFR2 expression, and 2–3 indicated high VEGFR2 expression. Seven specimens of normal colon mucosa were used as control cases.

Results: These results showed that VEGFR2 was weakly expressed in normal colon mucosa, while, into the two groups of CRCm cases, VEGFR2 was highly expressed in the stroma, tumor cells cytoplasm and endothelial cells, in 14/17 of RAS WT and 14/17 of mutated ones. The correlation between VEGFR2 expression and RAS status was not statistically significant ($p = 0.6$).

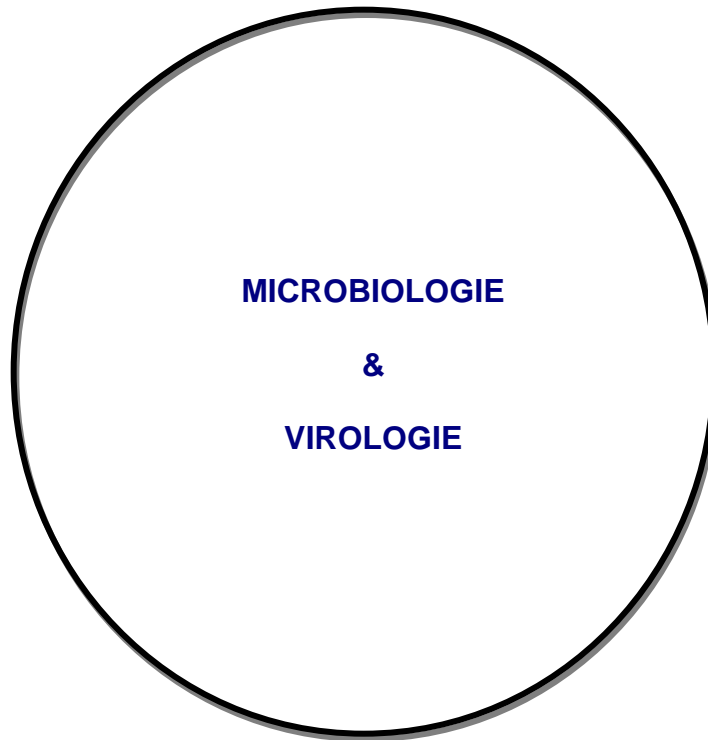
Conclusion: Our results suggest that the upregulation of VEGFR2 in metastatic colorectal cancer is independent from RAS status. It could be a potential biomarker in the stratification of patients eligibility to anti-angiogenic therapy. these preliminary results have to be validated by expanding our study cohort.

Keywords: mCCR, angiogenesis, VEGFR2, RAS.



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ASSOCIATION TUNISIENNE DES SCIENCES BIOLOGIQUES
29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE





C. AFFICHE N°:147.

EXTENDING COOKED SAUSAGES SHELF LIFE UNDER VACUUM CHILLED STORAGE USING ROSEMARY RESIDUES COMBINED OR NOT TO LINSEED IN CULL EWES' DIET

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The supplementation of sheep by linseed resulted in high meat content of healthy fatty acid, the PUFA. However, this type of fat has a low oxidative stability which can degrade the meat quality during storage. The use of natural antioxidant such as rosemary derivatives in animal diet could prevent lipid oxidation and preserve meat quality. The objective of this study was to measure the preservative effect of rosemary residues (RR) intake associated to linseed on ewes cooked sausages during chilled storage. Twenty eight Barbarine cull ewes were divided into four homogeneous groups: two Control groups were fed straw with control concentrate for CCC and with linseed concentrate for CLC; two RR groups were fed straw plus RR with control concentrate for RCC and with linseed concentrate for RLC, during 90 days. After slaughter and carcass dissection, the leg lean and caudal fat were used to make four sausages batches according to ewes' diet (74°C-15 minutes). After rapid cooling, sausages were vacuum packed in individual sections, then stored at 4°C during 20 days with microbial analysis every five days. All microbial counts increased significantly during storage. Linseed supplementation in ewes' diet did not affect sausages' microbial components, while RR intake inhibited microbial spoilage. The initial sausages' total viable counts were 3.4 vs. 4.6 log UFC/g and the final were 5.7 vs. 7.1 log UFC/g for RR and Control groups, respectively. Similarly, coliforms, yeast and mold were lower for both RR groups than control groups. Some pathogenic germs such as *Staphylococcus aureus*, *Listeria monocytogenes*, *Salmonella*, *Clostridium perfringens* and sulfite-reducing anaerobic bacteria were not detected in all sausages types. This relieved hygienic condition at slaughter and good practices at manufacturing and storage. The RR diet, whether combined or not to linseed inhibited microbial spoilage and was efficient in prolonging chilled cooked sausages shelf life with no need to add chemical additives. Thus, the dietary use of rosemary residues can be a good alternative to reduce preservatives in meat products.

Keywords: sausages, rosemary residues, linseed, microbial quality

C. AFFICHE N°:148.

MOLECULAR EPIDEMIOLOGY OF GROUP A ROTAVIRUS STRAINS DETECTED IN TUNISIAN CHILDREN (JANUARY 2015 - APRIL 2017).

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Group A Rotaviruses (RVA) are the most common aetiological agents of gastroenteritis in children worldwide. In developing countries, approximately 1440 children die from RVA infections each day, with an estimated 527,000 annually. In infants, RVA is estimated to cause more than 2 million hospitalizations every year depending on the income level of the country. The distribution of RVA genotypes varies between geographical areas and from one season to another. The aim of the present study was to characterize the different VP7 (G) and VP4 (P) genotypes of RVA circulating in Tunisia.

A total of 614 faecal specimens were collected from children hospitalized or consulting for gastroenteritis in the Central Coast of Tunisia between January 2015 and April 2017. All samples were prospectively screened by reverse transcription – polymerase chain reaction (RT-PCR) for the detection of VP6 gene specific of RVA. RVA-positive samples were further used for VP7 and VP4 genotyping using multiplex semi-nested RT-PCR.

Results: RVA detection rate was 13% (N = 81). Globally, VP7 genotypes found were G1 (46.9%), G9 (25.0%), G2 (15.6%), G4 (3.1%) and G3 (1.6%). Five specimens (7.8%) had mixed G profiles. Concerning VP4 genotyping, P genotypes detected were P[8] (69.0%), P[4] (19.7%), and P[6] (4.2%). Mixed P profiles were detected in 5 cases (7.1%). Conclusion: RVA gastroenteritis is a common disease associated with significant morbidity, mortality, and economic burden. Epidemiological knowledge of rotavirus is critical for the development of effective preventive strategies, including vaccines. These data will help to make informed decisions as to whether rotavirus vaccination should be considered or not for inclusion in Tunisia's National Immunisation Programme.



ATSB

ASSOCIATION TUNISIENNE DES SCIENCES BIOLOGIQUES
29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:149.

EVALUATION OF THE PREBIOTIC EFFECTS OF CRATAEGUS AZAROLUS FRUITS POLYSACCHARIDES ON THREE LACTOBACILLUS SPECIES

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Many scientific studies have reported that the prophylactic and therapeutic properties of certain microorganisms are present in fermented foods. These beneficial microorganisms for the health of humans and animals have been called "probiotics". In recent decades; this concept has been developed especially after the emergence, of antibiotic-resistant bacteria and the interest aroused by natural agents of inhibition for the control of pathogenic germs. The probiotic microorganisms selected for human consumption are essentially represented by lactic acid bacteria, of the genus *Lactobacillus* and *Bifidobacterium*, which are capable of fermenting substances that are essentially indigestible (complex carbohydrates) in the colon because of their high saccharolytic capacity. This property makes it possible to increase the growth or the activity of specific microorganisms of the gastrointestinal tract by positively influencing the health of the host. The beneficial effects generated by these interactions have allowed the development of the new "prebiotic" concept.

Our project has as main objective the isolation of lactic acid bacteria from different food sources then studying their growth using *CrataegusAzarolus* polysaccharide extracts as carbon source. A selection of lactic acid bacteria with probiotic properties was performed. The polysaccharide *Crataegusazarolus* significantly stimulates the growth of the *L.rhamnosus* and *L.brevis* strains but not the *L.paracaseissp.casei* strain. In addition, the pathogenic strain of *E. coli 1* has shown that it has a polysaccharide activity.

Key words: prebiotics - polysaccharide - *Crataegusazarolus* - Probiotics - *Lactobacillus rhamnosus*- *Lactobacillus paracasei ssp. case* - *Lactobacillus brevis 1*.

C. AFFICHE N°:150.

EVALUATION DE L'ACTIVITE ANTIBACTERIENNE DE DIFFERENTS ECHANTILLON DE MIEL VIS A VIS DES SOUCHES DU GENRE PSEUDOMONAS ET STAPHYLOCOCCUS

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Le présent travail est une contribution à l'évaluation de l'effet antibactérien de quatre échantillons de miels naturel récoltés de quatre sites du territoire Algérien ; Il s'agit des Wilayas suivantes : Djelfa, Blida, Tébessa, Sétif, vis-à-vis de huit bactéries à caractère pathogène et leurs souches de référence respective. Nous avons choisi pour cette étude deux catégories de groupes bactériens, des bactéries à Gram + (Staphylocoque) et bactérie à Gram - (Pseudomonas). L'évaluation de l'activité antibactérienne des échantillons de miel a été réalisée par la méthode de diffusion en gélose par la technique des disques et des puits ainsi que la méthode de dilution en milieu liquide pour déterminer la croissance bactérienne en présence du miel.

Les résultats obtenus montrent clairement l'impact du miel naturel sur la sensibilité microbienne. Cet effet inhibiteur a été constaté pour les quatre échantillons testés, avec des différences d'un échantillon à un autre et d'une souche bactérienne à une autre dont les diamètres d'inhibition varient entre 7 et 35 mm, et les CMI (Concentration Minimale Inhibitrice) allant de 1 à 1.3 mg/ml.

Nous avons constaté que les quatre échantillons de miel naturel ont montré un seul type d'effet antibactérien : un effet bactériostatique vis-à-vis des souches bactériennes testées. Les miels locaux se sont avérés très efficaces car ils ont montré un effet antibactérien très puissant vis-à-vis de la plupart des souches testées.

Mots clés : Résistance aux antibiotiques ; Miel naturel ; Activité antibactérienne, Pseudomonas ; Staphylococcus ; Micrococcus.



ATSB

ASSOCIATION TUNISIENNE DES SCIENCES BIOLOGIQUES
29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:151.

SEROLOGICAL STUDY OF ABORTIVE CHLAMYDIOSIS AT SMALL RUMINANTS IN THE CENTER OF ALGERIA.

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The abortions in small ruminants are a major concern for farmers because of its losses. Abortive Chlamydia is one of the abortive diseases caused principally by *C. abortus* bacterium with intracellular multiplication of Chlamydiaceae family.

In order to search for the circulation of *C. abortus* in small ruminants, a survey was conducted during the period from 2012 to 2013 in the centre of Algeria.

The analysis of 102 sera (aborted ewes and goats or kidded successors) through the indirect ELISA revealed positive cases in the herds of three provinces surveyed with an attack rate of 28.6% in herd level and 6.9% at individual level. According to the statistical analysis, the size and composition of the herd were the main factors influencing the rate. At individual level, the physiological stage and the animal species show an effect on the attack rate.

Finally, the flow of *C. abortus* has been demonstrated by the indirect ELISA in the visited farms.

Keywords: Chlamydia abortus, small ruminants, indirect ELISA, centre of Algeria

C. AFFICHE N°:152.

EMERGENCE OF STAPHYLOCOCCUS AUREUS VANCOMYCIN (R), FUCIDIC ACID (R) IN SUPERFICIAL INFECTIONS OF THE DIABETIC FOOT

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Diabetic foot is one of the most serious complications of diabetes and is the leading cause of hospitalization in diabetic patients. It is characterized by several pathological complications such as peripheral vascular disease, neuropathy, foot ulceration and infection. Every year more than a million diabetic patients require limb amputation worldwide. Diabetic foot infections are often polymicrobial. In this sense, our work was carried out on (34) diabetic patients presenting superficial lesions at the level admitted to the level of internal medicine service of hospital for a period of two months (2017). The aim of the present study is to diagnose the bacteriological causes and antibiotic susceptibility patterns of the organisms isolated from diabetic foot infections in Tebessa area (north-east) Algeria. The samples were taken by swab after mechanical debridement. The bacteriological study of the latter showed that among the (63) bacterial strains isolated *Staphylococcus aureus* occupy the first rank with (33) strains (52.38%), followed by the Enterobacteria (30) strains (47.61%). The study of antibiotic susceptibility revealed a multitude of resistance profiles for *Staphylococcus* (21 profiles), Enterobacteria (13 profiles). The resistance affected all classes with variable magnitude; *Staphylococcus* spp showed resistance to :Vancomycin and Clindamycin (60.60%), fusidic acid (15.15%); Azithromycin and Streptomycin (27.27%), Gentamycin (24.24%), Ofloxacin (18.18%) .

Keywords: Diabetic foot, Infection, *Staphylococcus aureus* ,Vancomycin (R), Fusidic Acid (R).



C. AFFICHE N°:153.

MOLECULAR EPIDEMIOLOGY OF ENTEROBACTERIACEAE STRAINS ISOLATED FROM PATIENTS WITH INFECTED DIABETIC FOOT ULCERS IN AN ALGERIAN UNIVERSITY HOSPITAL

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Background and aim: A diabetic foot infection is one of the most feared complications of Diabetes mellitus. Many studies have reported on the bacteriology of Diabetic Foot Infections (DFIs) over the past 25 years, but the results have been varied and often contradictory. The objectives of this study were to determine epidemiological characteristics of Enterobacteriaceae responsible for DFI in Annaba university hospital.

Methods: Patients were included if they were admitted for DFI in the Department of Diabetology at the Annaba University Hospital from July 2013 to June 2014. Ulcers were classified according to the Infectious Diseases Society of America/International Working Group on the Diabetic Foot classification system. Aerobic gram negative bacilli were tested for extended spectrum β lactamase (ESBL) and carbapenemase production by phenotypic and genotypic methods. Isolates were characterized genotypically by rep-PCR using the DiversiLab™ strain typing system (Bio-Mérieux).

Results: Among the 107 patients, 365 strains were isolated from 273 samples (1.33 isolate per sample). Aerobic Gram-negative bacilli were the most common isolated organisms (52% of all isolates). The study of ecological data highlighted the extremely high rate of multidrug-resistant organisms (MDROs) (77% of all isolates). The situation was especially striking for Enterobacteriaceae (Klebsiella pneumoniae (76.9%) and Escherichia coli (72.7%)). 68% strains were positive for blaCTX-M gene followed by blaTEM 24 (16.5%). Five isolates of Kp were carbapenem resistant and harbored blaOXA-48.

Conclusion: This study showed a preponderance of gram negative bacilli among the isolates from the diabetic foot ulcers and the alarming prevalence of MDROs in DFI in Algeria

Keywords: Diabetic foot ulcer, Bacterial profile, infection, multidrug-resistant organism, Enterobacteriaceae

C. AFFICHE N°:154.

PHENOTYPIC AND GENOMIC CHARACTERISTICS OF A NOVEL ATYPICAL MYCOBACTERIA SPECIES RELATED TO THE MYCOBACTERIUM FORTUITUM COMPLEX

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Compelling evidence suggests that Non Tuberculous Mycobacteria (NTM) might be responsible of respiratory infections in both immunosuppressed and immunocompetent hosts. We describe here a rapidly growing, non photochromogenic mycobacteria (referred herein to as *Mycobacterium* sp. M458), isolated from the sputum of a Tunisian young woman suspected of pulmonary Tuberculosis. M458 was unique in that it shows a rough morphotype and a separate phylogenetic branch within the *Mycobacterium fortuitum* complex, based on sequence variability in 16S rRNA, hsp65, sodA and rpoB gene sequences. This has prompted us to sequence its whole genome, which consisted of 5 526 191-pb circular chromosome with a G+C% of 67.3%, 5,193 protein-coding sequences and 55 RNA genes (including rRNA, tRNA and tmRNA). Three putative CRISPRs loci were found, along with two regions coding for a putative prophage were predicted. The functional annotation of M458's genome revealed large number of genes encoding lipid transport and metabolism (8.66%), as well as energy production and conversion (6.78%), a hallmark typical of all Mycobacteria. Also 7.95% encoding secondary metabolites biosynthesis metabolism and catabolism, 4.33% encoding inorganic ion transport and metabolism amino acid transport. Strikingly, M458 genome harbors a wide variety of putative genes related to virulence, suggesting its pathogenic potential.

Keywords: De novo sequencing, De novo assembling, Mycobacterium sp.nov, annotation, genomic comparison



ATSB

ASSOCIATION TUNISIENNE DES SCIENCES BIOLOGIQUES
29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:155.

ANTIMICROBIAL ACTIVITY AND DFT STUDIES OF ORGANO-METALLIC SCHIFF BASE COMPLEXES CONTAINING SULFONYL MOIETY

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Copper complexes of N-sulfonyl imine have been used widely in photography, industries, medicine [1] and electroplating. Schiff bases and their metal complexes have exhibited biological activity as antibiotics, antiviral and antitumor agents[2]. The ligand and its metal chelates have been screened for their antimicrobial activities using the disk diffusion method against the selected Gram-positive bacteria: Staphylococcus aureus, Enterococcus faecalis, Gram negative bacteria: Escherichia coli. These complexes have been isolated and characterized by IR and UV-vis. The complexes formation was studied in solution and in solid state. The stability constants and species distribution were determined with the help of Hyperspec and Hyperquad. In order to gain further insights into the interaction ligand-ion in this system the 1:2 complex was computed with DFT B3LYP/6-311G.

Keywords : Antimicrobial activity, N-sulfonyl imine, DFT, Copper complexes

C. AFFICHE N°:156.

STUDY OF THE PREVALENCE OF SALMONELLA DUBLIN IN COWS IN THE REGION OF ALGIERS

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Salmonellosis is an infectious inoculable and contagious disease caused by ubiquitous enterobacteria of the genus Salmonella. It is one of the leading causes of food-borne illness in humans in developed countries. In cattle, many serotypes of Salmonella enterica are responsible for a wide variety of clinical manifestations that can cause considerable economic losses. Some serotypes can sporadically abort cows, such as the Dublin serotype. This study was conducted in different cattle farms in the Algiers region, between December 2012 and October 2013. The bacteriological results showed a prevalence of 2.70% for S. Dublin. On the other hand, the immunological analysis of the milk by the ELISA technique revealed a rate of 13.18% (95% CI 5% -20%) of individuals presenting antibodies specific for Salmonella Dublin.

A case-control study was conducted to demonstrate a link between Salmonella Dublin positivity and abortion in cows. If the bacteriological results are taken into account, the study did not establish a clear association (OR = 8.66 95% CI 0.58-130.12). On the other hand, the case-control study carried out based on the immunological results of milk showed a significant positive association (OR = 62.33 IC 95% 2.13-1822) between having a positive response to Salmonella Dublin in milk and the presence of abortions in the farm. In view of these results, Salmonella Dublin should be systematically included in the differential diagnosis of abortions in Algeria.



C. AFFICHE N°:157.

MOLECULAR CHARACTERIZATION OF RESPIRATORY SYNCYTIAL VIRUS DETECTED IN TUNISIAN HOSPITALIZED INFANTS (2016-2017)

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Background: Human respiratory syncytial virus (RSV) is the leading cause of acute lower respiratory tract infections (LRTI) in children globally, with nearly all children experiencing at least one infection by the age of two. RSV is divided into two antigenic groups, A and B, on the basis of the reactivity of the virus with monoclonal antibodies against 'G' glycoprotein, a type II transmembrane protein containing two variable regions, and by genetic analysis of the G gene. The major antigenic differences between subtypes are due to variations in the second hyper-variable region located at the C-terminal end of the attachment glycoprotein G. Infection with one group does not confer immunity against the other and children infected with one antigenic group are more likely to be reinfected with the heterologous group. The aim of the present study was the molecular characterization of RSV laboratory-confirmed respiratory samples, based on coding sequences of G glycoprotein. **Methods:** Nasopharyngeal aspirates (NPA) were collected from infants less than 2 years of age hospitalized between January 2016 and December 2017 in the Central coast of Tunisia with LRTI. All samples were screened for RSV by direct immunofluorescence assay (DIFA). RSV positive samples were used for genetic characterization by amplifying and partial sequencing of the attachment glycoprotein gene. **Results:** During the study period (2016-2017), a total of 427 NPA were collected and tested by DIFA for the presence of RSV antigen. Globally, 156 (36.5%) were RSV-positive, with a peak incidence during the coldest months of the year (December to February). Genetic characterization was performed in 21 RSV cases, showing that 14 (67%) of them belonged to group A and 7 (33%) belonged to group B viruses.

Conclusions: Both RSV groups co-circulated during 2015 in 2016 in the Central coast of Tunisia, but RSV-A was predominant. Since viruses continuously evolve, continued surveillance of RSV strains circulating worldwide is required to aid in the development of reliable diagnostics and monitoring for changes in areas targeted by current and future RSV therapeutics or vaccines.

Keywords: Respiratory Syncytial Virus, Genotyping, Attachment glycoprotein

C. AFFICHE N°:158.

SURVEYS BY INFORMAL INTERVIEWS OF VETERINARIANS ON VACCINATION PRACTICES FOR THE PREVENTION OF GUMBORO DISEASES IN POULTRY FARMING

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Gumboro's disease is prevalent in chicken farms despite its routine vaccination, which would call into question its effectiveness. The purpose of this study is to provide information for vaccination practices carried out for the prevention of IBD. It is composed of practicing veterinarians in 3 wilayas: Tiziouzou, Bouira and Boumerdes realized in their cabinets. The results of this survey show that vaccination failures are indeed present and that IBD is still a problem for poultry farming.

It is a vaccination practiced by all veterinarians or the only pathology vaccinated for broiler flocks, which testifies to vaccine failures in the field. This vaccination is most often applied in primary vaccination only for more. She uses a type of vaccines living abroad drinking water for all breeders. The number and type of vaccine seems too much for a region where the circulation of hyper virulent strains remains highly suspected, which would have favored the extent of this pathology.

Strengthening the protection and serological surveillance of vaccination makes it necessary to re-establish the prophylaxis program for any possible change in the epidemiological situation.

Key words: Gumboro, vaccinated, veterinary, vaccination practices, chicken.



ATSB

ASSOCIATION TUNISIENNE DES SCIENCES BIOLOGIQUES
29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:159.

DETECTION OF EPSTEIN-BARR VIRUS IN TUNISIAN PATIENTS WITH GLIOBLASTOMA MULTIFORME

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Background: Epstein-Barr virus (EBV) has been implicated in the development of certain cancers including Burkitt's lymphoma and Hodgkin's lymphoma, but its implication in glioblastoma remained unclear. The aim of this study was to investigate the presence of EBV sequence among Tunisian glioblastoma patients.

Material and Methods: Eighty-six samples of glioblastoma were screened for the presence of a specific EBV DNA sequence using Polymerase Chain Reaction (PCR). Immunohistochemical staining and in situ hybridization were used to confirm the presence of EBV in GBM patients.

Results: In this study, we showed the presence of EBV DNA sequence in 27 out of 86 patients with GBM. Positive cases were confirmed by immunohistochemical staining and in situ hybridization.

Conclusion: The prevalence of EBV DNA was 27/86 (31.4%) in our glioblastoma collection. Further studies are needed to establish the possible role played by EBV in the tumorigenesis of glioblastoma.

Mots clés : Glioblastoma multiforme, EBV.

C. AFFICHE N°:160.

CHEMICAL COMPOSITION AND ANTIMICROBIAL ACTIVITY OF THE ESSENTIAL OIL OF THYME (*THYMUS VULGARIS L.*) AND ROSEMARY (*ROSMARINUS OFFICINALIS*) AGAINST AVIAN *ESCHERICHIA COLI* STRAINS

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In veterinary medicine and particularly in poultry farming, antimicrobial resistance is a real public health problem, in effect, the anarchic use of antibiotics has led to the development of bacteria that have, increasingly, moreover, alarming resistance.

In Algeria, the poultry sector is one of the most prosperous sectors and white meat is the most consumed meat, so any selection of antimicrobial resistance will inevitably affect the health of the Algerian consumer

Following this observation, our approach was to think about new substances that could have the same antibacterial effect as that of antibiotics, while having the advantage of avoiding the selection of new bacteria resistant, that's why, we naturally think to an ancient remedy namely the aromatic plants and specially their essential oils. Therefore, after isolating 40 pathogenic strains of avian *E. coli* (24 from the broiler chicken and 16 isolated from turkey) and identifying their antimicrobial resistance profile, we subjected them to the action of two essential oils, that of Thyme (*Thymus vulgaris L.*) and that of Rosemary (*Rosmarinus officinalis*) and this in order to determine their supposed antibacterial effect. Our work has enabled us, following analyzes by GC-MS, to identify the main chemical components of the two essential oils mentioned above and to demonstrate that the comparison between the two essential oils has led to the conclusion that the essential oil of Thyme (*Thymus vulgaris L.*), from its MIC and its zones of inhibitions, had a much greater antibacterial activity than the essential oil of Rosemary (*Rosmarinus officinalis*). The in vitro study, concerning Thyme essential oil was conclusive, remains to carry out the in vivo study thus allowing to validate successfully the antibacterial action of the essential oil of Thyme in the poultry field.



C. AFFICHE N°:161.

ANALYSES PHYSICOCHIMIQUE ET MICROBIOLOGIQUE D'UN FROMAGE ARTISANAL « JBEN »

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Le jben est un produit laitier connu et consommé en Algérie depuis fort longtemps aussi bien en milieu rural qu'en milieu urbain. L'objectif du présent travail était de contribuer la caractérisation d'un fromage traditionnel « Jben ». L'analyse physicochimique de fromage a porté sur les paramètres (pH, acidité, matière sèche, teneur en sel, taux de matière grasse, azote total et protéines solubles).

Les résultats montrent que les échantillons collectés ont une teneur en extrait sec total de 29 ± 1.06 g par cent grammes de fromage et une teneur en matière grasse de 36.44 ± 4.12 g par cent grammes de matière sèche. Un pH de 4.02 ± 0.31 et une acidité de 5.62 ± 0.31 g d'acide lactique par cent grammes de matière sèche. L'analyse microbiologique a porté sur 6 groupes microbiens : bactéries lactiques, coliformes totaux et fécaux, staphylocoques, flore indologènes et putride, levures et moisissures, et certains groupes potentiellement pathogènes (*Staphylococcus aureus*, salmonelles). Le dénombrement a permis de souligner la présence d'une forte contamination des échantillons analysés avec des moyennes estimées de $1,56.10^9$, $4,60.10^6$, $1,90.10^5$, $6,31.10^6$, $2,90.10^6$, $3,14.10^5$ et $6,50.10^2$ UFC/g respectivement. Cette analyse a montré aussi que l'écosystème microbienne est très riche avec une dominance de la flore lactique appartenant aux genres : *Lactococcus* (53.74%), *Lactobacillus* (32.14%) et *Leuconostoc* (14.28%). Les résultats des aptitudes technologiques des souches lactiques indiquent que l'ensemble des souches présentent de bonnes propriétés fonctionnelles (acidifiante, protéolytique, texturante, et aromatisante) qui peuvent être exploitées. Les aptitudes probiotiques sont aussi révélées intéressantes. La recherche de l'antagonisme bactérien dans le milieu solide a été réalisée suivant la méthode de double couche et la diffusion en puits. Les résultats ont montré que les souches productrices de bactériocines sont fréquemment isolées des produits laitiers.

Mots clés : fromage traditionnel, Jben, qualité, microbiologie, contamination.

C. AFFICHE N°:162.

MISE EN EVIDENCE DU POTENTIEL EN MOLECULES BIOACTIVES PRODUITES PAR UN NOUVEAU TAXON BACTERIEN D'UNE SEBKHA ALGERIENNE.

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Dans le cadre des recherches de notre laboratoire sur l'isolement de métabolites bioactifs nouveaux potentiellement intéressants en thérapie, une souche a été isolée et rattachée à un nouveau taxon. Il s'agit de la souche *Melghiribacillus thermohalophilus*. Le métabolome de l'extrait à l'acétate d'éthyle des cellules a été étudié par spectrométrie UV-Vis et Infrarouge (IR-ATR). Ensuite, cet isolat a été criblé pour rechercher des activités enzymatiques et antagonistes. Des activités enzymatiques intéressantes ont été mises en évidence: chitinase, caséinase, lécithinase. Pour mettre en évidence les activités antagonistes, elle a été testée contre de nombreuses bactéries Gram+, Gram- et des champignons. Aucune activité n'a été détectée contre l'ensemble de ces germes-cibles. Pour cela, nous avons étendu les germes-cibles aux Archaea. 6 souches d'Archaea appartenant à différentes espèces ont été testées. Un résultat positif a été retrouvé sur l'une d'entre-elles: *Halorubrum sacchrovorum* isolée d'une sebkha. Cette activité originale est importante car elle concerne une *Haloarchaea*, connu pour être sensible aux métabolites anti-tumoraux. Cela pourrait expliquer son inaction sur tous les autres germes testés. La production de l'activité a été entreprise en milieu liquide. La cinétique de croissance et de production a été étudiée. Elle a montré que la production s'effectue à l'extérieur des cellules pendant la phase de croissance. L'extraction de la fraction liquide du milieu a été réalisée avec l'acétate d'éthyle.

L'extrait actif a été ensuite étudié par CCM suivie d'une bio-autographie pour localiser les taches actives. Une seule tache active a été détectée de $R_f = 0,79$. Des cultures à grandes échelles ont été réalisées, suivies d'extraction et de chromatographies pour récupérer un maximum de produit semi-purifié. Une purification finale a été réalisée par HPLC. Un début de caractérisation par spectrophotométrie UV-visible et par Infra rouge a été effectuée. Les études se poursuivent pour une caractérisation finale du produit.

Mots clés : biotechnologie, bactérie thermohalophile, molécules extracellulaires, activité antimicrobienne, Archaea.



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29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:163.

ISOLATION AND IDENTIFICATION OF BACTERIA FROM DOG SALIVA

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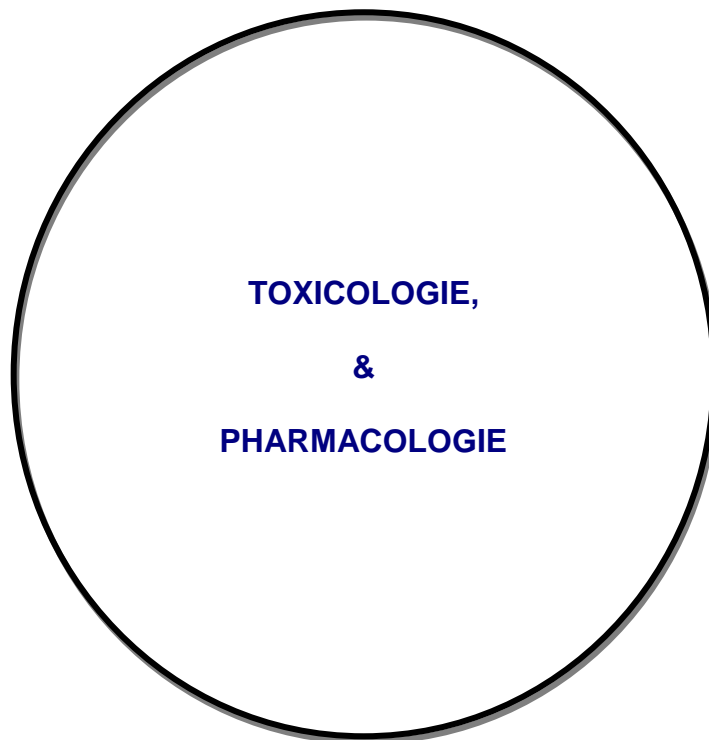
The salivary flora of dogs is particularly varied . The role of the latter in the transmission of this flora to man after bite appears preponderant. The main objective of this study is to estimate the prevalence of asymptomatic carriage of the main germs (inoculation zoonosis agents) in the oral cavity of dogs in order to evaluate the risk that these pets could pose to public health. Swabs of the palate, glosso-gingival and gingival space are performed on 60 samples using a dry, sterile swab. Of the total of 60 oral samples, 105 bacteria were isolated (54 gram-positive bacteria, 51 gram-negative bacteria). Several bacterial species were identified (6 staphylococcus aureus, 5 pasteurilla multocida, 2 pasteurilla dagmatis, 7 streptococcus....)

Key words : *Bacteria*, saliva, dog.



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29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:164.

LARVICIDAL EFFECT OF METHANOLIC EXTRACT OF *LAURUS NOBILIS* AGAINST *CULEX PIPPIENS* (DIPTERA:CULICIDAE)

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Mosquitoes are at the center of global entomological research mainly for their medical importance as vectors of dangerous diseases such as malaria and arbovirosis . They are considered the most important vector group in human health because they are involved in the transmission of malaria, fever and dengue, hemorrhagic fevers, lymphatic filariasis, etc.

Among these insects, *Culex pipiens* is one of the main vectors of St. Louis encephalitis virus in the United States, it was also considered to be the principal vector of West Nile virus in Romania, Israel , United States, Bulgaria and the Czech Republic. Morocco was hit in 1996 and 2003. It has also been cited as pathogen vector responsible for malaria, yellow fever, dengue, filariasis and some encephalitis. In Algeria, West Nile virus caused a major epidemic in the Timimoune region in 1994. *Culex pipiens* is the mosquito that is most interesting because of its abundance and the real nuisance it represents in urban areas.

The methanolic extract of leaves of *Laurus nobilis* was tested against 4th instar larvae of the mosquito *Culex pipiens* L. The obtained results indicated a sensitivity of *Culex pipiens* larvae for the plant species aroused. This sensitivity is even higher when exposure of the larvae to insecticides is extended in time. Generates the greatest mortality rate 49% for 900 mg /l after 72 h of exposure against 24% for 900 mg /l after 24 h exposure for the extract of leaves of *Laurus nobilis*. For LC₅₀ values, leaves of *Laurus nobilis* acted at low concentrations with an LC₅₀ of 915mg /l after 72 h of exposure.

Thus, these results may provide an opportunity to develop alternatives to environmentally hazardous chemicals with some available cheap plants which are usually environmentally safe to different living organisms.

Keywords: Plants extracts, Mortality, LC₅₀, *Laurus nobilis*, *Culex pipiens*

C. AFFICHE N°:165.

CITRULLUS COLOCYNTHIS (CUCURBITACEAE) EFFECTS ON BIOCHEMICAL PARAMETERS IN FEMALE RATS (WISTAR STRAIN)

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Citrullus colocynthis is a spontaneous plant in the arid regions of Africa and Asia; it's very common in the Sahara. Used in traditional medicine to treat excess sugar, that explains high poisoning frequency in the Maghreb.

This study shows that the ingestion of sublethal concentration (20µg/ml) causes changes in biochemical parameters such as blood glucose, urea and creatinine levels in the poisoned rats compared with control animals.

Key words: Insecticide, *Citrullus colocynthis*, Rat Wistar, Biochemical parameters.



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29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:166.

EFFETS DES ANTIOXYDANTS DANS LA RÉDUCTION DE TOXICITÉ INDUITE PAR LE CHLORURE MERCURIQUE CHEZ LE RAT WISTAR

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Cette étude a été réalisée sur les rats pour évaluer les capacités protectrices et réparatrices de l'huile de persil sur le dysfonctionnement des reins causé par une toxicité aiguë par le chlorure mercurique (HgCl₂)

Il s'agit d'une étude expérimentale durant de 8 jours, déroule sur 24 rats adultes répartis aléatoirement en 4 lots chacun de 6 rats, un lot (C) contrôle reçoit pendant une semaine (de J1 à J7) l'eau distillé par gavage gastrique ainsi qu'une seule injection intra-péritonéal de NaCl à 0,9% au 4e jour (J4), lot (Hg) reçoit par gavage gastrique l'eau distillé (de J1 à J7) avec une seule injection intra-péritonéal de chlorure mercurique (J4), lot (Hg+PO) reçoit par gavage gastrique l'huile de persil (de J1 à J7) avec une seule injection intra-péritonéal de chlorure mercurique (J4) et le lot (PO) reçoit l'huile persil par gavage gastrique (de J1 à J7) avec une seule injection intra-péritonéal de NaCl à 0,9% (J4), le 8^e jour les rats ont été décapités, et le sang a été récupérés dans des tubes héparines pour le dosage des paramètres biochimiques.

Nos résultats montrent des différences significatives entre les lots pour l'urée et la créatinine et suggèrent que l'huile de persil joue un rôle néphroprotective très important contre la toxicité par le chlorure mercurique.

Mots clés : Rats Wistar, Toxicité, Chlorure Mercurique, Huile de Persil, Urée, Créatinine.

C. AFFICHE N°:167.

BIOCHEMICAL STUDY OF HEPATOTOXICITY BY TITANIUM DIOXIDE AND THE PROTECTIVE EFFECT OF AQUEOUS EXTRACT OF TURMERIC (CURCUMA LONGA) IN WISTER ALBINOS RATS

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Titaniumdioxideis an nanoparticule (TiO₂) used in a variety of consumerproducts, includingtoothpastes, foodcolouring and sunscreens. The goal of thisstudywasinvestigating the hepatotoxicity of TiO₂ and effects protective by aqueousextract of curcuma Longa (CL), Medicinal plants are traditionallyutilized to treathumandisorders. Curcuma longais one of the mostcommonlyusedherbalmedicines, has manybenefitssuch as antioxidant, anticancer, anti-inflammatory, anti-hyperlipidemic and antimicrobialeffects.

The animalsweredividedrandomlyinto four groups : the control group, TiO₂ group, Curcuma Langa group and TiO₂+CL group. Presentstudysuggestedthat Tio₂ administration increased the levels of biochemical test glutamate-oxaloacetate transaminase (AST) and glutamate-pyruvate transaminase (ALT), macromolécules (Glucid, lipid and protéine). However, the aqueousextract of Curcuma Langaprevented the increase in hepatic fonction test.

Key words : Curcuma Langa, titaniumdioxide (TiO₂), hepatotoxicity, glutamate pyruvate transaminase (ALT), glutamate oxaloacetate transaminase (AST)



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29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:168.

OXIDATIVE STRESS INDUCED BY GLYPHOSATE (GLP) IN RAT TESTIS: ATTENUATION BY ZINC SULFATE

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Pesticides are toxic substances that are deliberately released into our environment to kill or control living organisms. They have many beneficial qualities with regards to their intended use, but also carry with them potential harmful side effects for other living organisms that are inadvertently exposed, including humans. Our study aims to determine the potential ability of Zinc Sulfate (ZnSO₄), used as nutritional supplement, to alleviate oxidative stress in testis tissue induced by glyphosate (GLP), an organophosphorus pesticide. Rats were randomly divided into four groups: group I served as control rats. Group II was treated with 333 mg GLP/ (kg bw) administered in drinking water, Rats of group III have received Zinc Sulfate (ZnSO₄) at 227mg/ (kg bw) by gavage. Animals of group IV were treated with GLP and ZnSO₄, for 30 days. Our results indicated the potential effects of GLP to induce oxidative damage in tissues and the ability of ZnSO₄ to attenuate GLP-induced oxidative damage. A decrease in body weight and increase in the weight absolute and relative testicular compared to controls. Exposure to GLP increased malondialdehyde (MDA) levels, advanced oxidation protein products (AOPP), and a decrease in reduced glutathione (GSH). Antioxidant enzyme activities in tissue were modified in GLP group compared to controls. Administration of ZnSO₄ ameliorated these parameters. We conclude that GLP induces oxidative stress in testis and the ability of ZnSO₄ to attenuate GLP-induced oxidative damage.

Keywords: Glyphosate, Zinc Sulfate, Rats, Testis, Oxidative stress.

C. AFFICHE N°:169.

CONTRIBUTIION OF THE STUDY OF THERAPEUTIC EFFECTS OF ESSENTIEL OIL "SYZYGIUM AROMATICUM" ON WISTARS RATS EXPOSED FOR LEAD.

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The mechanisms responsible for the toxicity of lead and manganese are multiple and potentially affect all body cells. To this end, we were interested to oxidative stress induced by lead acetate in erythrocytes and the tissues (liver and kidney) at a dose of 2.84 mg / ml in the period gestation and lactation in Wistar rats and the ability of HE cloves "Syzygium aromaticum" (HEC) to restore or not this state of stress.

Furthermore, analysis of antioxidant status erythrocyte said the Pb increases significantly (p <0.001) enzyme activities of catalase (CAT), the enzyme activity of glutathione peroxidase (GPx) activity and non-enzymatic reduced glutathione (GSH) and a significant decrease (p <0.001) of the enzymatic activity of superoxide dismutase (SOD). By cons, analysis of tissue antioxidant status showed a significant increase (p <0.001) enzyme activities of catalase (CAT), the enzymatic activity of glutathione peroxidase (GPx) and a decrease significativet (p <0.001) of the activity of reduced glutathione (GSH) and superoxide dismutase (SOD), resulting in a malfunction of the antioxidant defense system. Biochemical analysis revealed that toxicity by Pb causes metabolic disorders (hyperglycemia, hyper-uremia, hyper-creatinine, and increased transaminases ...).

However, administration of HEC by the IP route for a period of 21 days previously addicted rats Pb, HEC indicates that this contributes significantly to improving defenses against free radical attack, by a recovery level of antioxidant enzymes activities by increasing it ability to eliminate radical compounds.

Keywords: Lead (Pb), Syzygium aromaticum, essential oil, glutathione peroxidase, catalase, glutathione reduced, superoxide dismutase, Oxidative stress.



C. AFFICHE N°:170.

DIRECT TOXIC EFFECTS OF *CLEOME ARABICA* (CAPPARIDACEAE) ON MORTALITY AND DEVELOPMENT OF *DROSOPHILA MELANOGASTER* (DIPTERA; DROSOPHILIDAE)

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Drosophila is a Diptera that offers many benefits for research. It's a well-known species in the laboratory that rises easily and can quickly get a large number of adults. These conditions facilitate the repetition and standardization required for comparative studies.

This study investigates the direct toxic effects of *Cleome arabica* aqueous extracts (a therapeutic, antibacterial and insecticidal plant) on the mortality and development of *Drosophila melanogaster*. Different concentrations are mixed with 40 g of feed in rearing tubes containing 20 larvae (2nd stage) and mortality is monitored for 15 days.

The results show that there is a strong positive correlation between mortality and exposure times to the plant extracts used, as well as between mortality and extract's concentrations. Using 100 µg/ml, we achieve up to 90% mortality after 15 days of treatment. We have recorded, too, that the treatment disrupts the fly's development.

Key-words: Biological control, *Drosophila melanogaster*, *Cleome arabica*, toxicity, mortality, development.

C. AFFICHE N°:171.

INFLUENCE OF COMBINED CYP3A4 AND CYP3A5 SINGLE-NUCLEOTIDE POLYMORPHISMS ON TACROLIMUS EXPOSURE IN KIDNEY TRANSPLANT RECIPIENTS

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Background: Tacrolimus (Tac), an immunosuppressant used for the prevention of graft rejection in kidney transplant patients, is characterized by a high interindividual variability of its pharmacokinetics. It is metabolized specifically by the CYP3A isoenzyme: CYP3A4 and CYP3A5. The present study investigated in Tunisian renal transplant patients, the genetic polymorphisms of CYP3A4*1B -392A>G, CYP3A4*22 15389C>T and CYP3A5*3 6986A>G, and their influence on tacrolimus pharmacokinetics during early and late post-transplant (PT) phases. The present study investigated in Tunisian renal transplant patients, the genetic polymorphisms of CYP3A4*1B -392A>G, CYP3A4*22 15389C>T and CYP3A5*3 6986A>G, and their influence on tacrolimus pharmacokinetics during early and late post-transplant (PT) phases.

Patients and methods: We included adult Tunisian patients having received Tac for de novo kidney grafts and undergone a therapeutic drug monitoring (TDM) of Tac by C₀ monitoring during early (1 to 90 days) and late (over 90 days) PT phases. The genomic DNA was extracted from peripheral blood mononuclear cells using a salting-out procedure. CYP3A4 and CYP3A5 genotyping were performed using polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP).

Results: Seventy-eight patients were enrolled in this study. During the early PT phase, only the CYP3A5*3 and the CYP3A4*22 polymorphisms correlate significantly with Tac dose-normalized C₀ (C₀/D ratio). During the late and all PT phases, only the CYP3A4*1B polymorphism correlates significantly with Tac C₀/D ratio. The mean daily doses (mg/kg) matching therapeutic C₀, regardless of the CYP3A genotypes were 0.68 ± 0.2 and 1.09 ± 0.17, during early and late PT phase, respectively.

Conclusion: Our data support a critical role of the CYP3A4*1B, CYP3A4*22 and CYP3A5*3 polymorphisms on the variation of Tac exposure during the early and the late PT phase, respectively. The establishment of customized Tac doses, according to CYP3A4/CYP3A5 genotype combination and the PT time, may allow preventing graft rejection and improving the safety profile of this drug.

Keywords: CYP3A4; CYP3A5; Pharmacokinetics; Tacrolimus; Transplant phases



C. AFFICHE N°:172.

NANOTOXICITY OF Fe_3O_4 ON THE PARAMETERS OF OXIDATIVE STRESS OF AN ALTERNATIVE CELL MODEL *PARAMECIA*.

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The number of industrial and consumer products which contain engineered nanomaterials (ENMs, materials with at least one dimension 1-100 nm) are increasing exponentially and there is a concern regarding their occupational and environmental safety. Nanoparticles can enter to the different organs, little is known so far on the toxicity potential and oxidative stress of Fe_3O_4 . Fe_3O_4 nanoparticles are the most widely used metal oxide nanoparticles, especially, in biomedical applications. Here the understanding of the effect of Fe_3O_4 nanoparticles on the general Redox state of a unicellular protozoa *Paramecium sp.* and the effect on mitochondrial swelling and respiration were assessed. Fe_3O_4 resulted in increase of toxicity markers, lipid peroxidation and protein. Mitochondrial enzymes and swelling were elevated with decreased respiration level.

In this study we are interested in the evaluation of the toxicity of Fe_3O_4 nanoparticles, on oxidative stress indicators of a cell model *Paramecium sp.* which is perfectly adapted with toxicological studies, the culture of these micro organisms allowed us to evaluate easily the toxicity of these nanoparticles.

Our study suggested that the mitochondrial disease and dysfunction with elevated oxidative stress in *Paramecia* treated with 200 and 300 ppm during 15 days is the original of toxicity and maybe the original cause of much environmental pathologies.

Keywords: Mitochondria, Toxicity markers, Fe_3O_4 nanoparticle, *Paramecium sp.*, Oxidative Stress.

C. AFFICHE N°:173.

ETUDE DE L'ACTIVITE INSECTICIDE DES FEUILLES ET DES GRAINES D'UNE EUPHORBIACEE (*MERCURIALIS ANNUA L.*)

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Les bio-insecticides dérivées des plantes représentent une alternative aux produits chimiques de synthèse. Ainsi, l'activité insecticide est bien connue chez la famille des Euphorbiacées ce qui la rend intéressante comme espèce insecticide. Dans ce contexte, en vue de la valorisation des ressources naturelles végétales, nous nous sommes intéressés à étudier les activités insecticides des extraits aqueux de feuilles de pieds mâles et de feuilles des pieds femelles ainsi que des graines d'une Euphorbiacées : *Mercurialis annua L.*

Des tests de toxicité ont été réalisés afin d'examiner l'effet insecticide des feuilles et des graines de *Mercurialis annua L.* sur des adultes de charançon de riz : *Sitophilus oryzae L.*

En effet, l'échantillonnage des plantes a été fait de 4 provenances : Ariana, Béja, Bizerte et Zaghouane. Les insectes ont été soumis à des différentes doses de poudres de feuilles et des pâtes de graines d'ordre croissant et durant divers durées d'exposition. Des individus qui n'ont subi aucun traitement ont été maintenus simultanément dans les mêmes conditions.

Les résultats ont montré les effets insecticides des différents extraits et surtout des graines de *Mercurialis annua L.* En effet, cette étude a mis en évidence une toxicité élevée contre les adultes de *Sitophilus oryzae L.* chez la provenance de Zaghouane avec un taux de mortalité de 100% et une DL50= 1.61mg/g après 3 jours d'exposition. L'importance de l'origine et la nature du matériel végétal, de la concentration de l'extrait et de la durée d'exposition a été marqué dans la quantification de l'activité étudiée.

Mots clés: *Mercurialis annua L.*, *Sitophilus oryzae L.*, Activité insecticide.



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ASSOCIATION TUNISIENNE DES SCIENCES BIOLOGIQUES
29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:174.

PEPTIDOMIC ANALYSIS OF BIOACTIVE PEPTIDES IN ZEBRA BLENNY (*SALARIA BASILISCA*) MUSCLE PROTEIN HYDROLYSATE EXHIBITING ANTIMICROBIAL ACTIVITY OBTAINED BY FERMENTATION WITH *BACILLUS MOJAVENSIS* A21

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In recent years, the finding of new and safe antibacterial compounds from natural sources has received considerable attention. In fact, the excessive and uncontrolled use of antibiotics was greatly associated with the emergence of resistant pathogens to conventional antibiotics, which frequently leads to treatment failure, severe outcomes and increasing expenditures. The present study investigates the antibacterial activity of zebra blenny (*Salaria basilisca*) protein hydrolysates obtained by fermentation with a proteolytic bacterium, *Bacillus mojavensis* A21. The fermentative zebra blenny protein hydrolysate (FZPH), with a degree of hydrolysis (DH) of 17.35%, was characterized. The physicochemical composition, hydrophobicity and content of free amino acids and nucleotides were determined. Similarly, the amino acid composition of FZPH and the mass distribution of peptides by MALDI-Tof were determined. The hydrolysate was fractionated by size exclusion chromatography on a Sephadex G-25 into six major fractions. Fraction F2, which exhibited antibacterial activity against several Gram-positive and Gram-negative bacteria, was further fractionated by reversed-phase high performance liquid chromatography (RP-HPLC). Fractions A and B from RP-HPLC exhibiting the highest antibacterial activity, were analysed using nanoESI-LC-MS/MS to identify the sequences of the peptides. A total of 28 and 41 peptides, containing from 8 to 31 amino acid residues, were identified in sub-fractions A and B, respectively. Further, identified bioactive peptides sharing sequences with previously identified peptides were reported. The results of this study suggest that FZPH is a good source of natural antimicrobial peptides and therefore, they could serve as a beneficial ingredient for nutraceuticals.

Keywords: *Salaria basilisca*, Fermentation, *Bacillus mojavensis* A21, Antibacterial peptides.

C. AFFICHE N°:175.

DEVELOPPEMENT DE SOLUTIONS ANTI-INFLAMMATOIRES ALTERNATIVES EN MEDECINE VETERINAIRE A BASE D'HUILE ESSENTIELLE DE *CUPRESSUS SEMPERVIRENS*

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De nombreuses plantes sont connues pour leur utilisation en médecine traditionnelle pour le traitement de plusieurs pathologies dont les maladies à composante inflammatoire. Cette étude a eu pour objectif l'évaluation des propriétés anti-inflammatoires des huiles essentielles de *Cupressus sempervirens*, récolté dans la région de Chréa, aux doses de 50, 100 et 200 mg/Kg de poids corporel, sur le modèle de l'œdème aigü de la patte de souris induit par la carragénine. Préalablement, sa toxicité orale a été étudiée à la dose de 2 g/kg de poids corporel. Les résultats de notre étude ont montré que notre huile essentielle ne présentait aucune toxicité à cette dose. L'étude de l'activité anti-inflammatoire a révélé que les différentes doses des huiles essentielles de *Cupressus sempervirens*, ont inhibé l'œdème inflammatoire d'une façon significative ($p < 0.05$) par rapport au témoin, et que cette activité inhibitrice était similaire à celle présentée par le groupe traité avec le Diclofénac (50 mg/kg) et ceci à partir de la 3^{ème} heure avec un effet maximal à la 6^{ème} heure.

Mots clés: Anti-inflammatoire ; Huiles essentielles ; *Cupressus sempervirens* ; Toxicité aigue ; Carragénine.



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ASSOCIATION TUNISIENNE DES SCIENCES BIOLOGIQUES
29^{ème} CONGRES INTERNATIONAL DE L'ATSB, 26-29 MARS 2018 -SOUSSE. TUNISIE

C. AFFICHE N°:176.

ETUDE DU POUVOIR ANTI-INFLAMMATOIRE DE L'EXTRAIT METHANOLIQUE DE LA PLANTE GLADIOLUS SEGETUM

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Gladiolus Segetum (G.S) est une plante qui est utilisée par les tradipraticiens algériens pour traiter l'inflammation. L'objectif de cette étude est d'évaluer l'activité anti-inflammatoire de l'extrait méthanolique de G.S. Les expériences ont été réalisées sur le modèle de l'œdème aigu de la patte de rat induit par l'ovalbumine. Nous avons testé l'extrait aux doses de 100, 250 et 500mg/kg par voie orale. Le gavage a été réalisé 30 mn avant l'induction d'une inflammation aiguë par l'ovalbumine à 100 µl. Les résultats obtenus ont été comparés à ceux de Dichlofénac et à ceux du contrôle physiologique. L'ovalbumine entraîne une augmentation significative du volume de la patte de rat. L'administration de Dichlofénac (150 mg/kg) prévient de façon significative l'augmentation du volume de la patte de rat. L'administration per os de l'extrait à la dose de 250 et 500mg/kg prévient de façon significative l'œdème aigu de la patte de rat au bout de 3h, 4h et 5h. Les résultats de notre étude mettent en évidence les bases pharmacologiques de l'utilisation de cette plante en médecine traditionnelle pour prévenir les processus inflammatoires.

Mot clés : Gladiolus Segetum, inflammation, phytothérapie.

C. AFFICHE N°:177.

ACTION ANTIULCEREUSE DE L'EXTRAIT BUTANOLIQUE DE LA PLANTE ATRACTYLIS FLAVA

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Atractylis Flava (A.F) est une plante traditionnellement utilisée contre les plaies et l'ulcère gastro duodéal. Le but de ce travail était d'étudier l'activité antiulcéreuse de l'extrait butanolique de cette plante. L'extrait a été testé à 100, 250 et 500 mg/kg. L'oméprazole a été utilisé comme témoin positif à la dose de 30 mg/kg et le groupe non traité a reçu de l'eau physiologique à 10 ml/kg. L'extrait a été administré par voie intragastrique, une heure après, 0,5 ml d'éthanol à 90% a été administré aux animaux pour provoquer l'ulcère pendant une heure. Après ce temps, les rats ont été sacrifiés. L'estomac de chaque rat a été ouvert pour observer et compter les ulcères. L'indice d'ulcère a été exprimé et le pourcentage de protection a été calculé. A 500mg/kg, l'extrait a induit une protection de la muqueuse de 75%. L'oméprazole, utilisé comme témoin a présenté une protection de 81,66%. Ces résultats démontrent que A.F peut intervenir dans le traitement de l'ulcère gastrique. La mise au point d'un phytomédicament contre l'ulcère gastrique à base cette plante est donc envisageable.

Mot clés : Atractylis Flava, protection, ulcère gastrique.



C. AFFICHE N°:178.

PROTECTIVE EFFECT OF COBALT CHLORIDE IN AMELIORATING GLUCOSE CONCENTRATION IN ALLOXAN DIABETIC RATS.

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The present study investigated the possible protective effect of cobalt chloride on certain biochemical parameters in alloxan-induced diabetic rats. Alloxan diabetic rats were given 2 mM of CoCl₂ in the drinking water for three weeks. Body weight gain was recorded regularly. On day 21 after an over night fasting, animals were killed and concentrations of blood glucose, serum proteins, urea, uric acid and creatinine, plasma levels of albumin were determined. Activities of serum glutamic oxalic transaminase (GOT), serum glutamic pyruvic transaminase (GPT) and alkaline phosphatase (ALP) were also estimated. The diabetic state had an effect on growth rate, blood glucose, serum proteins, urea, uric acid, albumin concentration and GOT, GPT, ALP activities. However treatment with CoCl₂ resulted no change in body weight. The administration of CoCl₂ significantly reduced blood glucose, serum urea concentrations and GOT, GPT, ALP activities and significantly increased serum albumin and proteins concentration. Whereas no change in creatinine and uric acid concentration of treated diabetic rats compared to their control counterparts.

We conclude, that these findings indicate that cobalt chloride has a benefit effect for inhibition of gluconeogenesis. In other words this compound was reduced the production of glucose from non carbohydrate sources in alloxan - induced diabetic rats.

Keywords: Diabetic rats, hyperglycemia, CoCl₂.

C. AFFICHE N°:179.

STUDY OF ANTIDIABETIC POTENTIAL EFFECT OF GLIMEPIRIDE AND ZYGOPHYLLUM CORNUTUM COSS EXTRACT COMBINATION TREATMENT IN ALLOXAN-INDUCED DIABETIC RATS.

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The use of complementary medicine has become a necessity for several diabetic patients. In order to evaluate its therapeutic efficacy, we studied the antidiabetic effect of treatment combination of a medicinal plant, *Zygophyllum cornutum* Coss, and a generic drug of glimepiride in rat's diabetics with Alloxane.

The animals were randomly divided into groups: the healthy controls and the diabetic group, this last was undergone a single intraperitoneal injection of 150mg/kg b.w. of Alloxane. Rats with glucose levels >300 mg/dl were subdivided into four sub-groups: the diabetic controls sub-group, the treated sub-group with a single dose of 2mg/kg b.w of the generic drug, the treated sub-group with 80mg/kg b.w. of the extract, the last sub-group is treated the morning with the generic drug and the evening with the plant extract; the treatment lasted four weeks.

The supplementation of the generic drug with the plant could have an hypoglycemic and anti-hyperglycemic effects, because we observed an important lowering effect on Glycemia, before and after sacrifice, in rats treated by the association compared to the diabetic controls and animals treated with the plant and the generic only. A decrease in triglycerides and total cholesterol levels was also registered in rats treated by the combination; more important than that obtained in the diabetic controls and that of animals those administered a monotherapy. The results suggest that the combination of medical treatment with phytotherapy could have an antidiabetic efficacy.

Key words: *Zygophyllum cornutum* Coss - experimental diabetes - Glimepiride - medicinal Plants.



C. AFFICHE N°:180.

EFFECTS OF ESSENTIAL OIL OF *LAVANDULA DENTATA* ON THE ADULT INSECT *TRIBOLIUM CONFUSUM* (HERBST) (COL., TENEBRIONIDAE)

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Protection of agricultural products from pest infestations is in the concern of scientists and the agrochemical industries worldwide. However, the disruptive effects of the synthetic insecticides tend to develop botanicals as crop protection agents that will be environment-friendly and of no harm to non-target organisms. Pesticides based on plant essential oils are considered relatively safe and their efficacy has been demonstrated against different insect species. This research aimed at contributing to the collation and organization of baseline data on natural insect repelling and insecticidal agents. The objective of this research was to investigate the efficacy of the essential oil extracted from *Lavanduladentata* in order to evaluate the repellent and fumigant actions against *Triboliumconfusum* adult. The results showed that the product exhibits a high level of toxicity with a dose-response relationship. The enzymatic analyses of the treated adults of *T. confusum* with the determined LC₅₀ dose revealed a neurotoxic activity of essential oil, with an inhibition of acetylcholinesterase and stimulation of the detoxification system that is interpreted by the increase of glutathione-S-transferase activity. The repellent effect of the essential oil against *T. confusum* adult was evaluated using the method of the preferred area on filter papers as described by McDonald *et al.* (1970). The essential oil significantly repelled the insect species after 30 min of treatment.

This study has highlighted a bioinsecticide activity of *L. dentata* against insect pests of stored foodstuffs (*T. confusum*). The *Lavandula* essential oil offers an interesting potential insecticide that could be studied more deeply to isolate and identify the active substances.

Keywords: *Lavanduladentata*, Toxicity, Repulsion, Enzymatic activities, *Triboliumconfusum*.

C. AFFICHE N°:181.

MOSQUITO LARVICIDAL ACTIVITIES OF *MENTHA PULEGIUM* ESSENTIAL OIL AGAINST *CULEX PIPPIENS* (L.) (DIPTERA : CULICIDAE).

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Mosquitoes can transmit serious human diseases such as malaria, dengue, filariasis, and yellow fever, which affect more than 700 million people annually throughout the world. WHO has declared the mosquitoes as public enemy number one. To prevent proliferation of this arthropod and to improve quality of environment and public health, more attention has been focused on botanicals, which are ecofriendly and found one of the possible alternatives to synthetic insecticides. Many studies on plant extracts against mosquito have been conducted around the world, and their larvicidal, pupicidal, adult emergence inhibition and repellent activities have been reported. The current study was undertaken in order to determine the chemical composition and larvicidal activity, of essential oil of *Mentha pulegium* (Lamiaceae) against *Culex pipiens* (Diptera: Culicidae), the most common and abundant species in urban and rural Tébessa areas.

The obtained percent yield of the hydrodistilled oil from aerial parts of *Mentha pulegium* was 0.87 ± 0.055%. The GC/MS analysis of *Mentha pulegium* essential oil has led to the identification of 14 components. Pulegone (72.50 %), Eucalyptol (10.44 %) and P-Menthone 2-Ethyl-5-Propyle (5.46 %), were the major constituents of which. Bioassay test done following the World Health Organization standard protocol revealed that this essential oil exhibited larvicidal activity. The LC₅₀ and LC₉₀ values against fourth instar larvae were 38.75 ppm and 85.91 ppm respectively.

The relationship between the chemical composition and biological activity of essential oil of *Mentha pulegium* is confirmed by the above-mentioned results. Therefore, the potential for exploiting this essential oil, such as bioinsecticide for vector control, can be taken into account.

Keywords: *Culex pipiens*, Essential oil, *Mentha pulegium*, Toxicity, Chemical composition.