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Bioscience Research  
(ISSN: 1811-9506)  
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## Bioscience Research

### Bioscience Research



- Print ISSN: 1811-9506
- Online ISSN: 2218-3973
- Starting year: 2004
- Current volume: 17
- **Impact Factor (Scopus) 2017: 0.737**

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All vols & issues

Indexing & coverage

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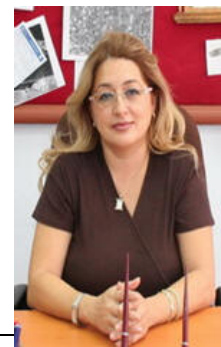
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- Editorial board
- All vols & issues
- Indexing & coverage

Bioscience Research, volume 16, issue 2 (April-June), 2019

Sr. #	Titles, Authors & affiliation (s)	Down
Research Articles		
1	<p>RESEARCH ARTICLE    BIOSCIENCE RESEARCH, 2019 16(2):888-897.    OPEN ACCESS</p> <p style="color: blue; font-weight: bold; font-size: 1.2em;">Isolation and prevalence of multidrug-resistant extended-spectrum <math>\beta</math>-lactamase-producing <i>E. Coli</i> from adults and children</p> <p>Aly E. Abo-Amer<sup>1,3*</sup>, Hani Moubasher<sup>2</sup> and Salam Sliat<sup>2</sup></p> <p><sup>1</sup>Division of Microbiology, Department of Biology, Faculty of Science, University of Taif, P.O. Box 888, Taif, Saudi Arabia.  <sup>2</sup>Department of Botany and Microbiology, Faculty of Science, Cairo University, Giza, Egypt.  <sup>3</sup>Department of Botany and Microbiology, Faculty of Science, Sohag University, Sohag (82524), Egypt.</p>	<p>Down <a href="#">Free Fu</a> Arti</p>
2	<p>RESEARCH ARTICLE    BIOSCIENCE RESEARCH, 2019 16(2):898-908.    OPEN ACCESS</p> <p style="color: blue; font-weight: bold; font-size: 1.2em;">Some Physical Characteristics of Pellets from Cattle Manure</p> <p>Mansoureh Pourjafar<sup>1</sup> and Javad Rezaeifar<sup>2</sup></p> <p><sup>1</sup>Higher Educational Complex of Saravan, Saravan, Sistan and Baluchestan, Iran.</p>	<p>Down <a href="#">Free Fu</a> Arti</p>
3	<p>RESEARCH ARTICLE    BIOSCIENCE RESEARCH, 2019 16(2):909-915.    OPEN ACCESS</p> <p style="color: blue; font-weight: bold; font-size: 1.2em;">Abdominal obesity in relation to inflammatory markers and insulin resistance in obese Egyptian Females</p> <p>Moushira Zaki<sup>1</sup>, Shams Kholoussi<sup>2</sup> and Walaa Yousef<sup>1</sup></p> <p><sup>1</sup>Biological Anthropology Department, Medical Research Division, National Research Centre, Giza, Egypt  <sup>2</sup>Immunogenetics Department, Human Genetics and Genome Research Division, National Research Centre, Giza, Egypt</p>	<p>Down <a href="#">Free Fu</a> Arti</p>
4	<p>RESEARCH ARTICLE    BIOSCIENCE RESEARCH, 2019 16(2):916-922.    OPEN ACCESS</p> <p style="color: blue; font-weight: bold; font-size: 1.2em;">The effect of Dolomite and Potassium to growth and yield of shallots in peatland</p> <p>Suparman</p> <p>Agricultural Technology Assessment Center, Central Borneo, Indonesia</p>	<p>Down <a href="#">Free Fu</a> Arti</p>

5	REVIEW ARTICLE	BIOSCIENCE RESEARCH, 2019 16(2):923-928.	OPEN ACCESS	Down <a href="#">Free Fu</a> Arti
<p><b>The effect of vinegar and metformin on blood glucose level and pancreas histopathology of diabetic mellitus wistar rats: a review</b></p> <p>Elok Zubaidah<sup>1*</sup>, Ani Rahmawati<sup>1</sup> and Umi Kalsum<sup>2</sup></p> <p><sup>1</sup>Department of Food Science and Technology - Faculty of Agricultural Technology - Brawijaya University, Indonesia  <sup>2</sup>Department of Pharmacology - Faculty of Medicine - Brawijaya University Jl. Veteran - Malang 65145, Indonesia</p>				
6	RESEARCH ARTICLE	BIOSCIENCE RESEARCH, 2019 16(2): 929-935.	OPEN ACCESS	Down <a href="#">Free Fu</a> Arti
<p><b>The effect of dolomite and potassium to uptake of NPK and tuber weight loss of shallots in peatland</b></p> <p>Suparman<sup>1*</sup>, Mudji Santosa<sup>2</sup> and Moch. Dawam Maghfoer<sup>2</sup></p> <p><sup>1</sup> Agricultural Technology Assessment Center, Central Borneo Indonesia  <sup>2</sup> Faculty of Agriculture, Brawijaya University, Malang, Indonesia</p>				
7	RESEARCH ARTICLE	BIOSCIENCE RESEARCH, 2019 16(2): 936-943.	OPEN ACCESS	Down <a href="#">Free Fu</a> Arti
<p><b>A comparative study of Procalcitonin with C-reactive Protein, and total Leucocytes count in septic-systemic inflammatory response syndrome in dogs.</b></p> <p>A. A. Kubesy<sup>1</sup>, G. M. Rakha<sup>1</sup>, and Shaymaa I. Salem<sup>2</sup> and A. H. Jaheen<sup>1*</sup></p> <p><sup>1</sup>Department of Medicine and Infectious Diseases, Faculty of Veterinary medicine, Cairo University, Giza,12211, Egypt.  <sup>2</sup>Department of Clinical Pathology, Faculty of Veterinary Medicine, Cairo University, Giza, 12211, Egypt.</p>				
8	RESEARCH ARTICLE	BIOSCIENCE RESEARCH, 2019 16(2):944-948.	OPEN ACCESS	Down <a href="#">Free Fu</a> Arti
<p><b>Study the role of pH in transcriptional activator (<i>csgD</i>) gene expression in <i>Enterobacter cloacae</i> locali isolates.</b></p> <p>Basima Qasim Hasan AL-Saadi, Marrib Nazih Rasheed, Hiba Hazim Hamid ALYousif, Noor Yahyaa Salman and Sara Faisal Hasan</p> <p>Institute of genetic engineering and biotechnology for post graduate studies / University of Baghdad, Baghdad / Iraq</p>				
9	RESEARCH ARTICLE	BIOSCIENCE RESEARCH, 2019 16(2):949-955.	OPEN ACCESS	Down <a href="#">Free Fu</a> Arti
<p><b>Inquiry training of agriculture vocational education and direct instruction based field practical: a technique for measuring student's learning outcomes in marginal land management</b></p> <p>Suryawati</p> <p>Department of Food Crops and Horticulture, State Agricultural Polytechnic of Kupang, Indonesia.</p>				
10	RESEARCH ARTICLE	BIOSCIENCE RESEARCH, 2019 16(2):956-962.	OPEN ACCESS	Down <a href="#">Free Fu</a> Arti
<p><b>Evaluation of oxidative stress marker, antioxidant enzymes status and their impact on DNA damage in a group of Egyptian children with <math>\beta</math>-thalassemia</b></p> <p>Hoda Abd El-Azim Seoud<sup>1</sup>, Amal Gaber Mohamed<sup>1*</sup>, Soheir saad koraa<sup>2</sup> and Seham Nabil Ramadan<sup>1</sup></p> <p><sup>1</sup>Pediatrics Department, Faculty of Medicine for Girls, Al-Azhar University, Egypt  <sup>2</sup>Molecular biology department, national center for radiation research and technology, Egypt</p>				
11	RESEARCH ARTICLE	BIOSCIENCE RESEARCH, 2019 16(2):963-978.	OPEN ACCESS	Down <a href="#">Free Fu</a> Arti
<p><b>Validation of molecular markers linked with salinity tolerance in wheat (<i>Triticum aestivum</i> L.) grown on saline soil.</b></p> <p>ELshafei A.A.<sup>1*</sup>, Afiah S.A.<sup>2</sup>, Amer M.A<sup>3</sup> and Magda A.M. El-enany<sup>1</sup></p> <p><sup>1</sup>Genetics and Cytology Department, Genetic Engineering and Biotechnology Division, National Research Centre (NRC), El-Dokki, Cairo, Egypt.  <sup>2</sup>Genetic Resources Dept., Desert Research Center, El-Mataryea, Cairo, Egypt.  <sup>3</sup>Genetic Resources Research Dept. in Field crops research institute, ARC, Giza, Egypt</p>				
12	RESEARCH ARTICLE	BIOSCIENCE RESEARCH, 2018 16(2): 979-985.	OPEN ACCESS	Down <a href="#">Free Fu</a> Arti
<p><b>Geometric morphometric analysis of interspecific size and shape variation in <i>Culex whitmorei</i> and <i>Cx. gelidus</i> (Diptera: Culicidae) in</b></p>				

## Thailand

Tanawat Chaiphongpachara<sup>1</sup> and Sedthapong Laojun<sup>2</sup>

<sup>1</sup>Department of Public Health and Health Promotion, College of Allied Health Science, Suan Sunandha Rajabhat University, Thailand,

<sup>2</sup>Bachelor of Public Health, College of Allied Health Sciences, Suan Sunandha Rajabhat University, Samut Songkhram, Thailand.

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13 REVIEW ARTICLE BIOSCIENCE RESEARCH, 2019 16(2):986-996. OPEN ACCESS [Down](#)

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Arti

### Antioxidant properties of marine algae: an overview

Reem Mohammed Alharbi\*

Biology Department, College of Science, University of Hafer Al Baten, Hafer Al-Baten, Saudi Arabia

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14 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2):997-1002. OPEN ACCESS [Down](#)

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Arti

### Effect of ultraviolet radiation on total leukocytes in postmenopausal women with vitamin D deficiency

Mai M. Ali<sup>1\*</sup>, Salwa M. El-Badry<sup>1</sup>, Amel M. Yousef<sup>1</sup> and Mohamed H. Mostafa<sup>2</sup>

<sup>1</sup>Department of Physical Therapy for Women's Health, Faculty of Physical Therapy, Cairo University, Giza, Egypt

<sup>2</sup>Department of obstetrics and gynecology, Faculty of Medicine, Cairo University, Egypt

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15 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 1003-1008. OPEN ACCESS [Down](#)

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Arti

### Vitamin D deficiency and its Receptor Gene Polymorphisms as a risk factor of depression in Saudi Men

Ayman Al-hazmi<sup>1</sup>, Anas Alomery<sup>1</sup>, mohab samarkandi<sup>1</sup>, Aseel Alsaadi<sup>1</sup>, Mazen Almeahmadi<sup>1</sup>, Sarah Al-Bogami<sup>2</sup>, Ashjan Shami<sup>1</sup>, Saleh Alghamdi<sup>1</sup>, Ahmad El Askary<sup>1,3</sup>, Saad Al-Shehri<sup>1</sup>, Alaa Shafie<sup>1</sup>, Bassem M. Raafat<sup>1</sup> and Ahmed Alhabs<sup>4</sup>.

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<sup>2</sup> Faculty of Sciences, Taif University, Taif city, Saudi Arabia

<sup>3</sup>Department of Medical Biochemistry, Al-Azhar University, New Damietta, Egypt

<sup>4</sup> Ministry of health, Taif city, Saudi Arabia

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16 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16 (2): 1009-1027. OPEN ACCESS [Down](#)

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Arti

### Physiological response of some wheat varieties to foliar application with yeast, potassium and ascorbic acid under salt affected soil conditions

Mohammed Mohammed El-Hawary<sup>1\*</sup>, Khaled Ibrahim Gad<sup>2</sup> and Ahmed Osman Ahmed Ismail<sup>3</sup>

<sup>1</sup>Crop Physiology Research Department, Field Crops Research Institute, ARC, 12619, Egypt.

<sup>2</sup>Wheat Research Department, Field Crops Research Institute, ARC, 12619, Egypt.

<sup>3</sup>Soils, water and Environment Research Institute, ARC, Egypt.

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17 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 1028-1034. OPEN ACCESS [Down](#)

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Arti

### Evaluation model of development organic farming dragon fruit based logical framework approach

Kustiawati Ningsih<sup>1\*</sup>, Halimatus Sakdiyah<sup>2</sup>, Herman Felani<sup>1</sup>, Rini Dwiastuti<sup>3</sup> and Rosihan Asmara<sup>3</sup>

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18 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 1035-1045. OPEN ACCESS [Down](#)

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Arti

### Effect of Visual Feedback versus Sensory Integration on Postural Instability in Patients with Idiopathic Parkinson disease

Waleed T. Mansour<sup>1</sup>, Ebtesam M. Fahmy<sup>2</sup>, Youssef M. Elbalawy<sup>1</sup> and Islam H. Fayed<sup>3</sup>

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<sup>3</sup>Department of Physical Therapy for Neuromuscular Disorder and Its surgery, Faculty of Physical Therapy, MTI University, Egypt.

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19 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 1046-1052. OPEN ACCESS [Down](#)

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### The role of IL-5 gene polymorphisms in rheumatoid arthritis

Ali S. Dawood<sup>1</sup> and Rafid A. Abdulkareem<sup>2</sup>

<sup>1</sup>Department of Pathology and Forensic Medicine, College of Medicine, Wasit University, Wasit, Iraq.

<sup>2</sup>Department of Genetic Engineering, Institute of Genetic Engineering and Biotechnology for Post Graduate Studies, University of Baghdad, Baghdad, Iraq.

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20 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2):1053-1059. OPEN ACCESS [Down](#)  
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Arti

### **The relationship between smoking and body mass index among Ahlia University Bahrain students: A cross sectional study**

Sayed A Tantawy<sup>1, 2</sup>, Fatima Mahdi Yusif Al-Jishi<sup>1</sup>, Fajer Abdulla Al-Moosa<sup>1</sup> and Dalia M Kamel<sup>1, 3</sup>

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<sup>2</sup>Department of Physiotherapy, Centre of Radiation, Oncology and Nuclear Medicine, Cairo University, Giza, Egypt.

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21 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 1060-1075. OPEN ACCESS [Down](#)  
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Arti

### **Biopreservation of the fresh Egyptian Nile perch fillets using combination of bacteriocins, sodium acetate and EDTA.**

Wael A. Bazaraa<sup>1</sup>, Mohamed E. Abdel- Aziz<sup>1</sup>, Hanan A. Goda<sup>2</sup> and Soheer N. Abdel- Khader<sup>1</sup>

<sup>1</sup>Food Science Department, Faculty of Agriculture, Cairo University, Giza, Egypt.

<sup>2</sup>Agricultural Microbiology Department, Faculty of Agriculture, Cairo University, Giza, Egypt

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22 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2):1076-1084. OPEN ACCESS [Down](#)  
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### **Assessment of bone mineralization in thalassemic children using dexa versus traditional bone markers.**

Asmaa Abd El Wakeel Elsehmawy<sup>1</sup>, Rasha Mohammed Gouda<sup>1</sup>, Nora Mohamed Ahmed Seliem<sup>2</sup>, Reham Yousri Elamir<sup>3</sup> and Doaa Sayed Mohammed<sup>4</sup>.

<sup>1</sup>Department of Pediatrics, Faculty of Medicine, Al-Azhar University, Cairo, Egypt.

<sup>2</sup>Biochemistry department, Faculty of Medicine, Al-Azhar University, Cairo, Egypt.

<sup>3</sup>Department of Public Health, Faculty of Medicine, Cairo University, Egypt

<sup>4</sup>Endocrine department, Faculty of Medicine, Al-Azhar University, Cairo, Egypt.

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23 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 1085-1093. OPEN ACCESS [Down](#)  
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### **Proprioceptive neuromuscular facilitation and virtual reality for improving hand functions post reconstructive surgeries**

Zakaria M. Emam Mowafy<sup>1</sup>, Ahmed G. El Sharkawy<sup>2</sup> and Bassem M. Fouda<sup>3</sup>

<sup>1</sup>Faculty of Physical Therapy1, Cairo University. Egypt

<sup>2</sup>Faculty of Medicine, Cairo University. Assistant Lecturer of Physical therapy, Egypt

<sup>3</sup>Department of Physical Therapy for surgery, Faculty of Physical Therapy, MTI University. Egypt.

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24 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2):1094-1103. OPEN ACCESS [Down](#)  
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### **Efficacy of natural hydroxyapatite nano-particles as a phosphorus fertilizer for soybean**

Samira E. Mohamed<sup>1</sup>, Hadeer I. Mohamed<sup>2,3\*</sup>, Manal Mubarak<sup>4</sup> and Abdelsattar M. Sallam<sup>2</sup>

<sup>1</sup>Faculty of Agriculture, Ain Shams University, Cairo, Egypt

<sup>2</sup>Faculty of Science, Ain Shams University, 11566, Cairo, Egypt

<sup>3</sup>Department of Neuroscience Technology, College of Applied Medical Science, Imam Abdel Rahman Bin Faisal, Jubail, Kingdom of Saudi Arabia

<sup>4</sup>Soil Science Department, Faculty of Agriculture, Ain Shams University, Cairo, Egypt

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25 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 1104-1112. OPEN ACCESS [Down](#)  
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### **Improving broiler productive performance and reducing environmental pollution by manipulating feed consumption**

H.M.R. Elsherif<sup>1</sup>, K.G. El-Iraqi<sup>2</sup> and F.A. Wahba<sup>3</sup>

<sup>1</sup>Animal Production Department, Faculty of Agriculture, Cairo University. 12613, Giza, Egypt

<sup>2</sup>Veterinary Hygiene and Management Department, Faculty of Veterinary Medicine, Cairo University, 12211, Giza, Egypt

<sup>3</sup>Physiology and Endocrinology Department, Faculty of Veterinary Medicine, Cairo University, 12211, Giza, Egypt..

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26 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 1113-1118. OPEN ACCESS [Down](#)  
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### **Interferon-stimulated-gene 15 polymorphism in Type 1 diabetic patients**

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- 27 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 1119-1125. OPEN ACCESS [Down](#)  
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- Impact of plant extract and essential oil of clove, *Syzygium aromaticum*, on life table parameters of the two-spotted spider mite; *Tetranychus urticae* koch (Acari: Tetranychidae).**  
Hanady A. Abo-Mousa<sup>1</sup>; Nabil M. Ibrahim<sup>2</sup>; Wafai Z. A. Mikhail<sup>3</sup>; Hassan M. A. El-Nenaey<sup>1</sup> and Marguerite A. Rizk<sup>1</sup>
- <sup>1</sup>Plant Protection Research Institute, Agriculture Research Center, Giza, Egypt  
<sup>2</sup>Department of Economic Entomology and Pesticides, Faculty of Agriculture, Cairo University Egypt  
<sup>3</sup>Department of Natural Resources, Faculty of African Postgraduate Studies, Cairo University, Egypt
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- 28 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 1126-1131. OPEN ACCESS [Down](#)  
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Arti
- Effect of green tea (*Camellia sinensis* L.) aqueous extract and L-carnitine supplements on some hormonal levels and some haematological parameters in obese male rats**  
Olfat A. Radwan<sup>1</sup>, Abeer A. Zayed<sup>2</sup> and Wafai Z. A. Mikhail<sup>3\*</sup>
- <sup>1</sup>Central Agricultural Pesticides Lab. (CAPL), Agricultural Research Center. Giza, Egypt.  
<sup>2</sup>Dept. Forensic Medicine and Clinical Toxicology, Faculty of Medicine, Cairo University, Giza, Egypt.  
<sup>3</sup>Dept. of Natural Resources, Faculty of African Postgraduate Studies, Cairo University, Giza, Egypt.
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- 29 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 1132-1142. OPEN ACCESS [Down](#)  
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Arti
- Association of high-altitude and smoking on the levels and phenotype of  $\alpha\beta$ -T-cells and  $\gamma\delta$ -T-cells**  
Mazen Almeahmadi<sup>1,4</sup>, Alaa Shafie<sup>1,4</sup>, Abdullah Bashiri<sup>1</sup>, Rayan Babukayr<sup>1</sup>, Mutaz Alknani<sup>1</sup>, Nawaf Alqurashi<sup>1</sup>, Aedh Alghamdi<sup>1</sup>, Abdulaziz Al-hajjiahmed<sup>1</sup>, Eid Althobaiti<sup>1</sup>, Mustafa Halawi<sup>2</sup>, Abdurhman Hazzazi<sup>3</sup> and Amal Alhamad<sup>3</sup>
- <sup>1</sup>Collage of Applied Medical Sciences, Taif University, Taif city, Saudi Arabia  
<sup>2</sup>Collage of Applied Medical Sciences, Jazan University, Jazan city, Saudi Arabia  
<sup>3</sup>Regional Laboratory and Blood bank, Dammam, Saudi Arabia.  
<sup>4</sup>High altitude research Centre, Taif University, Taif city, Saudi Arabia
- 
- 30 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2):1143-1147. OPEN ACCESS [Down](#)  
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Arti
- Low level laser lowers erythrocyte sedimentation rate and improve functional capacity among hypertensive obese elderly women**  
Ebtesam N. Abdel Mohsen<sup>1\*</sup>, Zienab M. Helmy<sup>1</sup>, Sherin H. Mohammed<sup>2</sup>, Samah M. ISMAEEL<sup>1</sup>, Esam B. Ewas<sup>3</sup>
- <sup>1</sup>Department of Physical Therapy for Internal Medicine, Faculty of Physical Therapy, Cairo University, Egypt  
<sup>2</sup>Department of Physical Therapy for Internal Medicine, Faculty of Physical Therapy, Beni \_ Suef University, Egypt  
<sup>3</sup>Department of Cardiology, Faculty of Medicine, Cairo University, Egypt
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- 31 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 1148-1152. OPEN ACCESS [Down](#)  
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Arti
- The effect of royal jelly on some biochemical parameters on male albino rats treated Nitrofurantoin**  
Salah Mahdi Mohssin<sup>1</sup>, Majeed H. Nawar<sup>2</sup> and Lina A. Salah<sup>3</sup>
- <sup>1</sup>Al-Nahrain University/Biotechnology researches center, Iraq  
<sup>2</sup>University of Baghdad.College of Agricultural Engineering Sciences. Department of Plant Protection, Iraq,  
<sup>3</sup>University of Baghdad. College of Science. Department of Biology. Iraq
- 
- 32 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2):1153-1160. OPEN ACCESS [Down](#)  
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Arti
- Effect of sulphur dust application on some insect predators naturally occurring in Okra fields**  
Mamdouh Maher Matter, Amany Ramadan Ebeid, Shahira Saad El-Din Marei, Ola Omar El-Fandary, Nagi Abdellatef Farag and Mohamed Ahmed Gesraha.
- Pests and Plant Protection Department, National Research Centre, Dokki, Cairo, Egypt
- 
- 33 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 1161-1166. OPEN ACCESS [Down](#)



## Hip versus Ankle muscles strengthening in treatment of Primary Knee Osteoarthritis

Wafaa Atef Abd Allah<sup>1</sup>, Magdy Elnaggar,<sup>2</sup> Mohamed A. Kaddah<sup>3</sup>, Nehad M. Elmahboub<sup>4</sup> and Hassan F. Elhelaly<sup>1</sup>

<sup>1</sup>Orthopedic Physical Therapy Department, Faculty of Physical Therapy, Misr University for Science and Technology, Egypt.

<sup>2</sup>Orthopedic Physical Therapy Department, Faculty of Physical Therapy, Cairo University, Egypt.

<sup>3</sup>Orthopedic Surgery Department, Faculty of Medicine, Cairo University, Egypt.

<sup>4</sup>Orthopedic Surgery Department, Faculty of Medicine, Misr University for Science and Technology, Egypt.

34 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2):1167-1173. OPEN ACCESS

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Arti

## Fecal incontinence responses to anal electrical stimulation

Sayed A Tantawy

<sup>1</sup>Department of Physiotherapy, College of Medical & Health Sciences, Ahlia University, Kingdom of Bahrain

<sup>2</sup>Department of Physiotherapy, Center of Radiation, Oncology & Nuclear Medicine, Cairo University, Egypt.

35 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 1174-1180. OPEN ACCESS

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Arti

## Secondary upper limb lymphedema following mastectomy responses to kinesio taping application: A pilot study

Sayed A. Tantawy

<sup>1</sup>Department of Physiotherapy, College of Medical & Health Sciences, Ahlia University, Kingdom of Bahrain.

<sup>2</sup>Department of Physiotherapy, Centre of Radiation, Oncology and Nuclear Medicine, Cairo University, Giza, Egypt.

36 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 1181-1188. OPEN ACCESS

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Arti

## Effect of butyric acid addition on physiological and productive performance in broiler chickens

Wafai Z. A. Mikhail<sup>1</sup>; Hassan M. Sobhy<sup>1</sup>; Abed El-Hamid E. Abd El-Hamid<sup>2</sup> and Joseph A. Youssef<sup>1</sup>

<sup>1</sup>Dept. Natural Resources, Faculty of African Postgraduate Studies, Cairo University, Egypt

<sup>2</sup>Dept. Animal and Poultry Production, Faculty of Agriculture, Damanhour University, Egypt.

37 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 1189-1197. OPEN ACCESS

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Arti

## Effect of Low Level Laser Therapy on Quadriceps Muscle Strength in Lower Limb Burn

Noha Mohamed Kamel, Adel Abdel Hamid Nossier and Maamoun Ismail Maamoun

Faculty of Physical Therapy, Cairo University, Egypt

38 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 1198-1213. OPEN ACCESS

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Arti  
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[MATERIAL](#)

## Plant distribution and diversity along altitudinal gradient of Sarawat Mountains at Taif Province, Saudi Arabia

Hatim M. Al-Yasi<sup>1</sup>, Saqer S. Alotaibi<sup>1</sup>, Yassin M. Al-Sodany<sup>1,2</sup> and Tarek M. Galal<sup>1,3</sup>

<sup>1</sup> Biology Department, Faculty of Science, Taif University, Taif, Saudi Arabia

<sup>2</sup> Botany Department, Faculty of Science, Kafr Al-Sheikh University, Kafr Al-Sheikh, Egypt

<sup>3</sup> Botany and Microbiology Department, Faculty of Science, Helwan University, Helwan, Egypt.

39 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 1214-1222. OPEN ACCESS

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Arti

## Cytotoxic Effect of methanolic extract of *Morenga oleifera* leaves on two cancer Cell Lines in vitro

Alaa N. Mohammed Ali<sup>1</sup>, Raghad J.Fayyad<sup>1</sup>, Ahmed Khayoon Abed Al- Abboodi<sup>2</sup>, Ahmed S.Dwaish<sup>1</sup>

<sup>1</sup>Biology Dept. Collage of Science. Mustansiriyah University, Iraq.

<sup>2</sup>Ministry of education, Iraq.

40 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2):1223-1231. OPEN ACCESS

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Arti

## T-lymphocytes and cortisol response to resistance training in diabetics

Aisha A. Hagag<sup>1</sup>, Hanan A Alnahas<sup>2</sup>, Azza F. Ismail<sup>1</sup> and Heba I. Hamed,<sup>3</sup>

<sup>1</sup>Department of physical therapy for cardiovascular/respiratory Disorder and Geriatrics, Faculty of Physical Therapy, Cairo University, Egypt.

<sup>2</sup>Physical Therapist at Cairo University Pediatric Hospital, Cairo University, Egypt.

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- 41 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 1232-1242. OPEN ACCESS [Down](#)  
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Arti
- Effect of introducing early weight bearing training in rehabilitating patient with tibial plateau fracture fixed with open reduction internal fixation.**
- Mahmoud Diab Mohamed<sup>1</sup>, Ahmed Khedr<sup>2</sup>, Lilian Albert Zaki<sup>1</sup>, Sherif Ahmed Radwan Khaled<sup>2</sup> and Alaa Balbaa<sup>1</sup>
- <sup>1</sup>Department of Orthopedic Physical Therapy, Faculty of Physical Therapy, Cairo University, Cairo, Egypt.  
<sup>2</sup>Faculty of medicine, Cairo University, Cairo, Egypt.
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- 42 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 1243-1250. OPEN ACCESS [Down](#)  
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Arti
- The Performance of Lebat-3 beans (*Phaseolus vulgaris* L.) Grown in Organic Urban Farming System**
- Mudji Santoso\* and Larasati Anggita.
- Department of Agronomy, Faculty of Agriculture, Brawijaya University, JL. Veteran Malang 65145, East Java, Indonesia
- 
- 43 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 1251-1257. OPEN ACCESS [Down](#)  
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Arti
- Inheritance of resistance to downy mildew (*Peronosclerospora maydis*) in crossing of Madura Maize Plant (*Zea mays* L.)**
- Achmad Amzeri \*, Kaswan Badami and Gita Pawana.
- Faculty of Agriculture, Trunojoyo Madura University, Bangkalan, East Java 69162, Indonesia\*
- 
- 44 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 1258-1266. OPEN ACCESS [Down](#)  
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Arti
- Genetic diversity among wheat genotypes using RAPD markers and its implication on genetic variability of diallel crosses**
- A.A.El-Hosary<sup>1</sup>; M. El. M. El-Badawy<sup>1</sup>; S.A.S Mehasen<sup>1</sup>, A.A.A.; El-Hosary<sup>1</sup>, T.A. El-Akkad<sup>2</sup> and A. El-Fahdawy<sup>1</sup>
- <sup>1</sup>Agronomy Dep., Fac. of Agric., Benha Univ., Egypt  
<sup>2</sup>Genetic Dep., Fac. of Agric., Benha Univ., Egypt
- 
- 45 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2):1267-1275. OPEN ACCESS [Down](#)  
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Arti
- Growth and Yield of Corn (*Zea mays*) after treatment with Biofertilizer and an organic P sources cultivated on calcareous soil**
- Cahyo Prayogo<sup>1</sup>, Mohammad Hamdani Rusydi<sup>1</sup>, Nurul Istiqomah<sup>2</sup> and Al Gamal Pratomo<sup>2</sup>
- <sup>1</sup>Soil Science Department , Faculty of Agriculture, University of Brawijaya, Jl.Veteran No.1 Malang-East Java-Indonesia  
<sup>2</sup>East Java-Assessment Institute for Agricultural Technology (AIAT), Jl. Raya Karangploso KM 4, Malang-East Java-Indonesia
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- 46 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 1276-1289. OPEN ACCESS [Down](#)  
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Arti
- Phytochemical contents of white and pink flowers of marshmallow (*Althaea officinalis* L) plants and their androgenesis potential on anther culture in response to chemical elicitors**
- Emad A. Ewais\*, Mohamed A. Ismail, Mohamed A. Amin and Eslam S. Abd-El-moety
- Botany and Microbiology Department, Faculty of Science, Al-Azhar University, Madinet Nasr, 11884 Cairo, Egypt.
- 
- 47 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 1290-1296. OPEN ACCESS [Down](#)  
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Arti
- Change in nutritional value of mallow (*Malva parviflora* L.) under influence of selenium.**
- Hediat M. Salama<sup>1</sup>, Khedr F.G.<sup>2</sup> and Shima A. Ismaiel<sup>3\*</sup>
- Botany Department, Faculty of Science, Zagazig University, Zagazig 44519, Egypt.
- 
- 48 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2):1297-1307. OPEN ACCESS [Down](#)  
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Arti
- Interethnic Differences in the Main Anthropometric Indicators and Indices for Assessing Physical Development**
- Zhanar Suyundikova<sup>1</sup>, Damilya Konysbaeva<sup>2</sup>, Gaukhar Baubekova<sup>1</sup>, Ainur Yermekova<sup>2</sup>, Kadyrzhhan Makangali<sup>3</sup> and Gulzhan Tokysheva<sup>3</sup>

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49 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 1308-1316. OPEN ACCESS [Down](#)  
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Arti

## Revisited the diversity of epiphyte orchids at Senduro, Bromo Tengger Semeru National Park, Indonesia

Lita Soetopo\* and Pandji Dimas Febriandito

Laboratory of Plant Breeding, Département of Agronomy, Faculty of Agriculture. Brawijaya University, Malang. **Indonesia**.

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50 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2):1317-1322. OPEN ACCESS [Down](#)  
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Arti

## Isolation and characterization of the NPR1 gene from highly susceptible pepper cv. Berangkai.

Bastian Nova<sup>1</sup>, Rahmi Hidayati<sup>2</sup>, Muhammad Fichri<sup>1</sup>, Lily Syukriani<sup>1</sup>, Alfi Asben<sup>3</sup> and Jamsari Jamsari<sup>2\*</sup>

<sup>1</sup>Department of Crop Science, Faculty of Agriculture, Universitas Andalas, 25136- Padang, West Sumatera, **Indonesia**.

<sup>2</sup>Study Program of Biotechnology, Post Graduate Program Universitas Andalas, 25136-Padang West Sumatera, **Indonesia**.

<sup>3</sup>Department of Agricultural Product Technology, Faculty of Agricultural Technology- Universitas Andalas, 25136- Padang, West Sumatera, **Indonesia**

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51 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 1323-1336. OPEN ACCESS [Down](#)  
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Arti

## A new hybrid approach for feature selection and predicting of protein interaction network in lung cancer

Zeinab Abd El Haliem<sup>1</sup>, Mohammad Nassef<sup>2</sup>, Amr Badr<sup>2</sup> and Khaled T. Wassif<sup>2</sup>

<sup>1</sup>Department of Computer Science, Faculty of Computer Science, Modern Sciences and Arts University, Giza, Egypt.

<sup>2</sup>Department of Computer Science, Faculty of Computer and Information, Cairo University, Giza, Egypt.

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52 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2):1337-1353. OPEN ACCESS [Down](#)  
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Arti

## Role of biochar soil amendment for alleviation of adverse effects of water stress on *Dimorphotheca ecklonis* plants

Soha E.Khalil and Fatma M. Seleem

<sup>1</sup>Department of Water Relations and Field Irrigation, National Research Centre, Dokki, Cairo, **Egypt** Department of <sup>2</sup>Ornamental Horticulture, Horticulture Research Centre, Cairo, **Egypt**.

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53 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 1354-1362. OPEN ACCESS [Down](#)  
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Arti

## Effect of selected exercise program on vitamin D and parathyroid hormone level in high altitude residents

Lamiaa Elsayyad<sup>1</sup>, Alaa Shafie<sup>2,3</sup>, Hatem H. Allam<sup>1</sup>, Mazen almehmadi<sup>2,3</sup>, Khadiga Ahmed Ismail<sup>2</sup>, Yaser O. Abu Asi<sup>1</sup>.

<sup>1</sup>Physical Therapy Department, College of Applied Medical Sciences, Taif University, **Saudi Arabia**.

<sup>2</sup>Clinical Laboratory Department, College of Applied Medical Sciences, Taif University, **Saudi Arabia**.

<sup>3</sup>High Altitude Research Center, Taif University, **Saudi Arabia**.

<sup>4</sup>Medical Parasitology Department, Faculty of medicine, Ain Shams University, Cairo, **Egypt**.

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54 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2):1363-1368. OPEN ACCESS [Down](#)  
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Arti

## Is there a role for resistin in the pathogenesis of polycystic ovary syndrome in Sudanese women?

Ahmed Mohamed Asmali<sup>1\*</sup>, Eltayeb Mohamed Ahmed Tayrab<sup>1</sup>, Samia Mahdi Ahmed<sup>2</sup>, Abdelatif Ashmaig Khalifa<sup>3</sup> and Zuhier Ahmed Awan<sup>4</sup>

<sup>1</sup>Department of Chemical Pathology, National Ribat University, Faculty of Medical Laboratory Sciences, Khartoum, **Sudan**.

<sup>2</sup>Department of clinical laboratory sciences, College of Applied Medical Sciences, Taibah University, Kingdom of **Saudi Arabia**.

<sup>3</sup>Department of Obstetrics and Gynecology - Faculty of Medicine. National Ribat University, **Sudan**

<sup>4</sup>Department of clinical biochemistry, Faculty of Medicine, King Abdelaziz University, **Saudi Arabia**

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55 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2):1369-1376. OPEN ACCESS [Down](#)  
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Arti

# Study on Morphological and Physiological Characters of Ponda merah Accession against Drought and Shade Stresses

Aisyah Ahmad<sup>1\*</sup>, Lita Soetopo<sup>2</sup>, Bambang Guritno<sup>2</sup> and Moch Dawam Maghfoer<sup>2</sup>

<sup>1</sup>Gorontalo Assessment Institute for Agricultural Technology, IAARD-Indonesia

<sup>2</sup>Department of Agronomy, Faculty of Agriculture, Brawijaya University Malang, Indonesia.

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56 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 1377-1390. OPEN ACCESS [Down](#)  
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Arti

## Enzymatic treatment of gliadins triggers anaphylactic reaction in a murine model of wheat allergy: *in vivo* and *ex vivo* study

Youcef Bouferkas\*, Abir Haddi, Nabila Mehedi, Djamel Saidi and Omar Kheroua.

Laboratory of Physiology of Nutrition and Food Safety, Department of Biology, Faculty of Natural and Life Sciences, University Oran 1 Ahmed Ben Bella, B.P 1524, El M'Naouer - 31000 Oran, Algeria.

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57 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2):1391-1394. OPEN ACCESS [Down](#)  
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Arti

## Hemoglobinopathies Among Saudi adults at Taif city, Saudi Arabia

Dahlawi H. A<sup>1</sup>., Zaini R. G<sup>1</sup>. Almeahadi M<sup>1</sup> and Zamzami O<sup>2</sup>

<sup>1</sup>College of Applied Medical Sciences, Taif University, Taif, Kingdom of Saudi Arabia

<sup>2</sup>General Directorate of Health Affairs, Ministry of Health, Taif, Saudi Arabia

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58 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 1395-1404. OPEN ACCESS [Down](#)  
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Arti

## Identification of green mussel from Lampung Bay, Indonesia by using a morphological and molecular approach

Nuning Mahmudah Noor<sup>1,2</sup>, Happy Nursyam<sup>1</sup>, Maheno Sri Widodo<sup>1</sup> and Yenny Risjani<sup>1</sup>

<sup>1</sup>Faculty of Fisheries and Marine Sciences, University of Brawijaya, Malang, Indonesia

<sup>2</sup>Aquaculture Department, State Polytechnic of Lampung, Bandar Lampung, Indonesia

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59 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 1405-1411. OPEN ACCESS [Down](#)  
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Arti

## Biochemical effect of *Eucalyptus* and Neem-based formulations on *Bactrocera zonata* (Saunders) (Diptera: Tephritidae)

Naeem M. Eesa<sup>1</sup>, Hanaa A. El-Sherif<sup>1</sup>, Mai K.K.A. Daif<sup>2</sup>, A.M.Z. Mosallam<sup>2</sup> and Dina H. Abd El-Monem<sup>1\*</sup>

<sup>1</sup>Department of Entomology, Faculty of Science, Cairo University, Egypt

<sup>2</sup>Plant Protection Research Institute, Dokki, Giza, Egypt

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60 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 1412-1422. OPEN ACCESS [Down](#)  
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Arti

## Growth and development of crossbred bulls obtained by breed transformation in the northern region of Kazakhstan

Nurlybay Kazhgaliyev, Alexey Shurkin, Amanzhol Bekkozhin, Zhanbay Aubakirov, Saniya Zhumagazieva

Department of Technology and Processing of Livestock Production, Faculty of Veterinary Sciences and Animal Husbandry, S.Seifullin Kazakh Agro-Technical University, Zhenis Avenue, Astana, Kazakhstan.

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61 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2):1423-1431. OPEN ACCESS [Down](#)  
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Arti

## An effective method of leaf area measurement of sweet potatoes

Eko Widaryanto\*, Mochammad Roviq and Akbar Saitama.

Department of Agronomy, Faculty of Agriculture, Brawijaya University, Malang, Indonesia

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62 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 1432-1437. OPEN ACCESS [Down](#)  
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Arti

## Access to medicine: induction of novel drugs in the post era of new patent regulation in Pakistan

Muhammad Asif<sup>1</sup>, Samiyah Tasleem<sup>2\*</sup> and Muhammad Akram<sup>3</sup>

<sup>1</sup>Department of Pharmaceutics, Faculty of Pharmacy and Pharmaceutical Sciences, University of Karachi, Karachi, Pakistan

<sup>2</sup>Department of Microbiology, University of Karachi, Federal Urdu University of Arts Science and Technology (FUUAST), Karachi, Pakistan.

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63 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 1438-1447. OPEN ACCESS [Down](#)  
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Arti

## Antimicrobial Potential of *Lactobacillus* and *Bifidobacterium* strains Isolated from Probiotic Antidiarrheal Formulations in Pakistan: An *In Vitro* validation against Diarrheogenic *E. Coli*.

Syed Imran Ali<sup>1</sup>, Dr. Baqar Shyum Naqvi<sup>1</sup> and Samiyah Tasleem<sup>2</sup>

<sup>1</sup> Department of Pharmaceutics, University of Karachi, Pakistan

<sup>2</sup> Department of Microbiology, University of Karachi, Pakistan.

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64 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 1448-1457. OPEN ACCESS [Down](#)  
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Arti

### Total steroids production from date palm callus under heavy metals stress

Zeinab E. Zayed, Maiada M. El Dawayati and Sherif F. El Sharabasy

Department of Biotechnology, The Central Lab of Date Palm Researches and Development, ARC, Cairo, Egypt.

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65 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2):1458-1467. OPEN ACCESS [Down](#)  
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Arti

### The Possible Mechanisms of Massage Therapy

Houyong Zhong<sup>1, 4,5</sup> Cuimei Wang<sup>1</sup> Zhen Wan<sup>2</sup> Jinpei Lei<sup>3</sup>

<sup>1</sup> Faculty of Physical Education, Gannan Normal University, Ganzhou 341000, China.

<sup>2</sup> Kaiping maternal and child health care family planning service center of Guangdong Province, Kaiping, 529300, China.

<sup>3</sup> Kaiping Central Hospital of Guangdong Province, Kaiping, 529300, China.

<sup>4</sup> Faculty of Associated Medical Sciences, Khon Kaen University, Khon Kaen 40002, Thailand

<sup>5</sup> Research and Training Center for Enhancing Quality of Life of Working-Age People, Khon Kaen University, Khon Kaen 40002, Thailand

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66 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 1468-1473. OPEN ACCESS [Down](#)  
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Arti

### The Efficacy Of Trigger Point Laser Puncture On Tension Headache

Hend S. Shokry<sup>1</sup>, Lilian Albert Zaki<sup>1</sup>, Ghada M. Koura<sup>1,2,3</sup> and Ahmad M Kholeif<sup>3</sup>

<sup>1</sup> Physical Therapy Department for Orthopaedic, Faculty of Physical Therapy, Cairo University, Egypt.

<sup>2</sup> Medical rehabilitation department, faculty of applied sciences, KKKU

<sup>3</sup> Orthopaedic Surgery Department, Faculty of Medicine, Cairo University, Egypt.

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67 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 1474-1484. OPEN ACCESS [Down](#)  
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Arti

### Authentication of *Cordia dentata* Poir. Growing in Egypt using ISSR and DNA barcoding

Ahmed Sayed Fouad\*, Rehab Mahmoud Hafez and Rim Hamdy

Botany and Microbiology Department, Faculty of Science, Cairo University, 12613 Cairo, Egypt.

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68 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 1485-14991. OPEN ACCESS [Down](#)  
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Arti

### Improvement of aroma of Noni juice using activated carbon adsorption

Susinggih Wijana, Nur Lailatul Rahma and Hesti Maghfiroh

Department of Agro-industrial Technology, Universitas Brawijaya, Indonesia

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69 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 1492-1499. OPEN ACCESS [Down](#)  
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Arti

### Correlations and path analysis to determine the selection characters for developing new-type of upland rice

Reny Herawati\*, Masdar, and Alnopri

Department of Agroecotechnology, Faculty of Agriculture, University of Bengkulu, Bengkulu, Indonesia. 38371.

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70 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 1500-1509. OPEN ACCESS [Down](#)  
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Arti

### Comparative cytotoxic and anticancer effect of Taxol derived from *Aspergillus terreus* and *Taxus brevifolia*

Nabila Zein<sup>1</sup>, Safa W. Aziz<sup>2</sup>, Ashraf S. El-Sayed<sup>3\*</sup> and Basel Sitohy<sup>4</sup>

<sup>1</sup> Biochemistry Division, Chemistry Department, Faculty of Science, Zagazig University, Egypt

<sup>2</sup> Department of Laboratory and Clinical Sciences, College of Pharmacy, University of Babylon, Iraq

<sup>3</sup> Microbiology and Botany Department, Faculty of Science, Zagazig University, Egypt.

<sup>4</sup> Division of Oncology, Department of Radiation Sciences, Umea University, Umea, Sweden

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- 71 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 1510-1514. OPEN ACCESS [Down](#)  
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Arti
- Biological Analysis of Population of Red Snapper Fish (*Lutjanus Gibbus*) In Alor Sea, East Nusa Tenggara, Indonesia**  
Amap Pakro<sup>1</sup>, Achmar Mallawa<sup>1</sup>, Sudirman and Faisal Amir<sup>2</sup>
- <sup>1</sup>Post Graduate Student, Fisheries Science, Hasanuddin University, Indonesia, 90243  
<sup>2</sup>Hasanuddin University, Indonesia, 90243
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- Biological and molecular characterization of an isolate of *Sweet potato feathery mottle virus* from sweet potato**  
Maha Adel Kawanna<sup>1</sup> and Dalia Gamil Aseel<sup>2</sup>
- <sup>1</sup>Department of Plant Pathology, Faculty of Agriculture, (El-Shatby), Alexandria University, 21545, Egypt  
<sup>2</sup>Plant Protection and Biomolecular Diagnosis Department, Arid Lands Cultivation Research Institute, City of Scientific Research and Technological Applications, New Borg El-Arab City, 21934, Egypt.
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- Pretreatment with low-doses of gamma irradiation enhances *Vicia faba* plant tolerance to lead stress**  
Hamed Mohamed El-Shora<sup>1</sup>, Hend Mostafa Habib<sup>2</sup>, Hedaya Ahmed Kamel<sup>2</sup>, Ibrahim Yassin Mostafa<sup>2</sup>
- <sup>1</sup>Botany Department, Faculty of Science, Mansoura University, Dakahlia, Egypt.  
<sup>2</sup>Radioisotopes Department, Nuclear Research Center, Dokki, 12311 Cairo, Egypt.
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- Potential use of tomato pomace as ruminants diet: A review**  
Sarong So, Anusorn Cherdthong\*, and Suthipong Uriyapongson
- Department of Animal Science, Faculty of Agriculture, Khon Kaen University, Khon Kaen 40002, Thailand.
- 
- 75 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 1549-1555. OPEN ACCESS [Down](#)  
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- Detection of some foodborne pathogens in meat by Duplex PCR**  
Abdelhalim A. Elshawadfy<sup>1</sup>, Ashraf A. Abd El-Tawab<sup>2</sup>, Hanan A. Fahmy<sup>3</sup>, Sherin Mahmoud Noser<sup>4</sup>, Fatma I. El-Hofy<sup>2</sup> and Ahmed Hikal<sup>2</sup>
- <sup>1</sup>Animal Health Research Institute, Mansoura branch, Agricultural Research Center, Giza, Egypt.  
<sup>2</sup>Bacteriology, Immunology and Mycology Department, Faculty of Veterinary Medicine, Benha University, Egypt.  
<sup>3</sup>Biotechnology Department, Animal Health Research Institute, Agricultural Research Center, Giza, Egypt.  
<sup>4</sup>Food Hygiene Department, Animal Health Research Institute, Agricultural Research Center, Giza, Egypt
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- Safety range of Boldenone Undecylenate injection in beef bulls**  
Nagwa Thabet Elsharawy<sup>1,2\*</sup>, Ahmed Ezzat Ahmed<sup>3,4</sup>, Mohie Haridy<sup>5</sup>, Ayman Y. Kassab<sup>6</sup> and H. A. Hamdon<sup>6</sup>
- <sup>1</sup>Biology Department. Faculty of Sciences, University of Jeddah, Jeddah, Saudi Arabia  
<sup>2</sup>Food Hygiene Department, Faculty of Veterinary Medicine, New Valley University, Egypt.  
<sup>3</sup>Biology Department College of Sciences, King Khalid University, Abha 61413, Saudi Arabia  
<sup>4</sup>Theriogenology Department, Faculty of Veterinary, Medicine, South Valley University, Qena 83523, Egypt.  
<sup>5</sup>Pathology Department, Faculty of Veterinary, Medicine, South Valley University, Qena 83523, Egypt.  
<sup>6</sup>Animal Production Department, Faculty of Agriculture, New valley University, Egypt
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- Maize hybrids yield potential as affected by plant population density in Qalyubia, Egypt**  
Mohamed E. Sidi, A. A. El-Hosary, G. Y. Hammam, El Saeed M. El-Gedwy and A.A. A. El-Hosary
- Agronomy Department, Faculty of Agriculture, Benha University, Egypt.
- 
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## Extraction and characterization of $\beta$ -hydroxybutyrate from *Azotobacter chroococcum* 9

Shatha Salman Hassan and Suaad Ali Ahmed

Biology Department /College of Science / Baghdad University, Iraq

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### Chicory (*Cichorium intybus* L.) Extracts as an alternative of (glibenclamide) on biochemical parameters in Diabetic Rats

Jackleen Attia Khalil<sup>1</sup>, Mohamed Said Abbas<sup>2</sup>, Hemat Sameh Abdel Salam<sup>1</sup> and Amira Shawky Soliman<sup>2</sup>

<sup>1</sup>Horticultural Research Institute, Medicinal and Aromatic Plants Research Department Egypt

<sup>2</sup>Natural Resources Department, Faculty of African postgraduate Studies, Cairo. University, Egypt.

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### Spectrophotometric Method for Monitoring Bioethanol Production in Yeast Cells

Bengü Ergüden

Department of Bioengineering, Gebze Technical University, 41400, Kocaeli ,Turkey.

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### Determination and Characterization of Phenolics, Flavonoids, and Dietary Fiber in Fermented Lebeu Bean (*Cajanus* sp.) Extracts by the SSF Method

Wahyu Mushollaeni<sup>1\*</sup> and Lorine Tantalu

Department of Agroindustrial Technology, University of Tribhuwana Tunggaladewi, Malang, East Java Province, 65144, Indonesia

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### Determination of Chemical Contents of Propolis Extracts Obtained from Different Regions of Denizli Province, Turkey

Yeşim Kara

Department of Biology, Pamukkale University, Science and Art Faculty, Denizli 20070-Turkey.

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### Utilization of ISSR marker and tolerance indices for selecting adapted wheat genotypes under water stress

A.A.A. EL-Hosary<sup>1</sup>, El Saeed M. El-Gedwy<sup>1</sup> and M.A. Abdel-Salam<sup>2</sup>

<sup>1</sup> Department of Agronomy, Faculty of Agriculture, Benha University, Egypt.

<sup>2</sup>Department of soil and water, Faculty of Agriculture, Benha University, Egypt.

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### Impact of Irrigation Scheduling and Application Rate of Organic Fertilizers under Rotational Distribution System in Sandy Soils to Mitigate Water Stress on Apple Trees

Abdelraouf, R. E.<sup>1</sup>, Adel. M. R. A. Abdelaziz<sup>2</sup>, E. F. Essa<sup>4</sup>, HAMED L. M. M<sup>3</sup>

<sup>1</sup>Water Relations and Field Irrigation Department and <sup>4</sup>Soil & Water Use Department, Agriculture and Biology Division, National Research Centre, Dokki, Giza, Egypt

<sup>2</sup>Central Laboratory of organic Agriculture, Agricultural Research Center (ARC), Ministry of Agriculture, Giza, Egypt,

<sup>3</sup>Soil and water Department, Faculty of Agriculture, Cairo University Egypt

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### Ecological functions of vegetation of riparian in preventing landslide of upper Ranoyapo River, North Sulawesi - Indonesia

Ratna Siahaan, Nio Song Ai, and Parluhutan Siahaan

Department of Biology, Faculty of Mathematics and Natural Sciences, University of Sam Ratulangi, Kampus Unsrat, Manado 95115, North Sulawesi, Indonesia

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## Effects of Aerobic and Inspiratory Muscle training on Pulmonary functions in Hemodialysis patients

Zahra Mohamed Hassan<sup>1</sup>, Heba A. Bahey El Deen<sup>2</sup>, Sahier Omar Elkhatab<sup>3</sup>, Khaled Takey Ahmed<sup>4\*</sup> and Heba Abd El Maboud Yusuf<sup>5</sup>

<sup>1</sup>Department of Physical Therapy for Cardiovascular/Respiratory Disorders and Geriatrics, Faculty of Physical Therapy, Cairo University, Egypt

<sup>2</sup>Department of Physical Therapy and Health Rehabilitation, Faculty of Applied Medical Sciences, Jouf University, Kingdom of Saudi Arabia

<sup>3</sup>Department of Physical Therapy for Surgery, Faculty of Physical Therapy, Misr University for Science and Technology, Egypt.

<sup>4</sup>Department of Internal medicine and Nephrology, Faculty of Medicine, Cairo University, Egypt

<sup>5</sup>Department of Physical Therapy, Faculty of Health Sciences, Beirut Arab University, Beirut, Lebanon

<sup>5</sup>Department of Physical Therapy for Cardiovascular/Respiratory Disorders and Geriatrics, Misr University for Science and Technology, Egypt

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## The influence of calcium sources and its application methods on the post-harvest phenological and physical quality attributes of gladiolus spikes

Masood Ahmad\* and Abdur Rab

Department of Horticulture, The University of Agriculture, Peshawar, Pakistan

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## Quality optimization of Luja plant (*Peristrophe bivalvis* Merrill) by Means of Light Intensity manipulation and identification of substance with pigment potential

Rima Melati<sup>1</sup>, Yogi Sugito<sup>2</sup>, Nurul Aini<sup>2</sup> and Ellis Nihayati<sup>2</sup>

<sup>1</sup>Faculty of Agriculture Khairun University, Indonesia.

<sup>2</sup>Faculty of Agriculture Brawijaya University, Indonesia.

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## Efficacy of locally prepared inactivated combined vaccine of *Salmonella enteritidis*, *Salmonella typhimurium*, Avian influenza (H9N2) and Newcastle disease viruses

Abeer S. El-Maghraby<sup>1</sup>, Wafaa R. Abdelaziz<sup>2</sup>, Abd El- Moneam M.M.<sup>2</sup> and A.M. Helal<sup>1</sup>

<sup>1</sup>Central Laboratory for Evaluation of Veterinary Biologics, Abbasia, Cairo, Egypt.

<sup>2</sup>Veterinary Serum and Vaccine Research Institute (VSVRI), Abassia, Cairo, Egypt

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## *In silico* characterization of CDKB1 and its coding gene in some *Oryza* species

Ahmed Sayed Fouad\* and Rehab Mahmoud Hafez

Botany and Microbiology Department, Faculty of Science, Cairo University, 12613 Cairo, Egypt.

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## Investigation of oxidative stress in nephropathy: Diabetic Vs Non-Diabetic Profile

Ghazala Yasmeen, Syeda Midhat Noor, Nazish I. Khan, Sumera Sohail and Lubna Naz \*

Pathophysiology Research Unit, Department of Physiology University of Karachi, Pakistan.

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## Biological effects of CeO<sub>2</sub> nanoparticles on components of water microbiocenosis

Anastasia Korotkova<sup>1,2</sup>, \*Dianna Kosyan<sup>1</sup> and Elena Rusakova<sup>1</sup>

<sup>1</sup>Laboratory of nanotechnology and Technogenic nanomaterial, Federal Research Centre of Biological Systems and Agro-technologies of the Russian Academy of Sciences, 9th Yanvarya St., 29, Orenburg, Russia, 460000.

<sup>2</sup>Institute of Bioelementology, Orenburg State University, Pobeda Avenue, 13, Orenburg, Russia, 460000.

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# The fatigue characteristic of electromyography, heart rate variability, electroencephalography under physical and mental demands: a review

Shuxun Chi<sup>1,2</sup> and Orawan Buranruk<sup>1,2\*</sup>

<sup>1</sup> School of Physical Therapy, Faculty of Associated Medical Sciences, Khon Kaen University, Khon Kaen, Thailand

<sup>2</sup> Research Center in Back, Neck, Other Joint Pain and Human Performance (BNOJPH), Khon Kaen University, Khon Kaen, Thailand.

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## Nutritional composition of some fruits harvested in the ripening period cultivated in Vietnam

Le Van Trong<sup>1</sup>, Bui Bao Thinh<sup>1,2\*</sup>, Nguyen Tuan Khoi<sup>2,3</sup> and Bui Danh Chung<sup>4,5</sup>

<sup>1</sup> Faculty of Natural Sciences, Hong Duc University, Thanh Hoa city, Vietnam

<sup>2</sup> School of Natural Sciences, Far Eastern Federal University, Vladivostok, Russia

<sup>3</sup> Faculty of Agronomy, Bacgiang Agriculture and Forestry University, Bac Giang city, Vietnam

<sup>4</sup> School of Biomedicine, Far Eastern Federal University, Vladivostok, Russia

<sup>5</sup> Faculty of Agronomy, Northeast College of Agriculture and Forestry, Quang Ninh, Vietnam

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## Physiological and biochemical changes in tomato fruit (*Solanum lycopersicum* L.) during growth and ripening cultivated in Vietnam

Le Van Trong<sup>1</sup>, Le Quy Tuong<sup>2</sup>, Bui Bao Thinh<sup>1,3\*</sup>, Nguyen Tuan Khoi<sup>3,4</sup> and Vu Thi Trong<sup>1,5</sup>

<sup>1</sup> Faculty of Natural Sciences, Hong Duc University, Thanh Hoa city, Vietnam

<sup>2</sup> National Center for Variety Evaluation Seed Testing and Plant Products, Hanoi city, Vietnam

<sup>3</sup> School of Natural Sciences, Far Eastern Federal University, Vladivostok, Russia

<sup>4</sup> Faculty of Agronomy, Bacgiang Agriculture and Forestry University, Bac Giang city, Vietnam

<sup>5</sup> Dang Thai Mai High School, Thanh Hoa, Vietnam

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## Serological studies on circulating interferon gamma in patients infected with hepatitis C virus.

Ahmed Barakat Barakat<sup>1</sup>, Sahar Ahmed Hafez Shoman<sup>1</sup>, Rashed Ibrahim Rashed Al Najdi<sup>1</sup> and Abdelfattah M. Attallah<sup>2</sup>

<sup>1</sup> Microbiology department, Faculty of Science, Ain shams University, Cairo, Egypt

<sup>2</sup> Biotechnology Research Center, New Damietta, Egypt

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## The Effect of Deficit Irrigation Levels on Squash at different Growth Stages

Elsawy, A.M.<sup>1</sup>, Ahmed Azab<sup>2</sup>, F.A Hashem<sup>1</sup>, Z. Y. Maharik<sup>1</sup> and H. Mehawed<sup>2</sup>

<sup>1</sup> Central laboratory for Agricultural Climate (CLAC), Agricultural Research Center, Giza- Egypt

<sup>2</sup> Agricultural Engineering Research Institute, Agricultural Research Center, Giza- Egypt

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## Application of Using DNA Barcoding Genes in Identification of Fungi Species, a Review

Mohammad Alhawatem<sup>1</sup>, Ali Alqudah<sup>1</sup> and Abdel Rahman Al Tawaha<sup>2</sup>

<sup>1</sup> Department of applied biological science, Faculty of Science, Tafila Technical University, Tafila, Jordan

<sup>2</sup> Department of Biological sciences, Al-Hussein bin Talal University, Maan, Jordan.

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## Genetic relationship among *Juniperus spp.* in Taif, Saudi Arabia, based on, molecular marker (RAPD), SDS-PAGE profile and seed morphological taxonomy

Hatim M. Al-Yasi

Assistant professor in the Department of biological science, Taif University, Kingdom of Saudi Arabia

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## Effect of aerobic exercise on non-obese adolescent girls with polycystic ovarian syndrome

Hala Mohamed Hanafy<sup>2</sup>, Mohamed Ahmed Awad<sup>2</sup>, Hossam El Din Hussin Kamel<sup>3</sup> and Dina Said Mohamed\*<sup>1</sup>.

<sup>1</sup>Physiotherapist at Al Khazendara General Hospital, the Ministry of Health, Cairo, Egypt

<sup>2</sup>Department of Gynecology and Obstetrics, Faculty of Physical Therapy, Cairo University, Giza, Egypt.

<sup>3</sup>Department of Gynecology and Obstetrics, Faculty of Medicine, AL-Azhar University, Cairo, Egypt

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### Adaptation test of several plants under the Pine Forest stands

Mokhtar Effendi<sup>1\*</sup>, Yogi Sugito<sup>2</sup> and Agung Nugroho<sup>2</sup>

<sup>1</sup>Postgraduate Program, Faculty of Agriculture, Brawijaya University, Malang, Indonesia

<sup>2</sup>Department of Agronomy, Faculty of Agriculture Brawijaya University, Malang, Indonesia.

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### CHROMagar™ O157 and gene sequencing for identification *Escherichia coli* from different sources

Israa AbdulJabbar Ibrahim<sup>1</sup>, Sundas AbdulMuhamin Al-Hudari<sup>2</sup> Mohammed A. Fayidh<sup>2</sup>

<sup>1</sup>Department of Microbiology, College of Science, Al-Karkh University of Science\* Baghdad University\*\*, Baghdad/Iraq,

<sup>2</sup>Department of Biology, Ibn Al-Haithem College of Education for Pure Science, Baghdad University\*\*, Baghdad /Iraq

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### Inclusion of natural bioactive mixture in drinking water: 1 Nutritional impact on Growth performance, carcass characteristics, ceacum, blood and microbiological parameters of Rex rabbits

Azza Mohamed Mohamed Badr<sup>1</sup>, Hamed Abdel-Aziz Ali Omer<sup>2</sup>, and Neamat Ibrahim Bassuony<sup>1</sup>

<sup>1</sup>Regional Centre for Food and Feed, Agriculture Research Centre, Ministry of Agriculture, Giza, Egypt.

<sup>2</sup>Animal Production Department, National Research Centre, 33 El-Bohouth Street, P.O: 12622, Dokki, Giza, Egypt.

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### Inclusions of natural bioactive mixture in drinking water 2: Nutritional impact on productive, physiological and reproductive performance of Rex rabbits breed

Hamed Abdel-Aziz Ali Omer<sup>1</sup>; Azza Mohamed Mohamed Badr<sup>2</sup> Neamat Ibrahim Bassuony<sup>2</sup> and Tarek Seleem Toufic<sup>3</sup>

<sup>1</sup>Animal Production Department, National Research Centre, 33 El-Bohouth Street, P.O: 12622, Dokki, Giza, Egypt.

<sup>2</sup>Regional Centre for Food and Feed, Agriculture Research Centre, Ministry of Agriculture, Giza, Egypt.

<sup>3</sup>Animal Production Research Institute, Agriculture Research Center, Ministry of Agriculture, Giza, Egypt.

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### Characterization of mycoplasmae isolated from chicken

El-Jakee J<sup>1</sup>, Marouf SH<sup>1</sup>, Basma H. Amin<sup>2</sup> and Riham H.Hedia<sup>3</sup>

<sup>1</sup>Department of Microbiology Fac. Vet. Med., Cairo University, Egypt.

<sup>2</sup>The Regional Centre for Mycology and Biotechnology (RCMB), Al-Azhar University, Egypt.

<sup>3</sup>Department of Microbiology and Immunology, National Research Centre, Dokki, Egypt

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### Diversity among timunsuri accession and their cucumis relative in Indonesia

Muhammad Muharram<sup>1\*</sup>, Sumeru Ashari<sup>2</sup> and Anna Satyana Karyawati<sup>2</sup>

<sup>1</sup> Postgraduate Program, Faculty of Agriculture, Brawijaya University, Jl. Veteran, Malang 65145, Indonesia

<sup>2</sup> Department of Agronomy, Faculty of Agriculture, Brawijaya University, Jl. Veteran, Malang 65145, Indonesia

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# Evaluation of Some Physical and Mechanical Properties of Date Palm Trunk

Seyed Meisam Mazlounzadeh and Mansoureh Pourjafar

Higher Educational Complex of Saravan, Saravan, Sistan and Baluchestan, Iran.

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## Kineso-Taping versus Pneumatic Compression Pump on Lymphedema post Mastectomy

Esraa Hany Rostom<sup>1</sup> and Dalia Galal El Sayed<sup>2</sup>

<sup>1</sup>Surgery P.T Department, Faculty of Physical Therapy, Cairo University Egypt

<sup>2</sup>Surgery P.T Department, Faculty of Physical Therapy, MTI University. Egypt

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## Application of maleic hydrazide controlled plant height and ameliorate flower production in local dahlia

Masood Ahmad<sup>1</sup>, Sumbal Ayaz<sup>1</sup>, Sultan Akbar Jadoon<sup>2</sup>, Mehboob Alam<sup>1</sup>, Abdur Rab<sup>1</sup>, Iftikhar Hussain Khalil<sup>2</sup>, Gohar Ayub<sup>1</sup>, and Hassan Ali<sup>1</sup>

<sup>1</sup>Department of Horticulture, The University of Agriculture, Peshawar-Pakistan.

<sup>2</sup>Department of Plant breeding and genetics, The University of Agriculture, Peshawar-Pakistan

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## Utilization of Differential Display Reverse Trancrptase- DDRT for detection of salt tolerant clones of Potato *Solanum tuberosum* L.

Zainab AL-Hussaini<sup>1\*</sup>, Shatha Yousif<sup>1</sup> and Sdoon AL-Ajeel<sup>2</sup>

<sup>1</sup> Agricultural and Food Research Directorate, Ministry of Science and Technology, Baghdad, Iraq.

<sup>2</sup> Biology Department, Faculty of Girl Education, Kufa University, Baghdad, Iraq

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## Incorporation of different roughage sources in growing sheep rations 2: Nutritional impact on growth performance, digestion coefficients, nutritive values, water metabolism, nitrogen balance and ruminal fermentation

Hamed Abdel-Aziz Ali Omer<sup>1</sup> and Azza M.M. Badr<sup>2</sup>

<sup>1</sup>Animal Production Department, National Research Centre, 33 El-Bohouth Street, P.O: 12622, Dokki, Cairo, Egypt.

<sup>2</sup>Regional Centre for Food and Feed, Agriculture Research Centre, Ministry of Agriculture, Cairo, Egypt

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## *In vitro* synthetic seed and herbicide resistant sugar beet varieties (*Beta vulgaris* L.)

Mohamed I. Masri<sup>1</sup>, Roba M. Ismail<sup>2</sup>, Wessam M. Rslan<sup>2\*</sup> and Naglaa A. Abdallah<sup>3</sup>

<sup>1</sup>Agronomy Department, Faculty of Agriculture, Cairo University, Cairo, Egypt

<sup>2</sup>Gene Transfer Lab, Plant Genetic Transformation Department, Agricultural Genetic Engineering Research Institute, Agricultural Research Center, Giza, Egypt

<sup>3</sup>Genetic Department, Faculty of Agriculture, Cairo University, Cairo, Egypt.

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## Impact of outreach and fair compensation on brucellosis seroprevalence of large ruminants and householder's knowlege, attitude and practices in Upper Egypt.

Nader R. Nassar<sup>1</sup>, Hassan M. Sobhy<sup>2</sup>, Ibrahim G. Ibrahim<sup>1</sup>, Mohamed S. El-Garhy<sup>1</sup> and Wafai Z. A. Mikhail<sup>2\*</sup>

<sup>1</sup> Animal Reproduction Research Institute, Agriculture Research Center, Giza, Egypt.

<sup>2</sup> Dept of Natural Resources, Faculty of African Postgraduate Studies, Cairo University. Egypt

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# Validation of a simple tool to identify osteoporosis risk of Egyptian Men

Rokia A El-Banna, Sahar A El-Masry, Nayera E Hassan and Safenaz Y El Sherity\*

Biological Anthropology Department, Medical Research Division, National Research Centre, Dokki, Giza, Egypt (Affiliation ID 60014618)

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## Mitochondrial Genetic Variations of *Musca domestica* in 10 countries

Tanawat Chaiphongpachara.

Department of Public Health and Health Promotion, College of Allied Health Science, Suan Sunandha Rajabhat University, Samut Songkhram 75000, Thailand.

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RESEARCH ARTICLE

BIOSCIENCE RESEARCH, 2019 16(2): 1952-1960.

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## Genetic diversity of the dengue vector *Aedes aegypti* assessed using DNA sequencing libraries

Tanawat Chaiphongpachara<sup>1</sup> and Sedthapong Laojun<sup>2</sup>

<sup>1</sup>Department of Public Health and Health Promotion, College, College of Allied Health Science, Suan Sunandha Rajabhat University, Samut Songkhram 75000, Thailand.

<sup>2</sup>Bachelor of Public Health, College of Allied Health Sciences, Suan Sunandha Rajabhat University, Samut Songkhram, Thailand

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## Impact of crop type on the diversity of soil fauna populations

Mostafa F. Masood<sup>1,3</sup>, Ensaf A. El-Gayar<sup>1</sup>, Hassan M. Sobhy<sup>2</sup> and Wafai Z. A. Mikhail<sup>2</sup>

<sup>1</sup>Zoology Department, Faculty of Science, Al-Azhar University, Assiut, Egypt.

<sup>2</sup>Dept of Natural Resources, Faculty of African Postgraduate Studies, Cairo University, Egypt.

<sup>3</sup>Biology Department, Faculty of Science, Jazan University, Jazan, Saudi Arabia.

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RESEARCH ARTICLE

BIOSCIENCE RESEARCH, 2019 16(2):1966-1971.

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## Effect of Adding Mushroom (*Agaricusbisporus*) Agricultural by-products with or without Enzymes in Rations on Some Immunological and Physiological Traits of Broiler Chicks

Aqeel Y. Alshukri, Zeaid Amad H. Zeny and Ali J. Hammod

Department of Animal Production. College of Agriculture. University of Kufa Republic of Iraq

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RESEARCH ARTICLE

BIOSCIENCE RESEARCH, 2019 16(2): 1972-1985.

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## Incorporation of different roughage sources in growing sheep rations 1: Nutritional impact on growth performance, drinking water, economic efficiency and some blood parameters

Hamed Abdel-Aziz Ali Omer<sup>1</sup>, Azza M. M. Badr<sup>2</sup> and Ahmed, A.A. M<sup>2</sup>

<sup>1</sup>Animal Production Department, National Research Centre, 33 El-Bohouth Street, P.O: 12622, Dokki, Cairo, Egypt.

<sup>2</sup>Regional Centre for Food and Feed, Agriculture Research Centre, Ministry of Agriculture, Cairo, Egypt.

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RESEARCH ARTICLE

BIOSCIENCE RESEARCH, 2019 16(2): 1986-1999.

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## Biological activity exerted by an adamantanyl-steroid derivative against ischemia/perfusion injury

Figuroa-Valverde Lauro<sup>1\*</sup>, Diaz Cedillo Francisco<sup>2</sup>, Rosas-Nexticapa Marcela<sup>3\*</sup>, Mateu-Armand Virginia<sup>3</sup>, Hernandez-Vasquez Patricia<sup>3</sup>, Garcimarer Espino E. Alejandra<sup>3</sup>, Benitez-Coeto Laura<sup>3</sup>, Pool Gómez Eduardo<sup>1</sup>, Hau-Heredia Lenin<sup>1</sup>, Lopez-Ramos Maria<sup>1</sup>, Borges-Ballote Yaritza<sup>1</sup>.

<sup>1</sup>Laboratory of Pharmaco-Chemistry at the Faculty of Chemical Biological Sciences of the University Autonomous of Campeche, Av. Agustín Melgar s/n, Col Buenavista C.P.24039 Campeche Cam., México.

<sup>2</sup>Escuela Nacional de Ciencias Biológicas del Instituto Politécnico Nacional. Prol. Carpio y Plan de Ayala s/n Col. Santo Tomas, México, D.F. C.P. 11340.

<sup>3</sup>Facultad de Nutrición, Universidad Veracruzana. Médicos y Odontólogos s/n, 91010, Xalapa, Veracruz. México.

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BIOSCIENCE RESEARCH, 2019 16(2): 2000-2008.

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## Toll-Like Receptor 4 Gene Polymorphism in Patients with chronic Hepatitis C Virus Infection: A Preliminary study

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122 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 2009-2016. OPEN ACCESS [Down](#)  
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### **Influence of *Rhamnus alaternus L* leaf extract on normal and alloxane-induced Diabetic rats**

Ouchtati Sara<sup>1</sup>, Seridi Ratiba<sup>1</sup> and Hamed M El-Shora<sup>2</sup>

<sup>1</sup>Laboratory of Plant Biology and Environment. Faculty of Science. Department of Biology. University BADJI Mokhtar - Annaba. Bp 12, 23000 Annaba. Algeria.

<sup>2</sup> Department of Botany, Faculty of Science, Mansoura University, Egypt.

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### **Effect of Group Dynamics on Environmentally Friendly Innovation (Case Study of Empowerment of Group of Dairy Cattle Farmers In Ngantru Village Ngantang Subdistrict Malang Regency East Java Province, Indonesia)**

Sarjono Wasis<sup>1,2</sup>, Yuliati Yayuk<sup>3</sup>, Sugiyanto<sup>3</sup> and Sukei Keppi<sup>3</sup>

<sup>1</sup>Postgraduate Program, Faculty of Agriculture, University of Brawijaya, Malang, Indonesia.

<sup>2</sup>National Animal Husbandry Training Centre Batu, Malang, Indonesia.

<sup>3</sup>Faculty of Agriculture, University of Brawijaya, Malang, Indonesia.

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124 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2):2034-2046. OPEN ACCESS [Down](#)  
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### **Comparative Study and Adaptation of Promising Varieties of Safflower (*Carthamus tinctorius L.*) For the Production of Fodder and Seeds in a Desert-Steppe Zone**

Semby Arystangulov<sup>1</sup>, Damilya Konysbaeva<sup>1\*</sup>, Victoria Gorbulya<sup>1</sup>, Jakypbek Nurkuzhaev<sup>2</sup>, Tlekkali Turganbaev<sup>1</sup>, Bekmyrza Sadykov<sup>1</sup> and Sholpan Bekenova<sup>1</sup>

<sup>1</sup>Department of Plant Protection and Quarantine, Faculty of Agriculture, S. Seifullin Kazakh Agrotechnical University, Astana, Kazakhstan

<sup>2</sup> Kazakh Research Institute of Economy of AIC and rural development, Almaty, Kazakhstan

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125 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 2047-2062. OPEN ACCESS [Down](#)  
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### **Impact of Pyrolysis Temperature and Water Quenching on Hydrophilicity of Biochar derived from Durian Wood Waste**

Evy Setiawati<sup>1,2</sup>, Sugeng Prijono<sup>3</sup>, Diah Mardiana<sup>4</sup>, Cahyo Prayogo<sup>3</sup>, Soemarno<sup>3</sup>

<sup>1</sup>Institute of Research and Standardization of Industry, Jl. Panglima Batur Barat, Banjarbaru South Kalimantan, 70711, Indonesia

<sup>2</sup>Postgraduate Program, Faculty of Agriculture, Brawijaya University, Jl. Veteran, Malang East Java 65145, Indonesia

<sup>3</sup>Department of Soil Science, Faculty of Agriculture, Brawijaya University, Jl. Veteran, Malang East Java 65145, Indonesia

<sup>4</sup> Department of Chemistry Faculty of Mathematics and Natural Sciences, Brawijaya University, Jl. Veteran, Malang East Java 65145, Indonesia

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126 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 2063-2075. OPEN ACCESS [Down](#)  
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### **Identification and Phylogenetic Analysis of Nine Plant Pathogenic Fungi by Application of ITS marker**

Salam Salem Al Sharari

Biology Department, College of Science, Jouf University, Sakaka, Kingdom of Saudi Arabia.

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### **Fabrication of radically new colorants based on Indigo Blue Vat Dye/ polymer/layered Silicate intercalated nanocomposites induced cotton prints with Batik and Denim effects**

A. A. Hebeish<sup>1</sup>, A. A. Shahin<sup>2</sup>, A. A. Ragheb<sup>2</sup>, I. Abd El-Thalouth<sup>2</sup>, E. E. Allam<sup>3</sup> and H. A. Shaban<sup>2\*</sup>

<sup>1</sup>National Research Centre (Scopus affiliation ID 60014618), Textile Industries Research Division, Pretreatments and Finishing of Cellulose based Textile Department, 33 El-Behouth St. (former El-Tahrir str.), Dokki, P.O. 12622, Giza, Egypt

<sup>2</sup>National Research Centre (Scopus affiliation ID 60014618), Textile Industries Research Division, Dyeing, Printing and Textile Auxiliaries Department, 33 El-Behouth St. (former El-Tahrir str.), Dokki, P.O. 12622, Giza, Egypt

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| <b>Effects of Supplementary Moringa Leaf Meals on Growth and Serum Contents of Pla-Mong Fish (<i>Pangasius bocourti</i> Sauvage, 1880)</b> |                  |  |             |  |
| Pornthep Niamphithak, Siripavee Charoenwattanasak and Sompong Doolgindachbaporn*   |                  |  |             |  |
| Department of Fisheries, Faculty of Agriculture, Khon Kaen University, 40002, Khon Kaen, Thailand.   |                  |  |             |  |
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| <b>First record of black spot disease infecting Guava fruits in Egypt and its pre and post-harvest management</b> |                  |  |             |  |
| Mokhtar Mohamed Abdel-Kader, Nehal Samy El-Mougy and Mohamed Saied Ali Khilil                                     |                  |  |             |  |
| Plant Pathology Dept., National Research Centre, Dokki, 12622, Giza, Egypt  |                  |  |             |  |
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| <b>Influence of Agro-industrial Wastes and <i>Azospirillum</i> on Nutrients Status and Grain Yield under Corn Plant Growth in Arid Regions</b>  |                  |  |             |  |
| * Mohamed Hafez <sup>1,2*</sup> , Alexander I. Popov <sup>1</sup> , and Mohamed Rashad <sup>2</sup>   |                  |  |             |  |
| <sup>1</sup> Department of Soil Science and Soil Ecology, Institute of Earth Sciences, Saint Petersburg State University, Saint Petersburg, Russia  |                  |  |             |  |
| <sup>2</sup> Department of Land and Water Technologies, Arid Lands Cultivation Research Institute, City of Scientific Research and Technological Applications, New Borg El- Arab City, Alexandria, Egypt. |                  |  |             |  |
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| <b>Growth and yield response in <i>Amaranthus tricolor</i> L. on various levels of urea fertilizer</b>  |                  |  |             |  |
| Wisnu Eko Murdiono, Kartika Yurlisa and Budi Waluyo   |                  |  |             |  |
| Departement Agronomy, Agriculture Faculty, Universitas Brawijaya Jalan Veteran, Malang 65145, Indonesia |                  |  |             |  |
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| <b>Indirect selection of yield component several soybean genotype at F<sub>2</sub> generation</b> |                  |   |             |  |
| Mohammad Setyo Poerwoko <sup>1</sup> and NurulSjamsijah <sup>2</sup>                              |                  |   |             |  |
| <sup>1</sup> Plant Breeding, Agronomy of Faculty of Agriculture Jember University, Indonesia.     |                  |   |             |  |
| <sup>2</sup> Plant Breeding, State of Polytechnic Jember, Indonesia                               |                  |   |             |  |
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| <b>Biotechnology in cattle business in indonesia</b>  |                  |   |             |  |
| Amam <sup>2</sup> , Moh. Wildan Jadmiko <sup>1</sup> , Pradiptya Ayu Harsita <sup>1</sup> , Roni Yulianto <sup>1</sup> , and Mohammad Setyo Poerwoko <sup>3</sup> |                  |   |             |  |
| <sup>1</sup> Jalan Kalimantan No. 37 Tegalboto Campus, Summersari, Jember, East Java 68121, Indonesia   |                  |   |             |  |
| <sup>2</sup> Agribusiness Study Program, Faculty of Agriculture, University of Jember, Indonesia  |                  |   |             |  |
| <sup>3</sup> Agronomy Study Program, Faculty of Agriculture, University of Jember, Indonesia  |                  |   |             |  |
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| <b>Medical Benefits of Agarwood: A review</b>   |                |  |             |  |
| Tengku, M.A <sup>1</sup> , Ahmad Zubaidi A.L <sup>2</sup> , Abdullah M. F <sup>3</sup> , Wan Nik W.B <sup>4</sup> and Mokhesur R. M <sup>1*</sup>     |                |  |             |  |
| <sup>1</sup> Institute for Community Development & Quality of Life (i-CODE), Universiti Sultan Zainal Abidin, 21300 Kuala Nerus, Terengganu, Malaysia |                |  |             |  |
| <sup>2</sup> Faculty of Medicine, Universiti Sultan Zainal Abidin, 21300 Kuala Nerus, Terengganu, Malaysia  |                |  |             |  |
| <sup>3</sup> School of Banking and Finance, Faculty of Economics and Management Sciences  |                |  |             |  |
| <sup>4</sup> School of Ocean Engineering, Universiti Malaysia Terengganu, 21300 Kuala Nerus, Terengganu, Malaysia                                     |                |  |             |  |
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## Green synthesis of magnetic nano particles using novel plant extracts and its impact as fertilizers on *Helianthus annuus* and *Vicia faba*

Manar Hassan and Souad A. El-Feky

National Institute of Laser Enhanced Sciences, NILES, Cairo University, Giza, Egypt.

136 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2):2179-2193. OPEN ACCESS

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### Toxicity study of bioactive water soluble glycoprotein isolated from blue green alga *spirulina platensis*

Azza Abdelmageed Matloub<sup>1</sup>, Sahar Salah Mohamed El Souda<sup>2</sup>, Abo El-Khair Badawy El-Sayed<sup>3</sup>, Hanan Farouk Aly<sup>4\*</sup>, Sanaa Ahmed Ali<sup>4</sup>, Manal Abdel Aziz Hamed<sup>4</sup>, Nagy Saba El-Rigal<sup>4</sup>, Maha Aly Fahmy<sup>5</sup>, Ayman Ali Farghaly<sup>5</sup> and Zeinab Mohamed Hassan<sup>2</sup>

<sup>1</sup>Pharmacognosy Department National Research Centre, 33 ElBohouth Street, Dokki, 12622, Cairo, Egypt.

<sup>2</sup>Chemistry of Natural Compound Department, National Research Centre, 33 ElBohouth Street, Dokki, 12622, Cairo, Egypt.

<sup>3</sup>Algal Biotechnology Unit, National Research Centre, 33 ElBohouth Street, Dokki, 12622, Cairo, Egypt.

<sup>4</sup>Department of Therapeutic Chemistry, National Research Centre, 33 ElBohouth Street, Dokki, 12622, Cairo, Egypt.

<sup>5</sup>Genetics and Cytology Department, National Research Centre, 33 ElBohouth Street, Dokki, 12622, Cairo, Egypt.

137 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2):2194-2203. OPEN ACCESS

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### Isolation and Characterization of Novel Isolates of *Pseudomonas* of Biotechnological Interest from Soils and Olive tree necrosis

Benyoub Kheira<sup>1\*</sup>, Kacem Mourad<sup>2</sup> and Kaid-Harche Meriem<sup>1</sup>

<sup>1</sup>Département de Biotechnologie, Faculté SNV, Université d'Oran (USTO M.B), BP. 1505 El M'Naouer 31000 Oran, Algérie. Laboratoire des Productions, Valorisations Végétales et Microbiennes (LP2VM).

<sup>2</sup>Département de Biotechnologie, Faculté SNV, Université d'Oran 1-Ahmed Ben Bella, BP. 1524 El M'Naouer 31000 Oran, Algérie.

138 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 2204-2216. OPEN ACCESS

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### Effects of vitamin C supplementation on infectivity of *Opisthorchis viverrini* metacercaria in silver barb (*Barbonymus gonionotus*)

Naiyana Senasri<sup>1</sup>, Smarn Tesana<sup>2</sup>, Budit Yuangsoi<sup>1</sup> and Sutee Wongmaneeprateep<sup>1\*</sup>

<sup>1</sup>Department of Fisheries, Faculty of Agriculture, Khon Kaen University, Khon Kaen 40002, Thailand

<sup>2</sup>Food-Borne Parasite Research Group, Department of Parasitology, Faculty of Medicine, Khon Kaen University, Khon Kaen 40002, Thailand

139 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 2217-2234. OPEN ACCESS

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### Biodegradation of 2-Chlorobenzoic Acid by *Acinetobacter calcoaceticus*: Optimization of Growth Conditions and Growth Kinetics

Ali Abdallah Alqudah\* and Ibrahim Khaled AL- Kafawin

<sup>1</sup>Department of Applied Biology, Faculty of science, Tafila Technical University- Jordan

<sup>2</sup>School of biomedicine, Faculty of Science, Universiti Sultan Zainal Abidin- Malaysia

140 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 2235-2245. OPEN ACCESS

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### Genetic analysis of thermotolerance and grain yield traits of bread wheat (*Triticum aestivum* L.) Using diallel analysis

Eman Abdallah<sup>1</sup>, Abdelhamid Hassan Salem<sup>1</sup>, Mohamed Mohamed Abdelhamid Ali<sup>1</sup> and Khaled Youssef Kamal<sup>1,2\*</sup>

<sup>1</sup>Agronomy Department, Faculty of Agriculture, Zagazig University, Zagazig, Sharqia, 44511, Egypt.

<sup>2</sup>Department of Molecular Biology, Centre of the Region Haná for Biotechnological and Agricultural Research, Faculty of Science, Palacký University, Olomouc, Czech Republic.

141 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2019 16(2): 2246-2253. OPEN ACCESS

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### Protective effect of Hibiscus (*sabdariffa* Linn.) against H<sub>2</sub>O<sub>2</sub> induced oxidative stress in Cardiomyocytes

Noha M. Almoraie

Food and Nutrition Department, Faculty of Home Economics, King Abdulaziz University, Jeddah. Saudi Arabia.

**A comparative study between the effect of low level laser therapy and hand splint on the spasticity of wrist flexors in stroke patients**Zeinab Nagy Saad<sup>1\*</sup>, Ghada Shaaban Eid<sup>2</sup>, Amani Mahmoud Nawito<sup>3</sup>, Ragia Mohamed Kamel<sup>4</sup> and Yousry Mahmoud Mostafa<sup>5</sup><sup>1</sup>Department of Physical Therapy for Neuromuscular Disorder and its Surgery, Faculty of Physical Therapy, Cairo University, Giza, Egypt<sup>2</sup>Department of Rheumatology and Rehabilitation, National Institute of Laser Enhanced Sciences (NILES), Cairo University, Giza, Egypt<sup>3</sup>Department of Clinical Neurophysiology, Faculty of Medicine, Cairo University, Cairo, Egypt<sup>4</sup>Department of Basic Science, Faculty of Physical Therapy, Cairo University, Giza, Egypt<sup>5</sup>Medical Laser Applications Department, National Institute of Laser Enhanced Sciences (NILES), Cairo University, Giza, Egypt**The selective isolation and characterization of pathogen bacteria *Salmonella* sp. from poultry coop soil**

Rizka Diah Fitri, Nadiyah Al Batati, Gilva Illavi, Verina Wahyunindita, Rojaunnajah Kartika Ainiyah, Windi Nur Pratama, Fatimah and Ni'matuzahroh \*

Department of Biology, Faculty of Science and Technology Universitas Airlangga, Kampus C Universitas Airlangga, 60115, Surabaya, Indonesia.

**Characterization of seeds of *Peltophorum pterocarpum* (DC.)K. Heyne and *Spondias mombin* L. and effect of storage conditions on seed viability and seedling growth**

Agung Sri Darmayanti, Febrina Artauli Siahaan and Ridesti Rindyastuti

Purwodadi Botanic Garden-LIPI Jl. Raya Surabaya-Malang, Km. 65 Purwodadi, Pasuruan, East Java, Indonesia.

**Protective and immunogenic characters of inactivated oil adjuvant *Brucella melitensis* vaccine versus Rev-1 vaccine**Ashraf A. Abd El-Tawab<sup>1</sup>, Fatma Ibrahim Abdallah El Hofy<sup>1</sup>, Medhat Sadk<sup>3</sup>, Rania Abo-Sakaya<sup>2\*</sup>, Amany Baghdadi<sup>3</sup><sup>1</sup>Bacteriology, Immunology, and Mycology, Faculty of Veterinary Medicine, Benha University, Benha, Egypt.<sup>2</sup>Department of Animal Medicine, Faculty of Veterinary Medicine, Benha University, Benha, Egypt.<sup>3</sup>Veterinary Serum and Vaccine Research Institute, Cairo, Egypt.**Apple cider vinegar modulates gut microbiota, improves lipid profile and attenuates tissue damage in rats with diet induced obesity.**Hadjer. Bouderbala<sup>1</sup> Wafaa Dib<sup>1</sup>, Chahinaize Zaoui<sup>2</sup>, Fouzia Rahl<sup>3</sup> Omar Kheroua<sup>1</sup>, Djamel Saidi<sup>1</sup> and Hanane Kaddouri<sup>1</sup><sup>1</sup>Laboratory of Nutrition Physiology and Food Safety, University Oran 1 Ahmed Ben Bella, Oran, Algeria.<sup>2</sup>Laboratory of Biology of Development and Differentiation, University Oran 1 Ahmed Ben Bella, Oran, Algeria.<sup>3</sup>Laboratory of Applied Microbiology, University Oran 1 Ahmed Ben Bella, Oran, Algeria**Effectiveness of Low Level Laser Therapy on Adult Patients with Lateral Epicondylitis – A Randomized Controlled Trial**

Saud M. Alrawaili

Department of Physical Therapy and Health Rehabilitation, College of Applied Medical Sciences, Prince Sattam Bin Abdulaziz University, Alkharj, Saudi Arabia.

**Effects of Glyoxalase 1 gene variations on the progression of diabetic nephropathy in diabetic patients in Taif, Saudi Arabia**Alaa Shafie<sup>1,2</sup>, Walaa Alsanie<sup>1</sup>, Mazen Almeahmadi<sup>1,2</sup>, Ayman Al-hazmi<sup>1</sup> and Anas Alomery<sup>1</sup>



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## **Zingiber officinale an alternative botanical insecticide against black bean aphid (*Aphis fabae* Scop)**

Hind Suhail Abdulhay<sup>1\*</sup> and May Ibraheem Yonius<sup>2</sup>

<sup>1</sup>Department of Biology, College of Science, Baghdad University, Baghdad, Iraq

<sup>2</sup>Department of Biology, College of Science, Baghdad University, Baghdad, Iraq

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## **Assessment of leukocytes, neutrophils, lymphocytes and monocytes level among sickle cell trait and sickle cell disease patients**

Rana G. Zaini

College of Applied Medical Sciences, Taif University, Taif, Kingdom of Saudi Arabia

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## **Experimental tests of application of zinc-containing preparations based on probiotic strains of microorganisms**

Alexey Sizentsov<sup>1</sup>, Yaroslav Sizentsov<sup>1</sup>, Tatiana Klimova<sup>1,2</sup>, Elena Barysheva<sup>1</sup>, Elena Salnikova<sup>1</sup>, Olga Kvan<sup>1,2,\*</sup>, Alexey Torshkov<sup>3</sup> and Galimzhan Duskaev<sup>2</sup>

<sup>1</sup>Orenburg State University, Orenburg, 460018, Russia

<sup>2</sup>Federal Research Centre of Biological Systems and Agro-Technologies of the RAS, Orenburg, 460000, Russia

<sup>3</sup>Orenburg State Agrarian University, Orenburg, 460000, Russia

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## **Aceto-Orcein Staining For Counting Somatic Chromosomes In Castor (*Ricinus communis* L.)**

Syakhrlil<sup>1</sup>, Budi Waluyo<sup>2</sup>, and Kuswanto<sup>2</sup>

<sup>1</sup>Faculty of Agriculture, University of Mulawarman, Samarinda, Kalimantan Timur, Indonesia.

<sup>2</sup>Faculty of Agriculture, University of Brawijaya, Malang, Indonesia.

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## **Evaluation of various diagnostic methods for detection of *Mycoplasma bovis* from bovine mastitis milk in Egypt**

Ashraf A. Abd El-Tawab<sup>1</sup>, Fatma I. El-Hofy<sup>1</sup>, Naglaa I. Hassan<sup>2</sup>, Manar E. El-khayat<sup>1,\*</sup>, Amira M. Rizk<sup>1\*</sup>

<sup>1</sup>Bacteriology, Immunology and Mycology Department, Faculty of Veterinary Medicine, Benha University, Egypt.

<sup>2</sup>Reproductive Diseases Research Department, Animal Reproduction Research Institute, Egypt.

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## **Dynamic Renal Scintigraphy: Technetium99m (Tc99m) Diethylenetriaminepentaacetic Acid (DTPA), Breast cancer center of International Islamic University Malaysia (IIUM) Experience**

Mohamed Shahrir<sup>1</sup>, Rosman Amira Diyana<sup>2</sup>, Mohamad Ariff Tengku<sup>3</sup>, Abdul Latif Ahmad Zubaidi<sup>3</sup>, Mohd Aznan Md Aris<sup>1</sup>, Mohamed Awang<sup>4</sup>, Mohd Kamaruzzaman<sup>5</sup> and Mohd. Mokhesur Rahman<sup>3\*</sup>.

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## **Effect of strengthening exercise versus intermittent pneumatic compression device to calf muscle on Blood flow in patients with varicose Veins.**

Hany Farid Eid Morsy Elsis<sup>1</sup>, Tarek Hanafy Mahmoud<sup>2</sup>, Zahra Mohamed Hassan Serry<sup>1</sup>, Awny Fouad Rahmy<sup>1</sup> and Naser Mohamed Mohamed Osman<sup>3</sup>.

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## Tyrosinase Inhibitory Activity of Ethyl Acetate Extracts from Marine Sponge-Derived Fungi *Haliclona fascigera*

Dian Handayani\*, Neny Sandrawati, Sauqi Akbar, Nova Syafni and Deddi Prima Putra

Laboratory of Sumatra Biota/Faculty of Pharmacy, Andalas University, Padang, Indonesia.

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Fatma M. Seleem<sup>1</sup> and Soha E.Khalil<sup>2</sup>

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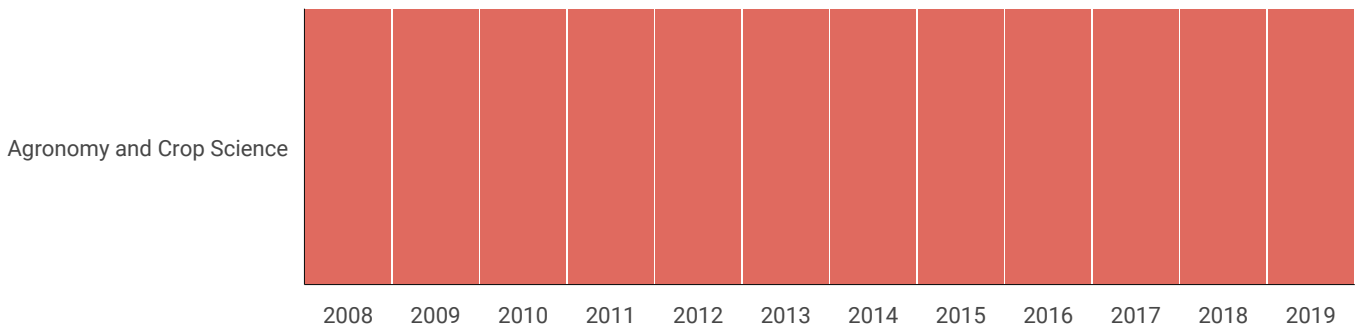
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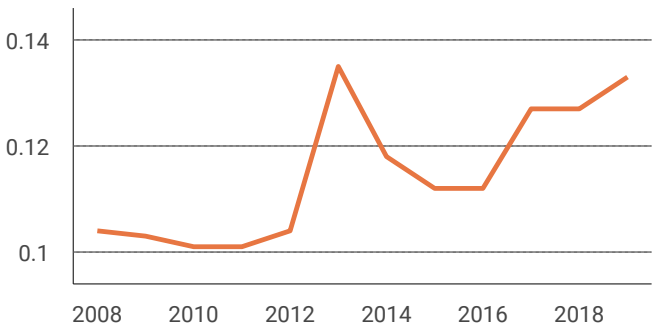
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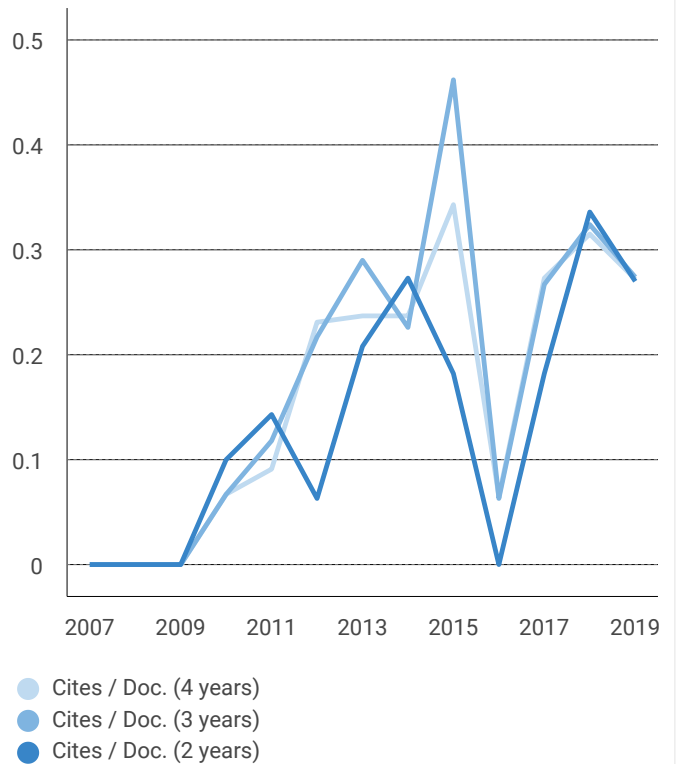
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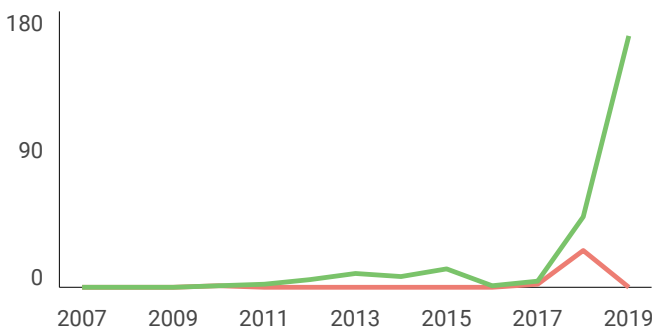
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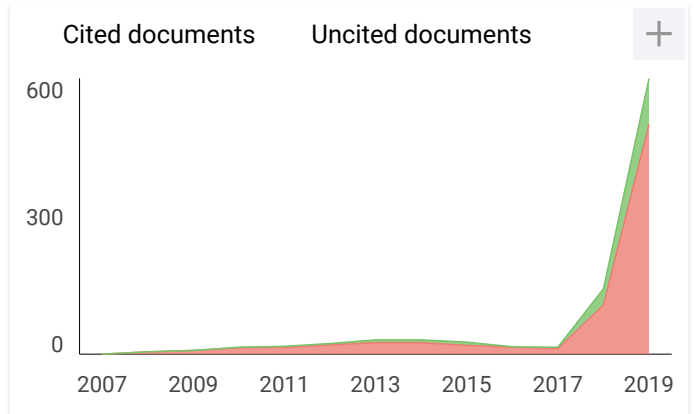
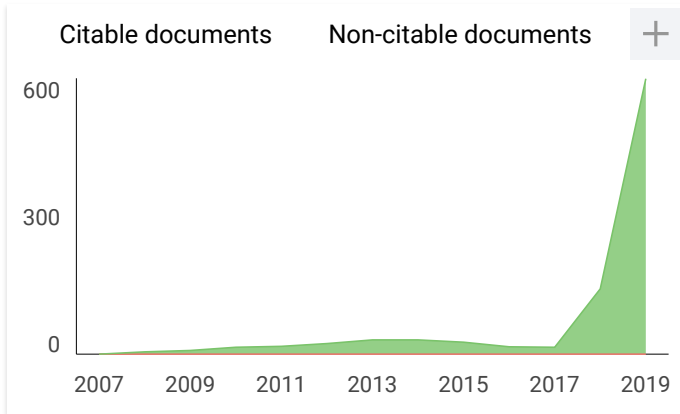


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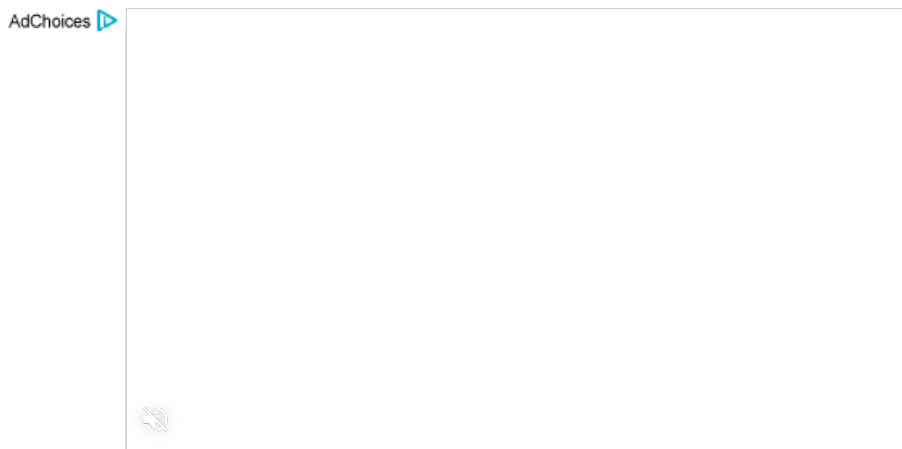
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RESEARCH ARTICLE

BIOSCIENCE RESEARCH, 2019 16(2): 2266-2271.

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## The selective isolation and characterization of pathogen bacteria *Salmonella* sp. from poultry coop soil

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Poultry commodities in Indonesia had high market prospects. The availability of poultry can decreased with the outbreak of disease that attack poultry. This occurrence can cause bacterial infections from the environment such as soil, water and air. This study purposed to detect the presence of *Salmonella* sp. derived from the poultry coop soil. Pathogenic bacteria was isolated from 3 different sample locations and was selected by using Salmonella Shigella Agar (SSA) selective media. The colonies that successfully isolated were carried out their characteristics. Macroscopic characters of colony were conducted by observing the morphology of bacterial colonies on SSA media, while microscopic characters of cell were carried out with Gram staining. Physicochemical characteristics of soil sample were evaluated by measuring pH, humidity, and soil texture. Based on the result, it was found that pathogenic bacteria from poultry coop soil phenotypically identified as *Salmonella* sp.

**Keywords:** Poultry, Soil, *Salmonella* sp.

### INTRODUCTION

Efforts to accelerate development of the livestock sector in Indonesia, are the government current targets. Development of livestock sub-sector as one of the producers of animal food needs jointly supported. Fulfillment of meat needs in 2015 is mostly came from broilers 53.13%, chicken buras 10.25%, beef is only 17.11% of total production national meat (BPS, 2016).

Poultry breeding industry in Indonesia in the last few years is undergoing a slowdown. In 2009, there were a lot of dead poultry caused by *Salmonella* sp. (Sudaryanti and Santoso, 2003). This occurrence can cause bacterial infections from the environmental such as soil, water, and air. *Salmonella* is a family of Enterobacteriaceae which are facultative anaerobic, gram negative, rod shape (Yan, et al., 2003). *Salmonella* grow

optimally at 35°C to 37°C, except *Salmonella gallinarum* and *Salmonella pullorum*. *Salmonella* that infected chickens is *Salmonella pullorum*, causing pulorum disease). Disease caused by *Salmonella* sp. was known as Salmonellosis (Shivaprasad, 2000).

Salmonellosis is one of the most frequently reported foodborne diseases worldwide (Panzenhagen et al., 2015). Foodborne diseases caused by non-typhoid *Salmonella* represent an important public health problem. Most human salmonellosis cases are associated with consumption of contaminated egg, poultry, pork, beef and milk products (Geimba, et al., 2004; Zaki, et al., 2009). Transmission of *Salmonella* to humans typically occurs when ingesting foods that are directly contaminated by animal feces or cross-contaminated by other sources (Modaressi and

Thong, 2010). Salmonellosis can manifest in a number of disease syndromes including gastroenteritis, bacteremia, typhoid fever and focal infections (Darwin and Miller, 1999). Study of pathogen such as *Salmonella* sp. bacteria from poultry has been done (Park, et al., 2014), but few data are available about this bacteria from poultry coop soil. The purpose of this study was to detect the presence of *Salmonella* sp. from the poultry coop soil.

## MATERIALS AND METHODS

### Sampling site

Soil sample was taken from poultry coop soil which located in Tajinan, Malang. The soil was taken from three different locations as deep as 10 cm from ground surface.

### Soil Sample Characterization

Physicochemical characteristics of soil sample were evaluated by measuring pH, humidity, and soil texture. Measuring pH and humidity were done by using soil tester.

### Isolation and Screening *Salmonella* sp.

*Salmonella* sp. was selected by using Salmonella Shigella Agar (SSA) selective media. Five-fold serial dilution of the sample was carried out and inoculated using the pour plate method: one milliliter (1ml) of serial dilution was inoculated

on sterile Petri dish, after that media was poured aseptically on the inoculated plates. The plates were incubated at 37°C for 24 hours. After incubation, morphologically colonies *Salmonella* sp. are shown with colorless colony with black center.

### *Salmonella* sp. Characterization

Characterization of *Salmonella* sp. isolate including observation of macroscopic, microscopic and physiological characters. Macroscopic characters of colony were conducted by observing the morphology of bacterial colonies on SSA media, while microscopic characters of cell were carried out with Gram staining and physiological characters used *Microbact*™ GNB 12 A and 12 B *Identification Kits OXOID*.

## RESULTS AND DISCUSSION

Soil sample was taken from three different locations in poultry coop soil. The three retrieval locations have different characteristic. The location of the first sample was a location with good intensity of light, the second sample was a location with less intensity of light and near to wellspring, and the last sample was the location that didn't expose with light. Physicochemical characteristics of soil sample test result were presented in Table 1 with three replications. The picture of the soil sample from three locations was presented in Figure 1.

**Table 1. Physicochemical characteristics of soil samples**

Samples	pH	Humidity	Soil textures
I	7	9	Brown and sandy soil
II	7.5	9	Black and sandy soil
III	8	10	Brown and sandy soil



**Figure 1. Soil sample from three locations in poultry coop soil.**

The results of selective isolation of pathogenic bacteria from poultry coop soil, showed the

presence of colonies. The colony has a colorless with black center, round, smooth and elevation shaped like a button. The morphology of the colony is presented in Figure 2.

Microscopic *Salmonella* sp. was carried out

with Gram staining. The result indicated that the colony belongs to Gram negative group and has a rod shaped that presented in Figure 3.

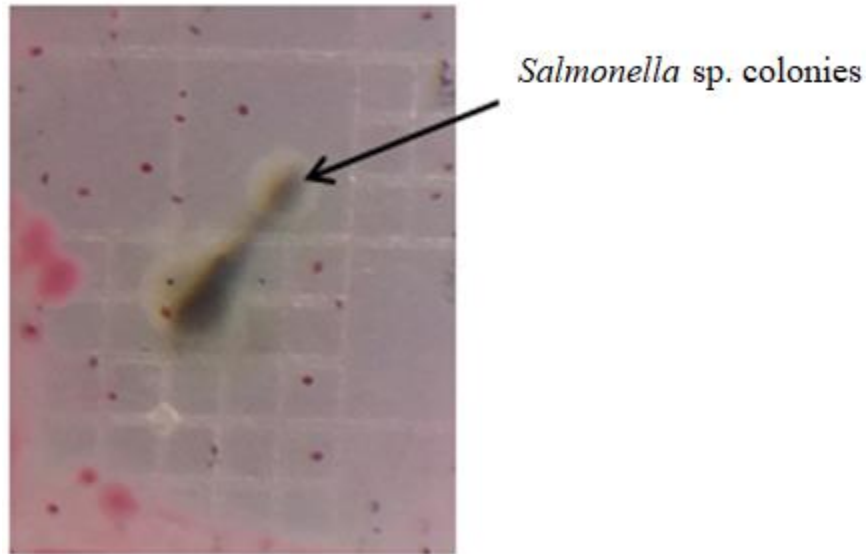


Figure 2. *Salmonella* sp. colonies in Salmonella and Shigella Agar



Figure 3. *Salmonella* sp. bacteria cell with 1000x magnification

The result of physiological test showed that the colony of bacteria has similarity with *Salmonella* sp.



Physiological test results were presented in Table 2.

The result of physiology test showed that the colonies belongs to *Salmonella enterica* ssp *arizonae* with 77% similarity, based on Cowan and Steel's Manual for the Identification of Medical Bacteria. The result of pathogenic bacteria *Salmonella* sp. selective isolation from poultry coop soil, showing the presence of colonies *Salmonella* sp. This bacteria was found in poultry coop soil because *Salmonella* sp. could replicate in animal digestive. The habitat of *Salmonella* sp. was found in the digestive tract and then issued through feces, so these bacteria can contaminate feed and the environment such as water, soil, plants, and dust (Humphrey, 2006).

Based on the characteristic of soil samples, pathogenic bacteria *Salmonella* sp. can be found in poultry coop soil because the condition of the soil has an optimal condition for its growth. The survival of *Salmonella* sp. in soil was determined by various

factors such as: temperature, moisture, soil type, presence of plants, exposure to sun (UV) light, protozoan predation and the initial number of present organisms. *Salmonella* sp. has been reported to survive from a few days up to 332 days in manure-amended soils (Islam, et al., 2004). Temperature was also an important factor in the growth of *Salmonella* sp., High temperatures will cause death in *Salmonella* sp. (Jacobsen and Bech, 2012). Growth of *Salmonella* sp. both at neutral pH and relatively resistant to acidic conditions (Finn, et al., 2013). It was in accordance with the results of the soil characteristic that indicate a neutral pH and had a fairly good humidity.

Isolation of *Salmonella* sp. using Salmonella Shigella Agar (SSA) selective media will show colorless with black center colonies of *Salmonella*.

**Table 2. Physiological characteristics of *Salmonella* sp. using Microbact Identification Kits 12 A and 12 B**

GNB	Characters	Results
12A	Oxidase	-
	Motility	+
	Nitrate	+
	Lysine	-
	Ornithine	-
	H <sub>2</sub> S	+
	Glucose	+
	Mannitol	+
	Xylose	+
	ONPG	+
	Indole	-
	Urease	+
	V-P	+
	Citrate	+
TDA	-	
12B	Gelatin	-
	Malonate	+
	Inositol	-
	Sorbitol	+
	Rhamnose	+
	Sucrose	-
	Lactose	+
	Arabinose	+
	Adonitol	-
	Raffinose	-
Salicin	+	
Arginine	+	

The pure colonies displayed typical *Salmonella* morphological characteristics on Salmonella-Shigella agar (SSA), which were clearly with a black spot in the center due to H<sub>2</sub>S gas production (Gunasegaran, et al., 2011).

Diseases caused by *Salmonella* sp. was a disease in poultry that transmitted through feces, especially in young birds with high number of mortality, while adult birds act as carriers (career) (Shivaprasad, 1997). It had severe bad impact on the economy which will cause huge losses because of production decreased and high embryo mortality. Poultry disease was caused by *Salmonella* sp. known as salmonellosis, and it was the most commonly reported foodborne disease in the world (Schlundt, et al., 2004).

The *Salmonella* group that found in this research was determined as *Salmonella enterica* ssp *arizonae*. This spesies is Gram negative, bacil shape, family of enterobacteriaceae, and is a rare spesies. *Salmonella* sp. is cause disease in human, turkeys, chickens, and some others animal. (Nuhu, et al., 2017), it's part of the normal reptile intestinal flora but can cause disease in monotremes, turkeys, chickens, goats, and humans (Aiken, et al., 2010). *S. enterica* ssp. *arizonae* enteritis or systemic infections have been well described in patient resident in the southern states of the USA (Casner, et al., 1990). Arizonosis is an important disease of turkeys and less important of poultry caused by *Salmonella enterica* ssp *arizonae*. Mode of infection and symptoms are very similar to those of avian paratyphoid. Adult birds do not show any symptoms but young chicks show diarrheas, pasting around vent and paralytic signs due to dehydration (Chauhan and Roy, 2003).

*Salmonella* sp. found in this exploring research had 77% similarity with *Salmonella enterica* ssp *arizonae*. The percentage of similarity was relatively far away and was not included in the spesies. This was supported by the literature from the book entitled Cowan and steel's manual for the identification of medical bacteria which states that with a percentage of 85-100% are positive strains which is mostly similar, 16-84% are positive strains which is only a few in common, and 0-15% is equivalent with one, few, some, or even none at all positive strain. The results of *Salmonella* sp. exploration research in the animal husbandry environment are become important because with knowing the existence of the spread of *Salmonella* in the farm environment then it can prevented by the addition of probiotics in food cattle so as to prevent *Salmonella* infection in poultry.

## CONCLUSION

The condition of the poultry coop is a factor which greatly influences the poultry's health. Exploration of *Salmonella* sp. is an effort to understand the condition of the poultry coop and preserve the health of the poultry. Based on the result of this research, *Salmonella* sp. pathogens can be found in poultry coop, spesifically in the coop soil.

## CONFLICT OF INTEREST

The authors declared that present study was performed in absence of any conflict of interest.

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## AUTHOR CONTRIBUTIONS

RDF, NAB, GI, VW, RKA, WNP, FAT design and perform the experiment and also write this manuscript. NMZ review, correct and edit the manuscript. All authors read and approve the final version..

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