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

### Bioscience Research

- Print ISSN: 1811-9506
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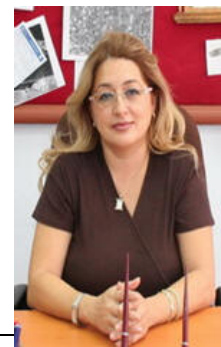
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### Bioscience Research



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#### Bioscience Research, volume 15, issue 3 (July-Sep.), 2018

Sr. #	Titles, Authors & affiliation (s)	Down
<i>Research Articles</i>		
1	<p><b>RESEARCH ARTICLE</b>    BIOSCIENCE RESEARCH, 2018 15(3): 1424-1432.    <b>OPEN ACCESS</b></p> <p><b>Effect of using tiger nuts (<i>Cyperus esculentus</i>) on nutritional and organoleptic characteristics of beef burger.</b>  <b>Irina Vladimirovna Bobreneva<sup>1</sup> and Ahmed Adel Baioumy<sup>1, 2*</sup></b>  <sup>1</sup>Department of Technology and biotechnology of food products of animal origin, Moscow State University of Food Production (MGUPP), Moscow, <b>Russian Federation.</b>  <sup>2</sup>Department of Food Science, Faculty of Agriculture, Cairo University, Giza, <b>Egypt.</b></p>	<a href="#">Free Full T</a>
2	<p><b>RESEARCH ARTICLE</b>    BIOSCIENCE RESEARCH, 2018 15(3):1433-1439    <b>OPEN ACCESS</b></p> <p><b>Cytological Differences of MV<sub>3</sub> Patchouli Plants (<i>Pogostemon cablin</i> Benth.) Derived From Gamma Ray-Irradiation</b>  <b>Muhammad Tahir*<sup>1</sup>, Ersan<sup>2</sup>, Dewi Riniarti<sup>1</sup>, and Jaky Kusuma<sup>2</sup></b>  <sup>1</sup>Management and Industrial Estate Crop Production, Politeknik Negeri Lampung, <b>Indonesia.</b>  <sup>2</sup>Estate Crop Production, Politeknik Negeri Lampung, <b>Indonesia</b></p>	<a href="#">Free Full T</a>
3	<p><b>RESEARCH ARTICLE</b>    BIOSCIENCE RESEARCH, 201815(3):1440-1448.    <b>OPEN ACCESS</b></p> <p><b>Response of Lycopene, β-carotene and yield of determinate and indeterminate type tomatoes in various of paranet colors at plastic house</b>  <b>Dwi Setyorini<sup>1,2</sup>, Yogi Sugito<sup>3</sup>, Nurul Aini<sup>3</sup> and Setyono Yudo Tyasmoro<sup>3</sup></b>  <sup>1</sup> Assesment Institute for Agricultural Technology, Malang, East Java, <b>Indonesia.</b>  <sup>2</sup>Postgraduate Program, Faculty of Agriculture, University of Brawijaya, Malang, <b>Indonesia.</b>  <sup>3</sup>Departement of Agronomy, Faculty of Agriculture, University of Brawijaya, Malang, <b>Indonesia.</b></p>	<a href="#">Free Full T</a>
4	<p><b>RESEARCH ARTICLE</b>    BIOSCIENCE RESEARCH,201815(3):1449-1455    <b>OPEN ACCESS</b></p> <p><b>Erythrocytes response to aerobic exercises in aging versus young anemic women.</b>  <b>Heba M. Mady<sup>1</sup>, Hala M E Hamed<sup>2</sup>, Mona M. Taha<sup>3</sup> ,Mohammed A. Shendy<sup>4</sup> and Shawky A. Fouad<sup>5</sup></b>  <sup>1</sup>Department of Physical Therapy, Kerdasa Hospital, Giza, <b>Egypt</b>  <sup>2</sup>Department of Physical Therapy for Cardiovascular, Respiratory Disorders, and Geriatrics, Faculty of Physical Therapy, Cairo University, Cairo, <b>Egypt</b></p>	<a href="#">Free Full T</a>

<sup>3</sup>Department of Physical Therapy for Cardiovascular, Respiratory Disorders, and Geriatrics, Faculty of Physical Therapy, Cairo University, Cairo, **Egypt**

<sup>4</sup>Department of Physical Therapy for Cardiovascular, Respiratory Disorder, and Geriatrics, Faculty of Physical Therapy, Cairo University, Cairo, Egypt (permanent). And Associate prof. at faculty of medical rehab science, Taibah University **Egypt**

<sup>5</sup>Department Internal Medicine, Kasr Alaini, Faculty Medicine, Cairo University **Egypt**

5 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):1456-1461. OPEN ACCESS [Free Full Text](#)

## Preliminary studies to clarify the relationship between potassium sulphate fertilizer and peach fly *Bacterocera zonata* (Saunders) infestations in citrus plantations.

Salem S. A.<sup>1</sup>; El-Kholy, M.Y.<sup>1,2</sup> and A. M. E. Abd-El Salam<sup>1</sup>

<sup>1</sup>Department of Pests and Plant Protection, National Research Center, Dokki, Cairo, **Egypt**\*

<sup>2</sup>Department of Biology, College of Science, Jouf University, Sakaka, Jouf, **Kingdom of Saudi Arabia**.

6 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3): 1462-1471. OPEN ACCESS [Free Full Text](#)

## A correct combination of pruning, spacing and organic fertilizer improve development and quality of fruit in watermelon cultivar: Case of Ecuadorian littoral

Julio Muñoz-Rengifo<sup>1,2,3,4,5,6</sup>; Ronald Villamar-Torres<sup>1,4,5</sup>; John Molina-Villamar<sup>1,5,6</sup>; Luz Garcia Cruzaty<sup>7</sup>; Bolier Torres Navarrete<sup>8,9</sup>; Bella Crespo Moncada<sup>1,10</sup>; Jessenia Castro Olaya<sup>7</sup>; Alexis Matute Matute<sup>1,11</sup>; Diego Ortega-Guevara<sup>12</sup>; and Seyed Mehdi Jazayeri<sup>13</sup>

<sup>1</sup>Secretaría Nacional de Educación Superior, Ciencia, Tecnología e Innovación del Ecuador (SENESCYT), Whympet E7-37 y Alpallana, EC170516, Quito - **Ecuador**.

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<sup>3</sup>Departament d' Ecologia, Universitat d' Alacant, Carretera San Vicente del Raspeig s/n, 03690, Alicante - **Spain**.

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<sup>5</sup>Departamento de Ecología, Universidad de Barcelona, Gran Vía de les Corts Catalanes, 585 08007, Barcelona - **Spain**.

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<sup>10</sup>Facultad de Educación Técnica para el desarrollo, Universidad Católica de Santiago de Guayaquil. Av. Pdte. Carlos Julio Arosemena Tola, EC090615, Guayaquil - **Ecuador**.

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<sup>13</sup>Departamento de Biología, Universidad Nacional de Colombia, Carrera 30#45-03 Edif. 476, Bogotá D.C. - **Colombia**.

7 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):1472-1479. OPEN ACCESS [Free Full Text](#)

## GCMS analysis of bioactive compounds in n-hexane, ethyl acetate, and methanol extract of *Piper betle* L. var. nigra.

<sup>1</sup>Junairiah, <sup>1</sup>Ni'matuzahroh and <sup>2</sup>Lilis Sulistyorini

<sup>1</sup>Department of Biology, Faculty of Science and Technology, Airlangga University, **Indonesia**

<sup>2</sup>Faculty of Public Health, Airlangga University, **Indonesia**

8 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):1480-1486 OPEN ACCESS [Free Full Text](#)

## Eco-friendly dyeing of wool and silk fabrics using mixed synthesized acid and natural dyes and antibacterial activity for the dyed fabrics

Fatma A. Mohamed<sup>1,2\*</sup>

<sup>1</sup>Department of Dyeing & Printing and Textile Auxiliaries, Textile Research Division, National Research Centre, 12622 Dokki, Cairo, **Egypt**

<sup>2</sup>Al-Qunfudah Center for Scientific Research (QCSR), Chemistry Department, Al-Qunfudah University College, Umm A-Qura University, **Kingdom of Saudi Arabia**.

9 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):1487-1493. OPEN ACCESS [Free Full Text](#)

## Iron chelation ability and hematological effect of sappan wood (*caesalpinia sappan*, l.) Extract tablet on iron overload condition of rats

Ratu Safitri<sup>1</sup> and Ani Melani Maskoen<sup>2,3,4\*</sup>

<sup>1</sup>Department of Biology, Faculty of Mathematics and Natural Sciences, Universitas Padjadjaran.

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10 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3): 1494-1502. OPEN ACCESS [Free Full Text](#)

## Assessment and evaluation of serum laminin and interleukin-6 in schistosomiasis patients with chronic active hepatitis c

Tamer E. Mosa<sup>1\*</sup>, Hatim A. EL-Baz<sup>1,2</sup>, Ahmed S. Elharoun<sup>3,4</sup>, Khaled Hamed<sup>5,6</sup>, Ahmed M. Asmali<sup>2</sup>, Mostafa Abo-Zeid<sup>7</sup>

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<sup>7</sup>Gastroenterology Center, Faculty of Medicine, Mansoura University, Mansoura, Egypt.

11 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 201815(3):1503-1510 OPEN ACCESS [Free Full Text](#)

## Effects of re-feeding on metabolic fuels and enzyme activities in starved Broadhead catfish (*Clarias macrocephalus* Gunther, 1864)

Rattanasuda Chaichate<sup>1</sup>, Budit Yuangsoi<sup>1</sup>, Thongchai Champasri<sup>1</sup>, Chamaiporn Champasri<sup>2</sup> and Siripavee Charoenwattanasak<sup>1,\*</sup>

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12 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 201815(3): 15011-1519. OPEN ACCESS [Free Full Text](#)

## Nutritional and sensory evaluation of the ginger emulsion sausage production from *Pangasius bocourti*

Ananya Simmalee, Budit Yuangsoi, Sutee Wongmaneeprateep and Siripavee Charoenwattanasak\*  
Department of Fisheries, Faculty of Agriculture, Khon Kaen University, 40002 Thailand

13 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 201815(3):1520-1527. OPEN ACCESS [Free Full Text](#)

Effect of bokashi fertilizer on growth and yield of local maize from muna island under net house treatment in west muna southeast sulawesi, indonesia

Resman<sup>1</sup>, Muhammad Tufaila<sup>1</sup>, Azhar Ansi<sup>2</sup>, Halim<sup>2</sup>, Makmur Jaya Arma<sup>2</sup> and Wa Ode Harlis<sup>3</sup>

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14 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 201815(3):1528-1541. OPEN ACCESS [Free Full Text](#)

## Chemical constituents and yield of *Simmondsia chinensis* plants as affected by foliar application of gibberellic acid and zinc sulphate

Amira K. G. Atteya<sup>1</sup>, Esmail A. E. Genaidy<sup>2</sup> and Hamdy. A. Zahran<sup>3</sup>

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<sup>2</sup>Pomology Department, Agricultural and Biological Research Division, National Research Centre, 12622 Dokki, Egypt.

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15 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 201815(3):1542-1558. OPEN ACCESS [Free Full Text](#)

## Impact of actosol and yeast extract on productivity and essential oil constituents of *Zinnia elegans* plants

Amira K. G. Atteya<sup>1\*</sup> and Abd El-Nasser G. El Gendy<sup>2</sup>

<sup>1</sup>Horticulture Department, Faculty of Agricultural, Damanshour University, Egypt.

<sup>2</sup>Medicinal and Aromatic Plants Research Department, National Research Centre, Dokki, 12622, Cairo, Egypt

16 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 201815(3):1559-1567 OPEN ACCESS [Free Full Text](#)

## Amino acid sequences of local isolates of Duck Hepatitis Virus A type 1 (DHAV-1) in Egypt

Hanaa A. El-Samadony<sup>1</sup>, Hoda M. Mekky<sup>2\*</sup> and Khaled M. Mahgoub<sup>2</sup>

<sup>1</sup>Animal Health Research Institute, Poultry Diseases and Research Department, Virological Unit, Dokki, Giza, Egypt.

<sup>2</sup>Department of Poultry Diseases, Veterinary Research Division, National Research Centre, P.O. 12622 Dokki, Giza, Egypt.

17 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 201815(3):1568-1574 OPEN ACCESS [Free Full Text](#)

## Construction and testing of job satisfaction of physical therapist questionnaire

Dina Mansour Tawfic, Wadida Hassan Elsayed and Magda Gaid Sedhom

Department of Basic Science, Faculty of Physical Therapy, Cairo University, Egypt.

18 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 201815(3):1575-1582 OPEN ACCESS [Free Full Text](#)

## Sugar manufacturing process :risk analysis and mitigation using fuzzy fmea and fuzzy ahp method

Dwi Tresna Choirul Yusuf, Imam Santoso\* and Dhita Morita Iksari

Agroindustrial Technology Department, Faculty of Agricultural Technology, Universitas Brawijaya Jl. Veteran - Malang, Indonesia

19 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 201815(3):1583-1587 OPEN ACCESS [Free Full Text](#)

## Cytokines level and oxidative damages in some egyptian patients with alopecia areata

Sherief Mahdy Hussein<sup>1</sup>, Ragia Hany Weshahy<sup>1</sup>, Hany Ahmed Shehata<sup>1</sup>, Hanan Farouk Aly<sup>2\*</sup> and Eman Refaat Youness<sup>3</sup>

<sup>1</sup>Department of Dermatology, National Research Centre, Cairo University, Cairo, Egypt

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20 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 201815(3):1588-1600. OPEN ACCESS [Free Full Text](#)

# Anti-Ulcerogenic Impact of Cannabis Extract On Experimental Induced Gastric Ulcer

Neveen Salem<sup>1, 2\*</sup> and Marwa El-Shamarka<sup>2</sup>

<sup>1</sup>Narcotics, Ergogenic Aids and Poisons Department, Medical Research Division, National Research Centre, Cairo, Egypt.

<sup>2</sup>Biochemistry Department, Faculty of Science, Al Faisaliah, King Abdulaziz University, Jeddah, Saudi Arabia.

21 RESEARCH ARTICLE BIOSCIENCE RESEARCH,201815(3):1601-1609. OPEN ACCESS [Free Full Text](#)

# Effect of Aerobic Exercise on Depression and Insomnia in Egyptian Geriatrics Parkinson's Population

Tamer I. Abo Elyazed<sup>1</sup>, Islam Mahmoud Abd-allah Al-Azab<sup>2</sup>, Moataz Mohamed El Semaary<sup>2</sup>, Moshref A.<sup>3</sup>, Sally Said Abd-Elhamed<sup>4</sup> and Amira Mohamed El Gendy<sup>5</sup>

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22 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 201815(3):1610-1620. OPEN ACCESS [Free Full Text](#)

# Modeling prediction of cation exchange capacity in saline

El-Hassanin<sup>1</sup>A.S.,Samak<sup>1</sup>,M.R.,Amira,SH.Soliman<sup>1</sup>,Maghrabi<sup>2</sup>,T.and Fatma,M. Abu Elamaium<sup>2</sup>

<sup>1</sup>Inst .of African Research and Studies, Cairo Univ., Egypt.

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23 RESEARCH ARTICLE BIOSCIENCE RESEARCH,201815(3):1621-1629 OPEN ACCESS [Free Full Text](#)

# Application of new models on concentration heavy metal in soil

El-Hassanin, A.S.<sup>1</sup>, Amira, Sh. Soliman<sup>1</sup>, Maghraby, T.<sup>2</sup> and Nashwa, M. El-Sheikh<sup>2</sup>

<sup>1</sup>Natural Resources Department, Institute of African Research and Studies, Cairo University, Giza, Egypt.

<sup>2</sup>Institute of Soil, Water and Environment, Agric. Res. Center, Giza, Egypt.

24 RESEARCH ARTICLE BIOSCIENCE RESEARCH,201815(3):1630-1637 OPEN ACCESS [Free Full Text](#)

# Screening of hybrid rice tolerance through stimulated condition of drought stress in rainfed lowland

La Ode Afa<sup>1\*</sup>, Bambang Sapta Purwoko<sup>2</sup>, Ahmad Junaedi<sup>2</sup>, Oteng Haridjaja<sup>3</sup> and Iswari Saraswati Dewi<sup>4</sup>

<sup>1</sup>Department of Agrotechnology, Faculty of Agriculture, Halu Oleo University, Kendari, Southeast Sulawesi, Indonesia

<sup>2</sup>Department of Agronomy and Horticulture, Faculty of Agriculture, Bogor Agricultural University, Jl. Meranti, IPB Campus, Bogor, 16680, Indonesia

<sup>3</sup>Department of Soil Science and Land Resources, Faculty of Agriculture, Bogor Agricultural University, Jl. Meranti, IPB Campus, Bogor, 16680, Indonesia

<sup>4</sup>Center for Research and Development of Biotechnology and Genetic Resources (BB-BIOGEN), Jl. Tentara Pelajar No. 3A, 16111, Bogor, Indonesia.

25 RESEARCH ARTICLE BIOSCIENCE RESEARCH,201815(3):1638-1644 OPEN ACCESS [Free Full Text](#)

# Yield of monocrop winter wheat sowing

Demidov A.A.<sup>1</sup>, Vakhnyi S.P.<sup>2</sup>, Siroshtan A.A.<sup>1</sup>, Khakhula V.S.<sup>2\*</sup> and Gudzenko V.M.<sup>1</sup>

<sup>1</sup>Mironovka Institute of Wheat named after V.N.Remeslo of the National Academy of Sciences of Ukraine Ukraine

<sup>2</sup>Bila Tserkva National Agrarian University Ukraine

26 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 201815(3):1645-1652. OPEN ACCESS [Free Full Text](#)

# The effectiveness of *azotobacter* sp. In increasing grown of local maize and sorghum in the intercropping system in ultisols

Andi Nurmas<sup>1\*</sup>,La Karimuna<sup>1</sup>, Laode Sabaruddin<sup>1</sup>, Andi Khaeruni<sup>2</sup>, Muhidin<sup>1</sup>, Rahayu M<sup>2</sup>, Rachmawati Hasid<sup>1</sup> and Robiatul Adawiyah<sup>1</sup>

<sup>1</sup>Department of Agrotechnology, Faculty of Agriculture, Halu Oleo University, Kendari Southeast Sulawesi, Indonesia

<sup>2</sup>Department of Plant Protection, Faculty of Agriculture, Halu Oleo University, Kendari Southeast Sulawesi, Indonesia.

27 RESEARCH ARTICLE BIOSCIENCE RESEARCH,201815(3):1653-1660 OPEN ACCESS [Free Full Text](#)

# Effect of herbal mixture on selected rumen and serum constituents in sheep

Al-Azazi, A. SH., Tayeb, F. A. and Baraka, T.A.\*

Department of Medicine and Infectious Diseases, Faculty of Veterinary Medicine, Cairo University, Giza, Egypt.

28 RESEARCH ARTICLE BIOSCIENCE RESEARCH,201815(3):1661-1665 OPEN ACCESS [Free Full Text](#)

# *Citrus reticulata* extract as biocides to control *Aedes aegypti*, the vector of dengue

Arif Nur Muhammad Ansori<sup>1</sup>, Muhammad Khaliim Jati Kusala<sup>1</sup>, Heri Irawan<sup>1</sup>, Naimah Putri<sup>1</sup>,Amaq Fadholly<sup>1</sup>, Annise Proboningrat<sup>1</sup>, Siti Rukmana<sup>1</sup>, Ine Karni<sup>1</sup>, Agri Kaltaria Anisa<sup>1</sup>and Hebert Adrianto<sup>2</sup>

<sup>1</sup>Faculty of Veterinary Medicine, Universitas Airlangga, 60115, Surabaya, East Java, Indonesia.

<sup>2</sup>Faculty of Medicine, Universitas Ciputra, 60219, Surabaya, East Java, Indonesia.

29 RESEARCH ARTICLE BIOSCIENCE RESEARCH,201815(3):1666-1672 OPEN ACCESS [Free Full Text](#)

# The pyraclostobin effect on in vitro rooting of potato tissue culture

Karuniawan Puji Wicaksono<sup>1\*</sup>, Kuswanto<sup>1</sup>, Paramyta Nila Permanasari<sup>1</sup>, Akbar Saitama<sup>1</sup>, Akbar Hidayatullah Zaini<sup>1</sup>and Edson Begliomini<sup>2</sup>

## Yield potential improvement of upland red rice using gamma irradiation on local upland rice from southeast Sulawesi Indonesia

Ni Wayan Sri Suliartini<sup>1\*</sup>, Teguh Wijayanto<sup>1</sup>, Abdul Madiki<sup>1</sup>, Dirvamena Boer<sup>1</sup>, Muhidin<sup>1</sup> and Muh Tufaila<sup>2</sup>

<sup>1</sup>Department of Agrotechnology, Faculty of Agriculture, Halu Oleo University, Jl. HEA Mokodompit Kampus Bumi-Tridharma, Kendari, Southeast Sulawesi, **Indonesia**

<sup>2</sup>Department of Soil Science, Faculty of Agriculture, Halu Oleo University, Kendari Southeast Sulawesi, **Indonesia**.

## Some descriptive characteristics and linear body measurements of Assaf sheep reared in Southern Sinai Egypt

Abd-Allah, S.; M. M. Shoukry; M. I. Mohamed; H. H. Abd-El Rahman and A. A. Abedo

Animal Production Department, National Research Centre, 33 El-Bohouth Street, P.O:12622, Dokki, Giza, **Egypt**.

## Effect of vegetation types on soil erosion in Endanga watershed, southeast Sulawesi, Indonesia

Sitti Leomo<sup>1\*</sup>, Sahta Ginting<sup>1</sup>, Laode Sabarudin<sup>2</sup>, Muh Tufaila<sup>1</sup> and Muhidin<sup>2</sup>

<sup>1</sup>Department of Soil Science, Faculty of Agriculture, Halu Oleo University, Kendari Southeast Sulawesi, **Indonesia**.

<sup>2</sup>Department of Agro technology, Faculty of Agriculture, Halu Oleo University, Kendari Southeast Sulawesi, **Indonesia**

## Selection of deleterious rhizobacterial isolate as bioherbicide to control of weed *Paspalum conjugatum* and *Ageratum conyzoides* on soybean cropland

Tresjia Corina Rakian<sup>1\*</sup>, Muhidin<sup>1</sup>, Gusti Ayu Kade Sutariati<sup>1\*</sup>, Gusnawaty HS<sup>2</sup>, Asniah<sup>2</sup> and Uli Fermin<sup>1</sup>

<sup>1</sup>Department of Agrotechnology, Faculty of Agriculture, Halu Oleo University, Kendari Southeast Sulawesi, **Indonesia**

<sup>2</sup>Department of Plant Protection, Faculty of Agriculture, Halu Oleo University, Kendari 93232, Southeast Sulawesi, **Indonesia**

## Bio-Ethanol Production from Fruit and Vegetable Waste by Using *Saccharomyces Cerevisiae*

Mohammad Moneruzzaman Khandaker<sup>1\*</sup>, Khadijah Binti Qiamuddin<sup>1</sup>, Ali Majrashi<sup>2</sup>, Tahir Dalorima<sup>1</sup>, Mohammad Hailmi Sajili<sup>1</sup> and ABM Sharif Hossain<sup>2</sup>

<sup>1</sup>School of Agriculture Science & Biotechnology, Faculty of Bioresources and Food Industry, Universiti Sultan Zainal Abidin, Besut Campus, 22200 Besut, Terengganu, **Malaysia**

<sup>2</sup>Department of Biological Science, Faculty of Science, Taif University, Taif, **Saudi Arabia**

<sup>3</sup>Department of Biology, College of Sciences, University of Hail, **Kingdom of Saudi Arabia**

## Shoot elongation rate in North Sulawesi local rice (*Oryza sativa* L.) under flooding and drought stress at the vegetative phase was different from the reproductive phase

Song Ai Nio<sup>1</sup>, Ratna Siahaan<sup>1</sup> and Daniel Peter Mantilen Ludong<sup>2</sup>

<sup>1</sup>Department of Biology, Faculty of Mathematics and Natural Sciences, University of Sam Ratulangi, Kampus Unsrat, Manado 95115, North Sulawesi, **Indonesia**

<sup>2</sup>Department of Agricultural Technology, Faculty of Agriculture, University of Sam Ratulangi, Kampus Unsrat, Manado 95115, North Sulawesi, **Indonesia**.

## Cytotoxic effects of *Atriplex halimus* extract on human cancer cell lines

Neima K. Al-Senosi<sup>1</sup>, Ahmed Abou-Eisha<sup>2\*</sup> and Ekram S. Ahmad<sup>2</sup>

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

<sup>2</sup>Department of Cell Biology, National Research Centre, Dokki, Giza, **Egypt**.

## Correlation of nan1 (Neuraminidase) and production of some type III secretion system in clinical isolates of *Pseudomonas aeruginosa*

Zina Hashem Shehab<sup>1</sup> and Bahaa Abdullah Laftah<sup>2</sup>

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

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

## Alleviation of salt stress on roselle plant using nano-fertilizer and organic manure

Yassen, A. A<sup>1</sup>; Abdallah, E.F<sup>2</sup>. M.S. Gaballah<sup>2</sup> and Sahar, M. Zaghloul<sup>1</sup>

<sup>1</sup>Plant Nutrition and Soil Fertility Dept. Giza, **Egypt**

<sup>2</sup>Water Relations and Field Irrigation Dept. National Research Centre, Giza, **Egypt**



## Biochar as a carrier for nitrogen plant nutrition: 2.The growth of maize (*Zea mays* L.) applied with nitrogen enriched biochar on different soil texture

WaniHadi Utomo<sup>1</sup>, Titiek Islami<sup>2</sup>, Erwin Ismu Wisnubroto<sup>3</sup> and Suhartini<sup>1</sup>

<sup>1</sup>International Research Centre for Management of Degraded and Mining Land, University of Brawijaya, Malang, Indonesia.

<sup>2</sup>Research Centre for Tubers and Root Crops, University of Brawijaya, Malang, Indonesia.

<sup>3</sup>Tribhuwana Tunggaladewi University, Malang, Indonesia

40 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 201815(3):1757-1762 OPEN ACCESS [Free Full Text](#)

## Improving growth,yield,physiological characteristics and nutrients uptake of growing sunflower (*helianthus annuus* l.) Plants in saline soil by using ascorbic acid

Abd El-RheemKh. M.<sup>1</sup>, Hayam A. A. Mahdy<sup>2</sup>, Entsar M. Essa<sup>3</sup> and Yasser A. El-Damarawy<sup>1</sup>

<sup>1</sup>Soils and Water Use Dept, National Research Centre, Dokki, Giza, Egypt.

<sup>2</sup>Plant Dept,National Research Centre, Dokki, Giza, Egypt.

<sup>3</sup>Plant nutrition Dept. National Research Centre, Dokki, Giza, Egypt.

41 RESEARCH ARTICLE BIOSCIENCE RESEARCH,201815(3):1763-1768 OPEN ACCESS [Free Full Text](#)

## Enhance sunflower productivity by foliar application of some plant growth bio-stimulants under salinity conditions

Sona Salem El-Nwehy, Adel Badr El-Nasharty\* and AbdElHalim Ibrahim Rezk

Department of Fertilization Technology, National Research Centre, 33 El Bohouth St., P.O. Box 12622, Dokki, Giza, Egypt.

42 RESEARCH ARTICLE BIOSCIENCE RESEARCH,201815(3):1769-1777 OPEN ACCESS [Free Full Text](#)

## Competition between *Chrysoperla carnae* (Neuroptera:Chrysopidae) and *Neoseiulus californicus* (Acari: Phytoseiidae) feeding on *Tetranychus urtica* (Acari: Tetranychidae) as a prey

Amany Ramadan Ebeid, Shima Fahim, Fahim and Mohamed Ahmed Gesraha.

Pests and Plant Protection Department, National Research Centre, Dokki, Egypt

43 RESEARCH ARTICLE BIOSCIENCE RESEARCH,201815(3):1778-1786 OPEN ACCESS [Free Full Text](#)

## Effect of ethinylestradiol on sperm quality of the tropical fish *Barbodes binotatus*

Alfiah Hayati\*,Ari Sofiyanti ,Dhea Sanggita Armando,Erika Wulansari ,Nurul Faridah , and Listijani Soehargo

Department of Biology, Faculty of Science and Technology, University of Airlangga, Surabaya, Indonesia. .

44 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 201815(3):1787-1795. OPEN ACCESS [Free Full Text](#)

## Land evaluation of old and recent cultivated reclaimed desert sandy soils in Egypt.

Th. K. Ghabour; Amal, M. Aziz and I. S. Rahim

Soils and Water Use Dept., National Research Centre, Dokki, Cairo, Egypt

45 RESEARCH ARTICLE BIOSCIENCE RESEARCH,201815(3):1796-1804. OPEN ACCESS [Free Full Text](#)

## Improving the availability of phosphorus from rock phosphate in calcareous soils by natural materials

Monier Morad Wahba.\*, Fawkia, L. Bahna and Amal, M.A.

Soils & Water Use Dept., National Research Centre (NRC), Cairo, Egypt.

46 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 201815(3):1805-1815. OPEN ACCESS [Free Full Text](#)

## Improvement of some chemical properties of an Ultisol of East Kalimantan through application of combined coal fly ash and oil palm empty fruit bunch

Fahrunsyah<sup>1,2</sup>, Zaenal Kusuma<sup>3</sup>, Budi Prasetya<sup>3</sup>, Eko Handayanto<sup>4\*</sup>

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

<sup>2</sup> Faculty of Agriculture, University of Mulawarman, Jl. Paser Belengkong, Kota Samarinda, East Kalimantan, Indonesia

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

<sup>4</sup> Research Centre for Management of Degraded and Mining Lands, Brawijaya University, Jl. Veteran, Malang 65145, Indonesia

47 RESEARCH ARTICLE BIOSCIENCE RESEARCH,201815(3):1816-1825. OPEN ACCESS [Free Full Text](#)

## The effect of gypsum formation and content on barley growth and yield under drip irrigation system

Abd El-Hady, M.<sup>1</sup>; Amal M. Aziz<sup>2</sup>; Ebtisam I. El-Dardiry<sup>1</sup> and Wahba, M.M.<sup>2</sup>

<sup>1</sup>Water Relations and Field Irrigation Dept. National Research Centre, El-Buhouth St., Dokki, Cairo, Egypt

<sup>2</sup>Soils and Water Use Dept. National Research Centre, El-Buhouth St., Dokki, Cairo, Egypt.

48 RESEARCH ARTICLE BIOSCIENCE RESEARCH,201815(3):1826-1831 OPEN ACCESS [Free Full Text](#)

## Agricultural wastes as a potent adsorbing agent for some organic pollutants from aqueous solutions

A.M. Allam<sup>1</sup>; M. K. Mohamed<sup>1</sup>; H.F. Zahran<sup>2\*</sup>; M.H. El Sheikh<sup>2</sup> and G.B. Abdelnour<sup>1</sup>

<sup>1</sup>Evaluation of Natural Resources and Planning for their Development Department, Institute of Environmental Studies and Research, University of Sadat City, Elmonofeh, Egypt

<sup>2</sup>Plant Production Department, Arid Lands Cultivation Research Institute, SRTA City, Alexandria, Egypt

49 RESEARCH ARTICLE BIOSCIENCE RESEARCH,201815(3):1832-1844 OPEN ACCESS [Free Full Text](#)

## Flaxseed alleviates toxic effects of some environmental pollutants on pregnant rats and their foetuses

Abdelgawad Ali Fahmi<sup>1</sup>; Mohamed Aly El-Desouky<sup>1</sup>; Khairy A. Ibrahim<sup>2</sup> and

Hala Abdelazeem Abdelgaid<sup>1</sup>

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

<sup>2</sup>Mammalian Toxicology Department, Central Agriculture Pesticides Lab, Agriculture Research Center, Dokki, Giza, Egypt.

50 RESEARCH ARTICLE BIOSCIENCE RESEARCH,201815(3):1845-1851. OPEN ACCESS [Free Full Text](#)

## Economic analysis of the effect of climate change on yield of wheat crop in Egypt: case study temperature change

Zainab El Khaliefa<sup>1</sup>, H.F. Zahran<sup>2\*</sup> and M.H. ElSheikh<sup>3</sup>

<sup>1</sup>Project Management and Sustainable Development Department. Egypt.

<sup>2,3</sup>Plant Production Department. Egypt.

<sup>1,2,3</sup>Arid Lands Cultivation Research Institute, SRTA City, Alexandria, Egypt.

51 RESEARCH ARTICLE BIOSCIENCE RESEARCH,201815(3):1852-1866 OPEN ACCESS [Free Full Text](#)

## Statistical bioprocessing strategy for cellulases production by endophytic *Trichoderma harzianum* utilizing lignocellulosic wastes

Shahira H. EL-Moslamy\* and Yasser R. Abdel-Fattah\*

Bioprocess development department, Genetic Engineering and Biotechnology Research Institute (GEBRI), City of Scientific Research and Technology Applications (SRTA city), New Borg El-Arab City, Alexandria, Egypt

52 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 201815(3):1867-1878 OPEN ACCESS [Free Full Text](#)

## Scaling-up production of endophytic *Aspergillus fumigatus* bioactive metabolites as anti-phytopathogenic agent

Shahira H. EL-Moslamy\* and Ahmed H. Rezk

Bioprocess Development Dept., Genetic Engineering and Biotechnology Research Institute, City of Scientific Research and Technology Applications, New Borg El-Arab city, Alexandria, Egypt

53 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 201815(3):1879-1891. OPEN ACCESS [Free Full Text](#)

## Effect of Nitrogen and Zinc Levels on Yield and Technological Characters of Some Promising Flax Genotypes

Elayan Sohair E.D<sup>1</sup>; Amany M. Abdallah<sup>1</sup>; S.H.A. Mostafa<sup>2</sup> and Riham H.H. Ahmed<sup>2</sup>

<sup>1</sup>Agronomy Department, Faculty of Agriculture, Cairo University, El-Gamaa Street, Giza, Egypt

<sup>2</sup>Fiber Crops Research Section, Field Crops Research Institute, Agricultural Research Center, Giza, Egypt

54 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3): 1892-1904. OPEN ACCESS [Free Full Text](#)

## Photo-Biosynthesis and Biological Evaluation of Silver Chloride Nanoparticles Using *Pseudomonas aeruginosa* and *Rhizobium leguminosarum*

Hanaa M.S. Ibrahim<sup>1</sup>; Mahmoud W. Sadik<sup>1\*</sup>; Yasser A. Attia<sup>2</sup>; and Michael R. Gohar<sup>1</sup>

<sup>1</sup>Microbiology Department, Faculty of Agriculture, Cairo University, Giza 12613, Egypt

<sup>2</sup>National Institute of Laser Enhanced Sciences, Cairo University, Giza 12613, Egypt.

55 RESEARCH ARTICLE BIOSCIENCE RESEARCH,201815(3):1905-1916. OPEN ACCESS [Free Full Text](#)

## Characterization of salt tolerance in four halophytic bacteria strain isolated from solar saltern at Alexandria-Egypt

Reham F.M. AL-Gozyer<sup>1\*</sup>; Reda E.A. Moghaieb<sup>2</sup>; Abdelhadi A. Abdallah<sup>2</sup>; Ahmed N. Sharaf<sup>2</sup> and Naglaa Abdallah<sup>2</sup>

<sup>1</sup>Genetic Engineering Research Department, VACSERA Holding Company, Agouza, Giza, Egypt.

<sup>2</sup>Department of Genetic, Faculty of Agriculture, Cairo University, Giza, Egypt.

56 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 201815(3): 1917-1924. OPEN ACCESS [Free Full Text](#)

## Effects of *Moringa oleifera* L. Herb and its extract on indomethacin-induced gastric oxidative stress in rats

Hany M.A. Wahba<sup>1\*</sup> and Lobna A. Shelbaya<sup>2</sup>

<sup>1</sup>Nutrition and Food Science Dept., National Research Centre, Dokki, Giza, Egypt.

<sup>2</sup>Home Economics Department, Faculty of Specific Education, Mansoura University, Egypt.

57 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 201815(3):1925-1930. OPEN ACCESS [Free Full Text](#)

## Salmonella infection in Broiler flocks in Egypt

Salem Soliman<sup>1\*</sup>; Ahmed Adel Seida<sup>2\*</sup>; Sahar Zou El-Fakar<sup>3</sup>; Youssef Ibrahim Youssef<sup>3</sup>; and Jakeen El-Jakee<sup>2</sup>

<sup>1</sup>Faculty of Veterinary Medicine, Cairo University, Giza 11221, Egypt

<sup>2</sup>Department of Microbiology and Immunology, Faculty of Veterinary Medicine, Cairo University, Giza 11221, Egypt

## Amyloid beta-peptide (1-42) induced neurotoxicity in experimental rats: Effect of Donepezil

Yasser M. Moustafa<sup>1</sup>, Dalia Medhat<sup>2\*</sup>, Sawсан A. Zaitone<sup>1,4</sup>, Zakaria El-Khayat<sup>2</sup>, Omar M. E. Abdel-Salam<sup>3</sup> and Alhammali A.M. Abdalla<sup>1</sup>

<sup>1</sup>Pharmacology and Toxicology Department, Faculty of Pharmacy, Suez Canal University, Egypt.

<sup>2</sup>Medical Biochemistry Department, National Research Center, 33 El Behouth St., 12622, Dokki, Cairo, Egypt.

<sup>3</sup>Toxicology and Narcotics Department, National Research Centre, Tahrir St., Dokki, Cairo, Egypt.

<sup>4</sup>Pharmacology and toxicology Department, Faculty of Pharmacy, University of Tabuk, Saudi Arabia.

## Wheat Yield Versus Seed Bed Conditions

Tayel, M.Y.; S. M. Shaaban; Ebtisam A. Eldardiry and H.A. Mansour  
Water Relations & Field Irrigation Department, National Research Centre, Cairo, Egypt

## Phenotypic and molecular marker analysis of a population derived from crossing of gogo-dryland x paddy-field rice varieties

ZaimDzoelHazmy<sup>1</sup>, NoerRahmi Ardiarini<sup>2</sup>, Respatijarti<sup>2</sup>, Damanhuri<sup>2</sup>, and Affiuddin Latif Adiredjo<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

## Identification of secondary metabolites and activity test of *Ganoderma lucidum* methanol extract as anti-termite (*Coptotermes curvignathus*) biopesticide

Surahmaida<sup>1\*</sup>, Tri Puji Lestari Sudarwati<sup>1</sup> and Junairiah<sup>2</sup>

<sup>1</sup>Academy of Pharmacy Surabaya, Surabaya, Indonesia

<sup>2</sup>Department of Biology, Faculty of Science and Technology, Airlangga University, Surabaya, Indonesia

## Effect of dried tomato waste powder on pH, water holding capacity, and water activity of Frankfurter made from Thai native beef

So Sarong<sup>1</sup>, Suthipong Uriyapongson<sup>1\*</sup>, Juntanee Uriyapongson<sup>2</sup>, Ronnachai Prommachart<sup>1</sup>, Thassawan Somchan<sup>1</sup>, Tanom Tathong<sup>3</sup>, Julakorn Panatuk<sup>4</sup>, Suthipong Pimsri<sup>1</sup>, and Khanya Phonsaen<sup>1</sup>

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

<sup>2</sup>Department of Food Technology, Faculty of Technology, Khon Kaen University, Khon Kaen 40002, Thailand

<sup>3</sup>Department of Food Technology, Faculty of Agriculture and Technology, Nakhon Phanom University, Nakhon Phanom 48000, Thailand

<sup>4</sup>Department of Animal Science, Faculty of Animal Science and Technology, Maejo University, Chiang Mai 50290, Thailand

## Effect Of Carrier Media for Biofertilizer of Phosphate Solubilizing Bacteria *Bacillus sp* to Peanut (*Arachis hypogea*) Growth

Tutik Nurhidayati<sup>1</sup>, Wirdhatul Muslihatin<sup>1</sup>, N.Firdausi<sup>1</sup>, E.P. Setyaningsih<sup>2</sup>, A.P.D Nurhayati<sup>1</sup> and Eko Prasetyo Kuncoro<sup>3</sup>

<sup>1</sup>Department of Biology, Faculty of Sciences, Institut Teknologi Sepuluh Nopember, Surabaya, Indonesia

<sup>2</sup>Department of Chemistry, Faculty of Sciences, Institut Teknologi Sepuluh Nopember, Surabaya, Indonesia

<sup>3</sup>Department of Biology, Faculty of Sciences and Technology, Universitas Airlangga, Surabaya, Indonesia

## In vitro germination of *Moringa oleifera* synthetic seed on different composition of medium

Wirdhatul Muslihatin<sup>1</sup>, Nurul Jadid<sup>1</sup>, Chusnul Eka Safitri<sup>1</sup> and Eko Prasetyo Kuncoro<sup>2</sup>

<sup>1</sup>Department of Biology, Faculty of Sciences, Institut Teknologi Sepuluh Nopember, Surabaya, Indonesia

<sup>2</sup>Department of Biology, Faculty of Sciences and Technology, Universitas Airlangga, Surabaya, Indonesia

## The effect of mung bean (*Phaseolus radiatus* L.) sprout on lovastatin and red pigments production of red mold rice

Elok Zubaidah, Lestari Puji Astuti and Teti Estiasih\*

Department of Food Science and Technology, Faculty of Agricultural Technology, Brawijaya University, Jl. Veteran, Malang, Indonesia.

## Green Nanoparticles: Biogenerators; Mechanistic Aspects of Biosynthesis; Potential Applications and Future Prospective

Nouf Mohammed Al-Enazi

Biology Department, College of Science and Humanity Studies, Prince Sattam Bin Abdulaziz University, Alkharj, Saudi Arabia

## The performance of soybean genotypes as the result of hybridization on leaf rust disease

Mohammad Setyo Poerwoko<sup>1</sup>, Nurul Sjamsijah<sup>2</sup>, Kacung Hariyono<sup>3</sup>, Slameto<sup>4</sup>

<sup>1</sup>Plant Breeding, Agronomy Study Program of Agriculture Faculty of Jember University, Indonesia

<sup>2</sup>Plant Breeding, Seed Technology, Polytechnic State Jember, Indonesia

<sup>3</sup>Plant Breeding, Agro technology Study Program, Faculty of Agriculture, Jember University, Indonesia

<sup>4</sup>Crop Physiology, Agronomy Study Program of Agriculture Faculty of Jember University, Indonesia

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Effect of growing media, bio and organic fertilization on the flowering and chemical constituents of *Calendula officinalis* l. Plants.

El-Sayed, A.A<sup>1</sup>., El-Leithy, A. S<sup>1</sup>., Bazraa, W. M.<sup>2</sup> and Abdel-Latef, M. S.<sup>2</sup>

<sup>1</sup>Ornamental Horti., Dept., Fac. of Agric., Cairo Univ., Giza, Egypt.

<sup>2</sup>Ornamental Horti., Dept., Agriculture research center Giza Egypt.

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Effect of post harvest treatments on *Gladiolus grandiflorus* cut flowers.

Mona Ahmed Darwish<sup>1</sup>, Atef Mohamed Zakareia Sarhan<sup>1</sup>, Khaled Abdl-Mohsen Emam<sup>2</sup> and Reham Emam Ahmed Alm-Eldeen<sup>2</sup>

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

<sup>2</sup>Horticulture Research Institute, Agriculture Research Center, Egypt

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Prevalence of ESBL genes in ESBL producing *Klebsiella pneumoniae* isolated from patients with urinary tract infections in Baghdad, Iraq

Riham Adday Salman and Kais Kassim Ghaima\*

Institute of Genetic Engineering and Biotechnology for Postgraduate Studies, University of Baghdad, Baghdad, Iraq.

71 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 201815(3): 2060-2067. OPEN ACCESS

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Effect of pollination time and proportion of females flowers to males flowers in yield and seed quality of melon (*Cucumis melo* L.)

Respatijarti<sup>1</sup>, Mochammad Roviq<sup>2</sup> and Afifuddin Latif Adiredjo<sup>1\*</sup>

<sup>1</sup>Plant Breeding Laboratory, Department of Agronomy, Faculty of Agriculture, Brawijaya University, Veteran street, Malang, East Java, Indonesia,

<sup>2</sup>Plant Physiology Laboratory, Department of Agronomy, Faculty of Agriculture, Brawijaya University, Veteran street, Malang, East Java, Indonesia.

72 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 201815(3): 2068-2088. OPEN ACCESS

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Role of arbuscular mycorrhiza,  $\alpha$ -tocopherol and nicotinamide on the nitrogen containing compounds and adaptation of sunflower plant to Water stress

Hala Mohamed Safwat El-Bassiouny<sup>1\*</sup>, Amany Attia Abd El-Monem<sup>1</sup>, Maha Mohamed-Shater Abdallah<sup>1</sup> and Kawther Mohamed Soliman<sup>2</sup>.

<sup>1</sup>Botany Department, Agriculture and Biology Division, National Research Centre, Dokki, Giza, Egypt,

<sup>2</sup>Food Toxicology and Contaminants Department, Food Industries and Nutrition Division, National Research Centre, Dokki, Giza, Egypt

73 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 201815(3): 2089-2103. OPEN ACCESS

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## Improving nutritional value of Roselle seeds by arginine, Fe-EDTA and hemin applications

Mervat Shamoon Sadak<sup>1</sup>, Hala Mohamed Safwat El-Bassiouny<sup>1\*</sup>, Maha Mohamed-Shater Abd Allah<sup>1</sup> and Bakry Ahmed Bakry<sup>2</sup>

<sup>1</sup>Botany Department, Agriculture and Biology Division, National Research Centre, Dokki, Giza, Egypt

<sup>2</sup>Agronomy Department, Agriculture and Biology Division, National Research Centre, Dokki, Giza, Egypt, 33 El Bohouth st P.O. 12622

74 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3): 2104-2114. OPEN ACCESS

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Effects of Fermentation and Storage on bioactive activities of cow-Milk supplemented with soymilk.

Kawthar Belkaaloul\*, Hanane Kaddouri, Djamel Saidi, Omar Kheroua.

Laboratory of Physiology of Nutrition and Food Safety, Faculty of Science of Nature and Life, University of Oran1 Ahmed Ben Bella, Oran, Algeria.

75 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3): 2115-2125. OPEN ACCESS

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Combination of type, time of interplanting of plant crops and weed extract on growth and yield of tomato plant (*lycopersicum esculentum*, mill.)

Olivina S. Messakh and Laurensius Lehar

Department of Food Crops and Horticulture, State Agricultural Polytechnic of Kupang, Indonesia.

76 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 201815(3): 2126-2133 OPEN ACCESS

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The efficiency of *Syzygium aromaticum* essential oil against renal intoxication by lead in rats during development.

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- 77 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3): 2134-2140. OPEN ACCESS [Free Full Text](#) [\[PDF\]](#)
- Jatropha tree productivity, seed oil content and oil quality as feed stock for biodiesel production**  
**Dorria Mohamed Ahmed<sup>1</sup>; Hamdy Abdel-Hady Zahran<sup>2</sup>; Ferial Abass Zaher<sup>2</sup>; Mohamed Abd El-Hady Abd El-Hamid<sup>3</sup> and Mona Abbas El-Hamidi<sup>2</sup>**  
<sup>1</sup>Pomology Dept., Agriculture, and Biological Division, National Research Centre, 12622 Dokki, Cairo, Egypt  
<sup>2</sup>Fats and Oils Dept., Food Industries and Nutrition Division, National Research Centre, 12622 Dokki, Cairo, Egypt  
<sup>3</sup>Water Relations and Field Irrigation Dept., Agriculture and Biological Division, National Research Centre, 12622 Dokki, Cairo, Egypt
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- 78 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3): 2141-2150. OPEN ACCESS [Free Full Text](#) [\[PDF\]](#)
- The relationship between HPV and genes expression (*miRNA-744*, *BCL-2*, *CASPASE-3*) in epithelial cervical abnormalities**  
**Tabark Sabah Jassim and Abdul Hussein Moyet Alfaisal**  
Institute of Genetic Engineering and Biotechnology-University of Baghdad Iraq.
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- 79 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2151-2158. OPEN ACCESS [Free Full Text](#) [\[PDF\]](#)
- The effect of Beauvericin comparing with nano Beauvericin against *Palpita unionalis* (Lepidoptera: Pyralidae)**  
**Magda Mahmoud Sabbour M.M<sup>1</sup> and Nayera.Yehia Solieman<sup>2</sup>**  
<sup>1</sup>Department of Pests and Plant Protection, National research center 33rd El-Bohouth St. - Dokki, Giza, Egypt  
<sup>2</sup>Agriculture Economic Dept. Agriculture Division. National research center 33rd El-Bohouth St. - Dokki, Giza, Egypt
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- 80 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3): 2159-2170. OPEN ACCESS [Free Full Text](#) [\[PDF\]](#)
- Novel rapid green fabrication of ZnO nps using mycofiltrate by local fungus *Aspergillus Parasiticus* Ap4**  
**Mohammed A.S. Issa<sup>2\*</sup>, Ali A.R. Taha Al-Sheikhly<sup>3</sup>, Mazin K. Hamid<sup>4</sup> and Mohammad I. Nader<sup>1</sup>**  
<sup>1</sup>Institute of Genetic engineering and Biotechnology for postgraduate studies, University of Baghdad, Iraq.  
<sup>2</sup>Department of Biology, College of science, University of Thi\_Qar, Iraq.  
<sup>3</sup>Department Applied Science, University of Technology, Iraq.  
<sup>4</sup>College of medicine, University of Al-Nahrain.Iraq.
- 
- 81 RESEARCH ARTICLE BIOSCIENCE RESEARCH,2018 15(3):2171-2184 .OPEN ACCESS [Free Full Text](#) [\[PDF\]](#)
- Evaluation of Some Vaccination Programs Against Field Strain of Genotype VIID of Newcastle Disease in Broilers.**  
**Moustafa A. Bastami<sup>1</sup>; Manal A. Afifi<sup>1</sup>; Mohamed A. El-Beheiry<sup>1</sup>;Sahar A.ZouElfakar<sup>1</sup>; Rafik, H Sayed<sup>2</sup>; Kawkab A. Ahmed<sup>3</sup> and Magdy E. ELSayed<sup>4</sup>**  
<sup>1</sup> Department of poultry diseases, Faculty of Veterinary Medicine, Cairo University, Egypt.  
<sup>2</sup> Central laboratory for evaluation of Veterinary biologics, Egypt.  
<sup>3</sup> Department of pathology, Faculty of Veterinary Medicine, Cairo University, Egypt.  
<sup>4</sup> Middle East for Vaccines MEVAC® company Egypt.
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- 82 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2185-2193. OPEN ACCESS [Free Full Text](#) [\[PDF\]](#)
- Photorhabdus* and *xenorhabdus* for biocontrol of the leaf miner *tuta absoluta***  
**Jihan Muhammad S. Ahmed<sup>1</sup>; Azazy A.M.<sup>1</sup>; Manal Farouk M. Abdelall<sup>2</sup>; Waleed D. Saleh<sup>3</sup> and M.A. Ali<sup>3</sup>**  
<sup>1</sup>Dept. Pest Physiology, Pant Protection Research Institute, Agricultural Research Center, Giza, Egypt.  
<sup>2</sup>Dept. Microb. Molec. Biol., Agric., Genetic Engin. Res. Inst., Agric. Res. Center , 12619, Giza, Egypt.  
<sup>3</sup>Agric. Microbiology Dept., Faculty of Agriculture, Cairo University, Giza 12613, Egypt.
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- 83 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2194-2199. OPEN ACCESS [Free Full Text](#) [\[PDF\]](#)
- The effect of thoracic spine mobilization and core stability exercise on chronic mechanical back pain patients**  
**Hanaa Ali Hafez<sup>1</sup>, Salwa Fadi<sup>2</sup>, Lilian Albert Zaki<sup>3</sup>, and Atef Mohamed Morsi<sup>4</sup>**  
<sup>1</sup>Beni Suef Universal Hospital, BeniSuef University, BeniSuef, Egypt  
<sup>2</sup>Faculty of Physical Therapy, Cairo University, Giza Egypt, Egypt  
<sup>3</sup>Faculty of Physical Therapy, BeniSuef University, BeniSuef, Egypt  
<sup>4</sup>Faculty of Medicine, BeniSuef University, BeniSuef, Egypt
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- 84 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2200-2206 OPEN ACCESS [Free Full Text](#) [\[PDF\]](#)
- Assesment of dynamic postural control in plantar fasciitis**  
**Dina S. Abd Allah<sup>1</sup>, Salwa Fadi<sup>1</sup>, Lilian A. Zaki<sup>1</sup> and Aly M. El Zawahry<sup>2</sup>**  
<sup>1</sup>Physical therapy department for musculoskeletal disorders and its surgery, Faculty of physical therapy, Cairo University, Egypt.  
<sup>2</sup>Orthopedic surgery, Faculty of Medicine, Cairo University, Egypt.
- 
- 85 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2207-2217 OPEN ACCESS [Free Full Text](#) [\[PDF\]](#)
- Arsenate phytoremediation-linked genes in Egyptian rice cultivars as soil pollution dna geno-sensor**

Mohamed A. Rashad<sup>1</sup>, Ebtesam A. EL.Bestawy<sup>2</sup>, Fatma El nakieb<sup>3</sup>, Sayed M. Hassan<sup>4</sup> and Elsayed E. Hafez<sup>5</sup>

<sup>1</sup>Department of Land and Water Technologies, Arid Lands Cultivation Research Institute, City for Scientific Research and Technology Applications, New Borg El-Arab City, Alexandria, Egypt.

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<sup>4</sup>Laboratory for Environmental Analysis, Georgia University, USA.

<sup>5</sup>Department of Plant Protection and Bio molecular Diagnosis, Arid Lands Cultivation Research Institute, City for Scientific Research and Technology Applications, New Borg El-Arab City, Alexandria, Alexandria, Egypt.

86 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018, 15(3):2218-2227 OPEN ACCESS [Free Full Text](#) [PDF](#)

### Application of immobilized bioagents in lactose hydrolysis

Osama A. Ibrahim<sup>1</sup>, Hayam M. Fathy<sup>2</sup>, Gamal A. Ibrahim<sup>1</sup>, Olfat S. Barakat<sup>2</sup>, Mahmoud A. El-Hofi<sup>1</sup> and Hassanein A. Hassanein<sup>3</sup>

<sup>1</sup>Dairy Sciences Department, National Research Centre, Cairo, Egypt.

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

<sup>3</sup>Averroes Pharma for Pharmaceutical Industries, Cairo, Egypt.

87 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2228-2236 OPEN ACCESS [Free Full Text](#) [PDF](#)

### Characterization of the First Aquaporin Gene from the Egyptian Cotton Leafworm, *Spodoptera littoralis*

Shimaa M. El-Gamal<sup>1</sup>, Sawsan Y. Elateek<sup>2</sup>, S. A. Ibrahim<sup>2</sup> and Sayed M. S. Khalil<sup>1,3</sup>

<sup>1</sup>Agricultural Genetic Engineering Research Institute, Agricultural Research Center, Egypt.

<sup>2</sup>Department of Genetics, Faculty of Agriculture, Ain Shams University, Egypt.

<sup>3</sup>Plant Protection Department, College of Food and Agriculture Sciences, King Saud University, Riyadh, Saudi Arabia.

88 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2237-2246 OPEN ACCESS [Free Full Text](#) [PDF](#)

### Gamma irradiation and gibberellic acid for improving of seed germination and seedling growth of *koelreuteria paniculata* laxm

Hamdy M.A. El-Bagoury<sup>1</sup>, Mohamed M. M. Hussein<sup>1</sup>, Magdy A. El-Essawy<sup>2</sup>, Mahmoud F. Noby<sup>2</sup> and Noha K. El-Shahawy<sup>2\*</sup>

<sup>1</sup>Department of Ornamental Horticulture, Faculty of Agriculture, Cairo University, Egypt.

<sup>2</sup>Plant Research Department, Nuclear Research Center, Atomic Energy Authority, Egypt.

89 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2247-2252 OPEN ACCESS [Free Full Text](#) [PDF](#)

### The correlation between pain and proprioception in mechanical lowback pain

Dina Mohamed Ali Al-Hamaky; Alaa Eldin Abdelhakim Balbaa; Lilian Albert Zaki Shehata and Aly M.E. Elzawahry<sup>2</sup>

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

<sup>2</sup>Faculty of medicine, Cairo University, Egypt.

90 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3): 2253-2259. OPEN ACCESS [Free Full Text](#) [PDF](#)

### Extraction of RB51 rough lipopolysaccharide antigen for evaluation of locally prepared RB51 vaccine

Sally, M. Abd El Salam<sup>1\*</sup>, Khaled Al-Amry<sup>2</sup>, Khaled, A. Abd-el-Azeem<sup>1</sup>, Noha, A. Helmy<sup>1</sup>, Abd EL Hamid M, I<sup>1</sup> and Ahmed Samir<sup>2</sup>

<sup>1</sup>Department of Bacterial Sera and Antigens Research, Veterinary Serum and Vaccine Research Institute, Cairo, Egypt

<sup>2</sup>Department of Microbiology, Faculty of Veterinary Medicine, Cairo University, Cairo, Egypt.

91 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3): 2260-2271. OPEN ACCESS [Free Full Text](#) [PDF](#)

### Ethidium Bromide Induced Spinal Cord Demyelination in a Dog a model of Multiple Sclerosis

Ahmed N. Abdallah<sup>1</sup> MVSc, Ashraf A. Shamaa<sup>2</sup> and Omar S. El-Tookhy<sup>2</sup>

<sup>1</sup>Pathology department, Animal Health Research Institute, Dokki, Giza, Egypt.

<sup>2</sup>Surgery, Anesthesiology and Radiology Department, Faculty of Veterinary Medicine, Cairo University, Egypt.

92 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2272-2285 OPEN ACCESS [Free Full Text](#) [PDF](#)

### Introgression blast resistance gene (*pita*, *pik-s*, *pib*, *piz-t*, and *pi54*), and blight resistance gene (*xa4* dan *xa7*) into transgenic plant 940302-2 golden rice through marker-assisted selection

Khazim Maksal Mina<sup>1,3</sup>, Bambang Sugiharto<sup>1,2,3</sup>, Kyung-Min Kim<sup>4#</sup> and Mohammad Ubaidillah<sup>1,2,3 \*</sup>

<sup>1</sup>Graduate School of Biotechnology University of Jember Jl. Kalimantan 37 Kampus Tegalboto - Gedung Program Pascasarjana, Jember East, Java Indonesia

<sup>2</sup>Study program of Agrotechnology, Faculty of Agriculture, University of Jember, Jl. Kalimantan 37 Kampus Tegalboto East Java Indonesia

<sup>3</sup>Center Development Of Advanced Sciences and Technology, Jember University, Jl. Kalimantan 37 Kampus Tegalboto Jember East Java Indonesia

<sup>4</sup>Division of Plant Biosciences, School of Applied Biosciences, College of Agriculture & Life Science, Kyungpook National University, Daegu-702-701, Korea

93 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2286-2294. OPEN ACCESS [Free Full Text](#) [PDF](#)

# The Effect of Recycling Different Wastes (as a substrate) on Mushroom (*Pleurotus ostreatus*) Fruit Bodies, Morphologically, Genetically and its Metabolites

Ayman S. Daba<sup>1</sup>; Fatma El nakieb\*<sup>2</sup> and Elsayed E.Hafez<sup>3</sup>

<sup>1</sup>Natural Pharmaceutical Products Department, Genetic Engineering and Biotechnology Research Institute, City for Scientific Research and Technological Application, New Borg El-Arab City, Alexandria, Egypt.

<sup>2</sup>Environmental Biotechnology Department, Genetic Engineering and Biotechnology Research Institute, City for Scientific Research and Technology Applications, New Borg El-Arab City, Alexandria, Egypt.

<sup>3</sup>Plant Protection and Bimolecular Diagnosis Department, Arid lands Cultivation Research Institute, City for Scientific Research and Technology Applications, New Borg El-Arab City, Alexandria, Egypt.

94 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2295-2303 OPEN ACCESS [Free Full Text](#) [\[PDF\]](#)

## Genotoxic effect of flonicamid and etofenprox on mice.

Al-Kazafy Hassan Sabry<sup>1</sup>, Lamiaa Mohamed Salem<sup>2</sup>, Neama Ibrahim Ali<sup>2</sup> and Sahar Saad EL Din Ahmed<sup>2\*</sup>

<sup>1</sup>Pests and Plant Protection Department, National Research Centre, Cairo, Egypt.

<sup>2</sup>Department of Cell Biology, Division research of Genetic Engineering and Biotechnology, National Research Centre, Cairo, Egypt.

95 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3): 2304-2311. OPEN ACCESS [Free Full Text](#) [\[PDF\]](#)

## Quality of life response to resistive airflow training in patients with chronic obstructive pulmonary disease

Nadia Saad Sayed Ahmed El Gressy<sup>1\*</sup>, Zahra Mohamed Hassan Serry<sup>1</sup>, Nesreen Ghareeb Mohamed El Nahas<sup>1</sup>, Nahed Husseiny Taha<sup>2</sup> and Moheb Wadea El Faizy<sup>2</sup>

<sup>1</sup>Faculty of physical therapy, Cairo University, Egypt

<sup>2</sup>El Sahel Teaching Hospital, Cairo, Egypt.

96 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2312-2317. OPEN ACCESS [Free Full Text](#) [\[PDF\]](#)

## Molecular characterization of *Clostridium perfringens* isolated from broiler chickens in Egypt

Heidy Abo El-Yazeed<sup>1</sup>, Amal Nader A.<sup>2</sup>, Eman Fathy F.<sup>2</sup>, Mahmoud El Hariri<sup>1</sup>, Rehab Elhelw<sup>1</sup> and Rafik Soliman<sup>1</sup>

<sup>1</sup> Microbiology Department, Faculty of Veterinary Medicine, Cairo University, Giza, Egypt

<sup>2</sup>Anaerobic unit, bacteriology department, AHRI, Egypt.

97 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2318-2326 OPEN ACCESS [Free Full Text](#) [\[PDF\]](#)

## Hydrolysis of *imperata cylindrica* (L.) Beau. By *penicillium* sp., *aspergillus niger* and *trichoderma viride* as bioethanol basic ingredient production

Tini Surtiningsih, Dyah Agustina and Yosephine Sri Wulan Manuhara

Department of Biology, Faculty of Sciences and Technology, Universitas Airlangga, Surabaya, 60115, Indonesia

98 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2327-2337 OPEN ACCESS [Free Full Text](#) [\[PDF\]](#)

## Progressive model of multiple sclerosis following ethidium bromide injection in dogs' spinal cord: failure of endogenous remyelination

Ashraf A. Shamaa<sup>1</sup>, Omar S. El-Tookhy<sup>1</sup> and Ahmed N. Abdallah<sup>2</sup>

<sup>1</sup>Surgery, Anesthesiology and Radiology Department, Faculty of Veterinary Medicine, Cairo University, Egypt.

<sup>2</sup>Pathology department, Animal Health Research Institute, Dokki, Giza, Egypt

99 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2338-2357 OPEN ACCESS [Free Full Text](#) [\[PDF\]](#)

## Botanical features and Lipid contents of *Cinnamomum verum* J.Presl, *Cinnamomum camphora* L. and *Melissa officinalis* L. cultivated in Egypt

Seham Elhawary<sup>1</sup>, Ahmed O. Hudhud<sup>2</sup>, Rabab Mohammed<sup>3</sup> and Walid baker<sup>4</sup>

<sup>1</sup>Pharmacognosy department, Faculty of Pharmacy, Cairo University, Cairo 11936, Egypt.

<sup>2</sup>Pharmacognosy department, Faculty of Pharmacy, Beni-Suef University, Beni-Suef, 62514, Egypt.

<sup>3</sup>Pharmacognosy department, Faculty of Pharmacy, Beni-Suef University, Beni-Suef, 62514, Egypt.

<sup>4</sup>Microbiology department, Faculty of Pharmacy, Beni-Suef University, Beni-Suef, 62514, Egypt.

100 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2358-2363. OPEN ACCESS [Free Full Text](#) [\[PDF\]](#)

## *In vitro* study on the effect of hydrogel on rooting and acclimatization of pine apple (*Ananas comosus* cv. Smooth cayenne)

Hassan, S.A.M<sup>1</sup>.; Waly, A. I<sup>2</sup>., Bakry, A. B. and El-Karamany, M. F<sup>3</sup>

<sup>1</sup>Tissue culture technique Lab, Pomology Dept., National Research Centre, 33 El Buhouth St., Dokki, Giza, Egypt

<sup>2</sup>Textile Div, National Research Centre, 33 El Buhouth St., Dokki, Giza, Egypt

<sup>3</sup>Field Crops Res., Dept., National Research Centre, 33 El Buhouth St., Dokki, Giza, Egypt

101 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2364-2373 OPEN ACCESS [Free Full Text](#) [\[PDF\]](#)

## Fumigant potential of some essential oils against the cowpea beetle "*callosobruchus maculatus*" (F.) Under laboratory conditions

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- 102 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3): 2374-2382. OPEN ACCESS [Free Full Text](#)  
[\[PDF\]](#)
- Comparative study on one shot Lipid A and Montanide™ ISA 70 adjuvanted Pasteurella Vaccines for Rabbits**  
**Mahmoud T. A. Ismail<sup>1\*</sup>, Mona I. EL-Enbaawy<sup>2</sup>, Eman Mohamed El Rawy<sup>1</sup> and Mai A. Fadel<sup>3</sup>**  
<sup>1</sup>Veterinary Serum and Vaccine Research Institute (VSVRI), Abbasia, Cairo, Egypt  
<sup>2</sup>Microbiology department, Faculty of veterinary medicine, Cairo University, Egypt  
<sup>3</sup>Animal Health Research Institute, Dokki, Giza, Egypt
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- 103 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3): 2283-2392. OPEN ACCESS [Free Full Text](#)  
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- Evaluation of regeneration, active ingredients and antioxidant activities in jojoba tissue cultures as affected by carbon nanotubes**  
**Alaa A. Gaafar<sup>1</sup>, Rania A. Taha<sup>2,3</sup>, Nesreen H. Abou-Baker<sup>4</sup>, Esam A. Shaaban<sup>5</sup>, Zeinab A. Salama<sup>1</sup>**  
<sup>1</sup>Department of Plant Biochemistry, National Research Centre (NRC), Dokki, Giza, Egypt  
<sup>2</sup>Biotechnology and Micropropagation Lab., Pomology Department, NRC, Dokki, Giza, Egypt  
<sup>3</sup>Tissue Culture Technique Lab., Central Laboratories Building, NRC, Dokki, Giza, Egypt  
<sup>4</sup>Soils and Water Use Department, NRC, Dokki, Giza, Egypt  
<sup>5</sup>Pomology Department, NRC, Dokki, Giza, Egypt
- 
- 104 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2393-2400. OPEN ACCESS [Free Full Text](#)  
[\[PDF\]](#)
- Extraction and evaluation of the anti-inflammatory activity of six compounds of *marrubium vulgare* L.**  
**Shamil I. Neamah<sup>1\*</sup>, Ismail A. Sarhan<sup>2</sup>, Oqba N. Al-Shayea<sup>1,3</sup>**  
<sup>1</sup>Center of Desert Studies, University of Anbar, Ramadi, Anbar, Iraq.  
<sup>2</sup>College of Agriculture, University of Anbar, Ramadi, Anbar, Iraq.  
<sup>3</sup>College of Pharmacy, University of Anbar, Ramadi, Anbar, Iraq.
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- 105 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2401-2407. OPEN ACCESS [Free Full Text](#)  
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- Effect of pulsed electromagnetic field on ejection fraction after induced myocardial infarction**  
**Mona Abdelraouf Ghallab<sup>1,\*</sup>, Aziz Guirguis Aziz<sup>1</sup>, Ashraf AlyShamaa<sup>2</sup> and Fatma Aboelimged Mohamed<sup>1</sup>**  
<sup>1</sup>Department of Physical Therapy for Cardiovascular, Respiratory Disorder and Geriatrics, Faculty of Physical Therapy, Cairo University, Egypt  
<sup>2</sup>Department of Surgery, Anesthesiology and Radiology, Faculty of Veterinary Medicine, Cairo University, Egypt
- 
- 106 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2408-2415. OPEN ACCESS [Free Full Text](#)  
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- Effect of different level of solar ultra violet radiation on the vegetative growth, yield and quality of cherry tomatoes.**  
**Huda A. Ibrahim<sup>1</sup>; Mohamed A. A. Abdullah<sup>2</sup>; Nagwa M. K. Hassan<sup>1</sup> and Heba S. El-Batran<sup>1</sup>**  
<sup>1</sup>Vegetable Research Dept., National Research Center, Dokki, Giza, Egypt.  
<sup>2</sup>Vegetable Handling Dept., Horticulture Research Institute, Agriculture Research Center, Giza, Egypt.
- 
- 107 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2416-2425. OPEN ACCESS [Free Full Text](#)  
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- DPPD ameliorates renal fibrosis induced by HgCl<sub>2</sub> in rats**  
**Mohamed M. Elshemy<sup>1,\*</sup>, Ahmed E-S AbdEl-mejied<sup>1</sup>, Faten Zahran<sup>2</sup>, Mohamed M. Omran<sup>3</sup> and Ahmed Nabil<sup>4</sup>**  
<sup>1</sup>Faculty of Science, Menoufia University, Menoufia, Egypt  
<sup>2</sup>Faculty of Science, Zagazig University, Zagazig, Egypt  
<sup>3</sup>Faculty of Science, Helwan University, Cairo, Egypt  
<sup>4</sup>Faculty of Postgraduate Studies for Advanced Sciences, Beni-Suef University, Beni-Suef, Egypt
- 
- 108 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3): 2426-2432. OPEN ACCESS [Free Full Text](#)  
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- Comparative Means for Treatment of Respiratory Distress in Preterm Neonates**  
**Amira Ahmed<sup>1</sup>, Hala Atta<sup>1</sup>, Ashraf Mohamed Azmy<sup>2</sup> and Sonia Adolf Habib<sup>3</sup>**  
<sup>1</sup>Departments of: <sup>1</sup>Neonatology, El-Galaa Teaching Hospital, Egypt,  
<sup>2</sup>Child Health National Research Center, Egypt,  
<sup>3</sup>Pediatrics, National Research Center, Egypt.
- 
- 109 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2433-2440 OPEN ACCESS [Free Full Text](#)  
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## Risk factors predicting insulin resistance in obese adolescents

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<sup>1</sup>Biological Anthropology Department, Medical Research Division, National Research Centre, Cairo, Egypt.

<sup>2</sup>Pediatric Department, Faculty of Medicine (Girls), Al-Azhar University, Egypt.

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### Prevalence of some virulence associated-genes in methicillin resistance *Staphylococcus aureus* isolates from patients infected with septic arthritis and antimicrobial resistance patterns of these isolates.

Israa Abduljabbar Jaloob Aljanaby

University of Kufa, College of pharmacy, Department of Clinical Laboratory Sciences, Iraq.

111 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3): 2452-2462. OPEN ACCESS

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### Distribution behavior of *Parlatoria pergandii* Comstock, *Aonidiella aurantii* Maskell and *Crysamphalus dictyospermi* Morgan (*Hemiptera: Diaspididae*) on the canopy of citrus trees

Haddad N\* and Sadoudi Ali-Ahmed D

Production, safeguarding, threatened species and crops, Influence of climatic variations (PSEMRVC) laboratory, Faculty of Biological and Agricultural Sciences, M. Mammeri University of Tizi-Ouzou, 15000, Tizi Ouzou, Algeria.

112 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3) 2463-2480 OPEN ACCESS

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### Novel mechanistic aspects of formaldehyde-induced hepatotoxicity

Fatehya M. Metwally<sup>1</sup>, Amina A. Gamal el Din<sup>2</sup>, Soheir E. Kotob<sup>3\*</sup>, Wagdy K.B. Khalil<sup>4</sup>, Fatma A. Morsy<sup>2</sup>, Enayat A. Omara<sup>2</sup> and Hanaa H. Ahmed<sup>3</sup>

<sup>1</sup>Environmental and Occupational Medicine, National Research Centre, 33 El Bohouth st. (former El Tahrir st.) Dokki, Giza, Egypt.

<sup>2</sup>Pathology Department, National Research Centre, 33 El Bohouth st. (former El Tahrir st.) Dokki, Giza, Egypt.

<sup>3</sup>Hormones Department, National Research Centre, 33 El Bohouth st. (former El Tahrir st.) Dokki, Giza, Egypt.

<sup>4</sup>Department of Cell Biology, National Research Centre, 33 El Bohouth st. (former El Tahrir st.) Dokki, Giza, Egypt.

113 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2481-2488 OPEN ACCESS

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### Bio-geometrical shapes: a new option for protection against neurodegenerative insult of Wi-Fi radiation

Nevin E. Sharaf<sup>1</sup>, Mohammed S. El-Savy<sup>2</sup>, Hanaa H. Ahmed<sup>3\*</sup>, Fatehya M. Metwally<sup>1</sup>, Noha M. Hegazy<sup>1</sup> and Annan M. El-Mishad<sup>1</sup>

<sup>1</sup>Department of Environmental and Occupational Medicine, National Research Centre, Dokki, Giza, Egypt.

<sup>2</sup>Department of Architecture, Faculty of Engineering, Misr International University, Cairo, Egypt.

<sup>3</sup>Department of Hormones, National Research Centre, Dokki, Giza, Egypt.

114 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2489-2493 OPEN ACCESS

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### Yield and quality components on two tomato varieties as influenced by phosphorus fertilizer application

Aldila Putri Rahayu, Deffi Armita, Anna Satyana Karyawati, and Aditya Ronafani

Department of Agronomy, Faculty of Agriculture, University of Brawijaya, Jl. Veteran Malang, 65145, Indonesia.

115 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2494-2501. OPEN ACCESS

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### Toxicity effect of Imidacloprid and nano-Imidacloprid particles in controlling *Bactrocera oleae* (Rossi) (Diptera: Tephritidae) under laboratory and field conditions

Magda Mahmoud Sabbour<sup>1</sup> and El-Sayed Hassan Shaub<sup>2</sup>

<sup>1</sup> Department of Pests and Plant Protection, Agriculture Division. National Research Center, Dokki, Giza, Egypt

<sup>2</sup> Department of Entomology, Faculty of Science, Cairo University, Giza, Egypt

116 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2502-2506 OPEN ACCESS

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### Relationship between x-ray findings of knee osteoarthritis and foot posture

117 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2507-2519 OPEN ACCESS [Free Full Text](#) [\[PDF\]](#)

## The effectiveness of the social cognition intervention among the patients with schizophrenia

Al-shymaa M. Abdeltawab<sup>1</sup>, Enayat A. Khalil<sup>1</sup>, Zeinab A. Osman<sup>1</sup>, Zeinab M. Abdelsalam<sup>1</sup>, Aya M. Hussien<sup>2</sup> and Mona Y. Rakhawy<sup>3</sup>,

<sup>1</sup>Department of Psychiatric Mental Health Nursing, Faculty of Nursing, Cairo University, Egypt.

<sup>2</sup>Department of Adult Psychiatry, Dar El Mokattam for Mental Health Hospital, Cairo, Egypt

<sup>3</sup>Department of Psychiatry, Faculty of medicine, Cairo University, Egypt.

118 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2520-2533 OPEN ACCESS [Free Full Text](#) [\[PDF\]](#)

## Effect of Potassium Fertilization and Salicylic Acid Foliar Application on Growth, Yield and Quality of Bean Plants

E.H. Abd El-Samad\*, M.R. Shafeek, Faten S. Abd El-Al, Safia M. Adam and Awatif G. Behairy

Vegetable Research Department, Agricultural and Biological Research Division, National Research Centre (NRC), 33 El-Buhouth St. (former El-Tahrir St.), Dokki, Giza, Egypt

119 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3): 2534-2541 OPEN ACCESS [Free Full Text](#) [\[PDF\]](#)

## Evaluation of multi-temporal sentinel-2 capabilities for estimation of leaf chlorophyll concentration

R. S. Morgan<sup>1</sup>, M. Faisal<sup>2</sup>, Y. Atta<sup>2</sup> and I.S. Rahim<sup>1</sup>

<sup>1</sup>Soils and Water Use Department, Agricultural and Biological Research Division, National Research Centre, Dokki, Cairo, Egypt.

<sup>2</sup>Drainage Research Institute, National Water Research Center, Egypt.

120 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2542-2550 OPEN ACCESS [Free Full Text](#) [\[PDF\]](#)

## Changes in soil organic carbon composition resulting from long-term application of biochemical contrasting organic residues monitoring by synchrotron-based FTIR microspectroscopy

Saowalak Somboon<sup>1&2</sup>, Bhanudacha Kamolmanit<sup>3</sup>, Weravart Namanusart<sup>4</sup>, Kanjana Thammanu<sup>5</sup> and Phruksa Lawongsa<sup>1&2\*</sup>

<sup>1</sup>Department of Soil Science and Environment, Faculty of Agriculture, Khon Kaen University, Khon Kaen, 40002, Thailand

<sup>2</sup>Soil Organic Matter Management Research Group, Khon Kaen University, Thailand

<sup>3</sup>Nakhon Ratchasima Rajabhat University, Nakhon Ratchasima, 30000, Thailand

<sup>4</sup>Rajamangala University of Technology Isan, Nakhon Ratchasima, 30000, Thailand

<sup>5</sup>Synchrotron Light Research Institute (Public Organization), Nakhon Ratchasima, 30000, Thailand

121 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2551-2557 OPEN ACCESS [Free Full Text](#) [\[PDF\]](#)

## Investigating the association between perceived stress and some biochemical, socio-demographic and work-related predictors of stress

Mai S. Saleh<sup>1</sup>, Asmaa F. Galal<sup>2\*</sup>, Salwa F. Hafez<sup>1</sup> and Sally Mustafa<sup>3</sup>

<sup>1</sup>Environmental and Occupational Medicine Department, Environmental Research Division, National Research Centre, Dokki, Giza, Egypt

<sup>2</sup>Narcotics, ergogenics and poisons department, Medical Research Division, National Research Centre, Dokki, Giza, Egypt

<sup>3</sup>Douglas Mental Health University Institute, Montreal, QC, Canada

122 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2558-2567. OPEN ACCESS [Free Full Text](#) [\[PDF\]](#)

## Effect of kinetin on growth parameters and genetic diversity among some coleus cultivars by RAPD markers

Sami A. Metwally<sup>1</sup>, Shoaib R.M.<sup>2</sup>, Ibrahim M.M.<sup>2</sup>, Bedour H. Abo-Leila<sup>3</sup>, Aboud K.A.<sup>2</sup> and Sharbat L. Mohamed<sup>3</sup>

<sup>1</sup>Ornamental Plants and Woody Trees Dept., National Research Centre, Dokki, Egypt.

<sup>2</sup>Genetics and Cytology Department, National Research Centre, Dokki, Egypt.

<sup>3</sup>Water Relations and Field Irrigation Dept., National Research Centre, Dokki, Egypt.

123 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3): 2568-2582 OPEN ACCESS [Free Full Text](#) [\[PDF\]](#)

## **Novel micro-composites based on phosphorylated biopolymer/polyethyleneimine/clay mixture for cotton multi-functionalities performance**

Ahmed G. Hassabo, Amina L. Mohamed, Sahar Shaarawy and Ali Hebeish

National Research Centre (Scopus affiliation ID 60014618), Textile Industries Research Division, Pre-treatment and Finishing of Cellulosic based Textile Department, 33El-Behouth St. (former El-Tahrir str.), Dokki, P.O. 12622, Giza, Egypt

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124 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2583-2590 OPEN ACCESS [Free Full Text](#) [PDF](#)

### **First record of *Bordetella avium* in Egyptian turkey flocks**

Ahmed Erfan<sup>1</sup>, Jihan Badr<sup>2</sup> and Mahmoud Abd-elhalim<sup>3</sup>

<sup>1</sup>Reference Laboratory for Veterinary Quality Control on Poultry Production, Animal Health Research Institute, Dokki- Giza, Egypt

<sup>2</sup>Poultry Diseases Department, Animal Health Research Institute, Dokki- Giza, Egypt

<sup>3</sup>Brucella department, Animal Health Research Institute, Dokki- Giza, Egypt

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125 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15 (3):2591-2601 OPEN ACCESS [Free Full Text](#) [PDF](#)

### **Micro-nano encapsulation of black seed oil ameliorate its characteristics and its mycotoxin inhibition**

Abdel-Razek A.G<sup>1</sup>, Badr A.N<sup>\*2</sup>, El-Messery T.M<sup>3</sup>, El-Said M.M<sup>3</sup> and Hussein A.M.S<sup>4</sup>

<sup>1</sup> Department of Fats and Oils, National Research Centre, Dokki 12622, Cairo, Egypt

<sup>2</sup> Department of Food Toxicology and Contaminants, National Research Centre, Dokki 12622, Cairo, Egypt.

<sup>3</sup> Department of Dairy Science, National Research Centre, Dokki 12622, Cairo, Egypt

<sup>4</sup> Department of Food Science, National Research Centre, Dokki 12622, Cairo, Egypt.

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126 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2602-2610 OPEN ACCESS [Free Full Text](#) [PDF](#)

### **Protective and curative treatments of entomopathogenic nematodes against the potato tuber moth, *phthorimaea operculella* (zell.)**

Moawad S.S, Saleh M.M.E., Metwally H.M., Ebadah I.M. and Mahmoud Y.A.

Pests and Plant Protection Department, National Research Centre, Giza, Egypt.

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127 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3): 2611-2618. OPEN ACCESS [Free Full Text](#) [PDF](#)

### **Phytochemical, antibacterial and antioxidant activities of *Capparis spinosa* L. Cultivated in Iraq**

Ahmed H. AL-Azawi, Kais Kassim Ghaima and Hawazen H. Salih

Institute of Genetic Engineering and Biotechnology for Postgraduate Studies, University of Baghdad, Baghdad, Iraq.

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128 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3): 2619-2625. OPEN ACCESS [Free Full Text](#) [PDF](#)

### **Molecular detection and genotyping of herpes simplex virus (1 and 2) in some Iraqi infertile men**

Hayder Mazin Rasool AL-Haboobi, Mohammed Ibrahim Nader and Mohammad Ibrahim Mezaal .

Institute of Genetic Engineering and Biotechnology for Postgraduate Studies, University of Baghdad, Baghdad, Iraq.

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129 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3): 2626-2639. OPEN ACCESS [Free Full Text](#) [PDF](#)

### **Ecological Risk Assessment of Heavy Metal Pollution in Top soil of Mediterranean Coast: A Case Study of Mareotis Coast, Egypt**

Yasser A. El-Amier<sup>1\*</sup>; Suliman M. Alghanem<sup>2</sup> and Muhammad A. El-Alfy<sup>3</sup>

<sup>1</sup>Botany Department, Faculty of Science, Mansoura University, Mansoura, Egypt <sup>2</sup>Biology Department, Faculty of Science, Tabuk University, Tabuk, Kingdom of Saudi Arabia

<sup>3</sup>Marine Pollution Department, National Institute of Oceanography and Fisheries, Egypt

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130 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3): 2640-2650. OPEN ACCESS [Free Full Text](#) [PDF](#)

### **Implementation of biotechnology for production of hypericin as antibladder cancer photosensitizer compound from Egyptian *hypericum sinaicum***

Heba D. Khelifa<sup>1</sup>, Hanaa H. Ahmed<sup>2</sup>, Ibrahim A. Ibrahim<sup>3</sup>, M.H. Bekhit<sup>3</sup> and Hussein S. Taha<sup>1</sup>

<sup>1</sup>Plant Biotechnology Dept., Genetic Engineering and Biotechnology Division, National Research Centre (NRC), Dokki, P.O.12622 Giza, Egypt

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131 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3): 2651-2667. OPEN ACCESS [Free Full Text](#) [\[PDF\]](#)

## **Anaplasmosis in ruminants and infesting ticks vectors settling Egyptian desert: Epidemiological updates regarding genetic profiles**

Sayed Mohamed Mahmoud Abd El-Baky<sup>1</sup> and Nesreen AllamTantawy Allam<sup>2\*</sup>

<sup>1</sup>Parasitology Unit, Department of Animal Health, Division of Animal and Poultry Production, Desert Research Center, Matariya, Cairo, **Egypt**.

<sup>2</sup>Parasitology and Animal Diseases Department, Veterinary Research Division, National Research Centre, Dokki, P.O. Box: 12622, Giza, Cairo, **Egypt**.

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132 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2668-2674. OPEN ACCESS [Free Full Text](#) [\[PDF\]](#)

## **Stress among parents of children with attention deficit hyperactivity disorder**

\*Shymaa Aly Hamed\* and Nefissa M. AbdAlkader

Psychiatric Mental Health Nursing, Faculty of Nursing, Cairo University, **Egypt**.

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133 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3): 2675-2678. OPEN ACCESS [Free Full Text](#) [\[PDF\]](#)

## **Abdominal fat thickness response to low level laser therapy**

Marwa Elhelali Elsherbeni<sup>1</sup>, Hala Mohamed Ezz Eldeen Hamed<sup>2</sup>, Elhadidy Elhadidy Mohamed<sup>3</sup>, Maha Mohamed Saber<sup>4</sup>, Fatma Aboelmagd M. Hamid<sup>5</sup> and Eitedal Daoud<sup>6</sup>

<sup>1</sup>Assistant Lecturer Delta University **Egypt**

<sup>2</sup>Environmental Affairs and Community Services Faculty of Physical Therapy Cairo University **Egypt**

<sup>3</sup>Head of Internal Medicine Department Faculty of Medicine Mansoura University **Egypt**

<sup>4</sup>Head of Complementary Medicine Department National Research Center-Cairo **Egypt**

<sup>5</sup>Department of Physical therapy for Internal Medicine Faculty of Physical Therapy Cairo University **Egypt**

<sup>6</sup>Department of Complementary Medicine National Research Center-Cairo **Egypt**

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134 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2679-2685. OPEN ACCESS [Free Full Text](#) [\[PDF\]](#)

## **Growth response of *Lactuca sativa* to plant number per pocket and irrigation interval in planting bag wall**

Sitawati

Department of Agronomy, Faculty of Agriculture, Universitas Brawijaya Jl. Veteran, Malang 65145, **Indonesia**.

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135 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3): 2686-2692. OPEN ACCESS [Free Full Text](#) [\[PDF\]](#)

## **Effect of rigid tape on hip joint proprioception in patients with sacroiliac joint dysfunction**

Neama H. Neamat Allah<sup>1\*</sup>, Ghada A. Mohamed<sup>1</sup>, Salam M. Elhafez<sup>1</sup> and Ihab M. Emran<sup>2</sup>

<sup>1</sup> Department of Biomechanics, Faculty of Physical Therapy, Cairo University, **Egypt**.

<sup>2</sup> Department of Orthopaedic Surgery, Faculty of Medicine, Cairo University, **Egypt**.

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136 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3): 2693-2701. OPEN ACCESS [Free Full Text](#) [\[PDF\]](#)

## **Effect of vegetable powders as nitrite sources on the quality characteristics of cooked sausages**

Youssef M. Riyad, Ibrahim Mohammad Mohiddin Ismail and M. E. Abdel-Aziz

Food Science Department, Faculty of Agriculture, Cairo University, Giza 12613, **Egypt**.

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137 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2702-2710. OPEN ACCESS [Free Full Text](#) [\[PDF\]](#)

## **Finite element analysis (FEA) for potato crop harvester blade suitable for small holdings.**

Nasr G. E.<sup>1</sup>, Rostom M. N.<sup>2</sup>, Hussein M. M.<sup>3</sup>, Farrag A. E.<sup>4</sup> and Morsy M. F.<sup>5</sup>

<sup>1</sup>Eng. Dept., Fac. Agric., Cairo Univ, **Egypt**.

<sup>2</sup>Agric. Eng. Dept., Fac. Agric., Cairo Univ, **Egypt**.

<sup>3</sup>Water relation and field irrigation Dept., Agric. Division, National Research Centre, **Egypt**.

<sup>4</sup>Mechanical Eng. Dept., Eng. Division, National Research Centre, **Egypt**.

<sup>5</sup>Special Agronomist, Water relation and field irrigation Dept., Agric. Division, National Research Centre, **Egypt**.

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138 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2711-2720. OPEN ACCESS [Free Full Text](#)

## Application of *Trichoderma harzianum* and essential oils as seed dressing against charcoal rot disease incidence of sunflower under field conditions

Nehal Samy El-Mougy and Mokhtar Mohamed Abdel-Kader\*

Plant Pathology Dept., National research Centre, El-Behoos St., Dokki, 12622, Giza, Egypt

139 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2721-2732. OPEN ACCESS [Free Full Text](#) [\[PDF\]](#)

## Botanical features and genetic profiling of *Bauhinia retusa* Roxb. growing in Egypt

Seham Elhawary<sup>1</sup>, Rabab Mohammed<sup>2</sup>, Abeer Moawad<sup>2</sup> and Hebatallah Bahr<sup>3</sup>

<sup>1</sup>Pharmacognosy department, Faculty of Pharmacy, Cairo University, Cairo 11936, Egypt.

<sup>2</sup>Pharmacognosy department, Faculty of Pharmacy, Beni-Suef University, Beni-Suef, 62514, Egypt.

<sup>3</sup>Pharmacognosy department, Faculty of Pharmacy, Nahda University, Beni-Suef, Egypt.

140 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2733-2740. OPEN ACCESS [Free Full Text](#) [\[PDF\]](#)

## Polycystic ovary syndrome: Pro12Ala polymorphism, hormonal and metabolic profiles

Wafaa Ghoneim Shousha<sup>1</sup>, Moushira Erfan Zaki<sup>2</sup>, Hala T. El Bassyouni<sup>3</sup>, Sara Mohamed Abdo<sup>1</sup>, Salwa Mahmoud Mohamed Ali<sup>4</sup>

<sup>1</sup>Biochemistry division, chemistry department, faculty of science, Helwan University, Cairo, Egypt.

<sup>2</sup>Biological Anthropology Department, National Research Centre, Cairo, Egypt.

<sup>3</sup>Clinical Genetics Department, National Research Centre. , Cairo, Egypt.

<sup>4</sup>Private Medical Laboratory, Cairo, Egypt.

141 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2741-2747. OPEN ACCESS [Free Full Text](#) [\[PDF\]](#)

## Assessment of safety climate among nurses at selected hospital

Soher Mohammed Ahmed<sup>1</sup>, Nehad Fekry<sup>2</sup> and Fatma Ahmed Abed<sup>3</sup>.

Faculty of nursing, Cairo University, Egypt.

142 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2748-2455. OPEN ACCESS [Free Full Text](#) [\[PDF\]](#)

## Effect of main stem pruning and plant spacing on yam bean (*pachyrhizus erosus* L.)

Eko Widaryanto\*, Denys Aggrina Desyndia, Akbar Saitama and Akbar Hidayatullah Zaini

Department of Agronomy, Faculty of Agriculture, Brawijaya University Jl. Veteran, Malang 65145 East Java, Indonesia

143 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2756-2769. OPEN ACCESS [Free Full Text](#) [\[PDF\]](#)

## Exopolysaccharides production and optimization by *halomonas venusta* using response surface method

Ghada S. Ibrahim<sup>\*1</sup>, Mostafa M. Abo Elsoud<sup>2</sup> and Mohsen M. S. Asker<sup>3</sup>

<sup>1</sup>Department of Applied Biochemistry, Faculty of Science, University of Jeddah, Jeddah Saudi Arabia Kingdom.

<sup>2</sup>Microbial Biotechnology Department, National Research Centre, 33 Bohouth St., Dokki, Giza, 12622, Egypt.

<sup>3</sup>Biotechnology and Genetic Engineering Pilot Plant Unit, National Research Centre, Egypt.

144 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2770-2779. OPEN ACCESS [Free Full Text](#) [\[PDF\]](#)

## Minor components and thermal stability of butter, wheat germ and corn oils in the russian market

Samh Sobhy El-Hadad<sup>1,2,\*</sup> and Natalia Aleksandrovna Tikhomirova<sup>1</sup>

<sup>1</sup>Department of Technology and biotechnology of food products of animal origin, Moscow State University of Food Production (MGUPP), Moscow, Russian Federation.

<sup>2</sup>Dairy Science Department, National Research Centre, Dokki, Giza, Egypt.

145 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2780-2784. OPEN ACCESS [Free Full Text](#) [\[PDF\]](#)

# Effect of polygamy on egg production and longevity of the predatory mite *Agistemus exsertus* Gonzalez (Acari : Stigmaeidae)

Amira A. Abdel-khalek and Aly H. Rasmy

Pests and Plant Protection Department, National Research Centre, Cairo, Egypt

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146 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2785-2796. OPEN ACCESS [Free Full Text](#) [\[PDF\]](#)

## Input-output ratio of energy used on rice under conventional and organic farming

Bambang Kusmanadhi<sup>1</sup> and Mohammad Setyo Poerwoko<sup>2</sup>

<sup>1</sup>Environment Science Faculty of Agriculture-Estate Crops Jember University, , Indonesia.

<sup>2</sup>Plant Breeding Faculty of Agriculture Jember University, Indonesia.

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147 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2797-2801 OPEN ACCESS [Free Full Text](#) [\[PDF\]](#)

## Diversity of indigenous fungi during ruminant feed fermentation made of water hyacinth (*eichhornia crassipes*) and corn (*zea mays*) cob

Isnawati, Ni'matuzahroh and Tini Surtiningsih

Faculty of Mathematics and Natural Science, State University of Surabaya, Jalan Ketintang, 60231, Surabaya, Indonesia  
Faculty of Science and Technology, Airlangga University, Jalan Mulyorejo, 60114, Surabaya, Indonesia

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148 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2802-2812. OPEN ACCESS [Free Full Text](#) [\[PDF\]](#)

## Isolation, screening and optimization of L-asparaginase producing bacterial strains inhabiting agricultural soils

Osama M. Darwesh, Mohamed F. Eida and Ibrahim A. Matter\*

Agricultural Microbiology Department, National Research Centre, Cairo, Egypt

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149 SHORT COMMUNICATION BIOSCIENCE RESEARCH, 2018 15(3):2813-2815. OPEN ACCESS [Free Full Text](#) [\[PDF\]](#)

## Glomus organs in the skin of mammary glands of one humped-camel (*camelus dromedarius*)

Razia Kausar<sup>1</sup>, Zafar Iqbal<sup>2</sup> and Sami-Ullah-Khan<sup>1</sup>

<sup>1</sup>Department of Anatomy, Faculty of Veterinary Science, University of Agriculture, Faisalabad, Pakistan.

<sup>2</sup>Department of Biosciences, Faculty of Veterinary Science, Bahauddin Zakariya University, Multan, Pakistan.

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150 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3): 2816-2827. OPEN ACCESS [Free Full Text](#) [\[PDF\]](#)

Biological activity and physicochemical quality of different types of kombucha yoghurt VS traditional yoghurt during storage  
Ayah, B. Abdel-Salam<sup>1</sup> and Gehan, F. Galal<sup>2</sup>

<sup>1</sup>Department of Food Hygiene & Control, Faculty of Veterinary Medicine, Cairo University, Egypt.

<sup>2</sup>Department of Microbiology, Faculty of Agriculture, Ain shams University, Egypt.

\*Correspondence: [setelkol2003@yahoo.com](mailto:setelkol2003@yahoo.com) Accepted:12 Jun 2018 Published online: 30 Sep2018

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151 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2828-2839 OPEN ACCESS [Free Full Text](#) [\[PDF\]](#)

## Improving maize yield by cultivars selection and sowing time alteration under changing climate

Asim Muhammad\*, Abdul Basit and Misbahullah

Department of Agronomy, Faculty of Crop Production Sciences, the University of Agriculture Peshawar, Khyber Pakhtunkhwa, Pakistan

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152 RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2018 15(3):2840-2847. OPEN ACCESS [Free Full Text](#) [\[PDF\]](#)

Analysis of genetic polymorphisms in somaclonal variants of strawberry by RAPD markers

Md. Shahidul Haque Bir<sup>1</sup>, Md. Samiul Haque<sup>2</sup>, M. Mahbulul Haque<sup>2</sup>, Uzzal Kumar Nath<sup>3</sup>, Roushan Ara Khatun<sup>4</sup>, Mohammad Ali<sup>2</sup>, EunHee Soh<sup>5\*</sup>, and Kee Woong Park<sup>1\*</sup>

<sup>1</sup>Department of Crop Science, Chungnam National University, Daejeon 34134, Korea

<sup>2</sup>Bangladesh Institute of Nuclear Agriculture (BINA), Mymensingh, Bangladesh

<sup>3</sup>Department of Genetics and Plant Breeding, Bangladesh Agricultural University, Mymensingh, Bangladesh

<sup>4</sup>Department of Agricultural Extension, farm gate, Dhaka, Bangladesh

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- 153 **RESEARCH ARTICLE** BIOSCIENCE RESEARCH, 2018 15(3): 2848-2853. **OPEN ACCESS** [Free Full T](#)
- Effect of biochar types and sprinkling water volume on seed production and seed protein and fat content of red bean under lowlands dry climates  
**Yosefina Lewar, Mochammad Hasan and Laurensius Lehar\***
- Department of Food Crops and Horticulture – State Agricultural Polytechnic of Kupang, East Nusa Tenggara, **Indonesia**
- 
- 154 **RESEARCH ARTICLE** BIOSCIENCE RESEARCH, 2018 15(3):2854-2859 **OPEN ACCESS** [Free Full T](#)
- The application of cattle bio-urine to the back sandy soils characteristics and cauliflowers (*brassica oleraceae* var. Botrytis) during rainy seasons  
**Muhammad Anang Firmansyah<sup>1</sup>, Titin Apung Atikah<sup>2</sup> and Laurensius Lehar<sup>3</sup>**
- <sup>1</sup>Assessment Institut for Agricultural Technology of Central Kalimantan, **Indonesia**.  
<sup>2</sup>Faculty of Agriculture, Palangka Raya University, Central Kalimantan, **Indonesia**  
<sup>3</sup>Department Food Crops and Horticulture, State Agricultural Polytechnic of Kupang, **Indonesia**.
- 
- 155 **RESEARCH ARTICLE** BIOSCIENCE RESEARCH, 2018 15(3):2860-2870 **OPEN ACCESS** [Free Full T](#)
- Health educational program for family caregivers of ' children with phenylketonuria' knowledge and practices  
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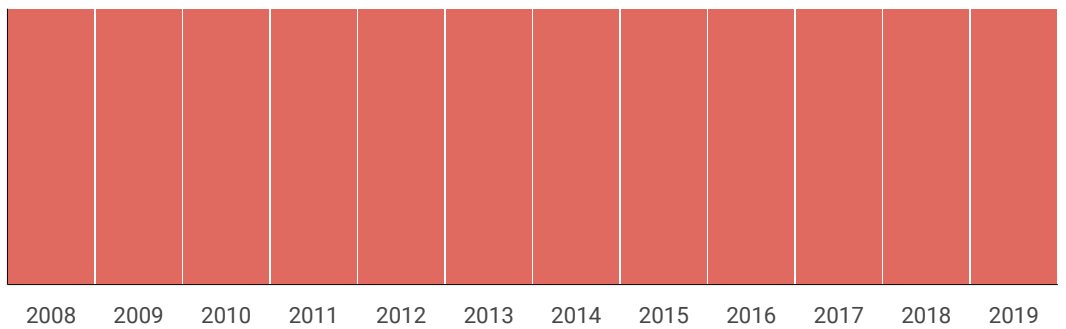
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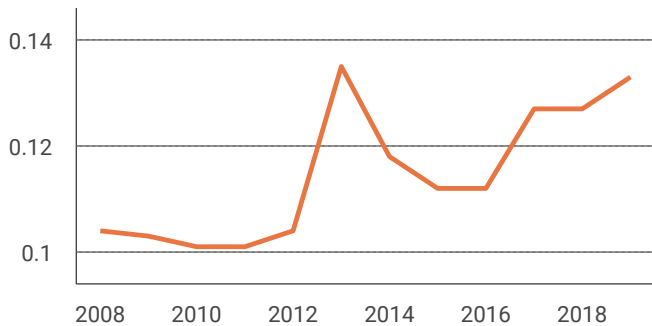
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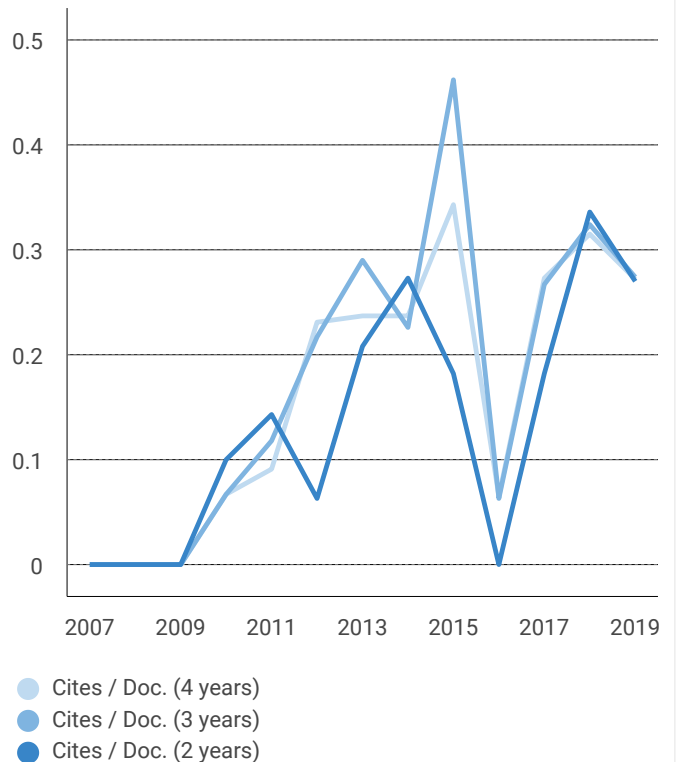
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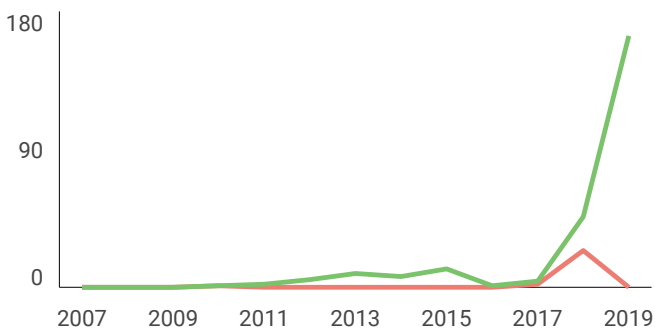
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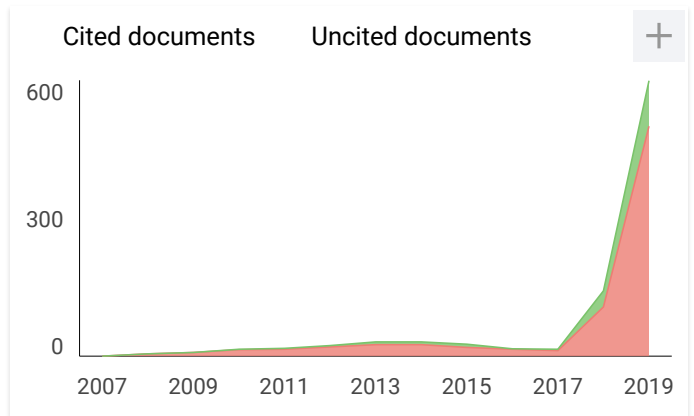
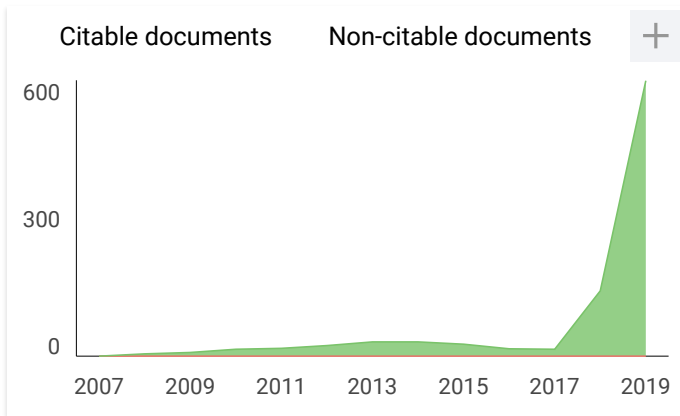


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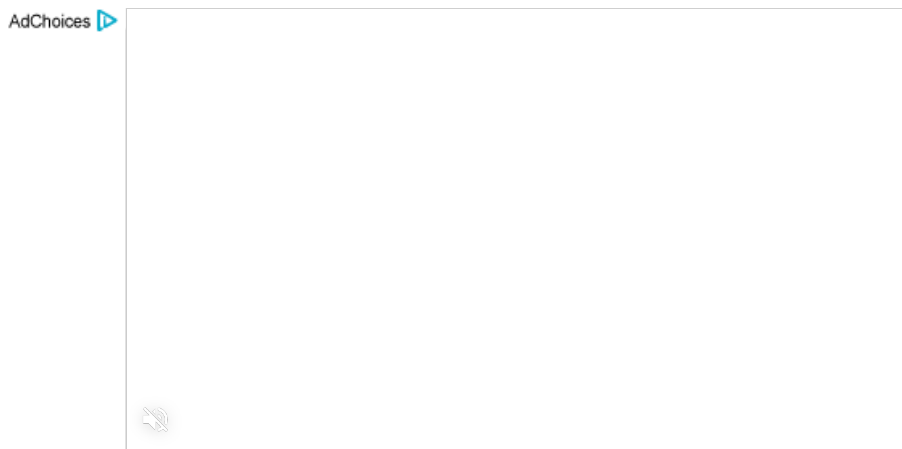
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RESEARCH ARTICLE

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## Diversity of indigenous fungi during ruminant feed fermentation made of water hyacinth (*eichhornia crassipes*) and corn (*zea mays*) cob

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This research aim to know the fluctuation of fungi community for 15 days of fermentation process. The procedure passed consisted of fungi isolation, purification and identification. Fungi identification was conducted using observation on the fungal macroscopic and microscopic character. Parameters of community ecology such as diversity, evenness, and dominancy were analyzed on this research. There were 10 fungi species, including *Aspergillus sp1*, *Rhizopus sp1*, *Aspergillus terreus*, *Mucor sp1*, *Aspergillus sp2*, *Aspergillus niger*, *Trichoderma sp1*, *Aspergillus flavus*, *Aspergillus sp3* and *Penicillium sp1*. The highest fungi diversity were in the third day, the highest evenness occurred at the third and tenth day fermentation process. All of the fungi species were dominant during fermentation. In the next research the indigenous bacteria community fluctuation will be displayed as a continuing this research.

**Keywords:** indigenous fungi, community fluctuation, fermentation, water hyacinth, corncob

### INTRODUCTION

Recently, the feed stock especially the cheap and nutritious feed has been a main problem in farming. This feed can be produced through fermentation process by utilizing farm-waste and weeds materials. In this research fermented feed is made from corncob and water hyacinth as the main material.

Corn cob is potential to be used as livestock feed because it contains 5,6% protein, higher than the protein concentration in rice-straw (4,9%) (Belal, 2014). Researchers had been utilized corncob as livestock feed, such as corncob powder had made by Sumaolang and it becomes favourite food for pigs, goats and poultries (Sarian, 2016). On the other research, corncob were used as buffalos feed (Wanapat, et al., 2012), fish feed (Rostika and Safitri 2012) and ruminant feed (Lardy and Anderson 2009).

Difficulties of digestion corncob is a weakness of utilize as feed material (Kanengoni, et al., 2015). Because of that, the material needs processing and addition other materials before used as feed. The suitable added material is water hyacinth (*Eichhornia crassipes*). Water hyacinth can grow very fast (Tham, 2012), contains high protein around 11.87%, high calcium and phosphorous, also can stimulate the milk production if it combined with suitable concentrate (Kumar, et al., 2011). Unfortunately, water hyacinth contains a very high rough fiber, water, and difficult digested protein (Saputro, 2016). This problems can solve by fermentation.

Water hyacinth fermentation process can be conducted by using *Aspergillus niger* (Saputro, 2016), and *tempeh* yeast (Fitrihidajati et al., 2015). Water hyacinth were fermented with *tempeh* yeast increased the goat bodyweight (Fitrihidajati et al., 2015) and increased protein

content of goat meat ( Suparno et al., 2015). The advantages of fermented feed are high nutrient concentration, high digestibility, and high palatability (Seo, et al., 2015).

The fermentation process involves bacteria and fungi. The rate of fermentation process depends on some factors, mainly the compatibility of microbes with materials that will be fermented. It means that fermentation process using certain materials will have specific and selected microorganisms (Boboescu et al., 2014). The specificity of microbes enzyme were play role in fermentation of specific materials . The diversity of indigenous microorganisms in every fermentation phase should be determined, in order to create a suitable starter consortium.

Fungi were involved in fermentation process with water hyacinth and corncob mixture as feed materials unknown. The knowledge about fungi species related in fermentation process of certain materials are very essential to increase the rate and quality of fermentation result. This research investigate the fluctuation of fungi in fermentation process from day to day. The diversity, evenness, and dominancy of fungi species will be analyzed.

#### MATERIALS AND METHODS

The feed was made by some stages: Water hyacinth and corncob were cutted, then dried. Dry materials were steamed, then mixed with ratio 1:1. After that, the mixture were incubated in order to naturally fermentation process (Fitrihidajati, et al., 2015). Everyday during fermentation process, the indigenous fungi was isolated by taking 30gr materials randomly, then was suspended in sterile aquades, filtered, and cultured by pour plate method. Potato Dextrose Agar (PDA) for Microbiology (Merck) was used as the media culture. Then, the culture was incubated in 37°C temprature for 4-7 days.

After 4-7 days incubation, the culture was purified by streak plate method, then incubated for 4-7 days again to get the pure culture. The pure culture was identified by macroscopic and microscopic characters. This identification give information of indigenous fungi diversity. Index of diversity, index of evennes, and index of species richness was calculated.

#### RESULTS AND DISCUSSION

The result presented in Table 1 as follow. Based on Table 1, from day to day there were different diversity, evenness, and species dominancy. By using culture method in potato dextrose agar, ten fungi species was successfully

isolated, consisted of *Aspergillus sp1*, *Rhizopus sp1*, *Aspergillus terreus*, *Mucor sp1*, *Aspergillus sp2*, *Aspergillus niger*, *Trichoderma sp1*, *Aspergillus flavus*, *Aspergillus sp3*, and *Penicillium sp1*.The highest fungi diversity were in the thirth day, the highest evenness occured at the thirth and tenth day. All of the fungi species were dominant during fermentation.

Feed materials consist of mixture water hyacinth and corncob that contain high cellulose. Because of that, the indigenous fungi had been isolated from this material were dominated by fungi which have cellulolytic activity. The number of species increased day by day, and at the end of fermentation process there are five species of fungi. Based on fungi diversity data during fermentation process as in Table 1, *Aspergillus sp1* and *Rhizopus sp1* have been detected the presence in all of day of fermentation process. The presence of that fungi indicate signal that the two species could utilize the cellulose degradation as the energy and carbon sources (Alruman, 2016). It was different from *Aspergillus flavus*, *Aspergillus sp3* and *Penicillium sp1* which presence at the end of fermentation process.

The indigenous fungi diversity that involved in fermentation process of water hyacinth and corncob mixture were different from day to day. The diversity of indigenous fungi consist of species variation, and the numbers of fungi that grow in those materials. The overall fungi diversity during fermentation process were classified low (Shannon-Wiener index of diversity value = 0.8721). This indicated that during fermentation process of water hyacinth and corncob mixture there was not a big species diversity of fungi, only a few fungi species involved in the fermentation process. The index of evenness each fungi about 0,3787 was categorized low. This indicated that the fungi species diversity were not distributed, only certain fungi species involved in the fermentation process. All of the fungi species are dominant species during fermentation process. Ramos et al., (2011) state that each different phase fermentation (mesophylic, termophylic, cooling and maturing) has different microorganisms and involve some kinds of bacteria and fungi.

In summary, fermentation process of the mixture of water hyacinth and corncob involved ten fungi species including *Aspergillus sp1*, *Rhizopus sp1*, *Aspergillus terreus*, *Mucor sp1*, *Aspergillus sp2*, *Aspergillus niger*, *Trichoderma sp1*, *Aspergillus flavus*, *Aspergillus sp3* and *Penicillium sp1*.

**Table1. Diversity, evenness, and dominance index daily of fungi species during water hyacinth and corncob mixture fermentation process**

Day of fermentation	Total number of fungi	Diversity index	Evenness index	Dominancy
1	133	0,1520	0,2193	<i>Aspergillus sp1</i> (51,13%) <i>Rhizopus sp1</i> (48,87%)
2	149	0,3004	0,4334	<i>Aspergillus sp1</i> (52,69%) <i>Rhizopus sp1</i> (47,32%)
3	220	1,0884	0,9907	<i>Aspergillus sp1</i> (45%) <i>Rhizopus sp1</i> (37,73%) <i>Aspergillus terreus</i> (17,27%)
4	230	0,4489	0,4086	<i>Aspergillus sp1</i> (48,48%) <i>Rhizopus sp1</i> (37,17%) <i>Aspergillus terreus</i> (19,35%)
5	194	0,2996	0,4323	<i>Aspergillus sp1</i> (54,12%) <i>Mucor sp1</i> (45,88%)
6	282,5	0,5785	0,4173	<i>Aspergillus sp1</i> (34,87%) <i>Rhizopus sp1</i> (30,97%) <i>Aspergillus terreus</i> (15,04%) <i>Aspegillus sp2</i> (19,12%)
7	284,5	0,5923	0,4273	<i>Aspergillus sp1</i> (27,94%) <i>Rhizopus sp1</i> (31,11%) <i>Aspergillus terreus</i> (17,22%) <i>Aspegillus sp2</i> (23,73%)
8	279	0,5901	0,4257	<i>Aspergillus sp1</i> (27,78%) <i>Rhizopus sp1</i> (29,57%) <i>Aspergillus terreus</i> (15,41%) <i>Aspegillus sp2</i> (27,24%)
9	178	0,4549	0,4141	<i>Aspergillus sp1</i> (36,80%) <i>Rhizopus sp1</i> (43,82%) <i>Aspergillus niger</i> (19,38%)
10	166,5	0,4772	1,5758	<i>Aspergillus sp1</i> (33,63%) <i>Rhizopus sp1</i> (32,73%) <i>Aspergillus niger</i> (47,50%)
11	161	0,4767	0,4339	<i>Aspergillus sp1</i> (31,37%) <i>Rhizopus sp1</i> (33,85%) <i>Aspergillus niger</i> (34,78%)
12	120,5	0,3009	0,4341	<i>Rhizopus sp1</i> (48,55%) <i>Aspergillus niger</i> (51,45%)
13	321,5	0,6974	0,4333	<i>Aspegillus terreus</i> (17,57%) <i>Aspergillus sp2</i> (20,68%) <i>Aspegillus flavus</i> (19,60%) <i>Aspergillus sp3</i> (22,86%) <i>Penicillium sp1</i> (19,29%)
14	295,5	0,6853	0,4258	<i>Rhizopus sp1</i> (11,17%) <i>Aspegillus terreus</i> (19,46%) <i>Aspegillus flavus</i> (21,15%) <i>Aspergillus sp3</i> (23,86%) <i>Penicillium sp1</i> (24,37%)
15	302	0,6933	0,4308	<i>Rhizopus sp1</i> (15,73%) <i>Aspegillus terreus</i> (18,05%) <i>Aspegillus flavus</i> (25,66%) <i>Aspergillus sp3</i> (20,70%) <i>Penicillium sp1</i> (19,87%)

The diversity, evenness, and dominance of related fungi in those fermentation materials from day to day are various. The highest diversity was on the third day, while the highest evenness occurred at the third and tenth days. All of fungi species were dominant during fermentation process.

### CONCLUSION

Based on the research result obtained, there were fungi diversity, evenness, and dominance fluctuation from day to day during fermentation. Therefore, in the utilization of fermented feed as indigenous fungi starter consortium, all the caught isolates had to be sponsored everyday.

### CONFLICT OF INTEREST

Author declare that There is no conflict of interest

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