Research Articles Published in International Scientific Journals By Kafrelsheikh University Staff

Mission Statement

Kafrelsheikh Universty is a governmental eddcational institution seeks to create, integrate, apply and disseminate scientific knowledge, focused on excel education, innovative research, and help developing and raising quality. Of life levels in frame of progressive values.

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5th Edition

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List of Papers

No	Papers Title	Authors	Journal	Impact Factor
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1	**The Reaper as an Alternative System for Litter Removal Inside Broiler Houses**	**M. A. Bassiouny[1]; Said Elshahat Abdallah[2]**	**AMA-AGRICULTURAL MECHANIZATION IN ASIA AFRICA AND LATIN AMERICA, Vol. 42, No. 3; pp. 85 – 91, 2011, ISSN:0084-5841 85.**	**0.034**
2	**The dynamics of nutrient utilization and growth of apple root stock 'M9 EMLA' in temporary versus continuous immersion bioreactors**	**D. Chakrabarty [a] Y. H. Dewir [ab] E. J. Hahn [a]**	**Plant Growth Regul, ,Vol.19, pp. 51:11, 2007, ISSN: 25-006-9115-5.**	**1.630**
3	**The Effects of Paclobutrazol, Light Emitting Diodes (LEDs) and Sucrose on Flowering of *Euphorbia millii* Plantlets *in Vitro***	**Y. H. Dewir[1,2], D. Chakrabarty[1,3] , E. J. Hahn1) and K.Y. Paek1)**	**Europ.J.Hort.Sci, Vol.71; No. 6; pp. 240–244, 2006, ISSN: 1611-4426.**	**0.489**
4	**Large-scale plantlets conversion from cotyledonary somatic embryos of Kalopanax septemlobus tree using bioreactor cultures**	**Sun Ja Kim[1] & Yaser Hassan Dewir[2] & Heung Kyu Moon1**	**J. Plant Biochem. Biotechnol., Vol.20, No.2; pp. 241–248, 2011, ISSN: 0971-7811.**	**0.412**
5	**Influence of GA3, sucrose and solid medium/bioreactor culture on in vitro flowering of Spathiphyllum and association of glutathione metabolism.**	**Yaser Hassan Dewir Æ Debasis Chakrabarty Æ Mohammed Babar Ali Æ Nisha Singh Æ Eun-Joo Hahn Æ Kee-Yoeup Paek**	**Plant Cell Tiss Organ Cult, Vol. 90; pp 25–235, 2007, ISSN: 0167-6857.**	**1.243**
6	**Micropropagation and detection of important triterpenes in *in vitro* and field grown plants of *Syzygium cordatum***	**Yaser Hassan Dewir[1,2*,] Nisha Singh[2], Senabelo Mngomezulu[3] and Ali Mikael Kalifa Omar[4]**	**Journal of Medicinal Plants Research, Vol. 5, No.14; pp. 3078-3083, 2011, ISSN: 1996-0875 .**	**dfrd**

7	**Implementation degree of agricultural decisions at the Egyptian farm level and the expected roles to the agricultural extension: a comparison with a case in Japan**	**Adel I. M. A. ELHAMOLY[1], Teruaki NANSEKI[2], Shoji SHINKAI[3]**	**JOURNAL OF THE FACULTY OF AGRICULTURE KYUSHU, UNIVERSITY. Vol 54, No. 2; pp..523–533, 2009, ISSN 0023-6152,**	**0.240**
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70	**Structure, magnetic, and electrical studies on vanadium phosphate glasses containing different oxides**	**E. E. Assem[1] • I. Elmehasseb[2]**	**J Mater Sci, VOL. 6; pp. 2071–2076, 2011, ISSN: 0022-2461.**	**1.859**
71	**Effect of replacing calcium oxide with calcium halide on crystallization and some physical properties of calcium vanadium phosphate glass ceramics**	**E.E. Assem**	**Physica B, Vol. 406; pp. 421–425, 2011, ISSN 0921-4526.**	**0.856**
72	**SPATIAL DISTRIBUTION OF RADIOISOTOPES IN THE COAST OF SUEZ GULF, SOUTHWESTERN SINAI AND THE IMPACT OF HOT SPRINGS**	**Kh. A. Ramadan[1,2], M. K. Seddeek[3,4], T. Elnimr2, T. Sharshar[5,6] and H. M. Badran[2,*]**	**Radiation Protection Dosimetry, Vol. 145, ٢٠١١, No. 4; pp. 411–420, ISSN: 0144-8420.**	**0.966**
73	**Chemical composition and the insecticidal activity of certain plants applied as powders and essential oils against two stored-products coleopteran beetles**	**Gomah E. Nenaah[1] • Sahar I. A. Ibrahim[2]**	**J. Pest. Sci., Vol. 84; pp. 393–402 , 2011, ISSN: 1612-4758.**	**0.988**
74	**Individual and synergistic toxicity of solanaceous glycoalkaloids against two coleopteran stored-product insects**	**Gomah Nenaah[1,2]**	**J. Pest. Sci., Vol. 84; pp. 77–86 , 2011, ISSN: 1612-4758.**	**0.988**
75	**Toxic and antifeedant activities of potato glycoalkaloids against Trogoderma granarium (Coleoptera: Dermestidae)**	**Gomah E. Nenaah***	**Journal of Stored Products Research, Vol. 47 ; pp. 185-190 , 2011, ISSN: 0022-474X.**	**1.438**
76	**Toxicity and growth inhibitory activities of methanol extract and the b-carboline alkaloids of Peganum harmala L. against two coleopteran stored-grain pests**	**Gomah Nenaah***	**Journal of Stored Products Research, Vol. 47 ; pp. 185-190, 2011, ISSN: 0022-474X.**	**1.438**

77	**Molecular identification and phylogenetic analysis of *Tryapanosoma evans* from dromedary camels (*Camelus dromedarius*) in Egypt; a pilot study**	**Amer S.[a,b]; Ryu O.[b]; Tada C.[b]; Fukuda Y.[b]; Inoue N.[c]; Nakai Y.[b]**	**Acta Tropica, Vol. 117 ; pp. 39–46 , 2011, ISSN: 0001-706X.**	**2.262**

78	**Multivalent DNA vaccine induces a protective immune response and enhanced resistance against *Cryptosporidium parvum* Infection**	**Wang C.[a], Luo J.[a], Amer S.[a,c], Guo Y.[a], Hu, Y.[a], Lu Y.[a], Wang H. Duan M.[b], He H.[a]**	**Vaccine, Vol. 29 ; pp. 323–328 , 2011, ISSN: 0264-410X.**	**3.572**
79	**Identification of *Fasciola* species isolated from Egypt based on sequence analysis of genomic (ITS1 and ITS2) and mitochondrial (NDI and COI) gene markers**	**Amer S.[a,b]; Dar Y.[c]; Tada C.[a,b]; Fukuda Y.[a]; Ichikawa M.[d]; Itagaki T[d]; Nakai Y.[a]**	**Parasitology International, Vol. 60 ; pp. 5–12 , 2011 ISSN: 1383-5769.**	**2.259**
80	**Prokaryotic expression and identification of 3-1E gene of merozoite surface antigen of Eimeria acervulina**	**Yuelan Zhao[1, 2]; Chengmin Wang[3]; Yanmin Lu[3,4]; Said Amer[5]; Ping Xu; Jianyong**	**Parasitol Res, Vol. 109; pp 1361–1365, 2011, ISSN: 0932-0113.**	**1.812**
81	**Molecular Analysis of *Cryptosporidium parvum* HNJ-1 Isolated in Japan**	**Said Amer[a,b], Ryuma Matsubara[a], Fumi Murakoshi[a] and Yutaka Nakai [a]**	**JOURNAL OF VETERINARY MEDICAL SCIENCE, Vol. 72, No. 12; pp. 1647–1649, 2010, ISSN: 0916-7250.**	**0.722**
82	**Post-Aswan dam sedimentation rate of lagoons of the Nile Delta, Egypt**	**Jiawei Gu[1,2] • Zhongyuan Chen[1] • Alaa Salem[3]**	**Environ Earth Sci, VOL. 64; pp. 1807–1813 , 2011, ISSN: 1866-6280.**	**0.678**
83	**Linking diagenesis to sequence stratigraphy in fluvial and shallow marine sandstones: Evidence from the CambrianeOrdovician lower sandstone unit in southwestern Sinai, Egypt**	**Masoumeh Kordi [a,b,*], Brian Turner [c], Alaa M.K. Salem [d]**	**Marine and Petroleum Geology, Vol. 28 ; pp. 1554- 1571, 2011, ISSN: 0264-8172.**	**2.130**

84	**Simultaneous determination of cadmium (II), lead (II), copper (II) and mercury (II) by square-wave anodic stripping voltammetry at a montmorillonite-calcium modified carbon paste electrode**	**Amr M. Beltagia[A], Enass M. Ghoneim[b] and Mohamed M. Ghoneim[b]**	**Intern. J. Environ. Anal. Chem., Vol. 91, No. 1; pp 17–32, 2011, ISSN: 0306-7319.**	**1.169**
85	**Synthesis, Characterization, and Tyrosinase Biomimetic Catalytic Activity of Copper(II) Complexes with Schiff Base Ligands Derived from α- diketones with 2-methyl-3-amino-(3*H*)-quinazolin-4-one**	**Abd El-Motaleb M. Ramadan*, Mohamed M. Ibrahim, Shaban Y. Shaban**	**Journal of Molecular Structure, VOL. 1006; pp. 348–355, 2011, ISSN: 0022-2860.**	**1.599**
86	**Synthesis, Characterization and Ascorbic Acid Oxidase Biomimetic Catalytic Activity of Cobalt(III) Oxime Complexes**	**Abd El-Motaleb M. Ramadan*, Shaban Y. Shaban, Mohamed M. Ibrahim**	**Journal of Coordination Chemistry, Vol. 64, No. 19, 10 ; pp. 3376–3392,2011, ISSN: 0095-8972.**	**1.932**
87	**Synthesis and spectroscopic characterization of zinc(II) and copper(II) complexes of ,N-bis(2-picolyl)glycine as structural phosphotriestrase models:The catalyzed detoxification of paraoxon**	**Mohamed M. Ibrahim**	**Journal of Molecular Structure, Vol. 990 ; pp. 227–236 , 2011, ISSN: 0022-2860.**	**1.599**
88	**Synthesis, superoxide dismutase, nuclease, and anticancer activities of copper(II) complexes incorporating *bis*-(2-picolyl)amine with different counter anions**	**Mohamed M. Ibrahim [a,b], Abdel-Motale[b] M. Ramadan [b], Gaber A.M. Mersal [a,c], Samir A. El-Shazly [d,e]**	**Journal of Molecular Structure, Vol. 990 ; pp. 227–236, 2011, ISSN: 0022-2860.**	**1.599**
89	**Preparation of Modified Electrode in situ Carbon Paste Electrode supported by Ni(II) Complex for the Electrochemical Removal of Nitrate from Drinking Water**	**Gaber A. M. Mersal[1,2,*] and Mohamed M. Ibrahim[1,3]**	**Int. J. Electrochem., Sci., Vol. 6 ; pp.761 - 777 , 2011, ISSN: 1452-3981.**	**2.808**

90	**Synthesis and characterization of benzimidazole-based zinc complexes as structural carbonic anhydrase models and their applications towards CO_2 hydratio**	**Mohamed M. Ibrahim [a,c] Mahmoud A. Amin [b,c], Kazuhiko Ichikawa [d]**	**Journal of Molecular Structure, Vol. 985 ; pp. 191–201, 2011, ISSN: 0022-2860.**	**1.599**
91	**A new approach for the N- and S-galactosylation of 5-arylidene-2-thioxo-4-thiazolidinones**	**Ahmed I. Khodair [a], Jean-Pierre Gesson [b]**	**Carbohydrate Research, Vol. 346 ; pp. 831–2837, 2011, ISSN: 0008-6215 346.**	**1.898**
92	**A Convenient Synthesis of Pyrano[2,3-*b*][1,5]oxazepines by Ring Closure of *O*-Glycosyl Amino Acids**	**Ahmed I. Khodair[A] and Richard R. Schmidt[B]**	**Eur. J. Org. Chem., VOL. 36; pp. 7407–7413 ,2011, ISSN: 1434-193X.**	**3.206**
93	**Syntheses and structures of four- and five-coordinate bio-related zinc complexes containing dithiolate–diamine ligands**	**Shaban Y. Shaban [1]**	**Inorganica Chimica Acta, Vol. 367 ; pp. 212–216, 2011, ISSN: 0020-1693.**	**1.899**
94	**Structural and mechanistic information on the nitrosation of model Fe(II) complexes containing a biomimetic S4N chelate**	**Shaban Y. Shaban*[a,b] and Rudi van Eldik[*a]**	**Dalton Trans., Vol , No. 40; pp. 287-294, 2011, ISSN: 1477-9226.**	**3.647**

Faculty of Agriculture

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AMA-AGRICULTURAL MECHANIZATION IN ASIA AFRICA AND LATIN AMERICA,
Vol. 42, No. 3; pp. 85 – 91, 2011,
ISSN: 0084-5841 85.
IMPACT FACTOR= 0.034

The Reaper as an Alternative System for Litter Removal Inside Broiler Houses

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ABSTRACT

A new test to identify a modified reaper has been developed for broiler litter removal. The present study describes in detail the efficacy of this new method on broiler litter removal efficiency. Tests were carried out to select the appropriate operating parameters for this purpose. The results of these experiments were graphed to show and examine the differences associated with the choice of the independent variable. It appears that the highest values of 1018.89 m^2/h effective field capacity and of 84.89 % field efficiency were achieved at operating conditions of 45.4 % w.b. litter moisture content, 1.2 km/h reaper travel speed and 2º shovel blade tilt angle. In contrast, the lowest values of 330.96 m^2/h effective field capacity and of 55.16 % field efficiency were achieved at the operating conditions of 35.7 % w.b., 0.6 km/h and 8º. It could be demonstrated that the differences between the highest and lowest values were of 207.8 and 53.9 % increment for the effective field capacity and field efficiency, respectively. Similar results were obtained for the remaining parameters. However, in this case, the differences between the highest and lowest values were of 19.30, 210.94, 124.21 and 210.64 % increment for the litter removal efficiency, reaper output, unit energy and unit operating cost, respectively. It was quite evident that, from cost estimates, the labor participation revealed the highest cost parameter percentage of 44.09. Contrariwise, the lowest cost parameter percentage of 10.23 was attributed to fuel and lubrication. In all circumstances, the equipment has proved efficient and cost effective during extensive use

2

Plant Growth Regul,Vol.19, pp. 51:11, 2007,
ISSN: 25-006-9115-5.
IMPACT FACTOR = 1.630

The dynamics of nutrient utilization and growth of apple root stock 'M9 EMLA' in temporary versus continuous immersion bioreactors

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Research Center for the Development of Advanced Horticultural Technology,
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ABSTRACT

The present study investigated the dynamics of nutrient utilization and various growth and physiological parameters during in vitro proliferation of apple root stock 'M9 EMLA' in two different bioreactor systems, i.e. temporary and continuous immersions. Individual shoots obtained from temporary immersion system had higher dry mass and were of better quality than those obtained from continuous immersion. In continuous immersion bioreactor, apple shoots appeared to utilize more nutrients from liquid culture medium than that from temporary immersion. The shoot growth was limited by the availability of phosphate and nitrogen in continuous immersion system. The shoots produced in temporary immersion bioreactor showed higher photosynthetic rate, maximum quantum yield of photosystem- II and slow but steady rate of nutrient absorption, indicating the occurrence of higher photomixotrophic metabolism. The study also showed that high level of antioxidant scavenging enzymes in shoots grown in continuous immersion system induced physiological changes to foster adaptation to stresses.

3

Europ.J.Hort.Sci, Vol.71; No. 6; pp. 240–244, 2006,
ISSN: 1611-4426.
IMPACT FACTOR = 0.489

The Effects of Paclobutrazol, Light Emitting Diodes (LEDs) and Sucrose on Flowering of *Euphorbia millii* Plantlets *in Vitro*

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[2]Department of Horticulture, Faculty of Agriculture, Kafr El-Sheikh University, Egypt and
[3])Floriculture Section, National Botanical Research Institute, Lucknow, India)

ABSTRACT

The effects of paclobutrazol, light emitting diodes (LEDs) and sucrose oninflorescence development *in vitro* were investigated in photoperiodically day-neutral *Euphorbia millii*. Paclobutrazol, a growth retardant, was mandatory to the shift from the vegetative to reproductive stage. Inflorescence development in the apical bud was observed after 21–30 days of culture on MS media containing paclobutrazol. Different light qualities also influenced *in vitro* flowering of *E. millii.* Highest flowering percentage (90 %), number of inflorescences per plantlet, percentage of mature inflorescences and early flowering (days to first bloom) were observed in fluorescent light. Among the LEDs treatments, red light reduced the flowering percentage, whereas blue, red plus far-red and blue plus far-red LEDs stimulated flowering *in vitro*. Sucrose concentration also influenced the growth and morphogenic patterns of *in vitro* plantlets. Sucrose at 5 % enhanced inflorescence differentiation. The results indicate that inflorescence development of *E. millii* plantlets in tissue culture can serve as a potential model to study the role of paclobutrazol, LEDs and sucrose in the flowering process of a day-neutral plant that does not require external signals for flower induction. Also the technique described here can be used as an efficient method for production of early, synchronized and profuse flowering of *E. millii* pot plants.

4

J. Plant Biochem. Biotechnol., Vol.20, No.2; pp. 241–248, 2011,
ISSN: 0971-7811.

IMPACT FACTOR = 0.412

Large-scale plantlets conversion from cotyledonary somatic embryos of Kalopanax septemlobus tree using bioreactor cultures

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ABSTRACT

A suitable bioreactor system for large scale embryo-to-plantlets conversion of Kalopanax septemlobus was established. In temporary immersion with net (TIN) bioreactor, 85% of embryos successfully produced plantlets whereas in continuous immersion with net (CIN) bioreactor, only conversion rate of 29.3% was obtained. Embryos cultured in TIN bioreactor produced more vigorous plantlets in terms of fresh weight, height, root length, roots and leaves quantity. In CIN bioreactor, Kalopanax plantlets showed high malondialdehyde (MDA) content and increased activities of reactive oxygen species (ROS)-processing enzymes, such as ascorbate peroxidase (APX) and glutathione reductase (GR) indicating the occurrence of oxidative stress. However, superoxide dismutase (SOD) and catalase (CAT) showed similar activities in plantlets grown in different bioreactors. Kalopanax plantlets grown in both TIN and CIN bioreactors were harvested and transferred to greenhouse for their acclimatization. Plantlets grown in CIN bioreactor exhibited low survival rate (75.8%) compared to those grown in TIN bioreactor (100%). MDA content decreased with progression of acclimatization indicating a decrease in oxidative stress. However, MDA level in CIN derived plantlets was higher than TIN derived plantlets. In TIN derived plantlets, an increase in SOD and GR activities were observed after 1 week and thereafter decreased. CAT activity decreased while APX activity started to increase after 1 week of acclimatization. The results indicated that Kalopanax plantlets were able to overcome oxidative stress mainly through SOD activity. However, levels of antioxidant enzyme activities were higher in CIN derived plantlets than TIN derived plantlets. Kalopanax plantlets obtained from TIN bioreactor performed better during the acclimatization phase and showed higher survival rate than material obtained on CIN bioreactor or conventional culture systems. Keywords Antioxidant enzymes .

Acclimatization . Oxidative stress . Somatic embryogenesis . Temporary immersion Abbreviations APX ascorbate peroxidase CAT catalase CIN

continuous immersion with net GA3 gibberellic acid GR glutathione reductase MDA Malondialdehyde MS Murashige and Skoog’s medium PPF photosynthetic photon flux ROS reactive oxygen species SOD Superoxide dismutase TI temporary immersion TIN temporary immersion with net

Plant Cell Tiss Organ Cult, Vol. 90; pp 25–235, 2007,
ISSN: 0167-6857.
IMPACT FACTOR = 1.243

Influence of GA3, sucrose and solid medium/bioreactor culture on in vitro flowering of Spathiphyllum and association of glutathione metabolism.

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[4]School of Biological and Conservation Sciences, University of Kwazulu-Natal, Durban 4000,South Africa

ABSTRACT

Hormonal control of flower inductionand inflorescence development in vitro was investigated in Spathiphyllum. The effects of gibberellic acid (GA3) and sucrose on inflorescence development were studied in plantlets regenerated in tissue culture. GA3 was mandatory for the shift from the vegetative to the reproductive stage. The effect of sucrose concentration on inflorescence bud development was studied in plantlets cultured in MS medium supplemented with 10 mg l–1 GA3. Sucrose concentration at 3 or 6%induced inflorescence development in, respectively, 83–85% of the plantlets. The effect of GA3 and sucrose on inflorescence differentiation and development were also recorded in liquid culture using air-lift bioreactor. The best response was found in the same medium which was standardized as an optimum for solid culture, but the results were better than solid culture. In order to study the relationship between glutathione (GSH) and flowering, we also measured the oxidized and reduced GSH content in leaves throughout the culture period on 2 weeks interval. The GSH accumulation was more after 4 weeks until 6 weeks in GA3 treated plantlets. Similarly, glutathione reductase which is involved in the recycling of reduced GSH providing a constant intracellular level of GSH, was also higher in GA3 treated plantlets. The transient increase in GSH contents also correlated with the changes in measured c-glutamylcysteine synthetase (c ECS) activity over the same period. The antioxidant enzyme activity in GA3 treated plantlets also suggests that the plants suffered increased oxidative stress during the period of GA3 treatment which subsequently increases GSH

synthesis through activation of c-ECS and this promotes flowering by increasing endogenous GSH.

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Journal of Medicinal Plants Research, Vol. 5, No.14; pp. 3078-3083, 2011,
ISSN: 1996-0875 .
IMPACT FACTOR=0.879

Micropropagation and detection of important triterpenes in *in vitro* and field grown plants of *Syzygium cordatum*

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[2]School of Biological and Conservation Sciences, University of KwaZulu-Natal, Private Bag X54001,
Durban 4001, South Africa.
[3]School of Chemistry, University of KwaZulu-Natal, Private Bag X54001, Durban 4001, South Africa.
[4]Department of Horticulture, Faculty of Agriculture, Omar Al-Mukhtar University, El-Beida 919, Libya

ABSTRACT

Syzygium cordatum (Myrtaceae), a recalcitrant tree species, commonly known as ‘umdoni‘or water berry is known for its medicinal uses. Extracts of the plant are taken as remedies for various ailments including tuberculosis. This study reports on developing a protocol for *in vitro* propagation of *S. cordatum* and the detection of important triterpenes in *in vitro* and field grown plants. A hundred percent seed germination occurred on Murashige and Skoog (MS) medium (Murashige and Skoog, 1962) within 2 to 3 days of culture. *In vitro* developed *Syzigium* shoots were cultured on MS medium supplemented with various concentrations of Thidiazuron (TDZ) and Indole butyric acid (IBA) for their multiplication. MS medium supplemented with 0.5 mg L-1 TDZ and 1.0 mg L-1 IBA is proved to be most effective in which 4.3 shoots per explants were obtained. The best rooting medium was ½ MS or ½ woody plant medium (WPM) supplemented with 1 mgL-1 IBA in which 92% rooting with an average of 3.7 roots per plantlet were obtained. *In vitro* and field leaf materials were oven dried, grounded into fine powders and extracted sequentially in hexane, dichloromethane, ethyl acetate and methanol. Betulinic acid (BA), oleanolic acid (OA) and ursolic acid (UA) were investigated *in vitro* and field plants by thinlayer chromatography (TLC), column fractionation using silica gel, and nuclear magnetic resonance (NMR) spectroscopy

JOURNAL OF THE FACULTY OF AGRICULTURE KYUSHU,
Vol 54, No. 2; pp..523–533, 2009,
ISSN 0023-6152, UNIVERSITY.
IMPACT FACTOR = 0.240

Implementation degree of agricultural decisions at the Egyptian farm level and the expected roles to the agricultural extension: a comparison with a case in Japan

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[2] Laboratory of Agricultural and Farm Management, Dept of Agricultural and Resource Economics, Faculty of Agriculture, Kyushu University, Japan
[3] Department of Food and Health Sciences, Fukuoka Women's University, Japan

ABSTRACT

This research has an attempt to determine the implementation degree of farm managers to the extent in which agricultural decisions are made at the farm level (ADI) in Egyptian farms with a comparison with Japan. Also, this research investigates the existing agricultural service centers that benefits farmers in Egypt. Besides it determines the environmental barriers which are facing Egyptian sample while implementing to their decisions.

Data collection was carried out with 195 Egyptian farm managers in the form of interview with questionnaire. Then, the same set of questionnaire was translated in Japanese version, and 550 copies were sent out to Japanese farmers by mail. However, only 36 copies were returned. The results from the surveys show that the agricultural cooperatives and agricultural shopping & companies are important services centers for Egyptian and Japanese farmers, and most of interviewees had benefited from had contact with these centers. Also, about 83% of Egyptian sample (E.S) and 39% of Japanese sample (J.S) had degree ranging between low and moderate of agricultural decisions implementation (ADI). Finally, the significant barriers to E.S were absence of agricultural extension role in the new areas, lack of the industry system in the farm, lack awareness of farmers of the organic- agriculture, agricultural intensification, agricultural industrialization, agricultural pre-marketing processes and the proximity of training centers that is too far from the farmer's villages.

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ANNALS OF MICROBIOLOGY, Vol. 62; pp. 1869-2044, 2012, ISSN 1590-4261.
IMPACT FACTOR = 0.350

Laboratory evaluation of botanical extracts, microbial culture filtrates and silver nanoparticles against Botrytis cinerea

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[2]Agricultural Botany Department, Faculty of Agriculture, Kafr El-Sheikh University, Kafr EL-Sheikh 33516, Egypt.

ABSTRACT

In an attempt to find alternatives to fungicides, the efficacy of crude extracts of seven plant species (Cassia senna, Caesalpinia gilliesii, Thespesia populnea var. acutiloba, Chrysanthemum frutescens, Euonymus japonicus, Bauhinia purpurea and Cassia fistula), three microbial culture filtrates (Epicoccum nigrum, Bacillus subtilis and Bacillus pumilus) and silver nanoparticles were evaluated against Botrytis cinerea, the causative fungus of rot, under laboratory conditions. All tested materials were evaluated alone and combined with tolclofos-methyl, the recommended fungicide against B. cinerea. Gas chromatography– mass spectrometry analysis was performed to identify the possible biologically active components of the most effective plant extract and culture filtrate against B. cinerea. The results showed that Euonymus japonicus was the most effective plant extract and Bacillus subtilis was the most effective culture filtrate against B. cinerea. In addition, silver nanoparticles showed a high efficacy against B. cinerea. Combining each of the microbial culture filtrates, plant extracts and silver nanoparticles with the tolclofosmethyl improved the efficacy of the fungicide against B. cinerea. These non-traditional control methods can be regarded as providing effective control against B. cinerea, but their practical application and effect on human health need to be evaluated. If a combination of one or more of the tested materials and tolclofos-methyl were to reduce the amount of fungicide required to control B. cinerea, the adverse side effects of this fungicide on human health and the environment would also be reduced.

African Journal of Microbiology Research, Vol. 5, No.19; pp. 3038-3050, 2011.
ISSN 1996-0808.
IMPACT FACTOR=0.528

Biodegradation of *Panicum repens* residues by *Pleurotus ostreatus* for its use as a non conventional feedstuff in diets of *Oreochromis niloticus*

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[2]Department of Animal Production, Faculty of Agriculture, Kafrelsheikh University, 33516, Kafr Elsheikh, Egypt.

Abstract

Biological degradation of torpedo grass, *Panicum repens* L. residues by *Pleurotus ostreatus* and suitability of using the highly digestible, protein enriched, as a non conventional feedstuff in diets of Nile tilapia, *Oreochromis niloticus*, fingerlings were investigated. The optimal pH and temperature for growth *Pleurotus ostreatus* and its cellulase production were 6 and 25°C, respectively. The cellulose was induced in submerged culture with presence of the carboxymethyl cellulose and Torpedo grass residues in MSL, while the presence of additional carbon sources such as glucose, dextrose or a complex media (Potato Dextrose) suppressed enzyme production. The amount of reducing sugar present in the biodegraded biomass by cellulase after 30 min incubation time was 2.5 (U/ml/min) but was 2.1 (U/ml/min) by *Pleurotus ostreatus* after 14 days incubation time under optimum growth conditions. The solid substrate fermentation (SSF) was carried out at pH 6 and 25°C for 32 days. Protein contents of the biodegraded biomass increased from 7.52 to 8.91% and crude fiber contents decreased from 23.27 to 11.28. This biodegraded biomass was used as non conventional feedstuff in diets of *Oreochromis niloticus* fingerlings. The results showed that Nile tilapia fingerlings received diets containing 25% treated torpedo grass showed the best results in growth parameters, feed efficiency and economic efficiency.

10

Australian Journal of Crop Science, Vol. 5, No3, pp. 248-253, 2011,
ISSN: 1835-2693.
IMPACT FACTOR = 0.899

Effects of some mechanical and chemical treatments on seed germination of *Sabal palmetto* and *Thrinax morrisii* palms

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[2]School of Biological and Conservation Sciences, 05-103, University of KwaZulu-Natal Westville Campus, Private Bag X54001, Durban 4000, South Africa

ABSTRACT

Sabal palmetto and *Thrinax morrisii*, Arecaceae, are important ornamental palms of socioeconomic importance. Experiments using physical, mechanical and chemical pre-sowing treatments were conducted to determine the germination response of these two palm species. Among various treatments, soaking of *Sabal* seeds in 500 ppm gibberellic acid (GA3) for 24 h resulted in a highest final germination percentage (FGP) of 95% in day 14 of culture and number of days lapsed to reach 50% of FGP (GT50) of 6.8 days. Nontreated *Sabal* seeds exhibited FGP of 75% in day 16and GT50 of 7.39 days. Soaking of *Thrinax* seeds in H2SO4 for 30 min resulted in a highest FGP of 90% in day 14 of culture and GT50 of 5.19 days. Non-treated *Thrinax* seeds exhibited FGP of 70% in day 16 and GT50 of 8.07 days. The results indicate that*Thrinax* seeds exhibit exogenous dormancy which is entirely imposed bythe hard seedcoat, whereas the *Sabal* seeds exhibit both exogenous and physiological dormancy

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ASIAN-AUSTRALASIAN JOURNAL OF ANIMAL SCIENCES,
Vol. 24, No. 11; pp. 1514 – 1524, 2011,
ISSN 1011-2367.
IMPACT FACTOR=0.487

Genetic and Economic Analysis for the Relationship between Udder Health and Milk Production Traits in Friesian Cows

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Abstract

A total of 4,752 monthly lactation records of Friesian cows during the period from 2000 to 2005 were used to estimate
genetic parameters and to determine the effect of udder health on milk production traits. Three milk production traits were studied: 305- day milk yield (305-dMY), 305-day fat yield (305-dFY) and 305-day protein yield (305-dPY). Four udder health traits were studied: somatic cell count (SCC), mastitis (MAST), udder health status (UDHS) with 10 categories and udder quarter infection (UDQI) with 7 categories. Mixed model least square analysis was used to estimate the fixed effects of month and year of calving and parity (P) on different studied traits. Sire and dam within sire were included in the model as random effects. Data were analyzed using Multi-trait Derivative Free Restricted Maximum Likelihood methodology (MTDFREML) to estimate genetic parameters. Unadjusted means of 305-dMY, 305-dFY, 305-dPY and SCC were 3,936, 121, 90 kg and 453,000 cells/ml, respectively. Increasing SCC from 300,000 to 2,000,000 cells/ml increased UDQI from 5.51 to 23.2%. Losses in monthly and lactationally milk yields per cow ranged from 17 to 93 and from 135 to 991 kg, respectively. The corresponding losses in monthly and lactationally milk yields return per cow at the same level of SCC ranged from 29.8 to 163 and from 236 to 1,734 Egyptian pounds, respectively. Heritability estimates of 305-dMY, 305-dFY, 305-dPY, SCC, MAST, UDHS, UDQI were 0.31±0.4, 0.33±0.03, 0.35±0.05, 0.23±0.02, 0.14±0.02, 0.13±0.03, and 0.09±0.01, respectively. All milk production traits showed slightly unfavorable negative phenotypic and genetic correlations with SCC, MAST, UDHS and UDQI. There were positive and high genetic correlations between SCC and each of MAST (0.85±0.7), UDHS (0.87±0.10) and UDQI

(0.77±0.06) and between MAST and each of UDHS (0.91±0.11) and UDQI (0.83±0.07). It could be concluded that the economic losses from mastitis and

high SCC are considerable. The high genetic correlation between SCC and clinical mastitis (CM) suggest that the selection for lower SCC would help to reduce or eliminate the undesirable correlated responses of clinical mastitis associated with selection for increasing milk yield. Additionally, it is recommended also that if direct information on under health traits is not available, measures of SCC can be inclusion in a selection criteria to improve the income from dairy cows.

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African Journal of Biotechnology,Vol. 10, No.2 ; pp. 10683-10690, 2011.
ISSN 1684–5315 .
IMPACT FACTOR =0.573

Application and comparison of two different intraspecific protoplast fusion methods in *Trichoderma harzianum* and their effect on β glucosidase activity

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Abstract

In an attempt to construct superior *Trichoderma harzianum* isolates for improving β-glucosidase productivity, protoplast fusion technique was applied. After application of different mutagenic treatments, twenty mutants were chosen to be tested for their resistance or sensitivity against four antifungal agents. Out of them, four isolates were selected on the basis of their response to antifungal agents and their productivities of carboxymethylcellulase (CMCase) and β-glucosidase to be introduced into intraspecific protoplast fusion experiments using two different methods (PEG and electrofusion). Three crosses were carried out among the selected four isolates. Results showed that, the number of fusants obtained after electrofusion were more than those obtained after polyethylene glycol (PEG) method. In addition, high productivities of CMCase and β- glucosidase were obtained after electrofusion in the three crosses. The applied protoplast electrofusion method proved to be a good and effective method for obtaining *T. harzianum* fusants with higher productivity of β- glucosidase enzyme.

Ausralian journal of crop science, Vol.5, No.,3 ; pp. 254-261,2011,
ISSN:1835-2707.
IMPACT FACTOR =0.899

Estimating the genetic purity in cytoplasmic male sterile (CMS) lines of Egyptian rice

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ABSTRACT

Cytoplasmic male sterile (CMS) lines often get contaminated with cognate isonuclear maintainer lines during multiplication. The fingerprinting of rice hybrids and their respective parental lines and testing genetic purity of rice hybrids using genetics markers are tested in the present study. To develop a reliable polymerase chain reaction (PCR) assay for distinguishing CMS and maintainer lines, a recommended primer pair called *drrcms* was used. PCR was performed with *drrcms* marker using the template DNA from a CMS line (IR 70368A), its cognate isonuclear maintainer line (IR 70368B), and the hybrid. This marker could unambiguously distinguish CMS (or the hybrid) from maintainer line. The PCR-based DNA marker *drrcms* described helps to detect contamination of maintainer and other male fertile lines in seed lots of WA-CMS lines. Up to our knowledge, this is the first study reported *drrcms* marker used to amplify distinct.

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Czech J. Anim. Sci., Vol. 56, No. 7; pp 314–324, 2011,
ISSN: 1212-1819.
IMPACT FACTOR=1.190

The effect of omega-3 enriched meat production on lipid peroxidation, antioxidative status, immune response and tibia bone characteristics in Japanese quail

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ABSTRACT

The objective of the present study was to research the effects of different supplemented dietary sources of n-3 polyunsaturated fatty acids (n-3 PUFA) to produce n-3 enriched meat on growth performance, meat quality, serum antioxidative status, immune response and tibia bone characteristics in Japanese quail. Three hundred 1-day-old Japanese quail chicks were randomly weighed and divided into five dietary treatments containing 0% oil (C, negative control), 2% vegetable oil (VO, positive control), 2% linseed oil (LO), 2% fish oil (FO) and a mixture of 1% linseed oil +1% fish oil (LO+FO). Body weight and feed consumption were recorded. Fatty acid profile, cholesterol content, chemical composition and physical characteristics of breast meat were determined. Serum thiobarbituric acid-reactive substances (TBARS), glutathione peroxidase (GSH-Px) activity and total antioxidant capacity were measured. No negative effects were detected in live weight, feed consumption and physical characteristics of meat. The incorporation of n 3 PUFA in the meat proved to be successful when different sources of n-3 PUFA were used. The supplementation of n-3 PUFA caused a significant decrease in TBARS values and a significant increase in both the GSH-Px activity and total antioxidant capacity. Interestingly, the inclusion of n-3 PUFA in quail diets enhanced the antibody titre and bone morphological characteristics. Therefore, it can be concluded that the inclusion of n-3 PUFA in diets at moderate levels increased the n-3PUFA content in meat, improved the antioxidative status, reduced lipid peroxidation, enhanced the antibody response and bone morphological characteristics and did not have any negative influence on physical characteristics of meat and growth performance in Japanese quail

Acta Astronautica, Vol. 69; pp. 387–396, 2011,
ISSN: 0094-576.
IMPACT FACTOR=0.612

Physio-anatomical responses of drought stressed tomato plants to magnetic field

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ABTRACT

This investigation aimed to study the effects of magnetic treatments (normal seeds irrigated with tap water, magnetized seeds irrigated with tap water, normal seeds irrigated with magnetized water and magnetized seeds irrigated with magnetized water) on growth, water relations, photosynthetic pigments, proline and water use efficiency as well as anatomical characters of tomato plants grown under three levels of water deficit (80%, 60% and 40% field capacities) beside the control 100% Field capacity. Pot experiments were conducted during 2009 and 2010 seasons under the natural conditions of the greenhouse of the Agriculture Faculty, Menufiya University, Shibin El-Kom, Egypt. Water deficit at 60 and 40% FC significantly decreased all growth, most physiological and anatomical characters. Tomato seeds irrigated with magnetized water and magnetized seeds irrigated with magnetized water treatments were the best treatments for overcoming the bad effects of water deficit on tomato plant growth characteristics, water relations, proline concentration and photosynthetic pigments, as well as anatomical structure of some organs of tomato plants. The positive effects were more pronounced at the levels of 60% and 40% field capacities. This study suggests that the effects of magnetic treatments act as a protective factors against water deficit.

Journal pesticide science, Vol. 36, No.3; pp. 402–406, 2011.
ISSN: 1348-589X.
IMPACT FACTOR=0.500

Cultural filtrates of certain microbial isolates as an alternative to powdery mildew chemical control in cucumbers

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ABSTRACT

Powdery mildew caused by *Sphaerotheca fuliginea* (Schlecht. Ex Fr.) Poll. Is a major problem in cucumbers grown under greenhouse conditions. Culture filtrates of certain biocontrol agents (*Epicoccum nigrum* ES1, *Epicoccum minitan*s ES2, *Epicoccum* sp ES3, *Trichoderma harzianum* ES4, *Trichoderma viride* ES5 and *Bacillus pumilus* ES6) were evaluated alone and in combination with penconazole against powdery mildew in cucumbers. The results showed that most of the culture filtrates of the tested microbial isolates in combination with the fungicide were more effective against powdery mildew than the fungicide alone at the recommended concentration level. The antifungal activity of the tested culture filtrates against powdery mildew was due to the presence of known antifungal compounds identified by GC-MS analysis. The results revealed that culture filtrates can be regarded as an effective control method for powdery mildew in cucumbers

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JOURNAL OF GENERAL PLANT PATHOLOGY,
Vol. 76; pp. 51–354, 2010,
ISSN: 1345-2630.
IMACT FACTOR=0.687

Molecular characterization of the phytoplasmas associated with toon trees and periwinkle in India

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ABSTRACT

In November 2008 in Himachal Pradesh and Chandigarh regions in India, toon trees and periwinkles were observed to have formed short internodes, small leaves and witches'-broom symptoms, typical of phytoplasma infection. The symptomatic toon and periwinkle samples were tested with universal PCR tests, and the 16S rRNA, rplB-rpsC, secA and secY genes were sequenced. The causal agents belonged to subgroup 16SrI-B of 'Candidatus Phytoplasma asteris', based on 16S rDNA, ribosomal protein gene, secA and secY phylogenetic analysis.

Journal of Plant Pathology, Vol. 93, No. 3; pp. 569-576, 2011,
ISSN: 1125-4653.
IMACT FACTOR=1.054

EGYPTIAN ISOLATES OF *PAPAYA RINGSPOT VIRUS* FORM A MOLECULARLY DISTINCT CLADE

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ABSTRACT

A survey to determine the incidence in open field squash (*Cucurbita pepo*) of *Papaya ringspot virus* (PRSV) in Kafrelsheikh governorate regions (Balteem, Shabah, Kafrelsheikh and Sheno) was carried out in 2009 and 2010. The most commonly observed symptoms were mosaic, malformation such as blisters and narrow leaf blades and malformed fruits. The identification of PRSV by ELISA showed that the virus was highly distributed in squash fields with an incidence higher than 50%. Egyptian isolates of PRSV were easily transmitted by mechanical inoculation and by *Myzus persicae*. Flexuous particles were observed in leaf dip preparations and pinwheels and scrolls were seen in thin sections of diseased squash tissue. The RT-PCR amplified partial coat protein (CP) gene was sequenced from eight Egyptian PRSV isolates. Sequence comparisons and phylogenetic analysis revealed that the Egyptian isolates grouped together in a distinct clade. Comparison with PRSV sequences retrieved from GenBank presented nucleotide identities in the range of 87.5 97.1% and close relationships of the Egyptian isolates with the two Venezuelan isolates of the so-called type-P, Sucre-ElMuco and Merida6, and to the Mexican and USA isolates. This is the first report on the incidence and characterization of PRSV in Egypt.

Bulletin of Insectology, Vol. 64; pp. S21-S22, 2011.
ISSN: 1721-8861.
IMPACT FACTOR = 0.371

STAMP encoding the antigenic membrane protein of stolbur Phytoplasma is useful for molecular epidemiology

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[2]National Academy of Science, Institute of Botany, Baku, Azerbaijan
[3]FITOLAB Plant Pest Diagnostic and Advisory Ltd, Budapest, Hungary
[4]University of KafrElsheikh, Faculty of Agriculture, KafrElSheikh, Egypt
[5]Università di Pisa, Dipartimento di Coltivazione e Difesa delle Specie Legnose "G. Scaramuzzi", Italy

ABSTRACT

The antigenic membrane protein of stolbur phytoplasma has been cloned and characterized. The expression of StAMP in Escherichia coli produced a 16 kDa peptide recognized by an anti-stolbur monoclonal antibody. Stamp is submitted to a positive diversifying selection pressure (Fabre et al., 2011). The genetic diversity of stamp was evaluated among a collection of stolbur phytoplasma strains representative of the tuf and secY genetic diversity of stolbur phytoplasmas in the Euro-Mediterranean basin. Most of the French, Italian and Croatian strains clustered on the same phylogenetic branch (tuf type b cluster I). A second branch of the phylogenetic tree corresponded to strains of central and Eastern Europe (tuf-type b cluster II), while a third branch grouped strains of the east of the Mediterranean basin (Greece, Serbia, Lebanon, and Azerbaijan). Strains of the tuf-type a genotype clustered together in an independent monophyletic branch of the stamp phylogenetic tree. In conclusion, stamp variability seems to be correlated to geographical origin in the case of the tuf-type b strains.

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Animal , Vol. 5, No.10; pp 1554–1562, 2011,
ISSN: 1751-7311.
IMPACT FACTOR =1.458

The impact of incorporation of n-3 fatty acids into eggs on Ovarian follicular development, immune response, antioxidative Status and tibial bone characteristics in aged laying hens

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ABSTRACT

The objectives of this study were to investigate the effects of different dietary sources of unsaturated fatty acids (fish oil (FO) and/or linseed oil (LO)) on laying performance, egg yolk fatty acid composition, ovarian follicular development, antioxidative properties, immune response and tibial bone characteristics in aged laying hens. A total of 100 Hisex Brown hens at 56 weeks of age were housed individually in laying cages in an open-sided building under a 16 h light: 8 h dark lighting schedule. Hens were randomly divided into four experimental treatments (n525 each). Birds were fed ad libitum diets containing 2.5% vegetable oil (C, control), 2.5% FO, 2.5% LO and a mixture of 1.25% LO 11.25% FO (LO1FO) from 56 to 68 weeks of age. Egg production, egg quality characteristics and yolk lipid profile were analyzed. At 68 weeks of age, ovarian follicles were classified and tibial bone characteristics were determined. Serum thiobarbituric acid reactive substance (TBARS), glutathione peroxidase (GSH-Px) activity and total antioxidant capacity were measured. Incorporation of n-3 polyunsaturated fatty acids (n-3PUFA) into the egg yolks has been successful by using dietary FO and/or LO. There were no significant effects of treatments on hen-day egg production, feed intake, egg weight, egg shape index, albumen height, Haugh units and yolk height. However, dietary FO and/or LO supplementation had a significantly positive effect on eggshell percentage, eggshell thickness and yolk color. At 68 weeks of age, there was no significant difference among dietary treatments for tibial bone measurements. Also, no negative effects were detected in ovarian follicular development and weights of the ovary and oviduct, expressed in both absolute terms and relative to body weight. Dietary 2.5% LO, 2.5% FO and a mixture of 1.25% FO11.25% LO enhanced GSH-Px activity, total antioxidant capacity and antibody titers significantly in comparison with control. It could be concluded that inclusion of mixed sources of n-3PUFA in diets at moderate levels (2.5%) increased the n-3PUFA content and decreased the n-6/n-3 ratio content in the yolk, improved the antioxidative status, reduced lipid peroxidation, enhanced the antibody

response and did not have any negative influence on ovarian follicular development and tibial bone characteristics in aged laying hens.

Livestock Science, Vol.,135; pp.103–109 , 2011,
ISSN: 1871-1413.
IMACT FACTOR =1.295

Effect of dietary betaine supplementation on growth, carcass and immunity of New Zealand White rabbits under high ambient temperature

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[b] Department of Poultry Production, Faculty of Agriculture, Kafrelsheikh University, 33516 Kafr El-Sheikh, Egypt

ABSTRACT

The objective of this study was to determine the effects of dietary betaine supplementation on growth performance, carcass characteristics, rectal temperature, respiration rate and immune response of growing rabbits under high ambient temperature. A total of 120 weaned New Zealand White male rabbits, 6 weeks old, were randomly divided into five experimental treatments(24 each). Animals were fed ad libitum the basal diet supplemented with 0 (control), 250, 500, 750 and 1000 mg betaine/kg diet from 6 to 12 weeks of age. Animals were provided with water freely. The average daily temperature and relative humidity inside the rabbitry were 30.3±0.9 °C and76.2±2.5%, respectively. Under heat stress conditions, diet significantly increased the body weight and hot carcass weight and significantly reduced the feed conversion. Dietary 1000 and 750 mg betaine/kg increased (Pb0.05) final body weights (2529.1 and 2418.5 g, respectively) compared with the control (2110.3 g). Betaine supplementation ameliorated some of the adverse effects of heat stress on immune responsiveness, rectal temperature and respiration rate. Dietary 250, 500, 750 and 1000 mg betaine/kg led to a decrease in rectal temperature (40.03, 39.85, 39.63 and 39.53 °C, respectively) compared with the control (40.20 °C). The inclusion of 1000 mg betaine/kg in the growing rabbits' diets nearly doubled the humoral and immune responses compared to the controls (Pb0.05) and significantly reduced rectal temperature and respiration rate. Serum T3, T4, total protein, globulin and total lipids were significantly increased while serum glucose concentration was significantly decreased due to dietary betaine. In conclusion, supplemental dietary betaine nhanced growth performance and humoral and cell-mediated immunity as well as reduced rectal temperature and respiration rate in growing rabbits subjected to heatstress. From an economic point of view, high levels of

betaine are not recommended because betaine is reasonably effective at lower, less expensive, doses.

Livestock Science, Vol. 136 ; pp.201–206 , 2011,
ISSN: 1871-1413
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IMACT FACTOR =1.295

A comparison of reproductive traits of four maternal lines of rabbits selected for litter size at weaning and founded on different criteria

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ABSTRACT

The objective of this study was to compare four Spanish maternal lines of rabbits (A, V, H and LP) on different criteria but selected for litter size at weaning, since their foundation until present for 39, 35, 16 and 4 generations, respectively. The comparisons among the lines were performed for litter size traits and kindling interval. The first comparisonmadewas at the foundation time of the lines, using mixed animal models (additive and non additive permanent effects) involving the complete data set (fromJune 1980 to February 2009) and the full pedigree to take into account the process of selection. A second comparison was made at fixed times and location (during the six year-seasons shared at the same farm and similar conditions for lines A, V and H involving data from March 1997 to August 1998, and A, V and LP ines from September 2007 to February 2009. hemodels used in the second omparison did not include the complete data set nor the additive gnatic efects so that line comparisonswere not dependent on the geneticmodel. The rawmeans or 47,132 parities produced from12,639 doeswere 9.80, 9.07, 7.79 and 6.95 rabbits for total born, number bon alive, number weaned and number marketed per litter, respectively, demonstrating high levels of prolificacy among the lines, and with a kindling interval of 49.80 days. At their respective times of foundation, line A showed the lowest litter sizewithmean differences (1.39 rabbits/litter for total born, 1.20 for number born alive, 0.84 for numberweaned and 1.06 for number marketed) among the combinedmeans of the other lines being important Lines V and H did not show significant differences for litter size traits, but for kindling interval the contrast was 3.30±0.72 days, which was significant and favourable to line H. LP exceeded V by approximately one rabbit for all litter size traits. The differences between the lines for kindling interval were negligible. Some interactions between lines and farm-year-seasons were important. In comparison of lines A, V and H from March 1997 to August 1998, the pattern of the differences between the line A and the others was similar to the one observed at the origin, and the only significant difference was found between lines V and H for the kindling interval (4.62 days in favour of line V). The comparison between the lines A, V and LP fromSeptember 2007 to February 2009 showed an approximation in their reproductive performance compared to the

differences at the origin. Overall, good agreement was observed between the comparisons of lines for litter size traits at fixed times, using a model without genetic

effects and data recorded during the time of comparisons, and the predictions derived fromthemodelwith genetic effects. Another point is the importance of the criteria in the sample of founders of lines thatwere used to determine the initial or starting performance levels. Therefore, it is recommended that commercial rabbit producers utilize line populations selected for the traits of economic interest rather an on a popular breed.

The Journal of Poultry Sciences, Vol. 48; pp. 201-206, 2011,
ISSN: 1346-7395.
IMPACT FACTOR= 0.833

Aspergillus Awamori and Aspergillus Niger on Growth Performance and Meat Quality in Broiler Chickens

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ABSTRACT

This study was conducted to show that dietary supplementation of fungi, *Aspergillus awamori* and *Aspergillus niger* so called Koji in Japan, improves growth performance and meat quality in broiler chickens. Total number of 42 chicks at 15 d of age with average weight (365±3) were divided into 7 treatments (*n*=6). First treatment as control was fed control diet and other chicks were fed diets supplemented with either *A. awamori* or *A. niger* at the levels of 0.01, 0.05 and 0.1%. The birds were raised for 12 d from 15 d of age to evaluate the effect on growth, organs weights, abdominal fat content, muscle fatty acids contents, muscle thiobarbituric acid reactive substance (TBARS) and plasma biochemical parameters etc. Body weight gain was increased, and feed intake and feed conversion ratio were decreased by the fungi. Plasma 3-methylhistidine as an index of skeletal muscle protein breakdown tended to be decreased by the fungi. Due to the fungi, abdominal fat and plasma cholesterol were decreased, while fat content in the breast muscle was increased. Interestingly, muscle α-tocopherol content was increased, and muscle TBARS as an index of lipid oxidation were decreased by the fungi, indicating anti-oxidative activities of the fungi. Furthermore, it was observed a decrease in saturated fatty acid and increases in unsaturated fatty acids due to the fungi in the muscle fat. In conclusion, feeding *A. awamori* and *A. niger* improved growth performance and meat quality in broiler chickens.

Faculty of Veterinary Medicine

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PLoS ONE, Vol. 6; No.,7 p. 20283, 2011,
ISSN: 1932-6203.
IMPACT FACTOR = 4.411

A Survey Study on Gastrointestinal Parasites of Stray Cats in Northern Region of Nile Delta, Egypt

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ABSTRACT

A survey study on gastrointestinal parasites in 113 faecal samples from stray cats collected randomly from Kafrelsheikh province, northern region of Nile delta of Egypt; was conducted in the period between January and May 2010. The overall prevalence was 91%. The results of this study reported seven helminth species: Toxocara cati (9%), Ancylostoma tubaeforme (4%), Toxascaris leonina (5%), Dipylidium caninum (5%), Capillaria spp. (3%), Taenia taeniformis (22%) and Heterophyes heterophyes (3%), four protozoal species: Toxoplasma gondii (9%), Sarcocyst spp. (1%), Isospora spp. (2%) and Giardia spp. (2%) and two arthropod species; Linguatula serrata (2%) and mites eggs (13%). The overall prevalence of intestinal parasites may continue to rise due to lack of functional veterinary clinics for cat care in Egypt. Therefore, there is a need to plan adequate control programs to diagnose, treat and control gastrointestinal parasites of companion as well as stray cats in the region.

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Journal of Parasitology, Vol. 97, No. 3; pp 527-528, 2011.
ISSN: 0022-3395.
IMPACT FACTOR=1.208

Sarcocystis dubeyi (Huong and Uggla, 1999) Infection in Water Buffaloes (Bubalus bubalis) from Egypt

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Parasitology and Animal Diseases Department, Veterinary Research Division, National Research Center, 12311, Dokki, Giza, Egypt; Parasitology Department, National Research Center, Dokki, Cairo, Egypt; §Animal Parasitic Diseases Laboratory, United States Department of Agriculture, Agricultural Research Service, Animal and Natural Resources Institute, BRC-EAST, Building 1001, Beltsville, Maryland 20705–2350;

ABSTRACT

Water buffaloes (Bubalus bubalis) are intermediate hosts for 4 species of Sarcocystis, i.e., Sarcocystis fusiformis and Sarcocystis buffalonis with cats as definitive hosts; Sarcocystis levinei with dogs as definitive hosts; and Sarcocystis dubeyi with an unknown definitive host but thought to be zoonotic. Currently, the latter species has been identified with certainty only from Vietnam. In the present study, sarcocysts of S. dubeyi are reported in 11 (30%) of 35 Egyptian water buffaloes from which the esophageal muscles were examined histologically. Sarcocysts were microscopic, measuring 180 250 3 70–110 mm in size. Ultrastructurally, the sarcocyst wall was 3.5–6.5 mm thick and had palisade-like villar protrusions which give it a striated appearance. The villar protrusions contained microtubules that were distributed along the whole villus. This IS the first report of S. dubeyi from water buffaloes in Egypt.

Life Science Journal, Vol. 8, No. 3; pp. 397-400, 2011,
ISSN: 10978135.
IMPACT FACTOR=0.158

Seasonal Variations and Prevalence of Some External Parasites Affecting Freshwater Fishes Reared at Upper Egypt

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ABSTRACT

This study was carried out to detect prevalence and seasonal variation of external parasites affecting freshwater fishes. 330 *Oreochromis niloticus* and 140 *Clarias gariepinus* were collected from three different cosystems at Kafrelsheikh province. Obtained results revealed that, the highest infection rate was recorded among *O.niloticus* followed by *C. gariepinus.* Also, seasonal dynamics among the examined *O.niloticus* were recorded.The isolated ectoparasites among examined fishes were *Cichlidogyrus tilapiae, Cichlidogyrus aegypticus, Cichlidogyrus cirratus, Quadricanthus aegypticus, Macrogyrodactylus clarii, Trichodina centrostrigeata, Trichodina rectinucinata, Chillodinella hexastica, Ichthyophthirius multifillis, Henneguya branchialis, Lamproglena monody, Ergasilus sarsi and Copepodit stage (2nd stage) of Lernea cyprinacea.*

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Parasitol Research, Vol. 110 , No. 2, pp. 679–687; 2012,
ISSN: 0932-0113.
IMPACT FACTOR = 1.812

ELISA and some biochemical tests of heterophyidae infection in laboratory animals

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ABSTRACT

Heterophyiasis is an important food-borne parasitic zoonosis in Egypt, among the inhabitants living around brackish-water lakes especially fishermen, and it is a common human parasite in the Nile Delta. The experiment was done on two laboratory animals (rats and dogs), and the time of sample collection was done periodically at 6, 9, 15, 21, and 28 days post-infection to evaluate different tests required. Whole blood was collected with heparin or ethylenediamine tetra-acetic acid as anticoagulant to help in the hematological studies such as red blood cells count (RBCs), white blood cells count, packed cell volume (PCV), and hemoglobin (Hb). Only marked increase in the total leuckocytic count was recorded while RBCs, PCV, and Hb were decreased in most of the results obtained. Total protein and globulin decreased while albumin and A/G ratio increased. Liver enzymes showing marked increase in aspartate aminotransferase and increase in alanine aminotransferase in dogs and rats denoting that liver has a role in the response to that infection. Kidney function tests, urea, and creatinine showed slight increase at 6 days post infection (d.p.i.). After preparation of different Ag (antigen) from different collected helminthes, the protein content of each was determined. The sera of infected animals were collected to find antibodies in their blood against the parasite using enzyme-linked immunosorbent assay and using crude heterophyid antigen collected from their intestines after scarification. The worms washed, homogenized, and then centrifuged to collect supernatant fluid as antigens The results indicated that antibody starts to appear at 9 d. p.i. and increases till 21 and 28 d.p.i. and detection depends on antigen concentration.

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Life Science Journal, Vol. 8, No.3; pp.401-405; 2011,
ISSN: 1097-8135.
IMPACT FACTOR = 0.158

Study on Clinopathological and Biochemical Changes in Some Freshwater Fishes Infected With External Parasites and Subjected to Heavy Metals Pollution in Egypt

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Abstract

The present investigation was carried out to study the impact of external parasites and heavy metals pollution on some liver function tests of some freshwater fishes. 470 Fish species (330 *Oreochromis niloticus* and 140 *Clarias gariepinus)* were collected alive from three different ecosystems in Kafr-Elshiekh province, Egypt. The obtained results revealed that aspartate aminotransferase (AST), alanine aminotransferase (ALT) enzymes activities as well as creatinine and urea values were elevated in the external parasites infected fish as well as in the fish exposed pollutants. While fishes exposed to both external parasites infection and heavy metal pollution led to more drastic increase in serum AST and ALT enzymes activities as well as creatinine and urea values. In addition; heavy metals pollution increased the susceptibility of fish to protozoa infection while decrease prevalence of monogenea and crustacean infection. On conclusion; infection with external parasites in fishes exposed to heavy metals had the highest effect on liver and kidney functions in the studied fishes.

Biol. Pharm. Bull., ol. 34, No.1; pp. 173—176; 2011,
ISSN: 0918-6158.
IMACT FACTOR=1.811

The Substrate Binding Preferences of Plasmodium Thymidylate Kinase

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ABSTRACT

Plasmodium falciparum thymidylate kinase (PfTMK) is a potential chemotherapeutic target as it can tolerate a range of substrates, which distinguishes it from other thymidylate kinases. An important step in drug development is to determine the interaction of ligands competing for their target sites in a proposed drug target. The estimated binding affinity of thymidylate (TMP) with PfTMK/deoxyguanylate complex was as low as 0.9_104M_1 with a very low exothermic signal of _3.9 kcal mol_1. Furthermore, titration of PfTMK/TMP with deoxyguanylate (dGMP) showed a very small heat signal corresponding to nonspecific background heat. Titration of PfTMK with a 1 : 1 mixture of TMP and dGMP showed a binding affinity corresponding to the average of the binding affinity for individual reactions. Thus, dGMP was unable to displace TMP from its binding site, while TMP was able to partially displace dGMP from the its binding site accompanied by a weak exothermic signal and lowered affinity. Based on these results, we propose that pyrimidine based inhibitors will compete with TMP and may be able to more efficiently displace dGMP from binding sites compared with purine based compounds. In addition, the synthesis of purine based compounds as inhibitors of PfTMK will be highly selective for the parasitic enzyme, however, they need to be potent enough to displace TMP from its binding site**.**

Indian Journal of Pharmacology, Vol 43, No.6; p.743, 2011.
ISSN: 0253-7613.
IMPACT FACTOR = 0.303

Efficacy of amprolium and toltrazuril in chicken with subclinical infection of cecal coccidiosis

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ABSTRACT

Coccidiosis is a significant problem in the poultry industry throughout the world. It is responsible for 6–10% of all broiler mortalities.[1] In subclinical coccidiosis, minor damage of the intestinal wall will lead to deteriorated performance. In such cases, the farm owners are complaining poor performance of the chicken. The diagnosis of coccidiosis is carried out promptly at the laboratory during routine parasitological examination. Under these conditions, broiler chickens are continually exposed to coccidial oocysts found in litter. Thus, at one time we could expect overlapping parasite cycles in which more than one parasitic stage will be present. Therefore, under these conditions, the anticoccidial efficacy will depend on the ability of drug to affect broad range of parasitic stages. This is typically occurring in subclinical coccidiosis, in which we expect different stages of a parasite at one time. In this study, the efficacy of amprolium and toltrazuril was investigated in casesof subclinical coccidiosis, in which the drug is given after the oocysts shedding started. Floor-pen studies were carried out to simulate field

Journal of Molecular Recognition, Vol. 24; pp. 322–332; 2011.
ISSN: 0952-3499.
IMPACT FACTOR =2.286

Binding dynamics and energetic insight into the molecular forces driving nucleotide binding by guanylate kinase

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ABSTRACT

Plasmodium deoxyguanylate pathways are an attractive area of investigation for future metabolic and drug discovery studies due to their unique substrate specificities. We investigated the energetic contribution to guanylate kinase substrate binding and the forces underlying ligand recognition. In the range from 20 to 35-C, the thermodynamic profiles displayed marked decrease inbinding enthalpy, while the free energy of binding showed little changes. GMP produced a large binding heat capacity change of S356 cal molS1 KS1, indicating considerable conformational changes upon ligand binding. Interestingly, the calculated DCp was S32 cal molS1 KS1, indicating that the accessible surface area is not the central change in substrate binding, and that other entropic forces, including conformational changes, are more predominant. The thermodynamic signature for GMP is inconsistent with rigid-body association, while dGMP showed more or less rigid-body association. These binding profiles explain the poor catalytic efficiency and low affinity for dGMP compared with GMP. At low temperature, the ligands bind to the receptor site under the effect of hydrophobic forces. Interestingly, by increasing the temperature, the entropic forces gradually vanish and proceed to a nonfavorable contribution, and the interaction occurs mainly through bonding, electrostatic forces, and van der Waals interactions.

Journal of Food Safety, Vol. 31; pp. 211–218; 2011.
ISSN 1745-4565.
IMPACT FACTOR= 0.702

ANTIBACTERIAL ACTION OF ZINC OXIDE NANOPARTICLES AGAINST FOODBORNE PATHOGENS

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ABSTRACT

The current spreading of nanomaterial applications supports the search for further possible functions of theses diminutive particles. The antibacterial potentiality of zinc oxide (ZnO) nanoparticles (NPs), compared with conventional ZnO powder, against nine bacterial strains, mostly foodborneincluding pathogens, was evaluated using qualitative and quantitative assays.ZnO NP was more efficient as antibacterial agent than powder. Gram-positive bacteria were generally more sensitive to ZnO thanGram negatives. The exposure of *Salmonella typhimurium* and *Staphylococcus aureus* to their relevant minimal inhibitory concentrationsfrom ZnO NP reduced= the cell number to zero within 8 and 4 h, respectively.Scanning electron micrographs of the treated bacteriawithNPsexhibited that the disruptive effect of ZnO on *S. aureus* was vigorous as all treated cellswere completely exploded or lysed after only4 hfrom exposure. Promising results of ZnO NP antibacterial activity suggest itsusage in food systems as preservative agent after further required investigations and risk assessments.

International Journal of Biological Macromolecules,Vol. 49; pp. 241–2452, 2011,
ISSN: 0141-8130.
IMPACT FACTOR= 2.502

Antimicrobial textile treated with chitosan from Aspergillus niger mycelial waste

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ABSTRACT

The waste biomass of Aspergillus niger, following citric acid production, was used as a source for fungal chitosan extraction. The produced chitosan was characterized with deacetylation degree of 89.6%, a molecular weight of 25,000 dalton, 97% solubility in 1% acetic acid solution and comparable FT IR spectra to standard shrimp chitosan. Fungal chitosan was applied as a cotton fabric finishing agent using pad-dry-cure method. The topographical structure of chitosan-treated fabrics (CTF) was much improved compared with control fabrics. CTF, after durability tests, exhibited a powerful antimicrobial activity against both E. coli and Candida albicans, the captured micrographs for E. coli cells contacted with CTF showed a complete lysis of cell walls with the prolonging contact time. The produced antimicrobial CTF could be proposed as a suitable material for many medical and hygienic applications.

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Sci Food Agric, Vol. 91;pp. 2160–2165, 2011,
ISSN: 0022-5142.
IMPACT FACTOR =1.360

Exploration of Islamic medicine plant extracts as powerful antifungals for the prevention of mycotoxigenic Aspergilli growth in organic silage

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ABSTRACT

BACKGROUND: Feed contaminationwithmycotoxins is a major risk factor for animals and humans as several toxins can exist as residues in meat andmilk products, giving rise to carry-over to consumers via ingestion of foods of animal origin. The starting point for prevention, in this chain, is to eliminate the growth of mycotoxigenic fungi in the animal forage. Ten plant extracts, recommended in Islamicmedicine, were evaluated as antifungal agents against mycotoxigenic Aspergilli, i.e. *Aspergillus flavus* and *A. ochraceus*, growth in organic maize silage. RESULTS: Most extracts had remarkable antifungal activities using both qualitative and quantitative evaluation methods. Cress (*Lepidium sativum*) seed extractwas proven to be themost powerful among the plants examined. Blending of themost effective extracts (garden cress seed, pomegranate peel and olive leaf extracts), individually at theirminimal fungicidal concentrations, with maize silage resulted in the reduction of inoculated *A. flavus* colony counts by 99.9, 99.6 and 98.7%, respectively, whereas silage blending with the combined extracts completely prohibited fungal growth for up to 30 days of incubation under aerobic conditions. CONCLUSION: Besides the health promoting effects,

silage blending with the bioactive plant extracts examined could lead to the required protection from pathogenic and mycotoxigenic fungi.

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Food and Chemical Toxicology, Vol. 49 ; pp. 2816–2819, 2011,
ISSN: 0278-6915.
IMAPCT FACTOR =2.602

Infants exposure to aflatoxin M1 as a novel foodborne zoonosis

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ABSTRACT

Occurrence of aflatoxin M1 (AFM1) in infant formula milk powder (IFMP) and maternal breast milk (MBM) was investigated as a risk factor affects the health of newborns in Egypt. A total of 125 IFMP and 125 MBM samples were collected and examined for the presence of AFM1 using competitive ELISA test. The results indicated that the relative risk (RR) of exposure to AFM1 via consumption of MBM was higher than IFMP (RR; 1.6, 95% CI; 1.28 2.03, p = 0.0001). The mean concentrations of AFM1 were significantly differed (p < 0.0001) between MBM (74.413 ± 7.070 ng/l) and IFMP (9.796 ± 1.036 ng/l). High frequency distributions were detected within the range of 5–25 ng/l and >50–100 ng/l in IFMP and MBM, respectively. The average daily exposure of newborns to AFM1 via consumption of MBM and IFMP was 52.684 and 8.170 ng, respectively, with a significant difference at p < 0.0001. Consumption of raw milk by lactating mothers exhibited a significant correlation (p < 0.0001) with the presence of AFM1 in their milk. In conclusion, this work established a pioneering concept that AFM1 may be considered as an etiological factor for a novel foodborne zoonosis identified as Aflatoxicosis M1.

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Veterinary Parasitology, Vol. 178; pp. 319–323, 2011,
ISSN: 0304-4017.
IMPACT FACTOR= 2.331

Risk of Toxocara canis eggs in stray and domestic dog hair in Egypt

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ABSTRACT

The aim of the study was to assess whether the hair of stray and domestic dogs in Egypt was contaminated with the eggs of the zoonotic parasite Toxocara canis, and also to identify risk factors for T. canis for contamination. Paired samples of hair and feces were collected from 53 stray and 47 domestic dogs, and hair samples were obtained from a further 11 stray and 9 domestic dogs. All samples were examined to identify T. canis eggs and, if eggs were found, their maturation stage. Eggs were identified in 26.6% of stray and 10.7% of domestic dog's hair samples. A significantly increased risk of embryonated T. canis eggs in hair samples was found in stray dogs ($p = 0.04$), stray dogs had 3.18 (95% CI: 1.04–9.74) times the odds of having T. canis eggs present compared with domestic dogs. There was also a significant difference ($p = 0.02$) between the mean quantity of eggs per gram in stray (77.6±6.54) and domestic (48.7±6.65) dog's hair. Fecal examination found a T. canis egg prevalence of 35.8% and 21.3% in stray and domestic dogs, respectively. As no domestic dogs which were positive from hair samples had negative fecal samples, this indicates that the presence of T. canis eggs in hair is probably due to self contamination. Two stray dogs had positive hair samples but negative fecal samples indicating that contamination may also be environmental. As both non-embryonated and embryonated T. canis eggs were found in the hair of domestic dogs, direct contact with dogs may be a potential risk factor for transmission of T. canis eggs to humans.

J. Vet. Med. Sci., Vol.72, No.12; pp. 1557-1563, 2010,
ISSN: 0916-7250.
IMPACT FACTOR = 0.722

Experimental Scuticociliatosis in Japanese Flounder (*Paralichthys olivaceus*) Infected with *Miamiensis avidus*: Pathological Study on the Possible Neural Routes of Invasion and Dissemination of the Scuticociliate inside the Fish B

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ABSTRACT

Japanese flounder (*Paralichthys olivaceus*) were experimentally infected with the highly pathogenic scuticociliate *Miamiensis avidus (*syn. *Philasterides dicentrarachi)* using the immersion method to clarify/identify the possible neural routes of entry and possible ways of dissemination of the scuticociliate in the fish body. Scuticociliates were observed on the skin and gills right from day 0-1 post-infection, muscle tissue on day 2 post-infection, reached the brain, and spinal cord on day 3 post-infection, and systemic infection was prominent afterwards. Brain lesions were observed in most of the examined fish from day 3 and day 4 post-infection and considered to be the cause of the sudden increase in mortality. Affected fish showed varying degrees of tissue damage including severe epidermal and dermal necrotic lesions, necrotic myositis, encephalitis and myelitis. Whereas, scuticociliates were frequently observed along the optic and/or olfactory nerve in the fish which were accompanied by severe brain lesions but by minimum lesions in the gills and skin, suggesting that in addition to skin and/or gills, neural routes including periorbital and nasal routes may play a role in scuticociliate invasion to the brain. Scuticociliates were also observed in the peripheral nerve fibers in the muscle tissue, cranial and spinal nerves, cranial cavity and in the vertebral canal, suggesting that nerve fibers and/or cerebrospinal fluid circulation may be involved in the spread of the scuticociliate

throughout the body in addition to the blood circulation and connective tissue.

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J. Vet. Med. Sci., Vol.72, No.10; pp.1359-1362, 2010,
ISSN: 0916-7250.
IMPACT FACTOR= 0.722

Pathological Study on the Scuticociliatosis Affecting Farmed Japanese Flounder (*Paralichthys olivaceus*) in Japan

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ABSTRACT

Pathological findings associated with scuticociliatosis in farmed Japanese flounder in Japan are described. Ten moribund fishes, farmed in Tottori Prefectural Fisheries Experimental Station, showed cutaneous ulcers, darkened skin, fin and tail rot, exophthalmia and alterations in swimming behaviour. Histopathologically, severe epidermal degeneration and necrosis, hyperplasia of branchial epithelium, myositis, myelitis, encephalitis associated with heavy accumulation of scuticociliates in the periorbital cavity and optic nerve fiber were observed. Moreover, masses of ciliates were found to feed on the host tissues such as skeletal muscles, gills and brain, causing severe degenerative changes associated with abundant neutrophilic and lymphocytic infiltration. These findings suggest that the present scuticociliate, *Miamiensis avidus*, is a highly invasive and destructive pathogen infecting Japanese flounder and capable of developing systemic fatal infection

Aquaculture, Vol. 318; pp. 371–378. 2011.
ISSN: 0044-8486.
IMPACT FACTOR = 2.044

Relationship between fertility and fatty acid profile of sperm and eggs in Arctic char, Salvelinus alpinus

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ABSTRACT

This study investigated the relationship between fertility and fatty acid (FA) profiles of egg chorions, total egg, and sperm cells of Arctic char, Salvelinus alpinus (L.) broodstock housed in tanks and fed a commercial diet. Fertility of semen from individual males was assessed using pooled eggs, and vice versa. Fertility of the gametes of broodstock fish was classified according to the percentages of eyed stage embryos into: (a) for males, high, ≥68%,medium: 49–67% and low: ≤48%; (b) for females, high: ≥55%; medium: 28–54% and low: ≤27%. Spermatozoa from the high fertility group contained less short chain saturated FAs, more n-3 and n-6 FAs with a higher n-3 to n-6 ratio compared to the sperm from the low fertility group. Egg chorions from the high fertility group also had less short-chain saturated FAs compared to the low fertility group. For spermatozoa significant correlations were found between C15:0, total saturated FAs, C22:5n-3, C22:6n-3, total n-3 FAs, and the ratios of n-3 to n-6 and their fertility, but no correlations were found between fatty acid profiles of egg chorions and of total eggs and egg fertility. In conclusion, sperm fertility of Arctic char is influenced to a much higher extent by their fatty acid composition than that of the eggs.

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Aquaculture Research, Vol. 42; pp. 1096-1100, 2011.
ISSN: 1355-557X .
IMKPACT FACTOR= 1.186

Effect of methanol concentration and thaw rate on the viability and fertility of cryopreserved Arctic char, Salvelinus alpinus (L.), spermatozoa

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ABSTRACT

In two trials, Arctic char (Salvelinus alpinus) semen was frozen in 0.5Ml straws using extenders consisting of 0.3M glucose and 10%, 12.5% or 15% methanol. Cryopreserved semen was thawed by immersing straws in 25 1C water for 17 s (11.6 1C s_1) or in 51C water for 60s (3.31C s_1). The viability of the frozen thawed semen was measured by determining post-thaw motility and sperm membrane integrity. Two fertility trials were also conducted. There was no e!ect of trial or thaw rate on post-thawspermviability or fertility. Use of15% methanol in the extender resulted in the highest overall percentage of sperm motilityand fertility. Use of12.5%methanol as a cryoprotectant resulted in a higher per cent post-thaw motility and a lower percentage of dead cells than did 10% methanol. Thus, levels of methanol higher than the commonly used10% are bene ¢ cial for cryopreserving Arctic char sperm.

Theriogenology, Vol. 75; pp. 354–361, 2011,
ISSN: 0093-691X.
IMPACT FACTOR= 2.045

Collection of gametes from live axolotl, *Ambystoma mexicanum*,and standardization of *in vitro* fertilization

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ABSTRACT

This study established the first protocol for collection of gametes from live axolotl, *Ambystoma mexicanum*, by gentle abdominal massage and *in vitro* fertilization. To stimulate spermiation and ovulation, human chorionic gonadotrophin (hCG) and Ovopel pellets, which are commercially used to stimulate spawning in fish, were tested. The hCG was more effective than Ovopel pellets and yielded a higher semen volume in the injected males and a shorter response time in the females. Collected semen by this method was already motile and fertile. Fertile eggs could be collected in 3–4 successive collection times after the female has started the typical spawning behaviour. The fertilization condition that yielded the highest hatching rate was mixing semen with eggs before the addition of a fertilization saline solution (20 mmol/l NaCl, 1 mmol/l KCl, 1 mmol/l Mg2SO4, 1 mmol Ca2Cl, 3 mmol NaHCO3, 10 mmol/l Tris, pH 8.5 – Osmolality _ 65 mosmol/kg). When the pH of the fertilization solution was increased to _ 10, the hatching rate was significantly increased. The use of fertilization solutions with osmolalities of _ 150 and _ 182 were accompanied with a significant decrease in hatching rates and the appearance of deformed larvae, respectively. In conclusion, a reliable protocol for gamete collection from live axolotl is established as a laboratory model of *in vitro* fertilization for urodele amphibians. This protocol may be transferable to endangered urodeles.

Animal Reproduction Science, Vol. 124; pp. 69–72, 2011.
ISSN: 0378-4320.
IMPACT FACTOR= 1.721

Plasma urea nitrogen in relation to pregnancy rate in dairy sheep

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ABSTRACT

The aim of this field study was to investigate the relationship of plasma urea nitrogen (PUN) with the pregnancy rate in lactating Awassi×Merino ewes. One hundred and eighty-five Awassi×Merino ewes were used in the present study. Ewes were fed a diet containing 17.4% crude protein and were milked twice a day by the milking machine. The ewes were synchronized for estrus by insertion of intravaginal sponges containing 30mg flurogestone acetate for 14 days. At the time of sponge removal each ewe was administered eCG (600 IU). All ewes were inseminated twice with fresh semen into the external os of the cervix at 48 and 56 h after sponge removal. The day of insemination was considered as Day 0 for calculating the gestational period. Blood samples were collected from each ewe at Days 0, 18 for measurement of PUN concentrations and at Day 22 after AI for measurement of pregnancy associated glycoprotein (PAG) by radioimmunoassay (RIA). Thirty-eight ewes (20.5%) were confirmed pregnant by PAG–RIA test at Day 22 and by ultrasonography at Day 80. The mean (±S.D.) concentration of PUN in all ewes at Day 0 was 12.7±4.6 mmol/L. There were non-significant differences in the level of PUN between pregnant and nonpregnant ewes at Days 0 (12.2±4.2 mmol/L vs. 12.8±4.7 mmol/L, respectively) and 18 (9.6±2.9 mmol/L vs. 10.4±4.0 mmol/L, respectively) after AI. Mean PUN concentrations decreased significantly from Day 0 to Day 18 after AI in both pregnant and non-pregnant ewes. By using logistic regression analysis, there was no effect of PUN concentrations on the probability of pregnancy occurrence in the studied ewes (odds ratio: 0.97; 95% confidence interval: 0.9–1.05; P = 0.45). In conclusion, there was no evidence of a relationship between PUN concentration and pregnancy rate for lactating Awassi×Merino ewes in the present study because of low pregnancy rate observed.

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IMPACT FACTOR= 2.045

Effect of restraint stress on plasma concentrations of cortisol,progesterone and pregnancy associated-glycoprotein-1 in pregnant heifers during late embryonic development

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ABSTRACT

The aim of the present study was to evaluate the effect of restraint stress, which is commonly practised in the field, on plasma concentrations of cortisol, progesterone (P4) and bovine pregnancy-associated glycoprotein-1 (boPAG-1) in pregnant heifers between Days 30 to 40 of gestation. Twelve Holstein Friesian heifers between Days 30 (Day 0 of experiment) and 40 (Day 10 of experiment) of pregnancy in a Hungarian dairy farm were used in the present study. The heifers were exposed to an acute stressor consisting of immobilisation (restraint stress) in a crush for 2 h (Group 1, n _ 6) on Day 2 (Hour 48) and for 2 _ 2 h (Group 2, n _ 6) on Days 2 and 3 (Hour 72) of the experiment. Transrectal ultrasonography (7.5 MHz linear-array rectal transducer) was performed daily from Day 0 to Day 10 of the experiment to detect embryonic heartbeat or the fate of the conceptus. Blood samples were withdrawn before each ultrasonographic examination. Additional blood samples were withdrawn by 1 and 2 h (at Hours 49 and 50 in Groups 1 and 2 and Hours 73 and 74 in Group 2) of the onset of applying the stressor. Plasma cortisol, P4 and boPAG-1 concentrations were measured by radioimmunoassay. Acute restraint stress significantly (P _ 0.001) increased the plasma cortisol level in pregnant heifers at 1 h of the exposure to the stressor at Days 2 (48 h) and 3 (72 h) of the experiment. On the other hand, the restraint stress did not affect the concentration of P4 and boPAG-1 concentrations in both groups. In conclusion, restraint stress for 2 h during early pregnancy in heifers increased blood cortisol, but it did not affect the concentrations of P4 and boPAG-1 between Days 30 to 40 of gestation.

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Preventive Veterinary Medicine , Vol. 101; pp. 173– 181, 2011.
ISSN: 0167-5877.
IMPACT FACTOR= 2.070

Ruminant brucellosis in Upper Egypt (2005–2008)

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ABSTRACT

Brucellosis is endemic among humans and ruminant in Egypt and recent reports suggest that its incidence may be increasing. In this study we describe the frequency of brucellosis among different ruminant species in Upper Egypt and its spatial distribution using the data generated by a large-scale control campaign undertaken between 2005 and 2008. A total of 120,090 individual animals of different ruminant species were tested during the campaign. The true proportions of brucellosis were estimated as 0.79% (CI: 0.71%–0.87%), 0.13% (CI: 0.08%–0.18%), 1.16% (1.05%–1.27%) and 0.44% (0.34%–0.54%) among cattle, buffaloes, sheep and goats respectively. We estimated that 0.2% (CI: 0.16%–0.23%) of households in thestudy area keep at least one seropositive animal. Spatial autocorrelation of the proportions of seropositive households and seropositive animals was assessed using Global Univariate Moran's I and Local Univariate LISA. These analyses showed that the distribution of seropositive animals has considerable spatial heterogeneity with clustering in the northern governorates of the study area. Our results show that brucellosis is widespread and heterogeneously distributed in Upper Egypt. At the current level of available resources it is very unlikely that test and slaughter could be implemented with the intensity needed to be effective and other control measures that could replace or complement the test and slaughter policy in place should be considered. Also, this study illustrates some of the challenges faced by bilateral projects that have to accommodate an externally funded intervention with an ongoing national official disease control program.

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BMC Public Health, Vol. 11; p. 341 , 2011.
ISSN: 1471-2458.
IMPACT FACTOR= 2.364

Brucella spp. infection in large ruminants in an endemic area of Egypt: cross sectional study investigating seroprevalence, risk factors and livestock owner's knowledge, attitudes and practices (KAPs)

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ABSTRACT

Background: Brucellosis is regarded as one of the major zoonotic infections worldwide. It was first reported in Egypt in 1939 and is now endemic, the predominate species of Brucella in cattle and buffalo in Egypt is B. melitensis. The aim of the study was to estimate seroprevalence of Brucella spp. in cattle and buffalo reared in households in an Egyptian village, identify risk factors for animals testing seropositive and to assess the knowledge, attitudes and practices (KAPs) of livestock owners with regards to brucellosis. Methods: A cross-sectional study was carried out in a village in Menufiya Governorate of Egypt. In June and July 2009, 107 households were selected using systematic sample and all lactating cattle and buffalo present in the household were sampled and tested for antibodies against Brucella spp. In addition, a questionnaire collecting information on potential risk factors for Brucella spp. infection in cattle and buffalo was administered to the household member responsible for rearing the livestock. Between December 2009 and February 2010 households were revisited and a second questionnaire regarding KAPs associated with brucellosis was administered. Results: True individual and household seroprevalence were estimated to be 11.0% (95% CI: 3.06% to 18.4%) and 15.5% (95% CI: 6.61% to 24.7%), respectively. Cattle and buffalo kept in a household with sheep and goats had 6.32 (95% CI: 1.44 to 27.9) times the odds of testing seropositive for Brucella spp., compared to cattle and buffalo that were not. Most participants in the study stated that livestock owners assist in the parturition of ruminants without wearing gloves and that some farmers sell animals which they suspect are Brucella infected to butchers or at market. Many participants made their livestock's milk into cheese and other dairy products without pasteurising it. Conclusions: Brucellosis was endemic at high levels, in the current study. Although livestock owners had good general knowledge of brucellosis, they still appeared to participate in high-risk behaviours, which may contribute to the high seroprevalence

in the area. Veterinarians, public health authorities and other community leaders need to collaborate to control the disease in animals and to manage the risk of human exposure.

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Am. J. Trop. Med. Hyg., Vol. 84, No. 3; pp. 420–425, 2011.
ISSN: 0002-9637.
IMPACT FACTOR = 2.446

Cross-Species Surveillance of *Leptospira* in Domestic and Peri-Domestic Animals in Mahalla City, Gharbeya Governorate, Egypt

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Cairo University, Egypt; Infectious Disease Service, Brooke Army Medical Center, Fort Sam Houston, Texas

ABSTRACT

A survey of 179 animals (black rats, dogs, sheep, buffaloes, cattle, donkeys, weasels, and cats) for *Leptospira* infection was conducted in Mahalla City (Lower Egypt). Blood, urine, and kidney were collected and tested by culture, microscopic agglutination test (MAT), and/or polymerase chain reaction (PCR). Among rats, 26% were positive by PCR, including 7% that were also positive by culture for *L. interrogans* serovars Grippotyphosa, Pyrogenes, and Icterohaemorrhagiae. *L. borpetersenii* serovar Polonica was isolated for the first time in Egypt in three rats. MAT titers ≥ 1:800 were observed in 11% of rats and 12% of dogs. *L. interrogans* serovar Grippotyphosa was detected in one cat. Sheep and donkeys were negative for leptospirosis by all methods. Buffaloes and cattle were seropositive in 20% and 44% of animals, respectively. Data indicate that several pathogenic serovars are circulating in the animals, which may pose exposure risks and account for high rates of acute febrile illness.

JOURNAL OF NEUROCHEMISTRY,Vol. 119; pp. 839–847, 2011.
ISSN: 0022-3042.
IMPACT FACTOR= 4.337

Chloroquine Inhibits Glutamate-Induced Death Of a Neuronal Cell Line by reducing reactive exygen species through sigma – 1 receptor.

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ABSTRACT

Chloroquine, a widely used anti-malarial and anti-rheumatoid agent, has been reported to induce apoptotic and non-apoptoti cell death. Accumulating evidence now suggests that chloroquine can sensitize cancer cells to cell death and augment chemotherapy-induced apoptosis by inhibiting autophagy. However, chloroquine is reported to induce GM1 ganglioside accumulation in cultured cells at low lM concentrations and prevent damage to the blood brain barrier in mice. It remains unknown whether chloroquine has neuroprotective properties at concentrations below its reported ability to inhibitlysosomal enzymes and autophagy. In the present study, we demonstrated that chloroquine protected mouse hippocampal HT22 cells from glutamate induced oxidative stress by attenuating production of excess reactive oxygen species. The concentration of chloroquine required to rescue HT22 cells rom oxidative stress was much lower than that sufficient enough to induce cell death and inhibit autophagy. Chloroquine increased GM1 level in HT22 cells at low Lm concentrations but glutamate-induced cell death occurred before GM1

Journal of Virology, Vol. 85 ; pp . 8413-8421, 2011.
ISSN: 0022-538X.
IMPACT FACTOR = 5.189

Phylogeography and Evolutionary History of Reassortant H9N2 Viruses with Potential Human Health Implications

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ABSTRACT

Avian influenza viruses **of** the H9N2 subtype have seriously affected the poultry industry **of** the Far **and** Middle East since the mid-1990s **and** are considered one **of** the most likely c**and**idates to cause a new influenza p**and**emic in humans. To unders**and** the genesis **and** epidemiology **of** these viruses, we investigated the spatial **and evolutionary** dynamics **of** complete genome sequences **of** H9N2 viruses circulating in nine Middle Eastern **and** Central Asian countries from 1998 to 2010. We identified four distinct **and** cocirculating groups (A, B, C, **and** D), each **of** which has undergone widespread inter- **and** intrasubtype reassortments, leading to the

generation **of** viruses with unknown biological properties. Our analysis also suggested that eastern Asia served as the major source for H9N2 gene segments in the Middle East **and** Central Asia **and** that in this geographic region within-country evolution played a more important role in shaping viral genetic diversity than migration between countries. The genetic variability identified among the H9N2 viruses was associated with specific amino acid substitutions that are believed to result in increased transmissibility in mammals, as well as resistance to antiviral drugs. Our study highlights the need to constantly monitor the evolution **of** H9N2 viruses in poultry to better unders**tand** the potential risk to human health posed by these viruses.

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Theriogenology, Vol. 75 ; 662–670, 2011.
ISSN: 0093-691X.
IMPACT FACTOR=2.045

Mitochondrial aggregation patterns and activity in *in vitro* cultured bovine oocytes recovered from early antral ovarian follicles

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d National Institute of Animal Production, Balice, Krakow, Poland

ABSTRACT

The low developmental competence seen in *in vitro* cultured oocytes collected from early antral follicles may be related to their mitochondrial status. The aim of this study was to examine the chromatin configuration, pattern of mitochondrial aggregation and mitochondrial activity of non-cultured and *in vitro*-cultured bovine oocytes originating from early antral ovarian follicles. Cumulus-oocyte complexes with adjacent granulosa cells (COCGs) were recovered from early antral follicles of 0.4 to 0.8 mm diameter. Control (Day 0) oocytes were recovered from freshly collected COCGs and fixed and stained. Selected COCGs were placed in growth culture for 7 days (Day 7) or 14 days (Day 14). Following growth culture, COCs with normal appearance were placed in maturation medium (IVM) for 24 h and then fixed and stained with MitoTracker CMTM Ros Orange and Hoechst 33258. The percentage of oocytes with an immature meiotic configuration after growth culture decreased with the time of growth culture, being 96.7; 72.5 and 35.4% respectively for Day 0, Day 7 and Day 14 of culture; the remaining oocytes were degenerating or resuming meiosis. After subsequent IVM the highest proportion of oocytes in diakinesis or metaphase I was found in the D7_IVM group (59.4%). When growth culture was prolonged to day 14 and IVM, the number of degenerated oocytes increased dramatically after IVM. The mitochondrial distribution in the oocytes changed from homogeneous to heterogeneous as growth culture time increased. The respiratory activity as measured by fluorescence intensity increased over the time of growth culture, and was highest in oocytes that had resumed GVBD. In conclusion, for oocytes in isolated COCGs from early antral follicles, culture conditions longer than 7 days should be more adapted for a slow nuclear maturation accompanied by a decreased energy metabolism to prevent chromatin pycnosis.

Faculty of Engineering

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Computers & Fluids, Vol. 44; pp. 248–257, 2011.
ISSN: 0045-7930.
IMPACT FACTOR= 1.433

A comparative study of turbulence models performance for separating flow in a planar asymmetric diffuser

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ABSTRACT

This paper presents a computational study of the separated flow in a planar asymmetric diffuser. The steady RANS equations for turbulent incompressible fluid flow and six turbulence closures are used in the present study. The commercial software code, FLUENT 6.3.26, was used for solving the set of governing equations using various turbulence models. Five of the used turbulence models are available directly in the code while the v^2–f turbulence model was implemented via user defined scalars (UDS) and user defined functions (UDF). A series of computational analysis is performed to assess the performance of turbulence models at different grid density. The results show that the standard k–co, SST k–co and v^2–f models clearly performed better than other models when an adverse pressure gradient was present. The RSM model shows an acceptable agreement with the velocity and turbulent kinetic energy profiles but it failed to predict the location of separation and attachment points. The standard k– and the low-Re k– delivered very poor results

International Journal of Heat and Fluid Flow,Vol. 32 ; pp. 740–754, 2011.
ISSN: 0142-727X .
IMPACT FACTOR= 1.802

Hydrodynamic and thermal fields analysis in gas–solid two-phase flow

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ABSTRACT

The present work aims to investigate numerically the flowfield and heat transfer process in gas–solid suspension in a vertical pneumatic conveying pipe. The Eulerian–Lagrangian model is used to simulate the flow of the two-phases. The gas phase is simulated based on Reynolds Average Navier–Stokes equations (RANS) with low Reynolds number k–8 model, while particle tracking procedure is used for the solid phase. An anisotropic model is used to calculate the Reynolds stresses and the turbulent Prandtl number is calculated as a function of the turbulent viscosity. The model takes into account the lift and drag forces and the effect of particle rotation as well as the particles dispersion by turbulence effect. The effects of inter-particles collisions and turbulence modulation by the solid particles, i.e. four-way coupling, are also included in the model. Comparisons between different models for turbulence modulation with experimental data are carried out to select the best model. The model is validated against published experimental data for velocities of the two phases, turbulence intensity, solids concentration, pressure drop, heat transfer rates and Nusselt number distribution. The comparisons indicate that the present model is able to predict the complex interaction between the two phases in non-isothermal gas–solid flow in the tested range. The results indicate that the particle–particle collision, turbulence dispersion and lift force play a key role in the concentration distribution. In addition, the heat transfer rate increases as the mass loading ratio increases and Nusselt number increases as the pipe diameter increases.

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Desalination, Vol. 277; pp. 281–287, 2011.
ISSN: 0011-9164.
IMPACT FACTOR= 1.851

Performance of finned and corrugated absorbers solar stills under Egyptian conditions

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ABSTRACT

An experimental study was conducted to improve the productivity of basin solar stills by increasing the surface area of absorber (base of still) and rate of heat transfer between saline water and absorber. In view of this, three solar stills are designed and fabricated in order to study the performance of each still. The first one is a conventional type and the second is a finned still while the third one is corrugated still. The performance of the finned and corrugated solar stills is tested and compared with conventional still under the same climate conditions. The performance of different solar sills were tested under two cases; stills at the same water depth (50 mm) and stills at the same quantity of saline water (30 and 50 l). The results indicate that the productivity of finned and corrugated solar stills is higher than that for conventional still. Also it is found that at quantity of saline water 30 liters the productivity increased, when finned solar still and corrugated solar still are used approximately by 40% and 21% respectively. In this case the daily efficiency and estimated cost of 1 liter of distillate for finned, corrugated and conventional solar stills are approximately 47.5 % - 0.041 $, 41 % - 0.047 $ and 35 % - 0.049 $ respectively.

Electr Eng., Vol. 93; pp. 103–116 , 2011.
ISSN:0948-7921.
IMPACT FACTOR= 0.368

Optimal Reactive Power Dispatch Using Ant Colony Optimization Algorithm

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ABSTRACT

This paper proposed a procedure to solve the optimal reactive power dispatch (ORPD) problem using ant colony optimization (ACO) algorithm. The objective of the ORPD problem is to minimize the transmission power losses under control and dependent variable constraints. Proposed sensitivity parameters of reactive power at generation and switchable sources are derived based on a modified model of Fast Decoupled Power Flow (FDPF). The proposed ACO-based algorithm is applied to the IEEE standard 14-bus, 30-bus systems and a real power system at West Delta Network (WDN) as a part of the Unified Egyptian Network (UEN). The obtained simulation results are compared with those of conventional linear programming (LP), genetic algorithm (GA) and particle swarm optimization (PSO) technique. Simulation results show the capability of the proposed ACO-based algorithm for solving the ORPD problem, especially with increasing the system size.

Faculty of Science

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Applied Surface Science, Vol. 258 ; pp. 2997– 3001, 2012.
ISSN: 0169-4332.
IMPACT FACTOR = 1.795

CuO nanoparticles: Synthesis, characterization, optical properties and interaction with amino acids

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ABSTRACT

Cupric oxide (CuO) nanoparticles with an average size of 6 nm have been successfully prepared by an alcothermal method. The prepared CuO nanoparticles were characterized by X-ray diffraction (XRD), transmission electron microscopy (TEM), Fourier-transform infrared (FT-IR) and UV visible absorption spectroscopy. A strong sharp emission under UV excitation is reported from the prepared CuO nanoparticles. The results show that the CuO nanoparticles have high dispersion and narrow size distribution. The fluorescence emission spectra display an intense sharp emission at 365 nm and weak broad intensity emission at 470 nm. Picosecond fluorescence measurements of the nanoparticles suggest bi-exponential function giving time constants of _1 (330 ps, 94.21%) and _2 (4.69 ns, 5.79%). In neutral and alkaline solutions, Zeta potential values of CuO nanoparticles are negative, due to the adsorption of COO^- group via the coordination of bidentate. At low pH the zeta potential value is positive due to the increased potential of H^+ ions in solution. Comparative UV–visible absorption experiments with the model amino acid compounds of positive and negative charges as arginine and aspartic acid, respectively confirmed the negative surface of CuO nanoparticles. The results should be extremely useful for understanding the mode of the interaction with biological systems. This binding process also affects the particle's behavior inside the body.

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Spectrochimica Acta Part A, Vol. 79 ; pp. 1904– 1908 , 2011.
ISSN: 1386-1425.
IMPACT FACTOR= 1.770

Inclusion of Paracetamol into ˇ-cyclodextrin nanocavities in solution and in the solid state.

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ABSTRACT

We report on steady-state UV–visible absorption and emission characteristics of Paracetamol, drug used as antipyretic agent, in water and within cyclodextrins (CDs): ˇ-CD, 2-hydroxypropyl-ˇ-CD (HP-ˇ-CD) and 2,6 dimethyl-ˇ-CD (Me-ˇ-CD). The results reveal that Paracetamol forms a 1:1 inclusion complex with CD. Upon encapsulation, the emission intensity enhances, indicating a confinement effect of the nanocages on the photophysical behavior of the drug. Due to its methyl groups, the Me-ˇ-CD shows the largest effect for the drug. The observed binding constant showing the following trend: Me-ˇ- CD > HP-ˇ-CD > ˇ-CD. The less complexing effectiveness of HP-ˇ-CD is due to the steric effect of the hydroxypropyl substituents, which can hamper the inclusion of the guest molecules. The solid state inclusion complex was prepared by co-precipitation method and its characterization was investigated by Fourier transform infrared spectroscopy, 1H NMR and X-ray diffractometry. These approaches indicated that Paracetamol was able to form an inclusion complex with CDs, and the inclusion compounds exhibited different spectroscopic features and properties from Paracetamol

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Journal of Luminescence, Vol. 131; pp. 570–576 , 2011.
ISSN: 0022-2313.
IMPACT FACTOR= 1.797

Enhanced photocatalytic degradation of Safranin-O by heterogeneous nanoparticles for environmental applications

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ABSTRACT

Nanostructure titanium dioxide (TiO2) has been synthesized by hydrolysis of titanium tetrachloride in aqueous solution and Ag–TiO2 nanoparticles were synthesized by photoreduction method. The resulting materials were characterized by X-ray diffraction (XRD), transmission electron microscope (TEM), Fourier-transforminfrared (FT-IR) and UV–vis absorption spectroscopy. The experimental results showed that the sizes of the synthesized TiO2 and Ag–TiO2 particles are in the range of 1.9–3.2 nm and 2–10 nm, respectively. Moreover, Ag–TiO2 nanoparticles exhibit enhanced photocatalytic activity on photodegradation of Safranin-O (SO) dye as compared to pure TiO2. The positive effect of silver on the photocatalytic activity of TiO2 may be explained by its ability to trap electrons. This process reduces the recombination of light generated electron–hole pairs at TiO2 surface and therefore enhances the photocatalytic activity of the synthesized TiO2 nanoparticles. The effects of initial dye and nanoparticle concentrations on the photocatalytic activity have been studied and the results demonstrate that the dye photodegradation follows pseudo-first-order kinetics. The observed maximum degradation efficiency of SO is about 60% for TiO2 and 96% for Ag–TiO2.

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Eur. J. Org. Chem., Vol. 25 ; pp. 4841–4852 , 2011.
ISSN: 1434-193X.
IMPACT FACTOR= 3.206

Alternating Copolymers Based on 2,1,3-Benzothiadiazole and Hexylthiophene: Positioning Effect of Hexyl Chains on the Photophysical and Electrochemical Properties

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ABSTRACT

A series of donor–acceptor alternating π-conjugated copolymers based on 2,1,3-benzothiadiazole and hexylthiophene units has been synthesized by the palladium-catalyzed Stille cross-coupling method. Various precursory monomers possessing dibromo and bis(tributylstannyl) functionalities were readily prepared in high yields. Microwave-assisted polymerization proved efficient for the production of high-molecular- weight copolymers, ranging from 13550 to 52490 gmol–1. All copolymers exhibited excellent solubilities in most common organic solvents. The thermal properties of these copolymers were investigated by thermogravimetric analysis and differential scanning calorimetry, and the polymers showed high thermal stabilities. Incorporation of the benzothiadiazole unit into polyhexylthiophene chains affected the photo- physical and electrochemical properties. The thin-film absorption spectra of all polymers are significantly red-shifted relative to the corresponding absorption bands in solution and exhibit broader absorption bands. The optical band gaps were estimated to be in the range of 2.02–1.74 eV. The highest occupied and lowest unoccupied molecular orbital energy levels are in the ranges of –5.37 to –5.66 eV and –3.33 to –3.44 eV, respectively. In the X-ray diffraction analysis of the deposited film of the copolymer **P3**, strong diffraction peaks were observed at 2θ = 5.72° (15.43 Å)

and 23.12° (3.84 Å). These values relate to the distances between chains with interdigitated hexyl chains and to π–π stacking between the conjugated chains.

58

Aquatic Botany, Vol. 92 ; pp. 86–92 , 2010.
ISSN: 0304-3770.
IMPACT FACTOR = 2.087

Effects of abiotic conditions on Phragmites australis along geographic gradients in Lake Burullus, Egypt

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ABSTRACT

Stand structure and biomass production of Phragmites australis (Cav.) Trin. ex Steud. were analyzed along north–south and east–west transects in the Burullus coastal lagoon (N Egypt, 410 km2) at monthly intervals over a period of 1 year (February 2003 until January 2004). For this purpose, young and old standswere selected at eight different locations in the lagoon. It was found that the north–south transect mainly represented a fertility gradient (207–286 mg l_1 TN, 30–106 mg l_1 TP), while the east west transect was associated with significantly decreasing salinity (7–4 ppt). All morphological and biomass variables of P. australis were significantly different between young and old stands. On average, the old (7.3 _ 0.2 kg DWm_2) accumulated three times more total above-ground biomass than the young stands (2.5 _ 0.1 kg DWm_2). Shoot height, diameter and shoot dry weight significantly increased by 25–50% with increasing fertility along the north–south transect. Shoot density significantly decreased from north to south, while it almost doubled in the north sites from 109 _ 6 to 216 _ 7 shoots m_2 along the west–east transect. In separate stepwise multiple regressions, variation in water quality explained 34–63% of the variation in morphology and total above-ground biomass in the old stands (salinity and water level were most important for biomass, transparency also for height and density) while it explained 16–42% of variation in young stands (mainly transparency)

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Scientific Research and Essays, Vol. 6, No. 4 ; pp. 966-976, 2011.
ISSN 1992-2248.
IMPACT FACTOR= 0.445

Bioaccumulation of nutrient and heavy metals by *Calotropis procera* and *Citrullus colocynthis* and their potential use as contamination indicators

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ABSTRACT

The concentrations of nutrient and heavy metals in organs of Calotropis procera and Citrullus colocynthis and their surrounding soil from Riyadh and Gazan, Saudi Arabia, were investigated to ascertain whether these species are characterized by differential accumulation of nutrients, and to test the suitability of their organs for bio-monitoring of soil nutrients. Nutrients which considered were N, Na, K, Ca, Cd, Cu and Fe. Between the two plant species, C. colocynthis showed the higher accumulation of Na, Fe and Cu, while C. procera showed the higher accumulation of N, K, Ca and Cd. Significantly positive relationships were observed among the concentrations of N, Ca, Cd and Fe in organs of C. procera and C. colocynthis and those of soil, indicating the potential use of the two plants for pollution monitoring of these metals. This study demonstrated that C. procera and C. colocynthis could be considered as a bio-indicator or bio-accumulator for soil polluted by nutrient and metals

60

Wetlands, Vol. 30; pp. 240–251 , 2010.
ISSN: 0277-5212.
IMPACT FACTOR = 1.238

Modeling Growth, Carbon Allocation and Nutrient Budgets of Phragmites australis in Lake Burullus, Egypt

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ABSTRACT

Phragmites australis is the major component of reed stands covering some 8200 ha along the shores of Lake Burullus (Egypt). We applied a published temperate zone reed model to assess growth and cycling of C and nutrients among the various organs of P. australis in this sub-tropical lake. We aim to quantify the role of reed stands for the C balance and nutrients cycling in the south Mediterranean wetland. Above-ground biomass was 3.5 times higher than the below-ground biomass. Root biomass represented 13% of the total below-ground, while leaves and panicles represented 16 and 3% of the above round biomass, espectively. Remobilization from rhizomes (15%) and eallocation from leaves (1%) were of little importance as ssimilated sources. utrients accumulation by total aboveground iomass ranged between 2.7 to 46.8 m−2yr−1 for P nd K, respectively. We calculated a C sequestration rate of 8.4 C m−2yr−1 for the dead rhizomes in the sediments. his value stresses the mportance of P. australis stands for sequestration in Lake Burullus. Further, s uch as 254 t and 5527 t N could potentially be removed annually from ake Burullus by harvesting P. australis at maximum total above-ground biomass.

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Appl. Math. Mech. -Engl. Ed.,Vol. 32, No. 4; pp. 1–14 , 2011.
ISSN: 0253-4827.
IMPACT FACTOR= 0.517

Stresses in rotating heterogeneous viscoelastic composite cylinder with variable thickness*

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ABSTRACT

An analytical solution is presented for the rotation problem of a two-layer composite elastic cylinder under a plane strain assumption. The external cylinder has variable-thickness formulation, and is made of a heterogeneous orthotropic material. It contains a fiber-reinforced viscoelastic homogeneous isotropic solid core of uniform thickness. The thickness and elastic properties of the external cylinder are taken as power functions of the radial direction. By applying of the boundary and continuity conditions, the radial displacement and stresses for the rotating composite cylinder are determined. The effective moduli and Illyushin's approximation methods are used to obtain the viscoelastic solution to the problem. The effects of heterogeneity, thickness variation, constitutive, time parameters on the radial displacement, and stresses are investigated.

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Acta Mechanica Solida Sinica, Vol. 24, No. 3; pp. 250-261 , 2011.
ISSN: 0894-9166.
IMPACT FACTOR = 0.543

BENDING RESPONSES OFANEXPONENTIALLY GRADED SIMPLY-SUPPORTED LASTIC/VISCOELASTIC/ELASTIC SANDWICH PLATE.

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ABSTRACT

The bending response for exponentially graded composite (EGC) sandwich plates is investigated. The three-layer elastic/viscoelastic/elastic sandwich plate is studied by using the sinusoidal shear deformation plate theory as well as other familiar theories. Four types of sandwich plates are considered taking into account the symmetry of the plate and the thickness of each layer. The effective moduli and Illyushin's approximation methods are used to solve the equations governing the bending of simply-supported EGC fiber-reinforced viscoelastic sandwich plates. Then numerical results for deflections and stresses are presented and the effects due to time parameter, aspect ratio, side to-thickness ratio and constitutive parameter are investigated.

Acta Mech., pp.
ISSN: 0001-5970.
IMPACT FACTOR = 1.024

Vol. 220; ٤٦–٣٣, 2011.

On the simple and mixed first-order theories for plates resting on elastic foundations

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ABSTRACT

This article investigates the bending response of an orthotropic rectangular plate resting on two-parameter elastic foundations. Analytical solutions for deflection and stresses are developed by means of the simple and mixed first order shear deformation plate theories. The present mixed plate theory accounts fo variable transverse shear stress distributions through the thickness and does not require a shear correction factor. The governing equations that include the interaction between the plate and the foundations are obtained. Numerical results are presented to demonstrate the behavior of the system. The results are compared with those obtained in the literature using three dimensional elasticity theory or higher-order shear deformation plate theory to check the accuracy of the simple and mixed first-order shear deformation theories.

Journal of Thermal Stresses,
Vol. 34, No. 11; pp.١١٣٨ -١١١٩ ،2011.
ISSN: 0149-5739.
IMPACT FACTOR= 0.946

THERMAL BUCKLING OF FUNCTIONALLY GRADED PLATES RESTING ON ELASTIC FOUNDATIONS USING THE TRIGONOMETRIC THEORY

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[2]Department of Mathematics, Faculty of Science, Kafrelsheik University, Kafr El-Sheikh, Egypt

ABSTRACT

In this article, thermal buckling analysis of functionally graded material (FGM) plates resting on two-parameter Pasternak's foundations is investigated. Equilibrium and stability equations of FGM plates are derived based on the trigonometric shear deformation plate theory and includes the plate foundation interaction and thermal effects. The material properties vary according to a power law form through the thickness coordinate. The governing equations are solved analytically for a plate with simply supported boundary conditions and subjected to uniform temperature rise and gradient through the thickness. Resulting equations are employed to obtain the closedform solution for the critical buckling load for each loading case. The influences of the plate aspect ratio, side-to-thickness ratio, gradient index, and elastic foundation stiffnesses on the buckling temperature difference are discussed

Acta Mech. Sin., Vol. 27 , No. 6 ; pp. 956-962, 2011.
ISSN 0567-7718.
IMPACT FACTOR = 0.749

Bending of orthotropic plates resting on Pasternak's foundations using mixed shear deformation theory

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ABSTRACT

The mixed first-order shear deformation plate theory (MFPT) is employed to study the bending response of simply-supported orthotropic plates. The present plate is subjected to a mechanical load and resting on Pasternak's model or Winkler's model of elastic foundation or without any elastic foundation. Several examples are presented to verify the accuracy of the present theory. Numerical results for deflection and stresses are presented. The proposed MFPT is shown simplely to implement and capable of giving satisfactory results for shear deformable plates under static loads and resting on two-parameter elastic foundation. Theresults presented here show that the characteristics of deflection and stresses are significantly influenced by the elastic foundation stiffness, plate aspect ratio and side-to-thickness ratio.

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Phosphorus, Sulfur, and Silicon and the Related Elements,
Vol. 186, No. 7; pp. 1572-1584, 2011.
ISSN: 1042-6507.
IMPACT FACTOR= 0.621

5-ANTHRACENYLIDENE- AND 5-(4-BENZYLOXY-3-METHOXY)BENZYLIDENE-HYDANTOIN, 2-THIOHYDANTOIN DERIVATIVES, SYNTHESIS, AND S-ALKYLATION

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ABSTRACT

5-Anthracenylidene- and 5-(4-benzyloxy-3-methoxy)benzylidene-hydantoin and 2-thiohydantoin derivatives ***3a-g*** *were prepared by condensation of anthracene-9- carboxaldehyde and 4-benzyloxy-3-methoxybenzylaldehyde with hydantoin and 2- thiohydantoin derivatives. Compounds* ***3a***, ***b***, ***f*** *undergo Mannich reaction with formaldehyde and morpholine to give the corresponding Mannich products* ***4a–c****. For the synthesis of alkylmercaptohydantoin* ***5a–o****, the potassium salt of compounds* ***3a***, ***b***, ***e***, ***f*** *were reacted with an alkylhalide, either methyl iodide, phenacyl bromide, ethyl bromo acetate, allyl bromide, or methallyl bromide, under stirring at room temperature to afford the alkylmercaptohydantoin* ***5a–o****. Acid hydrolysis of compounds* ***5a–c*** *afforded the corresponding arylidene-hydantoin derivatives* ***3c***, ***d***, ***g***. *2-Methylmercapto-hydantoin derivatives* ***5a***, ***c*** *were reacted with some secondary amines such as morpholine or piperidine to afford 5-(4- benzyloxy-3-methoxy)benzylidene-2-morpholino- or piperidino glycocyamidine derivatives* ***7a****, 5-anthracenylidene-2-morpholin- orpiperidino glycocyamidine derivatives* ***7b***, ***c.*** *Supplemental materials are available for this article. Go to the publisher's online edition of* Phosphorus, Sulfur, and Silicon and the Related Elements *to view the free supplemental file.*

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Journal of Mineralogical and Petrological Sciences,
Vol. 106, No. 5; pp. 255-260, 2011,
ISSN: 1349-3825.
IMPACT FACTOR= 0.677

Petrology and geochemistry of chromian spinel-bearing serpentinites in the Hida Marginal Belt (Ise area, Japan): characteristics of their protoliths

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ABSTRACT

The Ise area is located in the western part of the Hida Marginal Belt (central Japan), which includes several sporadic exposures of ultramafic rocks, sometimes forming a serpentinite mélange of the Paleozoic age. Ultramafic rocks in the Ise area, enveloped by Paleozoic-Mesozoic sedimentary rocks, are completely serpentinized; however, the abundance of bastite after orthopyroxene suggests harzburgite protoliths. The bastite- and mesh-textured serpentines are distinguished from each other in Al_2O_3, Cr_2O_3 and NiO contents. The bastite-textured serpentine is high in Al_2O_3 (up to 4.0 wt%) and Cr_2O_3 (up to 1.2 wt%), but low in NiO (<0.3 wt%) relative to the mesh-textured one. Relic chromian spinel, vermicular in shape, shows an inter-grain chemical homogeneity and is sometimes altered to ferritchromite at the margin. It has a narrow range of Cr# [= Cr/(Cr + Al) atomic ratio] from 0.38 to 0.51 and low Y_{Fe} [=(Fe^{3+}/(Cr + Al + Fe^{3+}) atomic ratio, <0.03)], similar to chromian spinel in Kotaki and Oeyama ultramafic masses. It is also similar in chemistry to spinels in forearc and abyssal peridotites, suggesting two possibilities for the derivation of the Ise serpentinite's protoliths. The degree of melting using Cr# versus TiO_2 of chromian spinel is ~ 20–25%, which is in accordance with the harzburgite protoliths obtained by whole-rock chemistry models. We found that Cr, Al, Ni and Ca, preserved in bastite and mesh-textured serpentine, are conservative during serpentinization, confirmed from the similarity in the whole-rock A1 and Ca of the Ise serpentinites to

occurrence of dolomite can stabilize the Ca and limited its mobility to escape outside the serpentinites. The harzburgite protoliths were Horoman harzburgites. The

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Journal of Asian Earth Sciences, Vol. 43 ; pp. 150–163, 2011,
ISSN: 1367-9120.
MPACT FACTOR= 2.21

Petrology and geochemistry of prograde deserpentinized peridotites from Happo-O'ne, Japan: Evidence of element mobility during deserpentinization

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ABSTRACT

The prograde deserpentinized peridotites from the talc zone in the Happo-O'ne complex, central Japan, show differences in their field relation and mineral assemblage with the high-P retrograde peridotites of the other part of the complex. They show a mineral assemblage, olivine + talc + antigorite ± prograde tremolite ± chlorite, formed by thermal metamorphism around the granitic intrusion at T, 500–650 _C and P < 7 kbar. The olivine has numerous opaque inclusions and high Fo (91.5–96.5) relative to the retrograde olivine, reflecting its formation by deserpentinization. The prograde tremolite, which is low in Al2O3 (<1.0 wt.%), Cr2O3 (<0.35 wt.%), and Na2O (<0.6 wt.%) but high in Mg# (up to 0.98) and SiO2 (up to 59.9 wt.%), is different in size, shape and chemistry from the retrograde tremolite. The prograde peridotite display a U-shaped REE pattern (0.02–0.5 times PM), similar to diopside-zone retrograde metaperidotites, possible protoliths. They are enriched in LILE (e.g., Cs, Pb, Sr, Rb) relative to HFSE (e.g., Ta, Hf, Zr, Nb), like their protoliths, because of their local re-equilibration with the fluid released during dehydration of the protoliths. They have high contents of REE and some trace elements (e.g., Cs, Th, U, Ta) relative to their protoliths because of an external-element addition from the granitic magma. In-situ analyses of peridotitic silicates confirmed that the prograde tremolite and talc display a spoon-shaped primitive mantle (PM)-normalized REE pattern (0.1–3 times PM) in which LREE are higher than HREE contents. The prograde tremolite is depleted in Al, Na, Cr, Sc, V, Ti, B, HREE and Li, but is enriched in Si, Cs, U, Th, HFSE (Hf, Zr, Nb, Ta), Rb and Ba relative to the retrograde tremolite; the immobile-element depletion in this tremolite is inherited from its source (antigorite + secondary diopside), whereas the depletion of mobile elements (e.g., Li, B, Na, Al) is ascribed to their mobility during the deserpentinization and/or the depleted character of the source of tremolite. The enrichment of HFSE and LILE in the prograde tremolite is related to an external addition of these elements from fluid/melt of the surrounding granitic magma and/or in situ equilibrium with LILE-bearing fluid released during dehydration of serpentinized retrograde metaperidotites and olivine-bearing serpentinites (protoliths). The prograde olivine is higher in REE and most trace-element contents than the retrograde one due to the external addition of these elements; it is enriched

in B, Co and Ni, but depleted in Li that was liberated during deserpentinization by prograde metamorphism Petrology and geochemistry of prograde deserpentinized peridotites from Happo-O'ne, Japan: Evidence of element mobility during deserpentinization

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Arch Appl Mech, Vol. 96, No. 27; pp. 81: 77 , 2011.
ISSN: 0939-1533.
IMPACT FACTOR= 0.853

Bending of a fiber-reinforced viscoelastic composite plate resting on elastic foundations

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ABSTRACT

Composite structures on an elastic foundation are being widely used in engineering applications. Bending response of inhomogeneous viscoelastic plate as a composite structure on a two-parameter (Pasternak's type) elastic foundation is investigated. The formulations are based on sinusoidal shear deformation plate theory. Trigonometric terms are used in the present theory for the displacements in addition to the initial terms of a power series through the thickness. The transverse shear correction factors are not needed because a correct representation of the transverse shear strain is given. The interaction between the plate and the foundation is included in the formulation with a two-parameter Pasternak's model. The effective moduli and Illyushin's approximation methods are used to derive the viscoelastic solution. The effects played by foundation stiffness, plate aspect ratio, and other parameters are presented

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J Mater Sci, VOL. 6; pp. 2071–2076, 2011.
ISSN: 0022-2461.
IMPACT FACTOR= 1.859

Structure, magnetic, and electrical studies on vanadium phosphate glasses containing different oxides

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ABSTRACT

Glass system with molar composition (60% P2O5–30%V2O5–10%X) where X is Li2O, Na2O, K2O, and BaO was prepared. The density and molar volume indicate that the density decreases while the molar volume increases with increasing ionic radius of doped oxides. IR studies reveal the coexistence of V4? and V5? ions (act as glass modifier and glass former, respectively). The observed paramagnetic behavior of samples indicates that V4?[V5? (the ratio V4?/V4? ? V5?[0.52 as obtained from chemical titration analysis). Mott's model of conduction was applied to discuss DC electrical conduction mechanism. The prepared glass exhibits semiconducting behavior. However, Ba ion is the only ion which did not contribute to the ionic conduction. The conductivity increases with decreasing ionic radius of doped oxides due to high mobility due to their small size. The effect of hopping distance on the electrical conduction and magnetic properties were discussed. An attempt was done to determine the expected temperature of Ba ionic conduction and its ionic activation energy

Physica B, Vol. 406; pp. 421–425, 2011.
ISSN 0921-4526.
IMPACT FACTOR= 0.856

Effect of replacing calcium oxide with calcium halide on crystallization and some physical properties of calcium vanadium phosphate glass ceramics

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ABSTRACT

The effect of halide ions on density, electrical, magnetic and crystallization kinetics for (20X–50P2O5 –30V2O5) mole% has been investigated, where X¼CaO, CaF2, CaCl2 and CaBr2. Halide ions reduce the glass transition temperature, crystallization temperature and activation energy of crystallization. Density, electrical conductivity and magnetic susceptibility increase while molar volume, glass thermal stability and interatomic distance between transition metal ions decrease as the halide ions replace the oxygen ions in these glasses.

Radiation Protection Dosimetry,
Vol. 145, No. 4; pp. 411–420, ٢٠١١,
ISSN: 0144-8420.
IMPACT FACTOR=0.966

SPATIAL DISTRIBUTION OF RADIOISOTOPES IN THE COAST OF SUEZ GULF, SOUTHWESTERN SINAI AND THE IMPACT OF HOT SPRINGS

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ABSTRACT

This work describes the concentrations of radioisotopes in soil, sediment, wild plants and groundwater in southwestern Sinai. The study area extends from Suez to Abu Rudies along the eastern part of the Suez Gulf. It included two hot springs: Ayun Musa and Hammam Faraoun. No dependence of 137Cs concentrations on any of the measured sand characteristics was found, including calcium carbonate. The enrichment of 226Ra in Hammam Faraoun hot spring was the most prominent feature. The 226Ra concentration in hot springs of Ayun Musa and Hammam Faraoun were 68 and 2377 Bq kg–1 for sediments, 3.5 and 54.0 Bq kg–1 for wild plants and 205 and 1945 mBq l–1 for the groundwater, respectively. In addition, 226Ra activity concentration in local sand in the area of Hammam Faraoun was 14 times that of Ayun Musa. On the other hand, the 232Th concentrations were comparable in the two hot springs, while 137Cs concentrations were relatively higher in Ayun Musa. The characteristics and radioelements studies support possible suggestions that the waters in the two hot springs have different contributions of sea and groundwaters crossing different geological layers where the water–rock interaction takes place

J. Pest. Sci., Vol. 84; pp. 393–402 , 2011.
ISSN: 1612-4758.
IMPACT FACTOR= 0.988

Chemical composition and the insecticidal activity of certain plants applied as powders and essential oils against two stored-products coleopteran beetles

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ABSTRACT

Powders and essential oils were prepared from the aerial parts of Cinnamomum camphora, Ocimum basilicum, Chenopodium ambrosioides, and seeds of Pimpinella anisum. Their adulticidal activities and effects on the F1 progeny of Trogoderma granarium (Everts) and Tribolium castaneum (Herbst) were evaluated. The chemical composition of the plant oils were identified by gas chromatography (GC) and GC/mass spectrometry (MS). All of the tested botanicals showed insecticidal activities against the test insects in a dose-dependent manner with T. granarium was more susceptible to the tested plant products than T. castaneum. At a concentration of 5 g kg-1, many of the plant powders caused 100% mortality of both insects after 14 days of exposure. The powders of C. camphora, O. basilicum, and C. ambrosioides were effective against T. granarium, while that of C. ambrosioides caused 100% adult mortality of T. castaneum under the same assays conditions. A dose of 1.50 ml cm-2 of the oils of C. camphora and O. basilicum completely controlled T. granarium, while 100% mortality of T. castaneum adults was recorded with P. anisum oil. A significant and/or complete reduction (100% inhibition) of the F1 progeny of both insects was obtained as a result of parental exposure to the tested botanicals, especially at the highest doses applied. Botanicals under investigation showed a considerable grain protecting activity against the tested insect species and could be included in integrated pest management (IPM) strategies

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IMPACT FACTOR= 0.988

Individual and synergistic toxicity of solanaceous glycoalkaloids against two coleopteran stored-product insects

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ABSTRACT

Toxicity of solanaceous glycoalkaloids against stored-grain insects was investigated under laboratory conditions. The total glycoalkaloids (TGAs), a-chaconine and a-solanine from potatoes, Solanum tuberosum L. And a-tomatine from tomatoes, Lycopersicon esculentum Mill. were isolated and tested in this bioassay. Their acute and residual toxicity were assessed against the rust red flour beetle, Tribolium castaneum Herbst (Coleoptera: Tenebrionidae), and the rice weevil, Sitophilus oryzae L. (Coleoptera: Curculionidae). All compounds were tested either individually or as binary mixtures. Results revealed considerable toxicity of the tested glycoalkaloids against the target insects. When adults of S. oryzae were exposed to a dry-film residue of these phytochemicals, the total glycoalkaloids (TGAs) fraction was the most toxic, followed by a-solanine, a-chaconine, and a tomatine with LC50s of (38.6 and 22.1), (48.2 and 38.9), (52.00 and 41.6), and (82.3 and 67.00) lg/cm2 at 24 and 48 h post treatment, respectively. The order of toxicity against T. Castaneum in a descending order was TGAs[a-chaconine[a-solanine[a tomatine. All compounds were more toxic when insects were fed grains treated with these phytochemicals (LC50s of TGAs were 7.4 and 16.2 mg/kg grains at 48 h post-treatment against S. oryzae and T. castaneum, respectively. All compounds, particularly the TGAs exhibited promising residual toxicity effects. Toxicity of glycoalkaloids was exceeded when tested as binary mixtures indicating their synergistic interaction. The study recommends the use of glycoalkaloids of Solanaceae as biorationals and natural leads to protect stored grains from insect infestation

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IMPACT FACTOR= 1.438

Toxic and antifeedant activities of potato glycoalkaloids against Trogoderma granarium (Coleoptera: Dermestidae)

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ABSTRACT

The total glycoalkaloid fraction (TGA) and the two glycoalkaloids, a-chaconine and a-solanine of potato, Solanum tuberosum, were isolated. Their toxic and antifeedant activities against the Khapra beetle, Trogoderma granarium Everts were investigated. Results indicated considerable toxicity, especially when adults were topically treated with the glycoalkaloids. The TGA fraction was the most toxic with LC50's of 16.7 and 11.9 mg/mg insect, 48 and 96 h post treatment, respectively. LC50's of a-chaconine and a solanine 96 h post treatment were 18.1 and 22.5 mg/mg insect, respectively. Moderate toxicities were recorded when insects were confined on dry-film residues of botanicals with LC50's ranging between 26.1 and 56.6, and 19.4 and 45.7, mg/cm2 48 and 96 h post treatment, respectively. Nutritional studies using the flour disc bioassay revealed significant reduction in the growth rate (RGR), food consumption rate (RCR) and food utilization (ECI) by T. granarium at concentrations ranging between 20 and 30 mg g_1 food with feeding deterrent indices reaching 82.4% with the TGA fraction. When testedas binary or crude alkaloidal mixtures, toxic and antifeedant activities of glycoalkaloids were increased, indicating some additive interaction among these botanicals. There is potential for use of such compounds to protect stored grains from insect infestation.

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IMPACT FACTOR= 1.438

Toxicity and growth inhibitory activities of methanol extract and the b-carboline alkaloids of Peganum harmala L. against two coleopteran stored-grain pests

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ABSTRACT

Methanol extract and the b-carboline alkaloids were extracted from the seeds of Peganum harmala (Zygophyllaceae). Their toxicity, growth inhibitory and effects on the progeny production of Tribolium castaneum and Rhyzopertha dominica was studied. To assess any additive effects among the extracted b-carbolines, they were tested as binary mixtures (1:1) or as a crude alkaloid fraction. All extracts exhibited a considerable adulticidal effect with increasing activities in response to increased exposure period. Using the contact toxicity bioassay, the crude b-carboline fraction was the most effective (LC50's were 20.1 and 36.7) mg/cm2, 48 h post-treatment against R. dominica and T. castaneum, respectively. LC50's of (harmaline þ harmine), (harmaline þ harmane), and methanol extract were (31.2, 39.4), (33.7, 47.2), and (39.8, 65.2) mg/cm2, 24 h post-treatment against R. Dominica and T. castaneum, respectively. At 48 h post-treatment, LC50 of (harmaline þ harmine) reached 22.4 mg/cm2 against R. dominica. When mixed with the insect's diets, toxicity of all extracts were increased with the crude alkaloidal fraction the most toxic (LC50's were 7.8 and 14.7) mg/kg grains, 48 h post exposure against R. dominica and T. castaneum, respectively. When the 2nd instar larvae were fed sub-lethal doses-treated grains, development and F1 progeny of both insects were significantly affected (P _ 0.001). At 3.5 mg/kg grains of the crude alkaloidal extract, percentages of malformed larvae and pupae of T. castaneum were 19.7 and 33.4%, respectively. In this case, a total life span of 81.3 days was recorded for the treated individuals compared to 44.2 for the control. A reduction in the adult progeny of 56.9, 44.0 and 43.6% was obtained with 3.5 mg/kg of the crude alkaloids, (harmaline þ harmine) and methanol extract, respectively. Meanwhile, the reduction in adult progeny of R. dominica reached 79.2% with the same concentration of the crude alkaloid extract

Acta Tropica, Vol. 117 ; pp. 39–46 , 2011.
ISSN: 0001-706X.
IMPACT FACTOR= 2.262

Molecular identification and phylogenetic analysis of *Tryapanosoma evans* from dromedary camels (*Camelus dromedarius*) in Egypt; a pilot study

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ABSTRACT

Animal trypanosomiasis is one of the major constraints of livestock industry in developing countries. In the present study, prevalence of Trypanosome evansi was assessed in the blood of dromedary camels (*Camelus dromedarius*) brought to Al Bassatein abattoir, Cairo, Egypt, by mouse inoculation test out of 84 tested camels, 4 animals (4.7%) were infected. Molecular analysis was achieved by PCR amplification and sequence analysis of part of ribosomal RNA gene including 18S, ITS1, 5.8S and ITS2 regions. Despite the conserved nature of 18S region, ITS region showed obvious heterogeneity compared to analogous sequences in database. Analysis of ransferrin receptor encoding gene (ESAG6) showed variable repertoire in the tudied isolates, which may indicate to a novel structure of *T. evansi* population from Egypt and/or a difference in host range. Furthermore, analysis of ariablesurface glycoprotein RoTat 1.2 gene marker revealed some heterogeneity at this gene locus. To our knowledge, this is the first molecular analysis of *T. evansi* in Egypt.

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ISSN: 0264-410X.
IMPACT FACTOR= 3.572

Vaccine, Vol. 29 ;

Multivalent DNA vaccine induces a protective immune response and enhanced resistance against *Cryptosporidium parvum* Infection

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ABSTRACT

The aim of this work was to evaluate efficiency as well as the type of immune response, Th1 or Th2, induced by multivalent DNA vaccinations in C57BL/6 interleukin-12p40 (IL-12p40) knockout (KO) mice. A recombinant pVAX-15–23 plasmid DNA was constructed by inserting surface glycoprotein (cp15- and p23)-encoding DNA into the pVAX1 expression vector. Various parameters including antibody and cytokine responses, proliferation assay and oocyst shedding were used to evaluate the type of immune response and the level of protection against challenge infection. Obtained results indicated that plasmid pVAX-15–23 induced strong protective immune response against *C. parvum* characterized by dominance of IgG2a, high level of INF-_ and lower level of the oocysts shedding after challenge infection. Moreover, co-immunization with the multivalent DNA and pMEM12R plasmid encoding IL-12 can further enhance these responses compared with the multivalent DNA alone. The obtained results suggest that multivalent pVAX-15–23 DNA

vaccine may be a candidate as a generic approach to *C. parvum* immunization applicable to clinical practice.

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Parasitology International, Vol. 60 ; pp. 5–12 , 2011.
ISSN: 1383-5769.

IMPACT FACTOR= 2.259

Identification of *Fasciola* species isolated from Egypt based on sequence analysis of genomic (ITS1 and ITS2) and mitochondrial (NDI and COI) gene markers

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A B S T R A C T

Fascioliasis has a negative impact on the farming industry in both developed and developing countries, rather than a public health challenge. This study was performed to identify *Fasciola* sp. from different definitive hosts (buffalo, cattle, and sheep) based on the molecular parameters and spermatogenesis. Ninety-one adult flukes were collected from livers of slaughtered animals at abattoirs in different prefectures in Egypt. Microscopic examination of the analyzed flukes showed many normal spermatozoa in the seminal vesicles (spermic), suggesting that they have the ability of spermatogenesis. This study showed that no parthenogenic *Fasciola* species occurred in Egypt. Molecular analysis was performed utilizing genomic (ITS1 and ITS2) and mitochondrial (NDI and COI) gene markers. Whereas 16 animals proved to have infection with a single *Fasciola* species, 2 were infected with both *F. hepatica* and *F. gigantica*. The results indicated that sheep were prone to *F. hepatica* (8 out of 10 animals) more than *F. gigantica* infection. Sequences of ITS1 and ITS2 ribosomal region indicated that the flukes were categorized into 3 groups F. hepatica-

type (47), *F. gigantica*-type (42) and 2 flukes possessed sequences of both types indicating an existence of different alleles at the same loci. Unique overlapping of

T/C bases were detected in both ITS1 (Position 96) and ITS2 (Position 416). Based on results of mitochondrial gene markers (NDI and COI), flukes were classified into *F. hepatica*-type and *F. gigantica*-type. Extensive intra-sequence polymorphism was detected at both markers. NDI and COI sequences of Egyptian strain of *F. gigantica* showed pronounced diversity compared with relevant sequences at database.

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Parasitol Res, Vol. 109; pp 1361–1365, 2011.
ISSN: 0932-0113.
IMPACT FACTOR= 1.812

Prokaryotic expression and identification of 3-1E gene of merozoite surface antigen of Eimeria acervulina

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ABSTRACT

E*imeria acervulina* was isolated from chicken at Hebei province, China. The gene of merozoite surface antigen 3-1E was amplified and cloned into pET28a(+) vector and then transformed into *Escherichia coli* BL21 strain. Results showed that 3-1E fusion protein band of about 22 kDa was identified by SDS-PAGE. Western blot analysis indicated that the recombinant protein specifically reacted with *E. acervulina* polyclonal antibody.

JOURNAL OF VETERINARY MEDICAL SCIENCE,
Vol. 72, No. 12; pp. 1647–1649, 2010.
ISSN: 0916-7250.
IMPACT FACTOR= 0.722

Molecular Analysis of *Cryptosporidium parvum* HNJ-1 Isolated in Japan

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ABSTRACT

Cryptosporidium parvum HNJ-1 is widely used as a reference strain in Japan. In the present study, the parasite was subjected for further molecular analysis including transcribed ribosomal region (ITS rRNA), dihydrofolate reductase (DHFR) and surface glycoprotein (GP60) genes. Partial sequence analysis of these genes indicated extensive polymorphism in ITS region compared with relevant sequences of other *Cryptosporidium parvum* isolates. In addition, this strain was identified as *C. parvum* IIaA15G2R1 subtype, based on the sequence results of GP60 gene locus.

Environ Earth Sci, VOL. 64; pp. 1807–1813 , 2011.
ISSN: 1866-6280.
IMPACT FACTOR= 0.678

Post-Aswan dam sedimentation rate of lagoons of the Nile Delta, Egypt

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ABSTRACT

This study uses radiometric analysis (210Pb and 137Cs) of short sediment cores with high-resolution sampling (1-cm interval) to trace sedimentation rates in the Nile Delta lagoons, particularly since completion of the Aswan High Dam in 1964. A declining trend in 210Pbex as calculated by the CIC model is clearly identified in about 10 cm of the upper-core sediments from the lagoons of Manzala and Edku, accompanied by two spikes of 137Cs in cores from the lagoons of Burullus and Edku. These findings illustrate average post-dam sedimentation rates ranging from 0.22 to 0.27 cm a-1 in the lagoons, in contrast with those found previously based on low-resolution sampling. The lower sedimentation rates in the lagoons are a consequence of a dramatic reduction in riverine sediment load to the coastal area as a result of the damming. Although widespread erosion occurs along the open estuarine coast, the lagoon setting remains calmer than before due to coastal diking and freshwater regulation in the delta plain in the past decades. This provides the possibility of continuously preserved radiometric records in the lessbioturbated lagoon sediments. Dating individual layers using the CRS model has revealed increasing sedimentation rates in Manzala and Burullus since the 1980s, which can largely be explained as a consequence of the reduction in lagoon area due to intensifying reclamation. The postdam sedimentation in the shrinking lagoons may have some adverse ecological consequences due to finer sediment's affinity with pollutants. These findings would shed light on the environmental conservation and socioeconomic development in the Nile Delta region.

Marine and Petroleum Geology, Vol. 28 ; pp. 1554-1571, 2011.
ISSN: 0264-8172.
IMPACT FACTOR= 2.130

Linking diagenesis to sequence stratigraphy in fluvial and shallow marine sandstones: Evidence from the CambrianeOrdovician lower sandstone unit in southwestern Sinai, Egypt

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ABSTRACT

By integrating diagenesis and sequence stratigraphy, the distribution of diagenetic alterations and their impact on reservoir quality was investigated within a sequence stratigraphic framework using the fluvial and shallow marine sandstones in the CambrianeOrdovician succession of southwest Sinai. The perographic and geochemical analysis of the studied sandstone revealed that the eogenetic alterations display fairly systematic spatial and temporal distribution patterns within the lowstand system tract and transgressive system tract, as well as along the sequence stratigraphic surfaces (i.e., sequence boundaries, transgressive surfaces and parasequence boundaries). During relative sea-level fall, percolation of meteoric waters through sandstones of the LST and below sequence and parasequence boundaries resulted in extensive dissolution of detrital grains and formation of kaolinite, authigenic K-feldspar and feldspar overgrowths as well as formation of mechanical infiltrated clays around the detrital grains. During relative sea-level rise, invasion of marinewater into the sandstones as a consequence of landward migration of the shoreline, as well as low sedimentation rates encountered in the TST, resulted in the formation of glauconite, apatite and pyrite. Development of pseudomatrix, which was formed by mechanical compaction of mud intraclasts, is mostly abundant along transgressive surfaces and parasequence boundaries of the TST, and is related to the abundance of mud

intraclasts in the transgressive lag deposits. The types and extent of eogenetic alterations have an important impact on the distribution of the mesogenetic alterations, including the formation of quartz overgrowths and dickite. Distribution of mesogenetic quartz overgrowths in the sandstones was controlled by the distribution of mechanically infiltrated clays and the presence of eogenetic cement. Sandstones that remained poorly cemented during eodiagenesis and that have thin or discontinuous infiltrated clay rims around the detrital grains were cemented during mesodiagenesis by quartz. The absence of extensive eogenetic cements in the

sandstones suggested that the partial deterioration of porosity was mainly due to mechanical compaction. Partial transformation of kaolinite to dickite, which indicates neomorphic change to a better-ordered and more stable crystal structure at the elevated temperatures during mesodiagenesis, is partially a function of distribution of kaolinite during eodiagenesis. The conceptual model developed in this study shows the diagenetic evolutionary pathways in the reservoir sandstones within a sequence stratigraphic context, which in turn provides some insights into the controls on reservoir heterogeneity.

Intern. J. Environ. Anal. Chem., Vol. 91, No. 1; pp 17–32, 2011.
ISSN: 0306-7319.
IMPACT FACTOR= 1.169

Simultaneous determination of cadmium (II), lead (II), copper (II) and mercury (II) by square-wave anodic stripping voltammetry at a montmorillonite-calcium modified carbon paste electrode

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ABSTRACT

A simple and efficient montmorillonite-calcium modified carbon paste electrode (MMT-Ca modified CPE) was constructed for simultaneous trace determination of Cd(II), Pb(II), Cu(II) and Hg(II). The MMT-Ca modified CPE significantly enhances the voltammetric stripping peak current magnitudes of the investigated metal ions compared to the bare CPE due to the large cation-exchange capacity and the strong adsorptive property of montmorillonite-Ca clay. A fully validated simple, sensitive, selective and precise square-wave anodic stripping voltammetric method was developed for the simultaneous trace determination of Cd(II), Pb(II), Cu(II) and Hg(II) in various water samples using a fabricated 10% (w/w) MMT-Ca modified CPE. The achieved limits of detection of Cd(II) 0.54 mgL_1, Pb(II) 0.30 mgL_1, Cu(II) 0.75 mgL_1 and Hg(II) 1.05 mgL_1 indicating the high sensitivity of the described SW-AS voltammetry method for the assay of these metal ions in aqueous solutions. The method was successfully applied for analysis of tap water, bottled natural water and seawater samples.

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ISSN: 0022-2860.
IMPOACT FACTOR= 1.599

Synthesis, Characterization, and Tyrosinase Biomimetic Catalytic Activity of Copper(II) Complexes with Schiff Base Ligands Derived from α- diketones with 2-methyl-3-amino-(3*H*)-quinazolin-4-one

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ABSTRACT

A template condensation of α-diketones (biacetyl, benzile and 2,3-pentanedione) with 2-methyl-3-amino-(3*H*)-quinazolin-4-one (AMQ) in the presence of CuX_2 (X = Cl^-, Br^-, NO_3^- or ClO_4^-) resulted in the formation of tetradentate Schiff base copper(II) complexes of the type [CuLX]X and $[CuL]X_2$. Structural characterization of the complex species was achieved by several physicochemical methods, namely elemental analysis, electronic spectra, ir, esr, molar conductivity, thermal analysis (TAG & DTG), and magnetic moment measurements. The stereochemistry, the nature of the metal chelates, and the catalytic reactivity are markedly dependent upon the type of counter anions and the ligand substituent within the carbonyl moiety. A square planar monomeric structure is proposed for the perchlorate, nitrate, and bromide complexes, in which the counter anions are loosely bonded to copper(II) ion. For the chloride complexes, the molar conductivities and the spectral data indicated that they have either square planar or square-pyramidal environments around copper(II) center. The reported copper(II) complexes exhibit promising *tyrosinase* catalytic activity towards the hydroxylation of phenol followed by the aerobic oxidation of the resulting catechol. A linear correlation almost exists between the catalytic reactivity and the Lewis-acidity of the central copper(II) ion created by the donating properties of the parent

ligand. The steric considerations could be accounted to clarify the difference in the catalytic activity of these functional models.

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ISSN: 0095-8972.
IMPOACT FACTOR= 1.932

Synthesis, Characterization and Ascorbic Acid Oxidase Biomimetic Catalytic Activity of Cobalt(III) Oxime Complexes

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ABSTRACT

A new quadridentate tetraaza ligand was prepared *via* Schiff-base condensation of 3,4-diaminotoluene with 2,3-butandione monoxime in an aqueous media. This ligand coordinates with cobalt(III) ion through its nitrogen donors in the equatorial positions with the loss of one of the oxime protons with concomitant formation of an intramolecular hydrogen bond. A series of cobalt(III) complexes of the type: $[CoLX_2]$; (X = Cl^-, Br^- or I^-), [SCNCoLBr], [CNCoLBr], $[BF_2CoLBr]$ and $[YCoLBr]ClO_4$; (Y= pyridine, thiophene, triphenylphosphene or n-pentylamine) was synthesized. The proposed structures and properties of the reported compounds were characterized based on the elemental analysis, (C H N), electrical conductance, magnetic moment measurements and spectral studies (IR, ^{1}HNMR and UV-Vis.). The thermal stability of representative complexes was examined by using the thermal analysis technique (TGA and DTG). The reported complexes are d^6 low-spin diamagnetic and a distorted octahedral environment was proposed for these chelates. All complexes undergo tetragonal distortion as evidenced by the splitting of $^1T_{1g}$ and $^1T_{2g}$ levels of the pseudo octahedral symmetry. The ligand field parameters such as Dq^E, Dq^A and the tetragonal splitting D_t, have been computed, and correlated with the nature of the coordinated axial ligands. The reported cobalt(III) complexes exhibit promising catalytic activity towards the aerobic oxidation of ascorbic acid to the corresponding dehydroascorbic acid. The oxidase catalytic activity is linked to both the tetragonal splitting parameter D_t and the Lewis - acidity of the central cobalt(III)

ion created by the nature of the coordinated axial ligands. The probable mechanistic implications of the catalytic oxidation reactions are discussed.

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IMPACT FACTOR= 1.599

Synthesis and spectroscopic characterization of zinc(II) and copper(II) complexes of ,N-bis(2-picolyl)glycine as structural phosphotriestrase models:The catalyzed detoxification of paraoxon.

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ABSTRACT

The reaction of the tetradentate ligand N,N-bis(2-picolyl)glycine, BPG-H, which was successfully synthesized in its free state, with the nitrate or perchlorate salts of both zinc(II) and copper(II) ions yielded the aqua complexes [BPG-Zn$(H_2O)_2$]X, **1**, **2** and [BPG-Cu(H2O)2]X_3, **4** (X = NO_3 for **1** and **3** and X = ClO_4 for **2** and **4**). Two intermediate complex species, namely the bridged copper(II) hydroxo {[(BPG)Cu]$_2(OH)_2$} 5 and zinc(II)-bound diethylphosphate ([BPG-Zn$(OPO(C_2H_5)_2$] 6 were successfully isolated in good yields and pure forms. The ligand and its complexes were characterized by using elemental analyses, FT-IR, and thermal analyses as well as in solution by using conductometric, UV–visible, pH, and 1H NMR titrations. All complexes have basically similar coordination chromophor (N_3O_3) through the coordination of the ligand with both zinc(II) and copper(II) metal ions. The hydrolase biomimetic catalytic activity of complexes 1 and 3 were examined towards the toxic organophosphate, paraoxon (p-NPDEP). The results indicate that the obtained bell-shaped curves of pH-rate below pH 8.6 mirrors the ionization curves of the coordinated water molecules to give the

hydroxoaqua complexes and provide strong evidence that these are the catalytically active species in the hydrolysis reactions.

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IMPACT FACTOR= 1.599

Synthesis, superoxide dismutase, nuclease, and anticancer activities of complexes incorporating *bis*-(2-picolyl)amine with different copper(II) counter anions

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ABSTRACT

Interaction of the tridentate ligand bis(2-picolyl)amine L with copper(II) salts gave a series of copper(II) complexes with the formula types: $[LCu(X)_2]$ (X=Cl, **1**, X= Br **2**), $[(LCu(H_2O)(SO_4)(LCu(H_2O)]SO_4$ **3**,$[LCu(OAc)](OAc)H_2O$ **4**, $[LCu(H_2O)_2](Y)_2$ (Y = NO_3 **5**, Y= ClO_4 **6**). Their structures and properties were characterized by elemental analysis, thermal analysis (TGA), IR, UV–vis and ESR spectroscopy, electrochemical measurements including cyclic voltammetry and electrical molar conductivity, and magnetic moment measurements. A square pyramidal geometry is proposed for the halogeno complexes **1** and **2** in monomeric structures. For sulfate complex, the sulfate group bridged two copper(II) ions of the two $[N_3O]$ donor units to give the dimeric complex molecule **3** in square pyramidal environment around the copper(II) ions. In the case of complexes **4** – **6**, square planar stereochemistries in monomeric structures are suggested. The SOD biomimetic catalytic activity of the obtained complexes was assessed for their ability to inhibit the reduction of nitroblue tetrazolium (NBT). The catalytic efficiency of O_2^- scavenging by complexes depends on the nature of the particular acidic anion radical incorporated in the complex molecule and follows the order: NO_3 > ClO_4 > Br Cl > SO_4 > AcO. A probable mechanistic implications for the catalytic dismutation of O_2^- by copper(II) complexes are proposed. Furthermore, complex **1** exhibits significant hydrolytic cleavage of

the genomic DNA in the absence of any external additives. In addition, the in vitro study of cytotoxicity of complex **1** on colon cancer cell line (Caco-2) indicates that the complex has the potential to act as an effective anticancer drug with IC50 value of 156 ± 0.35 lM.

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Preparation of Modified Electrode *in situ* Carbon Paste Electrode supported by Ni(II) Complex for the Electrochemical Removal of Nitrate from Drinking Water

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ABSTRACT

A new carbon paste electrode modified by N**S2** containing Ni(II) complex was prepared for the electrochemical removal of nitrate ions from drinking water. The tripod ligand N**S2**, namely: Hydro {bis(2-isopropylphenyl-2-thioimidazol-1-yl)(5-phenyl-3-methyl-pyrazol-1-yl)}borate, **L**, and its mononuclear Ni(II) complex [**L**Ni-NO3] were prepared and characterized in the solid state by infrared (FT-IR), thermal analysis (TA) and in solution by conductivity and 1H NMR. The carbon paste modified electrode was prepared by the immobilization of Ni(II) complex in carbon paste. The prepared electrode was characterized using scanning electronic microscopy (SEM) and cyclic voltammetry (CV). The modified electrode showed only one oxidation peak in the anodic scan at +0.14 V (*v*s. Ag/AgCl) for the oxidation of Ni(II) complex. Upon addition of nitrate ions, no reduction peaks were observed while the oxidation peak current height for Ni(II) complex was decreased. This decrease in the oxidation peak current can be explained on the basis that a part of Ni(II) complex was consumed in the reduction of nitrate ions to nitrite.

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Synthesis and characterization of benzimidazole-based zinc complexes as structural carbonic anhydrase models and their applications towards CO_2 hydratio

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ABSTRACT

The tripod ligand tris(2-benzimidazolylmethyl)amine L^1 and its methylated derivative tris(N-methyl-2-benzimidazolylmethyl)amine L^2 were used for the preparation of chloro complexes $[L^1Zn–Cl](PF_6)$ **1** and $[L^2Zn–Cl](PF_6)$ **2**. These complexes reacted with AgPF6 in aqueous acetone to form the corresponding aqua complexes $[L^1Zn–H2](PF_6)_2$ **3**, $[L^2Zn(H_2O)](PF_6)_2$ **4**, which were deprotonated by using KOH to form the hydroxide complexes [L1Zn–OH)](PF_6) **5** and $[L^2Zn–OH)](PF_6)$ **6**. 1H NMR titration of the ligands with Zn(II) ions gave detailed information about the structure of the resulting zinc complexes and the evidence for the existence of the zinc-bound hydroxo species. Complex 3 reacted with CO2 gas in the presence of triethylamine to give the bicarbonate complex $[L^1Zn–OCO_2H)](PF_6)$, which was characterized by IR and 13C NMR spectroscopes. The X-ray structure of $[L^1Zn–NCS]2[Zn(NCS)_4]$ **7** as structural carbonic anhydrase inhibitor was determined and adopted slightly distorted tetrahedral ZnN_4 coordination geometries with the equatorial positions occupied by three benzimidazole

nitrogen atoms and apical position by nitrogen atom from the thiocyanate anion.

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A new approach for the N- and S-galactosylation of 5-arylidene-2-thioxo-4-thiazolidinones

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ABSTRACT

N- and S-galactosylation was carried out via the reaction of 5-((Z)-arylidene) 2-thioxo-4-thiazolidinones with 2,3,4,6-tetra-O-acetyl-a-D-galactopyranosyl bromide under alkaline conditions or under silylation conditions. Deacetylation of the N-galactosylation products was performed with concentrated hydrochloric acid in methanol (3.5%) or sodium methoxide in methanol without cleavage of the 2-thioxo-4-thaizolidinone ring by means of acid hydrolysis. The anomers were separated by flash column chromatography, and their configurations were assigned by NMR spectroscopy. The deprotected nucleosides were screened against leukemia L 1210 and were found inactive.

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A Convenient Synthesis of Pyrano[2,3-*b*][1,5]oxazepines by Ring Closure of *O*-Glycosyl Amino Acids

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ABSTRACT

N-Boc-protected serine and threonine esters could be readily added to 2 nitroglycals, affording exclusively α- and β-anomers with *galacto*- and *gluco* configuration, respectively. Nitro group reduction to the amino group and also ester cleav-age led to compounds **2**, **6**, and **11**, which can be regarded as dipeptide mimetics. From these compounds, bicyclic pyrano[2.3 *b*][1,5]oxazepines **7**–**14** were prepared by ring closure

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Syntheses and structures of four- and five-coordinate bio-related zinc complexes containing dithiolate–diamine ligands

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ABSTRACT

Two new zinc complexes, namely, [{Zn(N2H2S2)}2] (3) [N2H2S2 2_ = N,N bis(2-mercaptophenyl)ethylendiamine (2_)] and [Zn(N2Me2S2)] (4) [N2Me2S2 2_ = N,N0-dimethyl-N,N0-bis(2-mercaptophenyl)ethylendiamine) (2_)] have been synthesized and structurally characterized by X-ray structure analyses. The structure of 3 consists of a bis(l-thiolato) binuclear unit, in which each zinc center was found to reside in an N2S3 array between square pyramidal and trigonal-bipyramidal environment. The two zinc centers are bridged by one of the two thiolates of an [N2S2] ligand. In the crystal packing, the neighboring binuclear units interact with each other by H-bonding interaction, which extends the binuclear unit into a 3D network. In contrast to 3 complex 4 is mononuclear, where each zinc center now was found to reside in an N2S2 distorted tetrahedral environment with a large S–Zn–S bite angle. The relevance of these compounds in biological systems is discussed. Unlike 3, the formation of hydrogen bridges in 4 is no longer possible and instead the molecular packing is determined by p-stacking between the phenyl rings

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Structural and mechanistic information on the nitrosation of model Fe(II) complexes containing a biomimetic S4N chelate

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ABSTRACT

In order to provide insight into the reaction pathways of nitrogen oxide redox species with [Fe–S] models that may parallel those existing in biology, the reactivity of the iron-sulfur species, *{*[FeII(S4N*Et2N*)]*}*2 (**1**) and [FeII(CH3CN)(S4N*Et2N*)] (**2**), where (S4N*Et2N*)2- = 2,6-bis(2-mercaptophenylthiomethyl)-4-diethylaminopyridine(2-), towards NO+ (nitrosation) has been studied mechanistically in acetonitrile and compared with the corresponding reactions with NO (nitrosylation). For the nitrosation of **1**, the reaction takes place in two steps that correspond to the nitrosation of the mononuclear (**2**) and dinuclear (**1**) complexes, respectively. For the corresponding carbonyl complex [FeII(CO)(S4N*Et2N*)] (**3**), the nitrosation reaction occurs in a single step. The relative reactivity of the iron-sulfur species is approximately (**1**)/(**2**)/(**3**) = 1/20/10. Activation parameters for the nitrosation of **1** (D*H*# = 27 ± 1 kJ mol-1, D*S*# = -111 ± 2 J K-1 mol-1, and D*V*# = -19 ± 2 cm3 mol-1), **2** (D*H*# = 46 ± 2 Kj mol-1, D*S*# = -22 ± 7 J K-1 mol-1, and D*V*# = -9.7 ± 0.4 cm3 mol-1) and **3** (D*H*# = 38 ± 1 kJ mol-1, D*S*# = -44 ± 4 J K-1 mol-1, and D*V*# = -7.8 ± 0.3 cm3 mol-1) were determined from variable temperature and pressure studies. The significantly negative D*S*# and D*V*# values found for the nitrosation reactions are consistent with an associative mechanism. A comparative study of the reactivity of the iron sulfur species **1** to **3** towards NO+ and NO is presented.