

الجلسة العلمية الاولى

١ أ.د. محمد أحمد على يوسف
٢ أ.د. السعيد الشربينى السعيد
٣ أ.د. نبيل ابو هيكل

قاعة البرامج الخاصة الدور الرابع

1: Systematic understanding of temperature-responsive recombinant protein block polymers for DDS

Toshimasa HOMMA[1,2], Alaa FEHAID[1,2,3], Mitsuhiro EBARA[2,4,5]

[1]Nat. Inst. Technol., Ichinoseki Col. [2]Nat. Inst. Mater. Sci. [3]Mansoura Univ. [4]Grad. Sch. Sci. Technol., Tsukuba Univ. [5]Grad. Sch. Adv. Eng., Tokyo Univ. Sci.
[1]Tel: +81-0191-47-4700, E-mail: hommatsh@g.ichinoseki.ac.jp

Unlike synthetic and natural polymers, recombinant protein polymers are monodisperse polymers with highly controlled monomer sequence and chain length, and are expected to be new biomaterials because they can be synthesized and degraded in vivo. Among them, the elastin-like polypeptide (ELP), which changes from soluble to insoluble when heated, and the resilin-like polypeptide (RLP), which changes from insoluble to soluble when heated, have potential applications in drug delivery systems (DDS). Recently, there is a trend to apply block polymers with both elastin-like and resilin-like sequences to DDS[1,2]. However, the knowledge of primary structure and function has not been accumulated enough to design polymers with desired temperature responsiveness from the ground up. Therefore, we prepared several block polymers with ELP and RLP sequences to systematically understand the relationship between the primary structure and the temperature response. As a result, we were able to clarify the relationship between the ELP weight fraction and the temperature response (Figure 1). This finding can be utilized for the design of protein polymers with desired environmental responsiveness and may be useful for the design of DDS.

Reference : 1) P. Weber et al., Biomacromolecules, 2021, 22, 4347-4356, 2) M. Dzuricky et al., Nano Lett., 2019, 19, 6124-6132

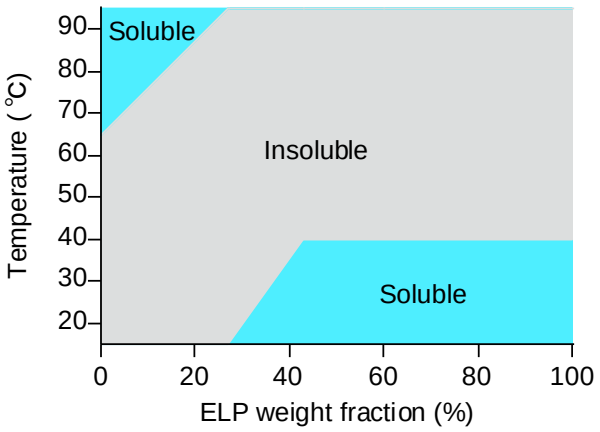


Figure 1 Relationship between temperature response and ELP weight fraction of the ELP-RLP block polymers.

2: Possible counteracting effects of zinc oxide nanoparticles on acute renal ischemia/reperfusion injury

Eman M. Embaby[1,✉], Rasha M. Saleh[1], Basma H. Marghani[1,2], Nashwa Barakat[3], Ahmed Nabil[4], and Nabil Abu-Heakal[1]

[1]Department of Physiology, Faculty of Veterinary Medicine, Mansoura University, Mansoura 35516, Egypt.

[2]Department of Biochemistry, Physiology and Pharmacology, Faculty of Veterinary Medicine, King Salman International University, Ras Sudr, South of Sinaa 46612, Egypt

[3]Urology and Nephrology Center, Mansoura University, Mansoura, 35516, Egypt.

[4]Department of Biotechnology and Life Sciences, Faculty of Postgraduate Studies for Advanced Sciences (PSAS), Beni-Suef University, Beni-Suef, Egypt

✉**Correspondence**

Eman M. Embaby, Assistant Lecturer of Physiology, Faculty of Veterinary Medicine, Mansoura University, Mansoura 35516, Egypt. Email: emanmohamed@mans.edu.eg

Abstract

Ischemia/reperfusion injury (I/RI) to the kidneys is a critical and significant side effect following kidney transplant and several cardiovascular diseases. Clinically, renal I/RI is the most common complication of acute renal failure, which is linked to lengthy hospital stays and increased mortality. The development of more specialized therapeutics to avoid and alleviate kidney injury should be aided by a deeper knowledge of the cellular pathophysiological mechanisms fundamental to the disease. It is crucial to manage this serious complication since the pathophysiology of I/R is intricate, multifaceted, and interdependent and involves hypoxia, damaging free radicals, and inflammatory reactions. The use of nanoparticles in medicine is an attractive proposition. Concerning the involvement of zinc oxide nanoparticles in various applications in biomedicine, such as anti-cancer, anti-bacterial, anti-oxidant, anti-diabetic, and anti-inflammatory capabilities, along with methods of drug delivery and bioimaging, the goal of this review is to summarize the possible protective mechanisms of zinc oxide nanoparticles to counteract acute renal ischemia/reperfusion injury.

Key words: Acute renal ischemia/reperfusion injury, Inflammation, Oxidative stress, Apoptosis, Zinc oxide nanoparticles.

3: Protective Effects of Nanoselenium on Japanese Quails Fed on Aflatoxin B1 Contaminated Diets on Performance Parameters, Hematological, Biochemical, Immunological and Pathological Studies.

Hend Diab,

Demonstrator, Pathology department, Faculty of Veterinary Medicine, Mansoura University, Egypt.

Abstract:

Mycotoxins considered a destructive problem in feed and food quality to animal and

human health. Nanotechnological application had been done for detection and elimination mycotoxins, recently attracted great scientific interest, mainly because of its potential benefits for poultry to control these problems. Our study aimed to investigate the toxic effects of AFB1in addition to the protective effects of nano-Se against aflatoxicosis in Japanese quails. To achieve this, one hundred twenty healthy Japanese quails, The quails were divided randomly into 5 groups containing 24 birds each. First group G1; fed basal diet (negative control) without any addition, Second group G2; fed basal diet supplemented with 0.5 mg/kg diet nano-Se, Third group G3; fed basal diet containing 300 ppb AFB1 (positive control), Fourth group G4; fed basal diet containing 300 ppb AFB1 treated with 0.3 mg//kg diet nano-Se, Fifth group G5; fed basal diet containing 300 ppb AFB1 and treated with 0.5 mg//kg diet nano-Se. The experiment was conducted for 6 weeks. Compared to control and second group, the results revealed decrease in FI, BWG, FBW and increase FCR of quail performance. Significant decrease in Hb, PCV, RBCS, WBCS, DLC, total protein, albumin and globulin was recorded in G3 compared to G1&G2, high dose of nano-Se revealed a significant increase in these parameters compared to G3 and G4. Significant increase in AST, ALT, creatinine, uric acid, TG, total cholesterol, LDL, VLDL and significant decrease in HDL in G3 compared to G1&G2. However, the opposite was recognized in G5 compared to G3 and G4. Also, AFB1 had a determintal effect on expression of IL-1B and IL6 as an indicator for inflammation and immune status of aflatoxicated quails. Sever degenerative changes and necrosis were observed in liver, kidney and lung with 300ppb AFB1. Slight to minimal pathological changes were observed in G3 while marked improvement was achieved in G5. We concluded that high dose of nano-Se (0.5 mg/kg diet) had more protective effect than (0.3 mg/kg diet) nano-Se against toxic effects of AFB1 on growth performance, hematological, biochemical and immunological parameters besides liver, lungs and kidneys histology of quails.
Keywords: AFB1, nano-Se, performance, immunohematological, biochemical and pathology, Japanese quails.

4: Histopathological Studies on the Protective Effects of Silymarin against Cispatin-Induced Ovarian and Testicular damage in Albino Rats.

Sohaila Abd El- Hameed *[1], Hebat Allah El- Mahgoub [1], Walaa Awadin[1], Ahmed El-Shaieb[1]

[1] Demonstrator, Pathology department, Faculty of Veterinary Medicine, Mansoura University, Egypt.

[1] Department of Pathology, Faculty of Veterinary Medicine, Mansoura University, Egypt.

[1] Department of Pathology, Faculty of Veterinary Medicine, Mansoura University, Egypt.

[1]Department of Pathology, Faculty of Veterinary Medicine, Mansoura University, Egypt.

Abstract

Objective: The aim of this study was to determine and document the protective effect of silymarin against cisplatin -induced ovary toxicity and testicular damage in male and

female albino rats.
Design: Randomized controlled study.
Animal Models: The experiment was performed on 80 adult albino rats of both sexes, weighting (160 g ±20g) and (4-6) weeks old.
Procedures: rats were divided into four groups, **(Control negative group):** rats received a daily (I / P) dose of sterile physiological saline at (1 ml / kg / b. wt) and daily oral dose of distilled water at (100 ml / kg/ b.wt) for 20 successive days, **(Silymarin treated group):** rats received a daily oral dose of silymarin at (100 mg / kg / b.wt) for 20 successive days, (**CDDP treated group):** rats received a daily (I / P) therapeutic dose of CDDP at (1mg / kg / b.wt) for 20successive days, and **(CDDP+ silymarin group):** rats received a daily oral dose of silymarin at (100 mg / kg / b.wt) and simultaneously treated with (I / P) therapeutic dose of CDDP at (1 mg / kg / b.wt) for 20 successive days.
Results: Our study recorded that CDDP treatment had deleterious hormonal and histopathological effects in the testis and ovaries of albino rats. Silymarin played a critical significant role in reducing CDDP- induced ovary toxicity and testicular damage in both sexes.
Conclusion: CDDP caused different histopathological lesions in ovaries and testis of albino rats. Silymarin protective responses in male rats were higher than in female rats. This study suggested that silymarin may lead to different responses against cisplatin-induced toxicities in male and female rats.
Running title: Silymarin Ameliorates Cisplatin-Induced Toxicities in Male and Female gonads of Albino rats.
Keywords: Silymarin, CDDP, Ovary, Testis, Rats

5: Molecular and pathological characterization of velogenic Newcastle Disease Virus causing late embryonic death in ostrich (*Struthio camelus*) in Egypt.

Samar GHALY[1*], Abdelfattah H. ElADL[2], Shaker ABDEEN[1] and Ahmed ELSHAIEB[3]
[1] Department of Pathology, Mansoura provincial lab., Animal Health Research Institute (AHRI), Agricultural Research Center (ARC), Ministry of Agriculture, Egypt,
[2] Department of Poultry Diseases, Faculty of Veterinary Medicine, Mansoura University, Mansoura, Egypt,
[3]Department of Pathology, Faculty of Veterinary Medicine, Mansoura University, Mansoura, Egypt.
***Corresponding author:**
Dr. Samar Ghaly
Department of Pathology, Animal Health Research Institute (AHRI), Mansoura provincial lab., Agricultural Research Center (ARC), Ministry of Agriculture, Dokki, Giza, Egypt.
Fax: +33350030, PO Box: 35516, Mobile number: +2-01016707237
Email: samar4vet@gmail.com

A b s t r a c t
In Egypt, ostrich farming has had a great increase during the last few years. The most common problems facing ostrich farmers are a high percentage of late embryonic mortality and low hatchability. This study was designed to survey the main causes of late in-shell ostrich embryonic death. A total of 100 freshly dead shell ostrich embryos, all of them were in the

second half of the incubation period with different ages ranging from 25 to 39 days old, were received during the breeding seasons of the period from October 2018- October 2021, from different ostrich farms in Egypt, suffered from late-stage embryonic death during artificial incubation, respiratory signs and diarrhea in breeders, moreover, the surveyed ostrich farms were near to chicken farms suffered from Newcastle Disease outbreaks. Gross findings in all embryos were recorded as anasarca, severe general congestion, and hemorrhages. In this study, 66 dead shell ostrich embryos out of 100 (66%) were immunohistochemically positive for Newcastle Disease Virus. Four Velogenic Newcastle Disease Virus strains (genotype VIIb) were molecularly characterized in 4 immune-positive ND embryos (from 4 different ostrich farms in 4 different Egyptian governorates) by RT-PCR and F gene sequencing. In addition, all embryos were negative for bacterial isolation except for one vNDV positive embryo (1%) (25 days old) that was superinfected by *Citrobacter spp*. The main histopathological lesions of vNDV-positive ostrich embryos were general edema, extensive congested blood vessels, hemorrhages, necrosis, syncytial cells formation in the upper respiratory tract, and leukocytic cells infiltrations. To the best of our knowledge, this study is the first report of the Velogenic Newcastle Disease Virus that immunohistochemically and molecularly characterized dead ostrich embryos in Egypt, therefore, Newcastle Disease Virus vaccination of ostrich breeders is strongly recommended.

Keywords: Ostrich, vNDV, late embryonic death, IHC, Histopathology, F gene sequencing, vertical transmission.

6: Lipid profile and obese related genes of rats, potential therapeutic effects of Peganum harmala /ZnO nanoparticles

Mervat Abdelsattar [1], Youssef Elseady[2], Walaa F. Awadin[3], Ahmed Hendawy[1], ABD EL-Aziz Abbas Diab [1],

[1] Department physiology and Zoology, Faculty of Science, Zagazig University, Egypt.

[2]Department of Physiology, Faculty of Veterinary Medicine, Mansoura University, Mansoura 35516, Egypt.

[3]Department of Pathology, Faculty of Veterinary Medicine, Mansoura University, Mansoura 35516, Egypt.

Corresponding author: Dr. Youssef ELSeady Tel…01126797600…; E-mail: elseady4370@yahoo.com, ORCID Id: 0000-0002-1971-8616

Abstract

Obesity is a major global health concern and is characterized by an imbalance between food intake and energy expenditure, which causes excessive accumulation of fat in blood, adipose tissue, and liver. It is an important morbid condition for cardiovascular disorders, cancer, and fatty liver metabolic syndrome. *Peganum harmala* (*P. harmala)* finds its place in traditional medicine as an effective anti-cancer, anti-inflammatory and hypolipidemic agent. The present study investigated the effects of methanolic extract of *harmala* nanopartical (H/ZnONP) extract on the changes in serum lipid profiles, serum leptin levels and liver and kidney PPAR gene expression in high caloric diet (HCD) induced obese rats. After induction of obesity with HCD for one month to half numbers of rats. A total number of 36 male rats were divided into two groups (obese and normal) each of which sub divided into 3 sub-groups. The main group administered orally with H/ZnONP

200 and 400 mg/kg BW/ daily for one month) while others remain as control normal and obese. After 4 weeks of treatment blood and tissue samples were collected and subjected to laboratory assay of lipid profile and leptin level in addition to expression of PPAR gene in liver and kidney. We also investigated the possible protective effect of H/ZnONP 200 and 400 mg/kg BW on liver and kidney histology. The obtained results demonstrated that H/ZnONP treatment to obese rats significantly decreased serum cholesterols, triglyceride, and LDL level while relative expression of PPAR gene in liver and kidney was significantly increased. Based on the obtained results we can concluded that H/ZnONP supplementation has potent anti-obesity in rat by improving lipid profile, enhance expression of PPAR gene in liver and kidney and improve liver and kidney histology particularly the high dose.

7: Alleviation of Fatty Liver by Using Soy Proteins in Rat

Asmaa Nabih[1], El-Saied EL-sherbini [2] , Reham A. El-shafei [3], Mohamed F. Salama[4]

[1]Department of Biochemistry and Molecular Biology , College of Veterinary Medicine, Mansoura University.

[2] Department of Biochemistry and Molecular Biology , College of Veterinary Medicine, Mansoura University.

[3]Department of Pharmacology, College of Veterinary Medicine, Mansoura University .

[4] Department of Biochemistry and Molecular Biology , College of Veterinary Medicine.

*Correspondence

Corresponding author: Asmaa nabeh

mail address: Asmaa.nabeh2014@yahoo.com

Abstract

The aim of the current investigation is to determine how soy isoflavone (ISF) and genistein (GS) affects oxidative stress, IL1-ß and PPARγ signalling pathways in liver of rats and how this pathway is involved in controlling the formation of hepatic fat. The study included 60 male Sprague Dawley rats that were allocated to six groups (n = 10rats) :(I) Fatty liver was induced in rats were daily fed (60% fat energy, high fat diet (HFD) for 12 weeks ; (II) (Fatty liver + ISF group) rats were daily fed with HFD and 10 mg/Kg ISF intragastrical for 12 weeks ;(III) (Fatty liver + GS group) rats were given HFD and 16 mg/Kg GS in 0.1% DMSO once daily by intragastric tube for 12 weeks; (IV) (Normal control group) rats were fed with normal balanced diet for 12 weeks; (V)(Normal diet + ISF group) rats were fed with normal diet and 10 mg/Kg ISF intragastrical for 12 weeks; (VI) (Normal diet + GS group) rats were fed with normal diet and 16 mg/Kg GS for 12 weeks. All rats allowed water whereas rats got HFD were accompanied by 18% sucrose solution freely. Also, weight was measured weekly. At the end of the experiments lipid profile and liver function were analysed. Moreover, the levels of MDA, SOD, CAT, and GSH, and the gene expression of IL1-ß and PPARγ genes were detected. The study showed that fat content was significantly lowered in the liver of ISF and GS -fed obese rats, accompanied by a reduction in hepatocellular vacuolation when compared to the fatty liver control. In ISF

and GS fatty liver treated groups SOD, CAT and GSH activities were significantly increased in comparison to the Fatty liver untreated group moreover, MDA level decreased in ISF and GS groups.IL1-ß and PPARγ expressions was downregulated in Fatty liver + ISF and Fatty liver+ GS treated rats when compared with Fatty liver one, however the results in Fatty liver+ GS treated rats was significantly Improved over ISF + Fatty liver. The study concluded that Genistein administration alleviated fatty liver through the down-regulation of PPARγ and IL-1 β and up-regulation the activity of oxidative stress marker (SOD , CAT and GSH.(

KEYWORDS: Soy isoflavone, Genistein, Oxidative stress,

8: Evaluation of the effect of spirulina platensis on some biochemical parameters in broiler chickens.

Authors: Enas M. M [1*], Gehad R [2], E, Azza E.H [1] and Shimaa A.E [2]

Affiliation: [1] Biochemistry Department, Animal Health Research Institute, Mansoura branch, Egypt

[2] [1]Department of Biochemistry and Molecular Biology, Faculty of Veterinary Medicine, Mansoura University, P.O. 35516, Mansoura, Egypt *Correspondence to

Name**:** Enas Hassan

Address: Biochemistry Department, Animal Health Research Institute, Mansoura branch, Egypt

Tel. 00201064317314,

E-mail: enashassan110@gmail.com

Abstract

Objective: This study was conducted to know influence of of Dietary spirulina platensis on some biochemical parameters and meat quality in broiler chickens

Design: experimental study

Animals: One hundred one-day-old broiler chicks. chickens of mixed sex (as hatched) were purchased from a local hatchary at Gamasa city were assigned randomly to three treatment groups, with four replications of 10 birds per group.

Results: From the present study we can conclude that It could be concluded that, dietary supplementation with spirulina dry leaves powder with 0.5 or 1 or 2 g/kg diet as alternatives growth promoters may enhancing productive performance of broiler without any adverse effect on their physiological responses,gut integrity, and immunity of broiler birds *S. platensis* increased the number of leukocytes, erythrocytes and decreased the mortality rate. These bioactive compounds have numerous biological activities such as antioxidant, antiviral anti-inflammatory,hepatoprotective, immunostimulatory, antimicrobial.

Key words: spirulina platensis; Broilers; ant oxidative activities; Growth performances.

9: Early Post-Hatching Development of the Grass Carp Pancreas

Eman Fiala [1], Mahmoud B. Shoeib [1], Safwat Ebada [1] , and Ahmed M. Abdellatif [1*]

[1] Department of Anatomy and Embryology, Faculty of Veterinary Medicine, Mansoura University, Mansoura 35516, Egypt

***Correspondence:**

Dr. Ahmed M. Abdellatif, Department of Anatomy and Embryology, Faculty of Veterinary Medicine, Mansoura University, Mansoura 35516, EGYPT.

Email. Abdellatif_ma@mans.edu.eg. Phone (cell): 0020-102-052-8248. Fax: 0020-502-200-696.

Abstract

The pancreas is a mixed gland that performs indispensable roles in digestion and glucose uptake. Grass carp (*Ctenopharyngodon idella)* is a cyprinid fish of aquacultural, medical, and research importance. Knowledge about the early post-hatching development of grass carp pancreas is lacking. In the present study, developmental features of grass carp pancreas were studied at 1-day post-hatching (1 dph), 4 dph, 10 dph, and 20 dph using histological and histochemical techniques. The pancreas of grass carp displayed progressive developmental changes during the studied period. At 1 dph, the pancreatic primordium was located dorsal to the gut and caudal to the hepatic primordium. Zymogen granules were detected as early as 4 dph and appeared clearer onwards, suggesting initiation of pancreatic digestive activity by this age. At 10 dph, the pancreas appeared in close contact with the liver and spleen. At 20 dph, the pancreas significantly increased in size, infiltrated by patches of adipose tissue, and housed a large number of pancreatic acini containing well-developed zymogen granules within the apical portions of their cytoplasm. Clustered endocrine cells were detected among pancreatic acini at 20 dph. The present study reports age-related structural changes in the pancreas of grass carp during early post-hatching life and will help to understand the pancreatic biology of the studied species.

Keywords: Development, Grass carp, Histochemistry, Pancreas, Zymogen granules.

10: Protective role of curcumin against hematological alterations and hepatic damage induced by gentamicin in rats

Sara Hamdy[1], Gehad E. Elshopakey[1], Engy F. Risha[1], Fatma M. Abdelhamid[1*]

[1] Department of Clinical Pathology, Faculty of Veterinary Medicine, Mansoura University, Mansoura, 35516, Egypt

[*]Corresponding author: Tel: +201019108001 Fax: +2050/2200696

E-mail address: fatmamostafa980@yahoo.com

Abstract

Gentamicin (GEN) is considered an aminoglycoside antibiotic which is widely used to treat numerous bacterial infections. It has toxic effect on liver tissue. Curcumin (CMN) is a natural polyphenolic compound with anti-oxidant as well as anti-inflammatory potentials.

The current study sought to investigate the effect of CMN in protecting against GEN-induced hematological alterations and hepatotoxicity. Rats were randomly assigned into 4 equal groups: Control, gentamicin group (100 mg/kg b.wt, i.p, daily for seven days), curcumin group (200 mg/kg b.wt, orally for 21 days) and curcumin plus gentamicin group. After 21 days, some hematological and serum biochemical parameters were measured. GEN-intoxicated group showed a marked decline in RBCs count, Hb concentration as well as PCV% with insignificant difference in MCV, MCH and MCHC. Moreover, there were leukopenia, lymphopenia and neutrophilia in GEN group. Concerning to the serum biochemical examination, a substantial increase in the serum activities of ALT, AST and ALP with a marked decline in the total protein, albumin and globulin serum levels were recorded following GEN injection. In addition, there was a marked increase in the cholesterol, triglycerides and glucose serum levels. Improvement in all tested parameters were noticed following concurrent CMN administration with GEN. Based on these results, CMN could be recommended as a treatment strategy for protection against GEN-induced hematological alterations and hepatic injury.

Keywords: Gentamicin; Curcumin; hepatotoxicity; oxidative stress; hematological alterations.

11: Chitosan and peptic ulcer in rats

Silvia Amir Trabolsi, El Said El-Sherbini, Basma Salama, Mohamed El-Adl
Department of Biochemistry and Chemistry of Nutrition, Faculty of Veterinary Medicine, Mansoura University, Mansoura, Egypt

ABSTRACT

Objective: The current study investigated the protective effect of chitosan in ethanol-induced) peptic ulcer in rats.
Animals: Sprague-Dawley rats
Experimental design : Animals were divided into four groups (n = 10): control group , Ulcerated group , chitosan treated group and chitosan pre-treated group and markers of redox state and oxidative stress were determined at the end of the experiment like superoxid dismutase (SOD) and Glutathione peroxidase (GPX), as well as lipid peroxidation markers like MDA (malonaldialdehyde), proinflammatory markers like (NO) nitric oxide, and (IL6) Interlukin 6 And apoptosis markers like(Bax) and (Bcl2)
RESULTS: Histological observation showed gastric mucosa of chitosan treated group had better healing effect. Chitosan significantly Inhibited (MDA) generation for lipid peroxidation ($P < 0.05$). Chitosan significantly promoted the activity Of (SOD) and (GPx) ($P < 0.05$). NO activity decreased in chitosan treated and pretreated groups. IL6 level showed increasing in both chitosan treated and pretreated groups. In Bax There is Non significant increasing between chitosan treated and pre treated groups. In Bcl2 there is non significant decrease in both chitosan groups. PH of the stomach return to normal in both groups of chitosan.
CONCLUSION: Chitosan can improve gastric mucosa tissue repair, exert significant influences on oxidative and antioxidant enzyme Activities and neutrophil infiltration.
Key words: Chitosan. Peptic. Gastric Ulcer. . Malondialdehyde. Ethanol. Rats

12: Growth Performance and Health Responses of Growing New Zealand White Rabbits Fed Different Levels of Dietary Synbiotic

Amr A. Gabr[1*], Eman H. Maklad[1], Mona A. Ragab[2] and Bassant K. Hegazya[1]

[1] Department of Animal Production, Faculty of Agriculture, Mansoura University, Mansoura 35516, Egypt.
[2] Animal Production Research Institute, Agricultural Research Center, Giza 12618, Egypt.
* Correspondence: dr.amrgabr@mans.edu.eg , (01099440340), ORCID:0000-0003-4947-5907

Abstract: Countering the antibiotics excessive use by the exploitation of promising immunostimulants alternatives is a trending strategy in modern animal husbandry. This research assessed the impact of novel dietary synbiotic supply at different levels on growing rabbits' performance. Forty-five New Zealand White rabbits were randomly allotted to five groups. Rabbits were fed the basal diet as control and the other groups supplemented with synbiotic (*Saccharomyces cerevisiae* along with β-glucan and mannan-oligosaccharide) at an inclusion level of 0.5, 1.0, 1.5 and 2.0 g/kg diet for 6 weeks. Results indicated that synbiotic addition increased the feed intake (p=0.01), enhanced the growth performance and feed conversion ratio (linear, p≤0.001; quadratic, p≤0.002) with the 0.5 g/kg diet level being the most effective. The synbiotic supply increased the serum total protein and albumin (quadratic, p≤0.024) as well as lipase and amylase (linear, p<0.001; quadratic, p=0.001), while decreased alanine-aminotransferase, urea, triglycerides, and glucose (quadratic, p≤0.023) as well as cortisol (linear, p<0.001; quadratic, p≤0.001). The concentrations of immunoglobulin-G, immunoglobulin-M, red blood cells, hemoglobin, hematocrit, and platelet count increased (linear, p≤0.001) and white blood cells decreased (linear, p<0.001) by the synbiotic inclusion. The hot carcass weight and the percentages of dressing, and carcass cuts were increased (quadratic, p≤0.02) in which the 0.5 g/kg diet level was better. Taken together, the current dietary synbiotic supplementation of 0.5 g/kg diet could pave the way for promoting the rabbits' growth and health status, thus, it is advisable to utilize these findings in the husbandry of rabbits under commercial production conditions.
Keywords: Synbiotic supplementation, growth performance, serum metabolites, carcass traits, New Zealand White rabbits.

13: Impact of Supplementing a Frankincense–*Melissa officinalis* Extract Mixture to Drinking water on the Performance and Economic Efficiency of Two Commercial Japanese Quail Strains.

Ebtsam E. Elkhoriby, Hend A. Radwan, Hanaa M. Ghanem , Mohammed M. Fouda.

Abstract

The purpose of the experiment was to investigate how a F-MOE mixture in drinking water affected the growth, carcass traits, sensory meat quality, and economic efficiency

of two commercial Japanese quails strains. A total of 120 one-day-old Japanese quails, comprising black quails (n=60) and white quails (n=60), were utilized for the experiment. The experiment commenced when the quails were 14 days old, after a two-week adaptation period. They were randomly divided into two treatment groups, each containing 30 birds, with three replicates of 10 birds in each group. The basic diet plus 2 ml F-MOE mixture in drinking water and the basic diet plus drinking water without any supplement (control) were the two treatments used in the experiment over a four-weeks period. The results demonstrated that supplementation with F-MOE significantly improved growth traits, dressing-out percentage, sensory meat quality, and economic efficiency compared to the control group. When the strain effect was considered, the white strain outperformed the black strain in terms of growth traits, dressing-out percentage, and economic efficiency.

Keywords: Japanese quails, F-MOE mixture, growth traits, carcass traits, sensory meat quality, economic efficiency.

14: Immunopharmacological study on cefepime in broilers

Asmaa, Reham Elshafie, Magdy Amer

Department of Pharmacology, Faculty of Veterinary Medicine, Mansoura University

Abstract

This study was performed to investigate the effect of cefepime on the cellular and humeral immunity, hemogram and some histopathology of the treated broilers. Total number of 120 of one day old chicken were divided equally into four groups Group 1 : non-vaccinated, non-treated, negative control group, Group 2 IBV vaccinated, non-treated group,Group 3 non-vaccinated ,cefepime-treated group,Group 4 IBV-vaccinated ,cefepime-treated group positive group . The ration and water were supplied ad-libitum throughout the experimental period. Live body weight, body weight gain, feed consumption, and feed conversion ratio (FCR) were calculated , Five blood samples were collected randomly to determine CBC, TLC and DLC. At the end of the experiment (the 14th week post treatment), 4 birds from each group were anesthetized and sacrificed by cervical dislocation. Spleen, thymus, cecal tonsils , Bursa of Fabricius, liver and kidney organs collected for histopathological examination .The obtained results displayed that, after cefepime administration there was a significant increase in RBCs(p< **0.0001)** in **G3** and **G4** compared with **G1** and **G2** . Moreover, there was a significant decrease (p<0.0001) in Hb concentration in **G2** and **G4** compared with **G1** and **G3.**In addition, there was a significant decrease (p<0.0001) in **G3** compared with G2 . Similarly, there was significant reduction in IgG titer (P<0.0001) of **G4**

compared with **G3** . there was a significant decrease ($p<0.0001$) on IgM titer of **G2** and **G4** compared with **G1** and **G4** compared with **G3** ,Meanwhile, there was a significant increase ($p<0.0001$) on IgM titer of **G3** and **G4** compared with **G2.** At the end of this experiment, it could be concluded that, cefepime at the tested therapeutic dose doesn't cause noticeable differences in the hematological picture, while there were some reversible adverse effects on both cellular and humeral immunity of treated birds

15: A Current and Future Overview for Fish Resources in Egypt achieve sustainable goals of 2030 Egyptian Strategy

Salah M. Aly, Chairman of Lakes and Fish Resources Protection and Development Agency and Professor of Pathology, College of Vet. Medicine, Suez Canal University, Egypt.

Abstract:

Aquaculture is rapidly expanding in the global animal food production sector, growing at an average rate of 6-9% annually. It plays a significant role in meeting the world's fish food demand, spanning from 12% to 47%. This sector also provides substantial global employment, offering around 20.67 million jobs. Egypt stands out in this field, leading African aquaculture with 1.7% of global production (1.59 million tons), projected to reach 2.65 million tons by 2030. Egypt's aquaculture involves both freshwater and other water sources, contributing 65-76% and 24-35% of cultured fish, respectively. Despite its potential, the aquaculture sector faces multifaceted challenges. These challenges span technical, environmental, administrative, financial, and legislative domains, along with market-related hurdles. Additionally, the future holds further complications as water resources dwindle, human population surges, marine fish fry decrease, and global climate change exacerbates existing predicaments.

Moreover, climate change compounds the challenges faced by the aquaculture sector. The burning of fossil fuels releases carbon, sulfur, and nitrogen oxides, leading to toxic compounds that contribute to "global warming." Temperature increases lead to various repercussions, including alterations in precipitation patterns, snow and ice melting, shifts from drought to floods, diminished water quality, sea level rise resulting in groundwater salinization and aquatic organism

threats, heightened ocean acidity causing migration and species extinction, and reduced dissolved oxygen levels driving fish metabolism, disease spread, and mortality rates. In light of these challenges, comprehensive strategies, sound policies, and scientific collaboration are essential to steer aquaculture towards sustainable growth and safeguard the health of aquatic ecosystems in Egypt and beyond.

To address these challenges, the Egyptian Government's strategic objectives for the fisheries and aquaculture sectors for 2020-2030 emphasize vital facets. These include water body preservation, scientific research advancement, vertical and horizontal fish farm development, institutional restructuring, capacity building, policy and regulation enhancement, aquaculture integration support, marketing and feed industry expansion, fish stock exchanges proliferation, environmental studies for fishing areas, and seas and lakes development. Strategic implementation calls for consistent efforts in water and land monitoring, fish resource identification, marine hatchery establishment, fisheries legislation refinement, organized training courses, genetic enhancement for improved productivity, investment in fish feed and related industries, aquatic animal health regulations, disease control, biosecurity measures, product quality assurance, adherence to marketing standards, and an overarching focus on environmental sustainability.

Overall, of notable concern is the risk assessment related to veterinary drug residues. A robust system must be in place to monitor and ensure the proper use of veterinary drugs during fish production. This includes adhering to manufacturer instructions, adhering to withdrawal periods, registering products with competent authorities, relying on veterinary prescriptions, compliant storage and transportation, following recommended practices, ensuring clear identification of pharmaceutical feeds, maintaining thorough record-keeping, and adhering to permissible drug residue concentrations.

16: Effects of dietary supplementation of *Nannochloropsis* on gene expression and serum profile of metabolic and lipogenic markers in growing Barki lambs

Ahmed A. El-Sayed

Department of Animal health and Poultry, Animal and Poultry Production Division, Desert Research Center (DRC), Matariya, Cairo, Egypt

Abstract

The objective of this study was to investigate the effects of dietary supplementation of *Nannochloropsis* on gene expression of lipogenic and metabolic genes and link this gene expression with body growth, growth performance, and metabolic profile in growing Barki lambs. For this reason, twenty apparently healthy growing Barki lambs were randomly allocated into two equal groups (10 lambs each). The first group (control) received the basal diet without feed supplement whereas the second group (supplemented) received the basal diet supplemented with *Nannochloropsis* powder which given in the concentrate at a rate of 10 g /kg/day for subsequent 30 days. A blood sample was collected from each lamb via jugular venipuncture before starting the experiment (T0), 15th day (T15) and 30th day (T30) after supplementation for hematobiochemical examination. Body weight and body growth indices of each lamb were calculated weekly. Levels of *ACACA*, *FASN*, *SCD* and *FABP4* genes expression were significantly up-regulated in supplemented lambs at (T15) and (T30) than control ones while *DGAT1*, *insulin*, *glucokinase* and *glucose transporter* showed a significant up-regulation at day 30 compared to control and day 15. Supplemented lambs had a significant ($P < 0.05$) increase of final body weights, daily weight gain and feed intake with significant ($P<0.05$) decrease of feed conversion ratio. From the third week onwards, the body weight, body length and body condition score were significantly ($P > 0.05$) higher in the supplemented group. There was a significant ($P<0.05$) increase in Hb, erythrocyte count, leukocyte count (WBC), serum level of glucose, insulin, triglyceride, total protein, globulin and BUN with significant ($p < 0.05$) decrease of cholesterol, ALT and AST in supplemented lambs in relation to control ones at T30. The results suggest that *Nannochloropsis* could be used as a useful supplement to improve health status and body growth of growing Barki lambs.

Keywards *Nannochloropsis oculata*, gene expression (RT-PCR), growth, metabolic variables, Barki lambs

17: Effect of linseed oil and fermented pomegranate peel supplementation on the growth performance, plasma metabolism, and muscle fatty acid deposition of heat-stress broiler chickens

Ahmed M. Elbaz

Department Animal and Poultry Nutrition, Desert Research Center, Cairo, Egypt

Corresponding author: Ahmed M. Elbaz; dm.a.baz@gmail.com

Abstract

This study aimed to investigate the efficiency of adding dietary linseed oil and fermented pomegranate peel on growth performance, digestibility, antioxidant capacity, and muscle fatty acid deposition in heat-stressed broilers. Three hundred Ross 308 broiler chicks (1 day old) were randomly assigned to four groups (group/five replicates). Dietary treatments included: (CON) corn-soybean meal basal diet; (FPP) basal diet + fermented pomegranate peel 4g/kg; (LIO) basal diet + 3% linseed oil; (FPLO) basal diet + fermented pomegranate peel + linseed oil. Compared with CON, broilers fed FPLO diet showed improved body weight gain and feed conversion ratio, while the experimental diet did not affect the feed intake. Broilers fed FPP or FPLO diet had higher dressing percentages and lower relative weight of abdominal fat than other groups, whereas other carcass traits and digestive enzymes activities were not influenced by treated groups. Nutrient digestion enhanced, as the crude protein digestibility increased in chickens fed FPP and FPLO, while the crude fat digestibility increased in chickens fed LIO and FPLO. Cholesterol and triglyceride concentrations decreased, while the HDL concentration increased in the chickens fed FPP and FPLO compared to other groups. The oxidative status was enhanced by the experimental additives, as the SOD and GSH-Px levels increased and the MDA level decreased in the serum in treated groups compared to the control group. Chickens fed FPP and FPLO had an improvement in gut health, as the number of *Lactobacillus* increased and the number of *E. coli* and *Total coliforms* decreased. A significant increase in unsaturated fatty acid and a decrease in the n-6:n-3 ratio was noticed in the muscles of chickens fed LIO and FPLO compared to other groups. This research indicates that diets supplemented with a combination of fermented pomegranate peel and linseed oil experience an

improvement in growth performance, blood antioxidant capacities, and fatty acid profile in the muscle of heat-stressed broilers.

KEYWORDS: Broiler chickens, Performance, antioxidant status, Fatty acid deposition, Linseed oil, pomegranate peel.