Comparative studies of curcuma, ginger and rosemary on DNA damage, cytogenicity and biochemical parameters in rats
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Abstract The present study was carried out to elucidate the effect of curcuma, Ginger and rosemary on carbon tetrachloride (CCL4) induced DNA damage and cytogenicity as well as some serum parameters in rats. A total of forty adult male albino rats(150-200gm)were used in this study. Rats were divided into 8 groups, each of 5 animals. Group one was kept as a control –ve and fed on the basal diet only. While three other groups were fed on the basal diet mixed with either curcuma, ginger and rosemary(0.1gm%) for 30 successive days. Other four groups were injected subcutaneously with CCL4 50% (0.1ml/100g.b.wt.twice/week for two weeks) to induce DNA damage and cytogenicity changes. One of these groups was left as a control +ve (sub cut injection with CCL4) Where as the other three groups were fed on basal diet mixed with either curcuma, ginger and rosemary respectively at the same dose for 30 successive days. At the end of experimental period ,blood samples were collected from each rats for biochemical analysis and rats were then sacrificied to illucidate DNA damage in hepatocytes and cytogenicity changes in bone marrow polychromatich erythrocytes. Subcutaneous injection of CCL4 caused significant increase in serum levels of AST, ALT, creatinine, triglyceride , total cholesterol, glucose, micronucleated polychromatich erythrocytes(MPCEs) and ratio of poly chromatic to normochromatic erythrocytes(PCE/NCE) and lipid peroxide(MDA) while the levels of serum total protein, albumin, globulin, NCE and glutathione transferase (GST) were significantly decreased. The smear on agarose gel had been observed in CCI4 treated groups indicating random DNA fragmentation and a hallmark of necrosis .Curcuma, ginger and rosemary significantly restored the serum levels of the biochemical parameters directed toward normal as compared with the control +ve group(injected with CCI4).
A trial to ameliorate the toxic effect of Aflatoxin in rabbits

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Abstract This study was carried out to investigate the effects of feeding a diet-containing probiotic (Pediococcus acidilactici), aflatoxin B1 and aflatoxin B1 + probiotic on some plasma biochemical, RBCs antioxidants and hormonal changes in male rabbits. A total of 24 male rabbits were allocated randomly into four equal groups (each of 6 animals). G1 kept as a negative control, G2 were given diet + probiotic (1000g/ton feed), G3 were given diet + aflatoxin B1(60ug/Kg feed ) and G4 were given diet + aflatoxinB1 + probiotic. This experimental trial lasted for six weeks. Some biochemical and hormonal parameters were determined at the end of the study. The results showed significant elevation in the liver function enzymes and alphafetoprotein (AFP) while, decrease in concentrations of plasma total protein, albumin, alpha, beta and gamma globulins together with A/G ratio. Also, a significant decreased in RBCs enzymatic catalase, SOD, GST activities. There is decrease in RBCs GSH levels and increased in plasma NO levels were shown after AF treatment (G3). Rabbit received probiotic in G4 induced decreased in liver function activities and alphafetoprotein (AFP). Also, ameliorate the changes in RBCs and plasma antioxidant and protein electrophoresis parameter when compared with G3. Statistically significant increases and decreases were detected in T3 levels at probiotic and aflatoxin groups, respectively. While, in the group that received feed containing both aflatoxin and probiotic, the levels of T3 were close to that of the control group and significantly increased in comparing to the group that received aflatoxin alone. Moreover, T4 levels were significantly increased in all groups in comparing to the control group. T4/T3 ratio significantly increased in AF group. Blood testosterone levels showed insignificant decrease in all trial groups compared to the control. In conclusion, the findings of this research suggest that probiotic counteract some of the toxic effect of AFB1.
Ameliorating effect of folic acid to Aspartame toxicity in rats.

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Abstract The present study was designed to throw the light on the biochemical changes in the rat liver following treatment with aspartame with evaluation of the possible protective effect of folic acid. Forty male Wister albino rats were randomly distributed into 4 equal groups: control, aspartame (50 mg/kg orally for 8 weeks), folic acid (2g folic acid /kg as feed additive), and folic acid with aspartame for the same previous doses and route. At the end of the experimental period (8 weeks), blood samples were obtained for biochemical analysis. Then animals were sacrificed and autopsied immediately; liver specimens were processed for estimation of lipid peroxidation. Liver showed a severe damage following aspartame treatment as denoted by increased tissue malondialdehyde (MDA), serum alpha feto protein (AFP), alpha tumor necrosis factor (αTNF), transaminases (AST, ALT), gamma glutamyl transferase (GGT), total cholesterol, triglycerides and LDL with a significant decrease in tissue GSH, SOD, serum total protein, albumin, globulin, A/g ratio and HDL. On the other hand, rats received folic acid with aspartame revealed more or less normal serum biochemical constituents. It is concluded that Folic acid proved to have remarkable protective effect against toxicity of aspartame.

Key words: Aspartame, folic acid, hepatocellular injury, tumor marker, rats.
The use of gamma interferon assay in diagnosis of bovine tuberculosis in Egypt with attention to other diagnostic techniques

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Abstract

Introduction: Early detection of bovine tuberculosis in infected cattle is important to eliminate the infected animals from a herd, and to reduce the risk post by animals and animal products to human. Methods for the detection of mycobacteria are continuously being developed.

Materials and methods: A total of 1050 cows were tested by tuberculin test and the lymph nodes and internal organs of tuberculin positive cows were examined by culture method and confirmed by RT-PCR. The whole blood samples that collected as soon as the reading of the tuberculin test from both the tuberculin positive and tuberculin negative cows were used for detection of gamma interferon release (bovigam, prionics).

Results: The obtained results revealed that 57 cows were positive tuberculin test (5.4%), 37 out of them were harbored the acid fast bacilli of mycobacteria (65%), which confirmed by the use of RT-PCR, while there are 49 out of 57 tuberculin positive cows were tuberculous by gamma interferon assay (86%). There are 3 cases out of 57 tuberculin negative cows were tuberculous by gamma interferon assay.

Conclusion: The use of gamma interferon assay has the superiority for diagnosis of bovine tuberculosis over the conventional culture method and tuberculin test due to the obstacles of the decontamination process as well as the field problems of tuberculin test.

 Acknowledgement: The authors would like to express their great appreciation to Science and Technology Development Fund (STDF) for its financial support of the project 2966. Keywords: Bovine tuberculosis, gamma interferon, tuberculin test
Efficacy of zingiber officinalon male infertility induced by cobalt toxicity in white rats.

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Abstract To investigate the ameliorative potential of zingiber officinale (ginger) on male infertility induced by cobalt, sixty male albino rats were classified equally into four groups. Group (1) left as a negative control group, group (2) fed on ginger containing diet (2g/kg diet daily) as a positive control group, group (3) intubated orally with cobalt at a concentration level (2.23 mg/kg b.wt.) equivalent to 1/40 LD₅₀ 3times/week, group (4) intubated the same dose of cobalt and fed on ginger containing diet. All treatments continued for 65 days. Analyzed data showed that cobalt evoked overt disorders in male fertility in the form of significant decrease in relative testes weights, testicular sperm count, sperm motility, alive sperm percentages and serum testosterone levels as compared to –ve and +ve controls, meanwhile sperm cell abnormalities, serum FSH and LH were significantly increased in cobalt treated rats in respective to –ve and +ve controls. While group given cobalt with ginger showed lesser effect. Fertility was significantly reduced in group’s dosed cobalt alone or with ginger in that the number of female impregnated by them was significantly reduced, significant decrease in number of implant/litters and alive percent were recorded. Resorption was observed in cobalt treated group. Fetal values indicated significant decrease in their body weight and length with the increase in malformation percentage. A positive control group showed non-significant changes in comparison to –ve control group. Otherwise, it recorded best results in sperm cell concentration and testosterone level. Quantitation of cobalt residues in testes and accessory sex organs with atomic absorption indicated elevated cobalt levels in prostate gland followed by seminal vesicles and testes in cobalt treated rats. All results were confirmed by histopathological findings which carried out on testes, seminal vesicles as well as prostate gland and revealed several abnormalities including necrosis, hypoplasia within seminiferous tubules associated with interstitial hemorrhage and arrest of spermatogenesis. The present study is strongly suggested that exposure to cobalt showed adverse effects on fertility index and male reproductive performance which improved by using ginger through its powerful antioxidant and androgenic effects.
Physiological and pathological studies on the effect of \( \beta \)-carotene in liver of male albino rats exposed to Gamma irradiation


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**Abstract** The present study has been performed to investigate the possible protective and treatment role of \( \beta \)-carotene (8mg/kg/body Wight) in minimizing the radiation (gamma ray /6.5 Gy) as single dose induced changes in certain biochemical and histological parameters in the liver of the studied rats. 30 male albino rats average weight from 100 to 120 gm were used in these experiments. Animals were divided into 6 equal groups (normal group, treated group, radiated group, treated before irradiated group, treated after irradiated group and treated before and after irradiated group. These rats were sacrificed from each group after 21 day. Blood was immediately collected and centrifuged to obtain serum for biochemical studies. The activities of alanine aminotransferase (ALT), Aspartate aminotransferase (AST), Albumin, also determination of enzyme (Lipid peroxides, MDA), Glutathione (GSH) and Superoxid dismutase (SOD). The liver were excised from the rats and kept in bouin fixative for the pathological study. Biochemical observations of the treated group with supplemented \( \beta \)-carotene only showed no significant changes in biochemical parameter, similar with control group. Increase the rate of the effect of radiation showed significant changes in biochemical parameter at radiated group; also observations significantly reduced the effect of radiation in other groups compared with irradiated group in all biochemical parameters. Histological observations the treated group with supplemented \( \beta \)-carotene shows no significant change, similar to control group. The liver of rats which was exposed to gamma irradiation 6.5 Gy showed significant changes in the histological examination as destruction of hepatic cells and fibrosis connective tissue in portal tract at 21 days. The liver of rats exposed to single dose of gamma irradiation 6.5 Gy before or after treated with \( \beta \)-carotene led to a partial improvement of hepatocytes. Accordingly it was concluded that \( \beta \)-carotene treated before and after irradiation group could exert a beneficial protective role against radiation induced biochemical and histological disorders in the liver.
Physiological and pathological studies on the effect of β–carotene in kidney of male albino rats exposed to Gamma irradiation


Abstract The present study has been performed to investigate the possible protective and treatment role of β–carotene (8mg/kg/body Wight) in minimizing the radiation (gamma ray /6.5 Gy) as single dose induced changes in certain biochemical and histological parameters in the kidney of the studied rats. 30 male albino rats weight from 100 to 120 gm were used in these experiments. Animals were divided into 6 equal groups (normal group, treated group, radiated group, treated before irradiated group, treated after irradiated group and treated before and after irradiated group). 5 rats were sacrificed from each group at 21 day,.Blood was immediately collected and centrifuged to obtain serum for biochemical Studies the activities of urea, uric acid and creatinine were evaluated .Kidney were excised from the rats and kept in bouin fixative for the pathological study. Biochemical observations (urea, creatinine and uric acid) of treated group with supplemented β–carotene only showed no significant changes in biochemical parameters similar with control group. Urea, Creatinine and uric acid in the serum at 21 days post-irradiation are significantly increase recorded in the serum compared with control group. Also it was found significantly reduced effect of radiation in other groups compared with irradiated group in Urea, Creatinin and uric acid. Histological observations of the treated group with supplemented β–carotene only shows no significant changes, similar to control group. Whole body gamma irradiation of rats (6.5 Gy) produced prominent changes in the pathological examination represented as complete degeneration of Malpighian corpuscles . The kidney of rats exposed to single dose of gamma irradiation 6.5 Gy before or after treated with β–carotene led to a partial improvement of renal tubules. Accordingly it was concluded that β–carotene treated before and after irradiation group could exert a beneficial protective role against radiation induced biochemical and histological disorders in the kidney.
Effect of Glyphosate on male fertility, cytogenicity and biochemical parameters in rats

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Abstract Oral administration of round up in rats doses of 49 and 490 mg/kg b.wt. daily for 65 successive days respectively, significantly decreased the weight of sexual organs, sperm cell concentration and sperm motility while the sperm abnormalities were increased. The levels of creatinine, cholesterol, uric acid and bilirubin in serum were significantly increased.Round up significantly increased the activities of serum AST, ALT and AP. The tested herbicide showed mutagenic potential as measured by a positive response in the micronucleus assay. The small dose tested caused slight toxicity to the bone marrow proliferation as determined by insignificant increased rate of bone marrow cells while the large dose significantly increased the rate of bone marrow proliferation as determined by the increase the rate of ratio in tested groups over that of the control.
Bacteriological and Biochemical studies on water pollution with special reference to its pathological effects

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Abstract A total of 30 ground water samples were collected from 30 wells found at sheep & goat farms in El.Menofia Governorate. The water samples were subjected to bacteriological and chemical examination. Total coliform count of the examined samples, isolation and identification of the pathogenic enterobacteriaceae were done. Serotyping of the isolated E.coli isolates was examined. Fecal samples of the animal suffering from emaciation at farms in the same area of the examined water were bacteriologically tested. Determination of some isolates virulence was carried out for experimental infection to rats. Chemical analysis of water samples revealed that chloride, carbonate, total dissolved solids, iron and manganese levels were within permissible limits except lead level showed above the WHO permissible limit. A total of 48 albino rats were divided into 6 groups each group contain 8 animals. 1st group kept as control, 2nd group, 3rd group, 4th group, 5th group and 6th group received E.coli (LDso12x10^5 cfu/ml), Citrobacter freundii (LDso5x10^5 cfu/ml), Pseudomonas aurigenosa (LDso8x10^5 cfu/ml), Kelebsilla pneumonia (LDso8x10^5 cfu/ml) and lead acetate (0.16 ppm) per os 3 times/week respectively. After four weeks haematological examination revealed significant decrease in erythrocytic count (RBCs), haemoglobin concentration (Hb) and hematocrit values (PCV). While total leukocytic count showed significant increase associated with neutrophilia and lymphocytopenia. Moreover, no change in eosinophils and monocyte was recorded. Serum biochemical analysis showed significant increase in ALT and AST, urea, creatinine and globulin, but albumin and A/G ratio and total protein revealed significant decrease in all infected groups. Histopathological findings in liver, lungs, kidneys, brain and intestine of experimental animals revealed that E.coli, Citrobacter freundii, Pseudomonas aurigenosa, Kelebsilla pneumonia, and lead isolated from water wells has drastic pathological changes on the previous tissues. It is recommend that periodic sanitary surveys of the water should be carried out to established the level of risk of epidemic waterborne disease to which human and animals are exposed.
Ameliorative effect of Celery (Apium graveolens) and Sweet Marjoram (Origanium marjoram) on some biochemical parameters of diabetic male rats

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Abstract The goal of this study was to determine some biochemical activities of two medicinal plants Celery (Apium graveolens) and Sweet marjoram (Origanium marjoram) on normal and diabetic rats for 30 successive days. Twenty mature rats of an average body weight of (150-180 gm) were divided into 4 groups 5 rats each. (G1) control, (G2) diabetic control group injected intraperitoneal by alloxan in a dose 150 mg/kg b.wt. (G3) diabetic rats fed on basal diet mixed with 1% dried Celery (Apium graveolens), (G4) diabetic rats fed on basal diet mixed with 1% dried Sweet Marjoram (Origanium marjoram). At the end of the experiment, serum blood samples were collected to determine some biochemical parameters, some oxidative markers and relative organs weights. Rats were sacrificed and organs were weighed to determine relative organs weight. Results revealed that there were a significant decrease of serum levels of AST, ALT, ALP, cholesterol, triglyceride, urea and glucose as well as MDA than diabetic control groups at P<0.05. On the other hand our result found no effect on albumin, globulin and A/G ratio while catalase enzyme activity showed a significant increase than control diabetic one. The relative organs weight in (G3) and (G4) returned toward normal values. Conclusively, fed Celery or Sweet marjoram to diets of diabetic male had a beneficial practical tool to minimize the effect of diabetes without any adverse effect on metabolic parameters and organs weight of rats.
Effects of tartrazine and aspartame administration on serum biochemical and oxidative stress on brain tissues of rats

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Abstract Tartrazine (TART) and aspartame (L-aspartyl-L-phenylalanine methyl ester, (ASP) are the most widely used artificial food and feed additive. Many concerns have been raised about the side effects of ASP and TART consumption and its safety. The aim of the present study is to investigate whether the daily supplementation of TART (70mg/100b.wt of rat) and ASP (4 mg/100bwt of rat) with ration for 60 days induce serum biochemical alteration and oxidative stress in the rat brain tissue. Serum marker enzyme in serum, some selected serum profile reflect liver and kidney function and extract brain tissue Lipid peroxidation (LPO), glutathione reduced (GSH) and nitric oxide (NO) levels as well as the activities of superoxide dismutase (SOD), glutathione-Stranferase (GST) and catalase (CAT) enzymes were determined. Our data showed a significant increase in total proteins, globulin, creatinine, urea, alkaline phosphatase and transaminases globulin in serum of rats treated with ASP and TART in compared to control group and TART supplementation rats showed a significant increase in free radical in brain tissue by increase both enzymatic (SOD, CAT , GST) and non-enzymatic (GSH) antioxidant level along with the marked increase in lipid peroxidation and NO. We concluded that at supplementation of tartrazine and aspartame induces adverse effects on liver and kidney and cause oxidative stress in brain tissue.

Key Word:
Tartrazine, Aspartame, serum biochemical, liver function, kidney function, brain oxidative, antioxidant enzymatic, non-enzymatic
Efficiency of L (-) Cystine against oxidative stress induced by Thallous nitrate in male albino rats.

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Abstract A total of 30 male albino rats were divided into 3 groups. The 1st group (control) was orally administered deionized water, the 2nd group was given L)-Cystine (500mg/kg b.wt. an hour before administration of 1/40 LD50 (0.5mg/kgb.wt.) thallous nitrate (TlNO3) and the 3rd group was given 1/40 LD50 (0.5mg/kgb.wt.) TlNO3 3 times/week for two weeks. Rats were anaesthetized then sacrificed, blood samples were collected and separated serum was preserved at -20 C˚. Liver and brain were taken and homogenized for analysis of the activities of antioxidant enzymes viz., superoxide dismutase (SOD), catalase (CAT), glutathione peroxidase (GHS px) and lipid peroxide, Malondialdehyde (MDA) levels. We found that TlNO3 induced oxidative damage revealed by significant decrease in the activities of CAT, GHS px and SOD and an increase in the lipid peroxide, Malondialdehyde (MDA) content in the 3rd group (TlNO3 treated group) in serum, brain and liver (p<0.05) compared to control, while results showed non significant difference in the 2nd group [L)-(Cystine and TlNO3 treated group] compared to controls. It was concluded that the sulphur containing amino acid, L)-(Cystine had a preventive role in inhibition of oxidative stress produced by TlNO3.
Pathological and molecular studies on Velogenic NewCastle disease in broiler.

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Abstract Newcastle disease (ND) is a highly contagious viral disease of all gallinaceous birds. It is considered as a major problem in many countries all over the world. It continues to be a major problem in poultry flocks in Egypt. The study was aimed to the prevalence of ND in Assuit. An acute highly fatal disease broke out in 8 broiler farms in Assiut providence. The mortality rate 30- 40%. infected birds showed weakness, coughing and gasping, greenish diarrhea, tremors, head, edema. Postmortem examination revealed serous exudates in nasal cavity, larynx and trachea, air saculitis, hemorrhagic lesion and necrosis of intestinal wall, Hemorrhagic necrotic caecal tonsils . Diagnosis of the disease was based on symptoms, postmortem lesions, virus isolation, haemagglutination and haemagglutination inhibition tests, reverse transcription polymerase chain reaction was used for detection of ND virus. The histopathologic examination of parenchymatous organs in different treated groups revealed that, lung showed marked intrapulmonary haemorrhage , extensive numbers of polymorph nuclear cells, degenerative changes of the bronchial epithelium, focal areas of necroses, Pulmonary arteries were showed progressive injury and necrosis . Lesions in trachea showed degenerative and necrotic epithelial cells, hyperplasia in mucous glands and hemorrhagic lesion surrounding by inflammatory cells. Disruption of cardiac myofibers, multifocal areas of hemorrhagic lesion and infiltration of mononuclear cells. Small intestine showed villous degeneration, multifocal, areas of necrosis. Multifocal hemorrhages, degenerative and necrotic epithelial cells in the collecting ducts and convoluted tubules, interstitials infiltration of lymphocytes and hyperplasia in mesengial cells lining the capsule of glomeruli. Liver showed focal areas of hepatocellular necrosis infiltrated by mononuclear cells and multifocal areas of hepatocellular hemorrhagic lesion. Bursa of Fabrics sections revealed lymphocyte depletion, formation of intrafollicular glandular structures with proliferation of fibrous connective tissue. The spleen had multifocal necrosis with extensive deposits of fibrin, lymphoid depletion and hyperplasia of macrophages, multifocal areas of necrosis and hemorrhages.

KEY WORDS: Virulent New castle, real-time reverse- transcriptase polymerase chain reaction (RRT-PCR), Histopathology.
Influence of crayfish (Procumborous Clarkii) supplementation on egg quality and serum biochemical parameters in table-egg Layers

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Abstract: This experiment was conducted to assess the effect of graded levels of inclusion of crayfish (Procumborous Clarkii) meal as a replacement to fish meal on serum biochemical indices and hematological parameters in table-egg Layers and egg quality. Sixty 1-day-old Hoffman chicks were used for the experiment that lasted 30 weeks. Birds were randomly allotted to 3 treatments with 20 birds each. Crayfish meal was used to replace fish meal at a level of 0, 5, 10 respectively. Results showed that crayfish can partially add to Hoffman chicks diet up to 5% without any adverse effect on liver and kidney function, mineral and heavy metals profile, blood parameters and egg quality. However, 10% crayfish meal in diets showed a significant increase on all parameters measured except egg cholesterol in the experiment. It was showed that there was an inversely proportional between % of crayfish meal in the diet and concentration of egg cholesterol. It was therefore concluded that crayfish meal can adequately replace fish meal in layers diets up to 5% without adverse effects. Key words: Blood indices, layers, crayfish meal, heavy metals, cholesterol, egg.
Effect of some antioxidant on biochemical parameters and microelements in laying hens

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Abstract
Biochemical effects of antioxidants material in laying hens were investigated. For these 70 Lohman Brown hens, 50 weeks old were used and classified into 7 main equal groups. The first group was fed a commercial diet without any treatment and saved as a control, while the 2nd; 3rd; 4th; 5th; 6th and 7th groups were fed the same diet to which Cu (50 or 150 mg); Zn(50 or 200 mg) and Vit.E(40 mg (0.26 or 0.47 mg Se)) Kg/diet, respectively were added. Fed diet supplemented with microelements (Copper, Zinc, and Vit.E.+Se) to basal ration of laying hens are very essential in decreasing plasma lipid profiles, increasing activity of antioxidant system by increasing free radical scavenger and decreasing lipid peroxidation (MDA). Also, the present study revealed that there was relation between micronutrient elements (Cu, Zn and Se) and antioxidant enzymes (GSH-PX, SOD, and CAT). Beside these vit E+Se and zinc increased plasma total proteins. Finally we recommended that copper, zinc and vit. E.+Se should be supplemented to the ration of laying hens during the egg production periods. Such antioxidant substances and microelement compounds are beneficial to improve health parameters and reproductive performance in laying hens.

Key word: lipid profile, Protein, antioxidant, minerals, leukocyte, biochemical parameter, laying hen.
Protective Effect Of Cabbage On Cadmium Induced Changes On Some Hematological And Biochemical Parameters In Albino Rats

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Abstract The present study was carried to clarify the protective effects of dietary supplemented cabbage on Cadmium (Cd) induced oxidative stress in the blood and tissues of rats. Thirty rats after adaptive were randomly divided into three equal groups. The first (A) were fed normal basal diet only – control group. The second (B) were fed normal basal diet mixed with Cadmium chloride (3mg/kg body weight daily) while group (C) were fed as the second group supplemented with 0.5 kg dry cabbage powder daily. Rats were monitored for 28 days. At the end of the treatments rats were scarified. The effect of Cadmium alone treatment and Cadmium combined cabbage treatment on lipid peroxidation measured by malondialdehyde level in testes and kidneys. Serum activities of acid phosphatase (ACP) and prostatic acid phosphatase (PAP) and alkaline phosphates (ALP), Alanine amino-transferase (AST), superoxide dismutase (SOD), glutathione reductas(GSH) and total protein, urea, creatinine, calcium, phosphorus and zinc were studied. Testes and kidneys were weighted. Assessment of some hematological indices were studied. The results showed that cadmium induced significant increase in testicular and kidney malondialdehyde (MDA) but the dietary cabbage showed a beneficial effect on lipid peroxidation. Cadmium also induce increase in ACP, PAP, ALP, AST,ALT, SOD, GSH activities and increase urea, creatinine levels, total leukocytic count but cabbage supplementation tended to produce a reduction in the activities in these enzymes except GSH activities. Significant decrease in calcium and phosphorus levels in cadmium treated rats. Administration of combined treatment of cadmium and cabbage (group C) provide beneficial effects against cadmium induce changes on the testes and kidneys weight, Malondialdehyde level, serum enzymes, acid phosphatase (ACP) and prostatic acid phosphatase (PAP) and alkaline phosphates (ALP), superoxide dismutase (SOD), glutathione reductas (GSH) and total protein, urea, Creatinine, calcium and phosphorus levels by reducing. Cadmium –associated. Oxidative stress

Key words: Cadmium toxicity, Antioxidant supplement, Cabbage, hematological, biochemical parameters.
Effect of dietary of some microelements on egg lipids; weight and production in poultry

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Abstract The variation of mineral concentration for laying poultry is an important issue due to intense skeleton development (young birds) or egg formation. For these 70 Lohman Brown hens, at laying stage were randomly distributed used classified into 7 main equal groups each one consisting of 10 laying hens. The first group was fed a commercial diet without any treatment and saved as a control, while the 2nd; 3rd; 4th; 5th; 6th and 7th groups were fed the same diet but added Cu(50 or 150 mg); Zn(50 or 200 mg); 40 mg vit. E+ Se(0.26 mg or 0.47 mg). / Kg of diet, respectively. The present study revealed that, there was relation among microelements (Cu, Zn and Se+ vit.E) and lipid profile. Moreover, change in lipid metabolism will be reflected on egg lipids Yolk (cholesterol and triglyceride). Indeed prevention of oxidative stress by increasing antioxidant system activity improved production of laying hen and egg weight. Finally we recommended that, Copper, Zinc and Vit. E+ Se should be added to the ration of laying hens during the egg production periods. Such antioxidant substances and microelements compounds may be beneficial to alleviate health parameters and reproductive performance in laying hens, without adverse effect. In addition, using these techniques we can produce high quality; minimized total lipid, and cholesterol eggs (eggs more healthy for human).

Key word: lipid profile, biochemical parameter, egg yolk, egg production, egg weight, laying hen.
Some studies on biochemical and pathological changes in ducks by lead and efficacy of zinc in treatment

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Abstract An investigation was carried out to clear the possible use lead toxicity regarding haematological and some biochemical as well as histopathological changes in ducks. Hundred duckling (2 weeks old) from Sharkia province were used in this investigations. Duckling were divided into four groups 25 each. First group was received tape water only and kept as control. The second and third received water contaminated with 20 mg/kg. b.wt. lead acetate. The third and fourth group received water contaminated with 2mg/kg b.wt. Zinc acetate for 21 days. It was observed that lead exposure elevated serum activities of AST, ALT, GGT, LDH & CPK while it inhibit ALP activity. Also lead increased the level of creatinine, uric acid and cortisone hormone and lower parathermone activity. Blood level, of lead and calcium as well as the accumulation of lead in the muscle increased owing to lead exposure. Administration of lead acetate reduced tissue contamination of lead and the most induced blood biochemical alterations. Oral administration of lead acetate for 21 days induced hepatorenal toxicity and histopathological changes manifested by hydropic and vascular degeneration of hepatic parenchyma. Kidney showed degenerative changes and necrosis of renal tubules. The heart showed partial haylanization of some cardiac muscles. These data clearly demonstrate the partial role of zinc in mediating the toxic effect of zinc pollution presumably because of antioxidant properties of zinc and it is cofactor for many enzyme.
The Effect Of Dietary Supplementation With Estradiol And Cholicalciferol On Calcium Absorption, Deposition In Scand Season Laying Egg In Japanese Quail

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Abstract An experiment was conducted to investigate the effect of dietary supplementation with cholicalciferol or/and estradiol benzoate on calcium absorption and deposition as well as eggshell quality in Japanese quail. The effect on performance and reproductive characteristics were also studied. One hundred and sixty laying Japanese quail at 47 weeks of age were fed for eight weeks on a corn–soya basal diet supplemented with 3900 I.U./Kg cholicalciferol or 9 mg/Kg estradiol benzoate or both of cholicalciferol + estradiol benzoate while the fourth group of birds was fed on the basal control diet. The results showed that body weight of birds fed estradiol or estradiol + cholicalciferol was increased by 7.1 and 11.9% compared to the control group respectively. Feed consumption and feed conversion ratio were not affected by treatments. Feeding estradiol or estradiol plus cholicalciferol improved average egg weight while egg production was positively affected by feeding estradiol + cholicalciferol only. Eggshell weight was improved by 14, 10 and 19% compared to control group due to feeding estradiol, cholicalciferol and estradiol + cholicalciferol respectively while the corresponding improvement for egg shell thickness were 6, 9 and 11% respectively. Feeding estradiol and estradiol + cholicalciferol increased tibia weight by 4%&12% in estradiol& estradiol + cholicalciferol treated groups compared to control group. While feeding cholicalciferol alone had no effect. Calcium absorption was significantly improved by 10% compared to control group due to feeding estradiol + cholicalciferol while, cholicalciferol and estradiol alone caused a slight improvement. Blood contents of calcium and estrogen were increased by feeding estradiol and estradiol + cholicalciferol groups. An increase in ovary and oviduct weight. was also achieved by feeding estradiol and estradiol + cholicalciferol. The results indicated that the presence of complementary effect between cholicalciferol and estradiol in enhancing calcium absorption and metabolism of old egg - laying Japanese quail. Key words: laying quail, estradiol, cholicalciferol, calcium absorption, eggshell quality, tibia
Effect of Heat Stress Early in Life on Some Physiological Parameters of Ostrich

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Abstract

30 ostrich birds one week of age from the breeding flock in Nuclear Research Center were used to investigate the effect of early heat stress on feed consumption and some physiological parameters. All birds were fed ration ad libitum had ME. 2680 Kcal/kg of diet, 22% protein and 6 g/kg crude fiber. Daily feed consumption was determined. And some physiological blood parameter as total protein (TP), albumin (Alb.), globulin (Glob.), A/G ratio, calcium (Ca), phosphorus (Ph), uric acid (U.A.), creatinine (Cr.) and triiodothyronine (T3) were measured. It was found that feed consumption was significantly lowered with heat stress exposed. In addition, total protein and albumin concentrations were significantly decreased while; globulin concentration increased when birds exposed to high environmental temperature. Also, calcium and phosphorus were significantly lowered, while uric acid and creatinine concentrations were significantly elevated by heat stress. Finally, triiodothyronine levels was significantly decreased by heat stress condition.

Key words: Heat stress, physiological parameters, ostrich
Re-evaluation of some anticoccidial drugs on Eimeria tenella infection

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ABSTRACT Avian coccidiosis act as a problem facing chicken’s production. The objective of this study was to measure the efficacy of either toltrazuril & amprolium (as curative drugs) diclazuril & salinomycin (as prophylactic drugs) against experimental infection of chickens with Eimeria tenella. One hundred and eighty (180), 1-day-old Hubbard chicks (40-45gm) were purchased from local hatchery and divided into six groups (30 chicks per group). Each group was subdivided into three replicates (10 chicks per replicate). Group1 was: non-infected, and non-treated, non-treated negative control, Group2 was infected with E. tenella field isolate. (infected and not treated positive control), Group3 infected with E. tenella field isolate and treated with toltrazuril, Group4 infected with E. tenella field isolate and treated with salinomycin, Group5 infected E. tenella field isolate and treated with diclazuril, Group6 infected with E. tenella field isolate and treated with amprolium. The drugs effect was estimated according to parasitological parameter (oocyst out put), improved growth performance (body gain, feed conversion ratio and total body weight) and mortality rate during certain periods of our experiment. Toltrazuril treated, salinomycin treated and amprolium treated groups had 10% mortalities that started from the 5th day till the 7th day P.I. Diclazuril treated group had the lowest mortality rate (6.6 6%) occurs within the same duration of mortalities (5th day P.I. till 7th day P.I.) Diclazuril treated group showed the lowest daily oocyst count per gm dropping followed by amprolium treated group then salinomycin treated group and finally toltrazuril treated group from the 6th day P.I. till the 13th day P.I,104,7,139,147,163 respectively Diclazuril treated group had significant body gain from 1st week till 3rd week P.I. than body gain of all others infected treated groups. Diclazuril treated group showed the highest body weight at 27, 34 and 41 days of age followed by amprolium treated group then salinomycin treated group and toltrazuril treated group at 27, 34 and 41 days of age.

258 Diclazuril treated groups were the best all over the experimental periods among the other treatments in comparison to the positive & negative control groups, yet it lose its significances in week 1 post infection in comparison to negative control group. In week 3 it was clear that diclazuril was uperiothan others as judged by FCR It was concluded that diclazuril can provide protection against E. tenella more than salinomycin as prophylactic drugs. while amprolium can provide protection against E. tenella more than toltrazurilas as curative drug in drinking water.
Flow cytometeric analysis of CD4+ and CD8+ in blood of persistently infected calves with Bovine viral diarrhea.

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This study was supported financially by a grant project from the science and technology development fund (STDF), Egypt.

Abstract  Bovine viral diarrhea virus (BVDV) is an economically important pathogen of cattle. BVDV infects a wide variety of cell types with a predilection for cells of the immune system either in acutely infected or persistently infected animals. The aim of this investigation was to analyze lymphocytes subpopulation cytotoxic T lymphocyte (CD4+) and helper T lymphocyte (CD8+) in fresh peripheral blood of persistently infected calves with BVDV using flow cytometry and two-color immunohistochemistry invasion system to evaluate the immune status of these animals. BVD antigen was detected in 32 out of 331 whole blood samples (Buffy coat) that were collected from Friesian calves from Alexandria governorate farms in Egypt. Thirteen of which was diagnosed as persistently infected with BVDV when retested positive after one month of the initial testing. Leukopenia associated with decrease in the absolute values of lymphocytes were significantly recorded in infected cases. Flow cytometric analysis of peripheral blood cells of Persistently infected calves revealed reduction in the numbers of CD4+ and CD8+ T-lymphocytes in the peripheral blood. BVDV antigen was detected in lymphoid organs (mesenteric lymph nodes and payer’s patches) by immunohistochemical staining. Key Words: Bovine viral diarrhea, persistent infection, calves, Flow cytometry, leukogram, T-cells subpopulation, lymphoid organs, Immunohistochemistry.
Disposal of Chemical Wastes

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Abstract The risk of chemicals in laboratories discussed in this document include elements, compounds, mixtures, commercial products, cleaning products, solvents, and lubricants. Many chemicals are poisonous, irritating, corrosive, carcinogenic, pyrophoric, or explosive. It is not uncommon for chemicals to have two or more of these properties. Chemicals that may be relatively safe when used alone can become very dangerous when mixed with other substances, either in a planned experiment or by accident. Furthermore, a material may not present any risk of exposure in one form, but may in another (e.g. solid vs. aerosol). Therefore, personnel who handle chemicals must consider the hazards and use appropriate controls and procedures. This document is intended to provide the user of chemicals with general guidelines on safe storage, and use of such chemicals in compliance with regulatory requirements.
Bacteriological and molecular studies on Streptococcus iniae in Nile tilapia at Kafrelsheikh province, Egypt

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Abstract Samples from Nile tilapia were collected from different fish farms in Kafrelsheikh province for isolation of Streptococcus iniae. Identification of Streptococcus iniae was carried out by traditional methods then confirmed by PCR. Streptococcus spp produced PCR product of 207 bp and strains of S. iniae at 300 bp. PCR is very rapid, sensitive and accurate method for diagnosis of S. iniae in fish.
Growth performance, biochemical changes and chemical quality of Nile tilapia feed on Ulva algae

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Abstract This study evaluated the effect of different levels of Ulva algae (0 gm/kg ration, 30 gm/kg ration and 40 gm/kg ration) on the growth performance and body composition of Nile tilapia (Oreochromis Niloticus) before challenge with Pseudomonas fluorescens. Its effect on antioxidant, some serum biochemical parameters, liver and kidney function and lipid profiles before and after challenge were studied. Its effect against pseudomonas fluorescens with recording the mortality rate after infection was evaluated. The results showed a significant increase in body weight and improved feed conversion ratio (FCR), body composition, presence of significance decrease in moisture % and significant increase in protein % and fat % in Ulva groups compared with control group, presence of antioxidant changes, decrease total protein in serum, no affect on liver and kidney function test and insignificantly decrease serum cholesterol in low concentration (30 gm/kg ration) of Ulva algae.

Keywords: Ulva algae, Nile Tilapia, body weight, survival rate, pseudomonas fluorescens, serum biochemistry, antioxidant, chemical quality of Nile Tilapia.
Studies on Infectious Coryza in Turkeys

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Abstract An investigation was carried to clear the infection coryza in Turkey as well as bacteriological examination and histopathological changes in infected turkey. A total of 55 turkeys were collected from different localities at Sharkia Governorate either in moribund state or freshly dead. The examined samples yield 5 (9.1%) positive Haemophilus paragallinarum isolates from the nasal sinuses. All bacteriological isolates of H. paragallinarum were morphologically and biochemically identified. The antibiogram pattern of isolated pathogen from naturally infected turkeys revealed variable sensitivity against some therapeutic agents which have been used. Antibiogram of 5 isolates of H. paragallinarum were sensitive to Erythromycin, Oxytetracycline and Doxycycline. The effect of experimental infection with H. paragallinarum through nasal route at 7 weeks old showed 20% mortality of infected turkey and not vaccinated and not treated. All infected turkeys showed reduction in their body weight and appearance of the clinical signs in addition to trachitis, bronchitis and hyperplasia of the lymphoid follicles in nasal sinus. Meanwhile, vaccinated turkeys showed a good protection.
Comparative studies on the oxidative stresses induced by some bacterial strains causing respiratory affections in Buffaloe calves.

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Abstract The present study was conducted on a total of 30 clinically diseased buffalo calves aged 6-24 months showing clinical symptoms of respiratory manifestation for studying the oxidative stresses induced by the bacterial strains isolated from these calves. So, a total of 30 nasal swabs were aseptically collected for bacteriological examination. The bacteriological examination showed that, 28 (93.3%) were positive for bacterial isolation either in pure single cultures or mixed ones and yielded 46 bacterial isolates (The pure single cultures were only Coagulase positive Staphylococcus aureus and Mannheimia haemolytica ). The most prevalent were Coagulase positive Staph. aureus and M. haemolytica (13%).Followed by Pasteurella multocida, E.coli; Streptococcus pyogenes; Arcanobacterium pyogenes; Klebsiella pneumoniae were isolated in low incidence respectively). The pathogenicity tests revealed that Coagulase positive Staph. aureus; M.haemolytica and P.multocida were pathogenic for mice. The in-vitro sensitivity tests revealed that Gentamycin, Amoxicillin plus Clavulinic acid and Enrofloxacin were the most effective antibacterial agents (83.0%79.2% and 77.4%).PCR results, showed that, clfA virulence gene was detected in Coagulase Staph. aureus and also, ssa virulence gene was detected in M. haemolytica . Meanwhile negative amplification of the plo, smeZ and Kmt1virulence genes of Arcanobacterium pyogenes, Streptococcus pyogenes and Pasteurella multocida, respectively.

Concerning the clinical chemical study , it could be concluded that the increased of oxidant parameter (Nitric acid) on the expense of the decreased antioxidant parameter (superoxide dismutase) in the two infected groups of buffalo calves( Group B infected with coagl. +ve staph.aureus and M. Haemol. and the group B infected with mixed infection of nine isolates) than that of control calves as indicator of the presence of oxidative stress induced by such respiratory infections. Also, the infected groups could induced hepatic and renal damage and deficiencies in phosphorus (P) , Magnesium(Mg) , Sodium (Na) , Iron (Fe) and Copper (Cu) deficiencies . So that it could be recommended that the administration of antioxidants to combat such oxidative stress induced by such respiratory infections along with the selected antibiotic therapy , also P, Mg, Na, Fe and Cu therapy should be recommended for respiratory infected calves to combat their deficiencies.

Key words: Oxidative stress, respiratory bacterial infections, bacterial species, PCR, Buffalo calves.
**Detection of 17α-Methyl testosterone hormone and some heavy metals residues in Tilapia (Oreochromis niloticus) fish**

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**Abstract**

A total of 60 samples of farm Tilapia fish (Oreochromis niloticus), wild Tilapia fish and Tilapia fillets (20 of each) were collected from different fish markets and supermarkets at Kalubia governorates and examined for detection of testosterone hormone residues in flesh of fish by using Enzyme-Linked Immunosorbent Assay method (ELISA) and analysis of some heavy metals residues (Lead (Pb), Cadmium (Cd), Mercury (Hg), Copper (Cu) and zinc (Zn) using Atomic Absorption Spectrophotometer. The obtained results revealed the presence of testosterone residues in flesh of farm Tilapia fish only in a percentage of 15% of the samples with mean value of 6.03 ±0.79 ppb. On the other hand, the heavy metal analysis revealed that the mean value for each of Lead, Cadmium, Mercury, Copper and zinc were 0.17 ±0.01, 0.10 ±0.01, 0.38 ±0.01, 1.15 ±0.18 and 9.69 ±1.04 mg/kg for farm Tilapia fish; 0.31 ±0.01, 0.18±0.01, 0.59±0.02, 1.47±0.21 and 6.80±0.73 mg/kg for wild Tilapia fish and 0.42 ±0.14, 0.33 ±0.12, 0.81 ±0.02, 2.19 ±0.27 and 8.71 ±0.95 mg/kg for Tilapia fillets, respectively. Copper and Zinc residues did not exceed the safe permissible limits of Food Stuffs Cosmetics and Disinfectant Act (2002) and FAO/WHO (1999). Lead and Mercury showed results within and over the permissible limits of E.O.S (2010) in wild Tilapia fish and Tilapia fillets. Cadmium residues were above the permissible limits of E.O.S (2010) in all positive samples of farm Tilapia fish, wild Tilapia fish and Tilapia fillets. The importance of the detected testosterone hormone and heavy metals residues was discussed, to direct the attention to the problem of hormonal and heavy metals residues, that is to improve the quality and safety of this type of fish as it is largely consumed by people.
Effect of oz maya (probiotic) to feed the quail on biochemistry and pathology

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\textbf{ABSTRACT} The present work was designed to study the effect of \textit{Saccharomyces cerevisiae} (SAC) on some blood and tissue parameters in Japanese quail (insulin hormone, glucose in serum and LDL and HDL in muscle and liver tissues and pathological examination of internal organs). It could be concluded from the present study that, the use of SAC in Japanese quail at different doses (0.5, 1, 1.5, 2\%) increased LDL, HDL in muscle tissue and decreased it in liver tissue and no detectable pathological changes were observed in all examined organs except the liver and spleen where the pathological changes varied from group to another.
Control of S.aureus in milk and milk products by Nisin with special reference to its enterotoxins

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Abstract Enterotoxigenic S. aureus in milk and milk products posses a potential health hazard to consumers. The objective of the current investigation is to determine the prevalence of Staphylococcus aureus in raw milk and its products as well as study the effect of the nisin against S. aureus and classical enterotoxins. The total of 80 samples representing raw buffalo's milk, butter, cream and yoghurt were collected randomly from various markets and microbiologically analyzed for S. aureus, and the presence of enterotoxins were identified using an ELISA test. The negative examined samples of S.aureus were used for nisin treatment. The samples were inoculated with S. aureus (enterotoxin type A) with level of 10² cfu/ml and treated with nisin at concentrations of 10, 30 and 50 ppm. Then, these samples were tested for the presence of S.aureus enterotoxin type A by using ELISA. The obtained results indicated that the average Staphylococcal counts were 9.01×10² ± 1.73×10², 6.86×10² ± 0.97×10², 2.21×10³ ± 0.35×10³ and 2.97×10³ ± 0.42×10³ cfu/g with incidence of 40%, 35%, 55%, 65% for buffaloes milk, yoghurt, butter and cream, respectively. Further, S.aureus was detected in 15%, 10%, 25% and 35% from such examined samples, respectively. On the other side, Enterotoxine type A was the predominant type by 5%, 10%, 5% and 15% in the positive examined samples of buffaloes milk, yoghurt,butter and cream followed by type C by 10%, 10%, 5% for milk, butter and cream, respectively. While, other enterotoxins were demonstrated in 5% of the examined samples of cream (type B) and 5% in butter (type D). In general, S.aureus strains lost their ability to produce their enterotoxin A in all examined samples of buffalo’s milk at 3 suggested doses of nisin after fifth days of application.
Comparative Study of Conventional Heat Treatment on chemical composition of milk and Microwave Heat

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Abstract According to nutritional science, milk and milk products are essential food for human. So the purpose of this paper was to see what is the effects of microwaves on the physical and chemical composition of the raw milk. The inhomogeneity of electromagnetic fields of microwaves leads to uneven distribution of temperature in the food products. The results showed that the average of fat, protein and lactose concentrations decreased during the microwave exposure while the density averages increased. This variation was characterized by the critical time moment of 60, 90 and 120 seconds corresponding to the moment when a milk sample exposed to the microwaves action undergoes the first significant alteration of its chemical composition.

Key words: milk, microwave, milk scan, chemical, fat
Study the effect of some bacteria as an etiological agent to reduce hatchability in quails hatcheries

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Abstract A total of 400 quails eggs (200 infertile and 200 dead-in shell embryos) and 100 swabs were collected from egg incubators of quails hatcheries in Dakhalia and Sharkia Provinces with history of reduced hatchability and fertility. The aerobic bacterial examination revealed total incidence of 22.29%. The incidence of bacterial isolation from outer shell and yolk content of infertile eggs was 14 and 21.5% respectively. While those from dead-in shell embryos and swabs from egg incubators were 29.9 and 26% respectively. The recovered bacteria were identified morphologically, biochemically as Proteus mirabilis (P. mirabilis), Citrobacter freundii (C. freundii) and Escheria coli (E. coli) in total percentages of 51.28, 30.13 and 18.59% respectively. Recovered bacteria caused mortality ranging from 40-80% and 31.25-75% in susceptible young quails and breeder hens respectively. Through intramuscular inoculation of young quails and hens, decrease in body weight, decrease in egg production, egg weight and hatchability in experimentally infected breeder hens were recorded.
Effect of Bio-Gluconase 10x as fish ration supplementations in biochemical profile in mono-gastric catfish (Clarias gariepnius)

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Abstract A commercial enzyme preparation (Bio-Gluconase 10) containing β-Glucanase, ad oher several enzymes, like alpha amylase and protease was examined in cat fish (Clarias gariepnius) experiment with wheat/barley/soybean/maize-based diets. The activities of other enzymes were measured also. Several biochemical parameters were estimated and effects of (Bio-Gluconase 10) on in vitro viscosity of wheat, barley, maize and soybean meal were determined. In the experiment, cat fish (Clarias gariepnius) at 4 weeks of age were given a wheat/barley/soybean/maize-basal diet without or with 50 and 100 mg of Bio-Gluconase 10, which provided 500, 1000; 28, 56 and 20, 40 IU of β-Glucanase, Alpha amylase and Protease/kg diet for 8 weeks. Several biochemical parameters were estimated. Addition of β-glucanase feeding improves ad had beneficial effect on biochemical parameters in β-glucanase supplemented diet fish. This effect was greater in high supplemented diet. It was concluded that the beneficial effect of using an enzyme preparation containing β-Glucanase, alpha amylase and protease in high dose recommended.

Keywords: poly-enzymatic complex, beta glucanase, Glucanases; amylases; protease. *Corresponding author: Basem G. A. Fahmy, Senior researcher of biochemistry, AHRI,
Biochemical Screening of Burullous Lake's.

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Abstract Oxidative stress biomarkers are of great interest due to their responses to environmental stressors which provide valuable data for biological monitoring of aquatic pollution. Thus, the individual effects of salinity and metals were investigated in two positions in Burullous Lake in Oreochromis niloticus and Thinlip mullet in the present study. Fish were collected from two farms exposed to salinity (2 and 8 ppt) with characteristic ecosystem parameters (Temperature, Transparency, Salinity, Conductivity, Dissolved Oxygen, BOD, COD and MDA and reduced glutathione and subsequently antioxidant enzymes (superoxide dismutase, (SOD); glutathione peroxidase, (GPX); glutathione reductase, (GR) and glutathione S-transferase, (GST) activities and glutathione (GSH) levels in the in the blood, liver and muscle were measured. Data showed that all the parameters varied in relation to salinity levels, metal species concentration and different ecosystem parameters. Profound alterations on the measured parameters were detected at the lower salinity compared to the higher one. Liver and blood SOD and CAT activities of fish kept in lower salinity were significantly higher than fish kept in higher salinity. However, the other antioxidant indices (glutathione metabolism) of both fish were affected at different water salinity but in different pattern from. Salinity alters the glutathione metabolism, whereas muscle SOD activity in lower salinity and liver CAT activity in both position waters changed significantly. Similarly, blood GST activity and GSH level were increased. This study showed that SOD and CAT were the most sensitive antioxidant indicts that glutathione metabolism, in general, was altered in different positions water. Salinity increase effectively stimulated the antioxidant parameters. The effects of salinity, Dissolved Oxygen (BOD) and metals on the measured parameters increased from region to others with subsequent changes in antioxidant parameter. SOD was the most affected antioxidant parameter. These results indicate that the ecosystem parameter's surround tilapia and Thinlip mullet seems to have oxidative stress, thus generating effect on fish metabolism. This work suggests that the chemistry of freshwaters should be taken into account in natural monitoring for contamination in the field and influence as oxidative stress.

Keywords: Antioxidant defence enzymes, Tilapias (Oreochromis niloticus), Thinlip mullet (Liza Ramada), SOD, copper-zinc containing superoxide dismutase (CuZn EC 1.15.1.1), CAT, catalase (EC1.11.1.6), glutathione peroxidase (GSH-Px, EC 1.11.1.9) GR, glutathione reductase (EC1.6.4.2), MDA, Manolandyde (mmol/ml) and Reduced glutathione, BOD dissolved oxygen,COD available oxygen, bio-monitoring, temperature.
Toxicity of thermally decomposed PVA in African catfish (Clarias gariepinus) and fibroblast cells (in vitro).

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Abstract Polyvinyl alcohol (synonyms, vinyl alcohol polymer, PVA, ethenolhomopolymer) is a watersoluble synthetic resin, prepared by the polymerization of vinyl acetate, followed by partial or complete catalysed hydrolysis. In this study, the effect of thermal degradation products of PVA was studied in Clarias gariepinus. The half lethal concentration of thermally decomposed PVA was 1.1 g/l. Fish were categorized into 4 groups: the first act as control, the second exposed to 1/2 half lethal concentration for 1 w (short term intoxicated group), while the third and the fourth exposed to 1/5 and 1/10 half lethal concentration for 6 w (long term intoxicated groups). The PVA exposed fish showed nervous manifestations, abnormal swimming behaviour in the form of erratic swimming and/or circling was also noticed beside abnormal skin discoloration in few cases and darkness in the others. The postmortem findings revealed, congestion and haemorrhages in all internal organs in addition to pale anaemic gills. Mortality rate was 50 % in short term PVA exposed group while was about 40 % and 30 % in fish groups exposed to 1/5 and 1/10 half lethal concentration of PVA during long term exposure. Biochemical investigations declared that there was significant increase in lipid peroxidation product (malondialdehyde), glutathione-transferase, catalase and superoxide dismutase, alpha fetoprotein, tumor necrosis factor and interleukin-6 in both short and long term PVA intoxicated fish while there was a significant increase in reduced glutathione during short term exposure and significant decrease during long term exposure. Results of proteinogram showed that there was a significant hypoproteinaemia, hypoglobulinaemia and hypoalbuniaemia in both short and long term PVA intoxicated fish in addition to a significant decrease in total immunoglobulins in PVA intoxicated fish. It was concluded from this study that although PVA is a safe widely used product, the thermal degradation products of PVA had several toxic effects in fish. These toxic effects could be attributed to that the PVA, after thermal treatment, can form chromophoricpolyene structure, as well as carbonyl and hydroxyl groups.
Influence of Probiotic Supplementation on growth performance and metabolic parameters in Broiler chickens

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Abstract: The present study was designed to investigate the effects of recently used Probiotic (10 and 20 ppm) on growth performance and some metabolic parameters in growing broiler chicks. Forty-five day old chicks were used and divided into three groups equally. 1st group served as control, 2nd, and 3rd groups fed on ration contain Probiotic at dose (10, 20 ppm) respectively for 8 successive weeks. The obtained results showed a significant increase in body weight gain as well as decreased the amount of feed consumed and improved feed efficiency. The tested drug significantly increased white blood counts, the activity of alkaline phosphatase and uric acid levels. Moreover, it decreased the level of calcium, cholesterol while AST, ALT, creatinine and total protein were not altered. The drug evoked a significant increase in the weight of carcass, bone and the protein % as well as decrease in giblets weight, the percentage of moisture and fat. Conclusively, addition of Probiotic to the ration of broiler chickens could be beneficial practical tool for improving productive performance that mediated through growth rate and improving the endogenous metabolic pools of birds.
The protective effect of camel milk on chronic methoxychlor induced hepatotoxicity in rats

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Abstract The present study was carried out to investigate the protective effect of camel's milk against methoxychlor induced liver toxicity. The unique characters of camel's milk make it used extensively in the field of medicine as anti-microbial, anti-diabetic and hepatoprotective agent. Methoxychlor, is an environmental contaminant, which widely used as a pesticide in many countries, it has been shown to induce hepatotoxicity in rat. Discovering the protective effect of camel's milk against hepatotoxic compound was the main reason beyond the conduction of the current experiment which aimed to investigate the protective effect of camel's milk against methoxychlor induced liver toxicity. Rats were assigned to 1 of 4 groups in each stage of the experiment for 6 and 12 months, respectively: control; 200 mg MXC/kg bw, twice/ week, orally; fresh milk (100 mL/24 h/cage); MXC (200 mg/kg bw, twice/ week, orally) plus fresh milk (100 mL/24 h/cage) respectively. Rats were administered their respective doses for 6 and 12 months. The levels of serum enzymes and histological alterations in liver were investigated. In addition, the levels of lipid peroxidation metabolite thiobarbituric acid reacting substances (TBARS) and the antioxidant enzyme reduced glutathione (GSH) were assayed in liver homogenate. MXC caused a significant increase in serum transaminases (AST and ALT), alkaline phosphatase (ALP) activities. Also, MXC induced a significant reduction in total protein and albumin levels. Moreover, MXC significantly increased lipid peroxidation and markedly enhanced glutathione in liver homogenate. Furthermore, severe pathological damages Occurred as: degeneration and coagulative necrosis of the hepatocytes were established in liver. The present study concluded that camel milk treatment may play a protective role against methoxychlor which induced liver damages in rats. These protective effects were in the form of improving of liver enzyme activities, biochemical and antioxidant parameters enhancing and histological picture of liver of intoxicated rats.

Keywords: Hepatotoxicity, Methoxychlor, Oxidative damage camel milk.
Microbiological and Chemical investigation of ready-to-eat Meat patties

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Abstract A total of 80 samples of ready to eat meat patties were collected from bakeries in Ismailia governorate. Twenty of each including hot dog, chicken frankfurter, minced beef and basterma patties were collected in two forms covered in plastic bags and uncovered. The samples were examined microbiologically by total aerobic, anaerobic bacterial count; mold and yeast count; Staphylococcus aureus count and toxin typing of positive coagulase strains then isolation and identification of E.coli, Salmonellae and Cl.perfringens. Chemical analysis includes moisture%, protein %, fat %, total volatile basic nitrogen (TVBN) and thiobarbituric acid (TBA) to evaluate the public health significance. In hot dog, chicken frankfurter, minced beef and basterma patties the mean values of total aerobic bacterial count of covered form were found to be 8.1x10^4, 2.5x10^5, 1.3x10^5 and 3.2x10^4 cfu/g. comparing to uncovered form which were 2.9x10^5, 1.8x10^5, 4.8x10^5 and 2.4x10^5 cfu/g. respectively. Total anaerobic bacterial count mean values of covered form were found to be 4.6x10^5, 4.8x10^5, 5.7x10^5 and 2.1x10^5 cfu/g., uncovered form were 3.2x10^5, 5.1x10^5, 6.3x10^5 and 8.4x10^5 cfu/g. The mean values of mould and yeast count were 5x10^4, 2.1 x10^4, 1.5x10^4 and 2.7x10^4 cfu/g. while in uncovered form they were 6.2x10^3, 2.9x10^3, 1.7x10^4 and 3.1x 10^3 cfu/g. Staphylococcus count of covered form were 3.2x10^6, 2.9x10^6, 6.8x10^6 and 1.2x10^6 cfu/g , comparing to uncovered form which were 6.2x10^3, 3.3x10^3, 4.9x10^3 and 3.5x10^3 cfu/g respectively. Typing of Staph. aureus toxins indicate negative Staph.aureus toxin production. Salmonella and E.coli failed to be isolated from any sample. Cl. Perfringens was isolated from hot dog and minced beef patties in a percentage of 10%, 25%. The mean values of moisture%; protein %; fat %; TVBN and TBA of hot dog, chicken frankfurter, minced beef and basterma patties were represented 31.3%, 35.6%, 32.3% & 26.4% ; 8.75%, 10.4%, 19.25% & 24.95 ; 26%, 20%, 35% & 6.1% ; 12.1, 10.45, 14.05 & 9.81 mg/100g and 1.4, 1.2, 2.3 & 1.9 mg malonaldehyde/kg respectively. These results indicate poor microbiological quality of the uncovered meat patties and generally the high fat content per patties which represent health hazards on the consumers. Therefore, precautionary measures are necessary for consumer protection, including the enforcement of inspection act, improvement of sanitary conditions in the sales locations and maintenance of standard relation to hygienic health quality.

Keywords: Hot dog Pattie - Chicken frankfurter Pattie - Minced beef Pattie - Basterma Pattie – Microbiology- Staph. aureus toxins - Chemical analysis - public health significance.
Lead residues in raw milk with special reference to the effect of pH on lead leaching from glass containers to milk

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ABSTRACT Lead is considered to be among the most dangerous metals for animal and human health. Lead have accumulative effect even by exposure to low concentration. in addition, Lead oxide uses in glass manufacture to decrease the melting point of glass and gives it the shiny appearance. In this respect, the present study was performed to detect lead residue in raw milk samples collected from Gharbia Governorate and evaluate lead leaching from glass containers to boiled milk, ripened milk, acetic acid and distilled water at zero, 2, 4 and 6 days all groups kept at 4°C. The samples analyzed for lead residue using (UNICAM 969) Atomic Adsorption Spectrophotometer. The obtained results concluded that all raw milk (20) samples contains lead residue above the permissible limit with mean value (1.1994 ± 0.27). At the 2nd day of lead leaching experiment, there was a highly significant increase (p<0.05) in lead residue in boiled milk (pH 6.34), ripened milk (pH5.38) and acetic acid 5% (pH 2.9) compared to commercial distilled water group (pH7.4). While, at 4th and 6th days of experiment, there were a significant decreases (p<0.05) in lead residue in boiled milk and ripened milk group. However no significant changes observed in acetic acid group. Our study concluded that, lead leaching from glass containers happened at the first two days at different acidic pH. The maximum leaching observed at ripened and boiled milk groups due to the presence of calcium which accelerate the lead leaching. Then, the leaching stopped at 4th day in boiled milk, ripened milk and acetic acid due to chemical inactive phenomena in which, a layer of non-porous lead oxide deposited on the inner surface of the glass containers also, the amount of lead residue decreased at 6th day in boiled and ripened milk due to formation of leadamino acid chelating complex.

Key words: Lead - pH – Leaching
DETECTION OF TESTOSTERONE HORMONE RESIDUE IN LOCAL BOVINE MEAT, LIVER AND KIDNEY

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ABSTRACT This study was done to estimate the testosterone residues in 120 samples of bovine meat, liver and kidney. Samples were collected randomly from different localities at Cairo and Giza markets and were analyzed using Enzyme-linked immuno sorbent assay (ELISA) method. The mean value of testosterone residues in bovine meat, liver and kidney were 0.24±0.04μg/ kg 0.43±0.05μg/ kg and 0.57±0.09μg/ kg. respectively. the such values were found to be within the acceptable daily intake . So it seems that the present status of this hormone in market meat does not constitute a public health hazard but we are need to routinely monitor this chemical as a food quality control measure.
EVALUATION OF DIFFERENT GRILLING METHODS FOR CONTROL OF BENZO[ A]PYRENE RESIDUE IN CHARCOAL GRILLED CHICKEN.

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ABSTRACT Evaluation of different grilling methods for control of Benzo[a]pyrene residue in charcoal grilled chicken was studied. This work was carried out on 40 samples (each sample representing half chicken), all samples were marinated with salts, onion, tomato, garlic, black pepper and spices. Samples were divided into four group (ten for each group), first group, chicken with bone were grilled in charcoal (control group). 2nd group, chicken with bone were grilled in charcoal after addition of lemon juice. 3rd group, chicken boneless were grilled in charcoal and 4th group, chicken with bone were oven-grilled for 30 minute then put on charcoal. The quantities of Benzo[a]pyrene were measured using gas chromatography-flame ionization detection (GC/FID). The results showed that the highest level of Benzo[a]pyrene was in the 1st group and the lowest one in the 4th group. The obtained results were discussed as well as the importance for preventive measures were mentioned ensure access of safe and healthy food to consumers.
Treatment trials of Aflatoxicosis in female tilapia (Oreochromis niloticus)

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Abstract The present study was designed to investigate the toxic effect of aflatoxin B1 (AFB1) on female tilapia (Oreochromis niloticus) and evaluate the detoxifying efficiency of chemical (Fylax plus), biological (Mia Myco-fit) and natural (Nigella sativa) dietary supplements. 75 Female fish Oreochromis niloticus were divided into five equal groups. Group (1), untreated control, group (2), fed on AFB1 contaminated diet (200 ppb/ kg diet), group (3) chemically treated group fed on AFB1 contaminated diet supplemented with (1g/kg Fylax plus), group (4) biologically treated group fed on AFB1 contaminated diet supplemented with (2g/kg Mia Myco-fit), group (5) naturally treated group fed on AFB1 contaminated diet supplemented with (30g/kg Nigella sativa) seeds powder. Female tilapia fed at 2% body weight per day for 10 weeks. Results showed that the aflatoxic contaminated diet led to occurrence of some clinical symptoms and postmortem lesions in the aflatoxicated fish (group 2) as well as reduction in survivability and significant reduction in growth performance (final body weight, body weight gain and feed conversion). Mycological examination revealed identification of Aspergillus terreus, Penicillium sp. and yeast sp. (saprophytes) from some fish but without disease signs. Serum analysis showed significant increasing in ALT, AST and urea in aflatoxicated fish (group 2) comparing to the control negative group. Concerning to histopathological examination of group (2) fed on AFB1 contaminated diet revealed pathological alteration in gills, liver, kidneys, spleen and different types of atresia observed in ovaries. While group (5) that received Nigella sativa showed marked modulation in previous alterations especially in ovaries which seen nearly normal histological architecture, followed by group that received biological treatment. Chemical treated group revealed no improvement. Best detoxifying results were obtained by dietary supplementation of 30g/kg Nigella sativa followed by 2g/kg Mia Myco-fit as biological detoxifying supplement then Fylax plus as chemical detoxifying supplement. It could be concluded that supplementation of 30g/kg Nigella sativa in female Oreochromis niloticus (O.niloticus) diets could reduce the toxic effects of AFB1.

Keywords: Female Oreochromis niloticus, Aflatoxosis, Clinical sings, Growth performance, Biochemical parameter, Histopathogy, Treatments, Fylax plus, MiaMyco-Fit, Nigella stiva
EFFECT OF METAL NANOPARTICLES IN COMPARISON WITH COMMERCIAL ANTIFUNGAL FEED ADDITIVES ON THE GROWTH OF Aspergillus flavus AND AFLATOXIN B₁ PRODUCTION

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Abstract The present work was undertaken to evaluate the antifungal potential of ZnO and Fe₂O₃ nanoparticles in comparison with some commercial antifungal feed additives (probiotic, propionic acid and clove oil) in inhibiting the growth of A. flavus strains that were isolated from feeds using well and disc diffusion tests. The aflatoxicogenic strains required higher concentration of metal nanoparticles than non- aflatoxicogenic strains where the zone diameter of growth inhibition increased when the concentration increased and it was larger in non-aflatoxicogenic than aflatoxicogenic strains. The concentrations of metal nanoparticles below 25 ug/ml didn’t affect the growth of all A. flavus strains. The zones of inhibition produced by the metal nanoparticles were larger than that produced by the commercial antifungal feed additives. The aflatoxin B₁ production by aflatoxicogenic strains in liquid medium (YES) or on yellow corn was significantly diminished in parallel with the decline parameters in colony count of the treated aflatoxicogenic strains. The field application of the above used nanoparticles and other drugs on commercial poultry feed evidenced the availability to use ZnO and Fe₂O₃ nanoparticles only as antifungal but their antimycotoxins effect was limited to their use as feed additives during manufacture and before exposure of feeds to fungal contamination. The significance of the present results was fully discussed. It is concluded that further studies are required for investigating the effect of combination of antioxidant metal nanoparticles with other commercial antimycotoxins to obtain dual synergistic actions to decrease the amount of used chemicals in the feeds manufacture.

Keywords: Zinc oxide nanoparticles (ZnO-NPs); Iron oxide nanoparticles (Fe₂O₃-NPs); A. flavus; Aflatoxin B₁; Antimycotoxins.
Effect of organophosphorus pirimiphos methyl on some biochemical parameter and protective role of antioxidant mixture

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Abstract Pirimiphos-methyl is a broad spectrum organophosphorus, it is one of the most widely pesticide in agriculture and public health practices worldwide, has fairly rapidly degraded in the environment. The present study was carried out to investigate the alterations in some biochemical parameters induced by Pirimiphos-methyl (PM) in male rat serum, and the possible protective role of ascorbic acid, α-tocopherol in combination with selenium (Se) at a dose of 100, 100 and 0.30 mg/kg body weight/day respectively as antioxidant mixture (Anti) during exposure to PM. Animals were divided into four groups of s’x rats each; the first group was used as control. Groups 2, were treated with PM (93.05 mg/kg body weight /day), group 3 Anti + PM and Anti group 4 respectively. Rats were administered by gavage their respective doses daily for 28 days. Results obtained showed that PM significantly decreased total protein level, albumin and Haemoglobin (Hb) concentration. While Aminotransferase (AST), Cholesterol, triglyceride, creatinine, urea and glucose levels were significantly increased. Also PM treatment causes no difference in glutathione (GSH) as compared to normal control rats. On the other hand, Anti in combination with PM significantly increased the levels of protein, albumin, Haemoglobin and glutathione. While decreased significantly the levels of Cholesterol, triglyceride urea, AST and glucose with a marked reduce in creatinine concentration when compared to PM group. In addition, Anti in combination with PM partially or totally alleviated its toxic effects on the studied parameters. In conclusion, Anti has beneficial effects and could be able to antagonize PM toxicity.
Some bacteriological, pathological and biochemical studies associated with hepatic and pulmonary lesions in apparently healthy camels slaughtered at some abattoirs in Sharkia governorate

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Abstract Seventy, one humped camels (Camelus dromedairus) were included in this study. Tissue (liver & lung) and blood samples were collected during the period from April 2013 to April 2014 from four different abattoirs in Sharkia governorate cites (Zagazig, Menit el-kamh, Belbiess and Abo-hamad city) for bacteriological, pathological and biochemical studies. Five different microorganisms were isolated and identified from lungs and livers of 32 camels, 14 cases +ve to staph aureus, 3 cases +ve to klebsiella pneumoniae, both isolated from lung tissue while, 7cases +ve to staph aureus, 5 cases +ve to coryne pyogen, 2cases +ve to salmonella enteritidis and a case +ve to listeria monocytogen, those isolated from, different lung and liver lesions with some biochemical alterations were accompanied with those microorganisms. Pathological studies on liver showed cirrhosis, fatty change, cholestasis and haemosiderosis in salmonella enteritidis and staph aureus +ve cases, congestion of hepatic blood vessels and leucocytic cell infiltration in coryne pyogene and listeria monocytogen +ve cases, while the affected lung showed emphysema, congestion in staph aureus +ve cases, haemorrhage and pneumonia in klebsiella pneumonia +ve cases. Biochemical studies carried out on blood samples of animals which showed gross lesions in liver and/or lung revealed significant increase in ALT and AST, while Glutathione peroxidase (GPx) enzyme showed significant decrease, while C-reactive protein (CRP) showed insignificant increase, other 38 camels were free from bacteria showed few, mild or no marked histological alterations or biochemical changes and considered as control negative animals.
EFFECT OF SPIRULINA INCORPORATED IN DIETS OF TILAPIA NILOTICA FRESH WATER FISH EXPOSED TO LEAD TOXICITY

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ABSTRACT
Heavy metals have long been recognized as major pollutants of the aquatic environment. When it is present in high concentrations in the milieu, it causes serious impairment in metabolic, hematological, biochemical and structural systems and consequently on mass and quality of the field product. During 60 days of feeding trial, the current study was carried out using 240 Nile tilapia (Oreochromis niloticus) fish, weighing 21± 0.55 g and reared in experimentally polluted water with lead 10 mg / liter. Fish were fed on diets contained 10 or 15 % dried biomass of Cyanobacteria Arthrospiraplantensis (Spirulina) to evaluate its role on ameliorating the lead (Pb) toxicity hazard. The achieved results indicated that 15 % of Spirulina dietary incorporation enhanced survival rate and growth performance of fish, improved blood cell counts, packed cell volume and hemoglobin %, and boosted antioxidant and liver function indices. Also, it increased protein and calcium content of the fish lean while lipid and Pb residues decreased. In conclusion, Spirulina inclusion in fish diets significantly amended the hazard of lead toxicity.

Keywords: Nile tilapia, lead toxicity, Spirulina, antioxidants, blood parameters.

Abbreviations: Pb Lead, ROS Reactive oxygen species, GR Glutathione reductase, GSH Reduced glutathione, SOD activity Superoxide dismutase, CAT'ase Catalase, LPO lipid peroxidation, MDA Malonaldehyde, NO Nitric oxide, ALT Alanine amino transferase, AST Aspartateamino transferase.
Estimation of selenium levels and malathion residues in blood serum, muscle and some offal of ruminant slaughtered in abattoirs

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ABSTRACT The study included two parts, The objective of 1st one was to determine whether ruminant animals in Kafer Elsheikh governorate have deficient, adequate, or toxic levels of selenium by using atomic absorption spectrophotometer. In 2nd one, was to detect the malathion residue in these animals using high performance liquid chromatography (HPLC) technique. The animals were slaughtered in slaughterhouses belong to Kafer Elsheikh governorate. Blood, meat, liver and kidney samples were taken from cows, buffalos, sheep and goats (10 samples each). The samples were kept in separate sterile plastic bags and transferred to the lab in an insulated ice box for detection of their content of selenium & malathion. The results showed that the mean concentrations of selenium are within the normal levels. Mean while, malathion were detected in 10 samples only. The level of malathion residues was lower than the permissible limits.
Molecular diagnosis of Mycoplasma in cattle milk with emphasizes to MIC

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Abstract

A total of 127 milk samples were collected from cow of different individual farmers and dairy cattle farms in El-Fayoum Governorate. The incidence of Mycoplasma and Acholeplasma species was 22.83% and 11.02% respectively. M. bovis, M. arginini and M. bovirhinis were isolated from the examined milk samples (20.5%, 0.8% and 1.6%) respectively. By (Polymerase chain reaction)PCR using the 16S rRNA, 29 cow's milk samples were positive for Mycoplasma species with an incidence of 22.83%. To confirm that these belonged to the M. bovis species, Mycoplasma isolates were tested using the PCR. Cow's milk positive for M.bovis, M.arginini and M.bovirhinis was similarity between the results of PCR and that of isolation and biochemical characterization. M. bovis field isolate was subjected to four antimicrobial agents (enrofloxacin, erythromycin, tulathromycin (daraxxin) and gentamycin) at different concentration to determine the (Minimum inhibitory concentration) MIC using microdilution method. M.bovis isolate has higher MIC value than the standard strain. It is clear that the MIC of M.bovis isolated from cows was ranged from 0.45-0.5, 4- 4.5, 0.5-1 and 5.5-6 μg/ml inhibition for enrofloxacin, erythromycin, tulathromycin (Daraxxin) and gentamycin, respectively.

Key words: Milk, Mycoplasma bovis, 16SrRNA, PCR, MIC
Investigation on some Bacteriological and chemical changes in bovine milk associated with subclinical mastitis

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Abstract Somatic cells are protective for the animal body and fight infectious organisms. An elevated Somatic cell count (SCC) in milk has a negative influence on the quality of raw milk. Subclinical mastitis is always related to low milk production, changes to milk consistency (density), reduced possibility of adequate milk processing, low protein and high risk for milk hygiene since it may even contain pathogenic organisms. We have investigated the average number of somatic cell samples which are collected from udder. Bacteriological isolation of major invading pathogen as staphylococcus aureus streptococci and E. coli. Chemically, there are slight elevations of total protein percentage in the subclinical mastitic milk comparing with those of normal milk. Albumin percentage insignificantly increased in the subclinical mastitic milk comparing with the normal milk. A significant decrease in whey milk calcium, phosphorus, potassium but a significant increase in sodium was observed. Blood antioxidant activities nitric oxide (NO), malondialdehyde (MDA) was increased while superoxidase dismutase activity (SOD) was decreased.
Diagnosis of Mycoplasma Isolated from Pigeon using Sequencing and its Control

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Abstract One hundred and seventy tracheal swab samples were collected from backyard pigeons (Wazzar, Ablaj, Keshr-bondok and Wazzar Meswed) of age 2-3 years were suffering from respiratory manifestations at different localities. The total incidence of mycoplasma was 45.88 %. Biochemical characterization revealed the presence of two bio-groups. One could hydrolyze arginine and produce film & spot, but couldn’t ferment glucose (57.69 %) which was considered to be M. columbinum. While, the second one fermented glucose but couldn’t hydrolyze arginine nor produce film & spot (42.3%) and was considered to be M. columborale. Genotyping characterization was used to confirm the identification of isolates based on 16S-23S inter-spacer region (ISR) common gene that was positive for all mycoplasma isolates giving band at 500bp. Gene target sequencing (GIS) of 16S-23S ISR common gene for avian mycoplasma gave positive results with the two biochemical groups isolated from pigeons. The sequence and phylogenetic analysis proved that one group was M. columbinum and the other one was M. columborale. These results confirmed the biochemical identification. Minimal inhibitory concentration (MIC) test was applied to determine the sensitivity of mycoplasma strains isolated from pigeons to some tested antibiotics. M. columbinum was sensitive to enrofloxacin and gentamcin. While, M. columborale was sensitive to gentamicin only.

Key words: Polymerase chain reaction (PCR), 16S-23S ISR gene, pigeons, M. columbinum, M. columborale, minimal inhibitory concentration (MIC).
Efficacy of Commiphora molmol extract against Clostridium perfringens experimental infection in chickens

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ABSTRACT This work was carried out to evaluate the effect of Commiphora molmol ethanol extract (CME) against Clostridium perfringens experimental infection with 10^9 CFU in chickens. Experimental infection was confirmed by clinical symptoms, scores of intestinal lesions in infected chickens, morbidity and mortality rates, effects on body weight and some serum biochemical parameters and finally by isolation and identification of C. perfringens. All non-infected chickens appeared healthy, while infected chickens showed mild, moderate or severe form of necrotic enteritis. CME (125 and 250 mg/kg, orally for 5 days) given before or after infection modified the course of the disease as mild clinical symptoms appeared, mild or no necrotic intestinal lesions, very low morbidity and mortality rates, maintained body weight, normalized the tested serum biochemical parameters and improved histopathological picture of intestine. C. perfringens could not be reisolated from treated chickens and can be isolated from non-treated chickens. C. perfringens could be identified by analysis of its toxin using PCR to assure the experimental infection and to confirm the efficacy of CME. Our results suggest that the use of CME can protect chickens against the deleterious effects of C. perfringens infection.

Keywords: Commiphora molmol; C. perfringens; Necrotic enteritis
Naturally aflatoxicosis in buffalo calves and trials for alleviating these effects experimentally in rabbits

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ABSTRACT In the present study, 30 buffalo calves were used for determination of the aflatoxins in their serum , four calves showed non- detectable values of Aflatoxin and 26 calves showed detectable mean values of AflatoxinB1 AFB1 (20.308 ng/mL),AFB2 (4.842 ng/mL),AFG1 (81.961 ng/mL) and AFG2 (32.502 ng/mL) , and this values could induce negative effects on calves especially when it exposed to aflatoxins for longer period of time. The toxic effects of Aflatoxin on calves demonstrated by elevation of liver enzymes , bilirubin and moderate kidney damage (due to elevation of urea and uric acid ). Another experimental study using 20 of Newzealand White male adult rabbits (4 month) which divided into 4 groups , the first group (as control ), the second group administred with 50 μg/Kg.B.W. AFB1, the third group administred with 50 μg/Kg.B.W. AFB1 and 30 mg N- Acetylcystein (NAC) /Kg b.w., But the fourth group administred with 30 mg NAcetylcystein (NAC) /Kg b.w.. Clinical biochemical on blood serum and histochemical analysis of fresh (unfixed) frozen cryostat liver sections to semiquantitative determination of succinic dehydrogenase (SDH- ase) and Adenosine triphosphatase (ATP-ase) enzymes. Results of clinical chemical analysis demonstrated that AFB1 could induced sever liver and kidney disfunction and strongly stimulated both SDH-ase and ATP-ase enzyme activities inducting disturbing in oxidative phosphorylation in hepatocyte mitochondria. NAC coadministration with AFB1 could significantly reduced toxic effects on liver and kidney functions and could normalizing the oxidative phosphorylation, oxidative stress and energy metabolism. The NAC treatment should be suggested and tried for alleviating the Aflatoxicoses in buffalo calves.
Assessment of heavy metals residues in camel's milk samples from ElDakhla City
(The new Valley, Egypt).

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Abstract

Objective: Nowadays, a great deal is directed towards the environmental pollution as it leads to an increased interest in contamination of milk. Many dangerous compounds, such as metals accumulate along the food chain. The almost ubiquitous presence of some metal pollutants, especially Cd and Pb, facilitates their entry into the food chain and thus increases the possibility of them having toxic effects on humans and animals. The safety of daily products decrease with increasing concentration of toxic compounds and environmental pollutants (especially heavy metals). The metal content of milk of camels raised under hot and dry desert conditions, such as ElDakhla (New Valley, Egypt) is poorly documented in the literature. Aim: In this study the metal contents of milk obtained from these camels raised at the region of El-Dakhla (New Valley, Egypt) is reported. Materials and methods: Thirty milk samples were collected from camels found in the El-Dakhla (New Valley, Egypt). The samples were analysed for their metals content (Pb, Cd, Mn, Cu and Fe) by using Graphite atomic absorption spectrometer ZEEnit 700 P analytikjena (Germany) at the Central Lab in the Faculty of Veterinary Medicine-Assiut University. The obtained results revealed that the concentration of analyzed metals (mg/l) were in the following manner: 0.0103±0.0011 (0.0027-0.0191) for lead, 0.1798±0.0372 (0.0171-0.6179) for cadmium, 0.2136±0.0135 (0.1428-0.3630) for manganese, 9.840±0.494 (6.630-13.345) for iron and 0.0571±0.0021 (0.0403-0.0763) for copper. Conclusion: as regards the fact that the amount of heavy metals (pb, Cu) in examined milk samples were within the Egyptian limit and EU, and the metals (Cd, Mn, Fe) were higher than the permissible limits, so it is highly recommended that controlling measures should be done to reduce contamination. It is therefore necessary to monitor and control the levels of metals in consumed food as milk.
Competency of lemon and vinegar in chelation of some heavy metal residues in muscles of salted sardine and herring fish

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Abstract In this study 30 Samples of both salted sardine and herring fish were purchased from Damanhour City markets. Two main factors were studied; the effect of immersion in lemon or vinegar (house-hold concentration, 5% acetic acid) and the difference in species on heavy metal levels in fish muscles. Samples were digested and analyzed by Atomic Absorption Spectrophotometer to determine heavy metals levels [cadmium (Cd), lead (Pb) iron (Fe) and zinc (Zn)] before and after treatment. Fe exceeded the permissible limits in all non-treated sardine and herring tissues and Pb in non-treated and lemon-treated herring tissues while Cd and Zn were within the permissible limits set by Egyptian Organization for Standardization (E.O.S.Q.C., 1993) in sardine and herring tissues before and after treatment. A significant increase (p<0.05) in Pb and Zn levels in herring tissues in all tested samples compared to sardine tissues and for Cd in lemontreated tissue, while non significant differences were observed in Fe level between the two fish species. These results indicating that herring is more contaminated with heavy metals than sardine. This study revealed a significant decrease (P<0.05) in Cd level in lemon-treated sardine compared to the non treated edible muscles tissue, significant decreases in Pb level (P < 0.05) in lemon or vinegar-treated sardine as well as lemon-treated herring, while non significant decrease in vinegar-treated herring and significant decreases in Fe and Zn levels in both lemon and vinegar-treated sardine and herring muscle tissue were observed. These findings confirm the effective role of vinegar and lemon in heavy metal chelation.
THE USE OF DIFFERENT SCREENING AND IMMUNOANALYSIS TESTS FOR DETECTION OF BOVINE SUB CLINICAL MASTITIS

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ABSTRACT A total of 450 apparently normal of udder Friesian lactating cows were investigated for subclinical mastitis. These animals were subjected to California Mastitis (CMT), Electric conductivity (ECT) and pH indicator paper (pH1) tests. Milk whey were prepared from the positive reactors as well as another 50 samples from negative subclinical cases used as control were subjected to Catalase, Nitric oxide, Lysozyme and Electrophoresis determinations. The results showed that 6.2%, of examined cows and 3.2 % of examined quarter were positive for CMT with different scores. Among the examined positive reactors, some cows had one or more positive quarter with majority of the cows had affected one quarter (16 out of 28) followed by cows with four quarters (9 out of 28). While 8% of the examined cows and 3.8% of the quarters reacted positively to ECT with conductivity of 9 m/sc. or more. The number of positive cows had only affected quarter (18 out of 36 cows) followed by cows with two affected quarters (9 out of 36 cows), pH indicator paper test showed 3.8% cows and 2.1% of examined quarter were positively with variable degree of intensity of colour. Immunoanalysis for some components of the milk whey from the positive reactors were applied and compared with the normal milk whey values. Milk whey samples from the subclinical cases showed 15 folds, 2 folds and 3 folds significant increase in the main value of catalase, nitric oxide and lysozymes respectively as compared to control samples. Protein fractions & profile of milk whey detected by electrophoresis revealed a significant increase in alpha lactoglobulin level. The obtained results can firmed that, the use of combined screening and immunoanalysis tests on apparent healthy milking cows help in clarifying their status among dairy herds.
DETECTION OF THEILERIA INFECTION IN EGYPTIAN BUFFALOES BY PCR and ESTIMATION OF CHEMICAL & PATHOLOGICAL CHANGES

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ABSTRACT This study was done to compare between the old microscopically method as a routine for diagnosis of Theileriosis and the most recent method by using (PCR) in Egyptian Buffaloes. Blood samples collected from 100 Buffaloes. comprising both diseased and apparently healthy buffaloes were examined for presence of Theileria infection by microscopic examination using Giemsa stained blood smears, The prevalence was 9% (9/100). To compare between the ordinary method & PCR assays, 20 bovine blood samples were selected and tested by PCR assays. Two primers were used: first based on small subunit (ssurRNA) gene for common Theileria DNA & second specific primers derived from the gene encoding major merozoite antigen to specifically amplify T. annulata DNA in examined bovine samples. The results showed that 5/20 (25%), whereas the PCR assay for Theileria sp. was most sensitive. By using histopathological examination, we found many changes associated with theileria infection in spleen, liver &lymph node, as disturbed follicular architecture with scattered follicular hyperplasia and sinus histocytosis were seen in lymph node . This study donated that, PCR methods are more sensitive & accurate for diagnosis of tropical Theileriosis than the common method (ME).

Keywords: Theileria , Egyptian Buffaloes , PCR, pathological & chemical changes.
Comparative studies of curcuma, ginger and rosemary on DNA damage, cytogenicity and biochemical parameters in rats

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Abstract

The present study was carried out to elucidate the effect of curcuma, ginger and rosemary on carbon tetrachloride (CCL4) induced DNA damage and cytogenicity as well as some serum parameters in rats.

A total of forty adult male albino rats (150-200gm) were used in this study. Rats were divided into 8 groups, each of 5 animals. Group one was kept as a control –ve and fed on the basal diet only. While three other groups were fed on the basal diet mixed with either curcuma, ginger and rosemary (0.1gm%) for 30 successive days. Other four groups were injected subcutaneously with CCL4 (0.1/100g.b.wt.twice/week for two weeks) to induce DNA damage and cytogenicity changes. One of these groups was left as a control +ve (sub/cut injection with CCL4) Where as the other three groups were fed on basal diet mixed with either curcuma, ginger and rosemary respectively for 30 successive days. At the end of experimental period, blood samples were collected from each rats for biochemical analysis, rats were sacrificed to induce DNA damage and cytogenicity changes. Subcutaneous injection of CCL4 at a dose of 0.1ml/100gm/b.wt caused significant increase in serum levels of AST, ALT, creatinine, triglyceride, total cholesterol, glucose, micro nucleated polychromat erythrocytes (MPCEs) and ratio of poly chromatic to normochromic erythrocytes (PCE/NCE) and lipid peroxide (MDA) while the levels of serum total protein, albumin, globulin, NCE and glutathione transferees (GSH) were significantly decreased. The smear on agarose gel had been observed in CCL4 treated groups indicating random DNA fragmentation and a hallmark of necrosis. Curcuma, ginger and rosemary were significantly altered the serum levels of the biochemical parameters directed toward normal as compared with the control +ve group (injected with CCL4).