الجلسة الأولى بالقاعة الصغرى للتدريب بالمعهد

The first session is in the small training hall, AHRI

Name (Prof. Dr.)	Job description	Number of researches
Steven R. Myers	Pharma. and toxicology dep. Louisville univ.	15
Osama El Tawil	Toxicol. dep. Cairo univ. Adjunct Professor Pharma. and toxicology dep. Louisville univ.	
Mostafa Fayez	Pharma. dep. Suez canal univ.	
Elham Mobarez	Bioch. dep. AHRI	

Evaluation of some organic acids alternative to antibiotics for control of salmonella infection in broiler chickens

Ghada A.Abd El-Dayem* Khalil M .R.*; Kheder Z.A.;Abeer A. Abd El Gafar*****

*Department of Poultry Diseases, ** Department of Biochemistry, NutritionalDeficiencyand Toxicology***Department of Bacteriology.Animal Health Research Institute, Agriculture Research Center,Dokki,Gizza,Egypt

ABSTRACT

This study was conducted to compare the effects of two types of organic acids (caprylic acid and propionic acid) for control of salmonella infection in broiler chicks. A total of 165, one day-old (Cobb 500) broiler chicks were used. At day old, five chicks were sacrificed and examined bacteriologically to prove their freedom from *S.* Enteritidis infection. One hundred and sixty birds were divided into eight equal groups. Chickens in (G1) non infected-non treated birds, (G2) wasinfected non treated birds, (G3) was infected and treated with caprylic acid1%,(G4) non infected and treated with caprylic1%,(G5)infected and treated with propionic acid1.2%, (G6) non infected and treated with propionic acid 1.2%,(G7) infected and treated with caprylic1% and propionic acid1.2%,(G8) non infected and treated with caprylic1% and propionic acid1.2%. All birds in (G2, G3 G5, and G7) were challenged 10^5CFU/ml *S.*Enteritidis at 7days of age. All the groups were kept under complete observation for four weeks for recordingsigns, moralities, gross lesions, shedding rate of *S.* Enteritidis, the performance .Five birds from each group were euthanized on days 21and 35day of age and examined bacteriologically for re-isolation of *Salmonella* Enteritidis from cecum and crop (quantitative and qualitative), liver, spleen were tested qualitative .pH in crop and cecum were measured.Plasma samples were collected from the portal vein to determine medium chain fatty acids and short chain fatty acids. Results indicated that

treatment with organic acids decreased reisolation of *Salmonella* Enteritidis from different organs, reduced colonization of*Salmonella* Enteritidis in the crop and cecumand fecal shedding. Birds supplemented with organic acidsshowed significantly ($P \leq 0.05$) higher body weight, body weight gains and lower feed conversion ratio compared to control group. Chicks treated with acids had an increase MCFA (caprylic acid) and decrease in SCFA (acetic acid and propionic acid) in portal bloodthan the control group.

The present study was able to show that this organic acids were useful in controlling of *Salmonella* Enteritidis in infected chicks and this procedure can be important as part of a *Salmonella* control program.

Key words: Salmonella Enteritidis, organic acid, caprylicacid, propionic acid, growthperformance, broiler

Hepatoprotective effect of fennel and tiger nut on biochemical parameters and DNA damage in rats

Hanan, M. Sobhy[1], Sohair, S Ahmad [2]Hanan, A. Azoz[1], Areej, A. Yassin[2]

[1]Biochem .Toxicol. &Feed Deff. Dep. - Animal Health Research Institute &[2]Nutrition &food science Dep.-Faculty of Home Economics Al –Azhar.

Abstract

The present study was carried out to investigate studies of dried fennel and tiger nut in normal and on carbon tetrachloride (CCl_4) induced DNA damage using one concentration of each plants alone for 30 days in male albino rats.

A total of thirty male albino rats (150-200 g) were used in this study.Rats were divided into 6 groups each of 5 animals. Group one was kept as a control –ve and fed on basal diet only, while the two other groups were fed on basal diet mixed with grind dried fennel and tiger nut at concentration (5 g / 100 g diet) for 30 successive days. Other three groups were subcutaneous injected of CCl_4 (0.1 ml/100 g b.wt. for two weeks) to induced DNA damage change .One of these group was left as a control +ve (subcutaneous injection of CCl_4), where the other two groups were fed on basal diet mixed with grind dried fennel and tiger nut at concentration (5 g / 100 g diet) for 30 successive days.

At the end of experimental period, blood samples were collected from each rat for biochemical analysis and rats were then sacrificed to elucidate DNA damage in hepatocytes.Subcutaneous injection of CCl_4 caused significant increase in serum levels of AST, ALT, ALP, creatinine, urea, triglyceride, glucose, total cholesterol, LDL and lipid peroxide (MDA) while the levels of serum total protein, albumin ,globulin , A : G ratio and glutathione transferase (GST) were significantly decreased .The smear on agarose gel had been observed in CCl_4 treated groups indicating random DNA fragmentation and a hallmark of necrosis . Fennel and tiger nut

significantly restored the serum levels of biochemical parameters directed toward normal as compared with the control +ve group (injected with CCl_4).

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Some studies on the effects of kemzyme and/or salinomycin supplementation on growth performance and certain haemato-biochemical parameters in broiler chicks

*** Amal,A.,Zaki*; Afaf,Saleh,Moussa****
Hodaallah,Hatem,Ahmed; Kamal ,A.,Attia**

*Animal Health Research Institute Dokki &**Physiology Department Cairo University

Abstract

The present study was designed to investigate the effects of enzyme (kemzyme; recently used multienzymes) and anticoccidial drugs (salinomycin) as feed additives on productive performance, metabolic and some heamostatic parameters in broiler chicks. The study was carried out on 200 male one day-old hubbard chicks. Chicks were assigned into 4 groups (50 chicks / group).1st group was fed on a basal ration for 8 successive weeks and kept as control group , 2nd group was fed on a basal ration mixed with kemzyme at a dose of (100 ppm / kg ration). 3rd group was fed on a basal ration mixed with salinomycin powder at a dose of 100mg / kg ration). 4th group was fed on a basal ration mixed with kemzyme (100mg / kg ration) and salinomycin (100mg / kg ration). At the end of the experiment, the results showed a significant increase in body weight, feed efficiency and a significant decrease in feed conservation ration in groups 2 and 4 in comparison to group 1 at $p \leq 0.05$.

Concerning haemostatic parameters, the levels of PT and APTT were significantly lowered. On the other hand, there were increase in levels of fibrinogen and activities of factors VII, IX and X at 6 weeks. The serum biochemical results showed a significant increase in the levels of glucose, liver glycogen and T_3 in all supplemented groups in comparison to control one at $p \leq 0.05$. However, there was a reduction in level of TSH in groups

supplemented with kenzyme. There was no significant change in the level of T_4 all supplemented groups. Kenzyme alone and/or in combination with salinomycin induced more pronounced effect than salinomycin alone, it shouldn't be added to broilers feed to more than 6 successive weeks to avoid their effect on blood coagulatability.

Hepatoprotective Effect of Jojoba Oil on DNA Damage and Antioxidant Enzymes Induced by Cadmium in Rats

Hanan ,M. Sobhy ;Mogda, K.Mansour ;Amal , Z. Abdelrahman and Maha ,M . Elkholy

Biochem. Toxicol. & Feed Deff. Dep. AHRI

Abstract

The present investigation aimed to study the effect of the treated jojoba oil(J.O) and / or ascorbic acid (vitamin C) in rats exposed to cadmium chloride ($Cdcl_2$) at a dose 10 mg/ 100g.b.wt. for 30 successive days . Forty mature rats of an average body weight 150-180 gm were used for the experiments. Fifteen rats were administered cadmium orally at dose 10mg/100gm.b.wt. for 30 successive days (for induced damage of DNA) . All rats divided into 8 equal groups of 5 rats each.Group1:served as control negative. Group2:fed on basal diet and administered cadmium orally for 30 days(control positive).Group3:fed on basal diet mixed with treated jojoba oil in ratio 2.5%. Group4:fed on basal died and administered orally vitamin C. Group5: fed on basal diet mixed with treated jojoba oil in ratio 2.5% and administered vitamin C Goup6(pretreated with cadmium) fed on basal diet mixed with treated J.O. in ratio 2.5% for 30 days. Group7(pretreated with cadmium) fed on basal diet and administered vitamin C orally for 30 days.Group8(pretreated with cadmium) fed on basal diet mixed with treated J.O. in ratio 2.5% and administered vitamin C orally for 30 days.

The obtained results showed that administration of treated jojoba oi land/or vitamin C to cadmium chloride intoxicated rats induced significant increase in the amount of DNA / gm of spleen ,decrease in the percentage of micronucleated polychromatic erythrocytes (MPCE) and increase the frequency of normochromatic erythrocytes (NCE) .

Cadmium exposure increased the production of reactive oxygen species (ROS) and altered the levels of oxidative stress related biomarkers of toxicity. Results revealed that cadmium significantly decreased catalase enzyme activity and reduced glutathione concentration while lipid peroxidation concentration (MDA) was increased in rat liver tissues. Furthermore, cadmium exposure were associated with depletion of serum levels of vitamin C, E, A and β-carotene. As compared to the results obtained in control groups . The activity of serum GGT, LDH, ALP and concentrations of urea, cholesterol, triglyceride and LDL were higher, whereas level of HDL was lower were higher. The study showed that a lower concentration of serum proteins and albumin were accompanied by decreased globulin alpha 1 and beta along with an increased gamma 2 globulin. Moreover, jojoba oil and vitamin C have ameliorated the cadmium-induced toxicity by improving antioxidant markers. The results of this investigation demonstrated that treatment with jojoba oil and vitamin C have the potentials to countermeasure the immunosuppressive and biochemical alteration as well as the oxidative damage induced by cadmium in rats.

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Protective effect of Cicer arietinum on infertility of male rats induced by gibrillic acid

***Darwish A.S.; *Tahia A. Elsaid; *Fatma F. Mohamed**

Biochem.Toxicol.& Feed Deff. Dept., AHRI, Dokki, Giza.

Abstract

The present study was carried out to elucidate the effect of Cicer arietinum (chick pea) on gibrillic acid (GA_3) induced infertility as well as some serum parameters in male rats.

A total of forty adult male Albino rats (150-180 g) were used in this study. Rats were equally divided into 4 groups. Group one (1^{st}) was kept as a control negative(–ve) and fed on basal diet only, while second (2^{nd}) group fed on basal diet mixed with GA_3 at concentration of 1g/ 100 kg ration as control positive(+ve). On other hand, third (3^{rd}) group was fed on basal diet mixed with chick pea at conc. 5% and forth (4^{th}) group was fed on basal diet mixed with both chick pea (5%) and GA_3 (1 g / 100 kg. ration) for 65 successive days.

At the end of the experimental period, blood samples were collected from each rat for biochemical analysis. Rats were sacrificed for studying the sexual organs weight and epididymal sperm characters.

Rats fed on ration mixed with GA_3 ,showed significant increase in serum levels of AST, ALT,AP, urea, creatinine, total cholesterol and sperm abnormalities; while the levels of serum total protein , albumin , globulin, testosterone and weight of sexual organs decreased significantly as compared with corresponding values of the controls (group one).

Rats fed on ration mixed with combination of chick pea and GA_3 were significantly altered the tested parameters directed toward normal as compared with control positive (+ve) group.

Cytogenetic, Fertility and Pathological Studies Organophosphorus Insecticide of (Profenofose) on Male Rats.

Safaa M. Abo El-Soud, Seham F. Al-Hadad, Faten G. Al-Saed and Samera A. Sanousi

Chemistry Department, Animal Health Research Institute, Dokki, Gizza, Egypt., Zagazig Lab. And New Valley Lab.

Abstract

Oral administration of profenofose for 65 days in a dose of 1/10 and 1/100 LD_{50} , respectively, significantly increase in the percentage of micronucleated polychromatic erythrocytes (MPCE), ratio of polychromatic erythroctes to normal chromatic erythrocytes (PCE/NCE). The PCE/NCE ratio used as a measure for red blood cell proliferation which gave a sign of toxicity or damage of some organs of the body. Also, a significant decrease in weight of testis than the control except at high dose which cause an increase in testis weigh. Although accessory glands (S.V., prostate and epididymis) showed variationi in weights than the control group. The sperm concentration and percentage of motility were decreased, although sperm abnormalities was increased which characterized by coiled tail and headless. The tested pesticide significantly increased the activities of serum AST, ALT and AP and the level of cholesterol, testosterone, bilirubin, while total protein, testosterone and creatinine significantly decreased.The treated rats with profenofos showed congestion, haemorrhage focal area of necrosis and lymphocytic mononuclear cell infiltration in liver and kidney. The spleen was hyperplastic with degeneration of thewall of some blood vessels. Severe degeneration and necrosis of the spermatic cells of the semineferous tubules in testis. Histopathological changes in different organs appeared to be dose dependent, with damage increase in the high doses.

Influence of vitamin C on cytogencity and biochemical parameters in chlorpyrifos intoxicated rats

Naglaa F. Al-Shap*; Sahar M. El-Sheshtawy*; Hanan M. Sobhy** and Khaled E. El-Ekhnawy**

*Toxicology, Animal Health Research Institute, Tanta Branch &**Biochem. Toxicology. &Feed deff. Dep. Animal Health Research Institute, Dokki

Abstract

This study is aimed to evaluate the effect of vitamin C on Chlorpyrifos induced cytogencity, some serum biochemical parameters and liver pathology in rats. A total of twenty albino rats weighing (180g -200g) were used for this study. Rats were divided into 4 groups each of 5 rats. First group was given Chlorpyrifos 12 mg/kg bw. Second group was given Vitamin C 200 mg/kg bw + Chlorpyrifos 12 mg/kg bw. Third group was given vitamin C only and fourth group was left as control group. All doses were orally administered daily for 14 successive days. At the end of the experimental period, blood samples were collected from each rat for biochemical analysis. Rats were humanely euthanized and femur from all rats was taken for cytogenicity and liver was collected for histopathological study. Oral administration of chlorpyrifos for 14 days in a dose of 12 mg/kg b .w, significantly increased the percentage of micronucleated polychromatic erythrocytes (MPCEs), ratio of polychromatic erythrocytes to normochromatic erythrocytes (PCE/NCE) .On other hand the administration of tested pesticide with vitamin c, reduce the frequencies of MPCEs and directed toward normal. The PCE/NCE ratio is a measure for red blood cell proliferation which gave a sign of toxicity or damage of some organs of the body. The effect on the liver is one of the main toxic effects of this product as there was a significant decrease in the total protein and albumin synthesized by the liver and increase in the leakage enzymes namely AST , ALT plus increased levels of in cholesterol

and triglyceride. Histopathology revealed vacuolar of hepatocytes with random hepatocyte necrosis and mononuclear cell infiltration. Administration of vitamin C improved serum biochemical parameters and alleviated degenerative necrotic damage in the sections of liver examined histologically. In conclusion vitamin C has beneficial effects as it tends to dampen chlorpyrifos toxicity in rats

Biochemical and cytogenetic Investigations into the effects of Enrofloxacin in rats

Tahia. A. Elsaid, K.,A. Deeb and Khalid El Ekhnawy

Animal Health research Institute. Biochemistry Department Dokki Animal Health research Institute. Biochemistry Department EL-Mansoura

Abstract

Oral administration of enrofloxacin at does of 7.5 and 10mg for 30 successive days into mature rats significantly increased the frequencies and percentage of micro nucleated polychromatic erythrocytes (MPCEs) and ratio of polychromatic erythrocytes normochrotic erythrocytes (PCE / NCE) was recorded.

The effect of enrofloxacin on body weight was studied in 2 groups of 10 mature rats each was orally administered by the tested drug at a dose of 7.5 and 10 mg/ 100gm.b..wt. for 30successiundays. Enrofloxacin showed insignificant increase in bodyweight of the rats at the doses. The tested drug significantly increased the activities of serum Aspartate amino transaminase (AST), Alanine amino transaminase (ALT) and the level of urea, but decreased the alkaline phosphatase (AP) activity and level of total protein

Effect Of N-acetylcysteine (NAC) On Hepatotoxicity Of Aspartame

Darwish, A. Sh.; Eman Sh. M. Laz and Faten, M. Elsayed

Biochemistry Department, Animal Health Research Institute

Abstract

The present study was designed to examine the ability of N-acetylcysteine (NAC) to attenuate Aspartame as a synthetic sweetener (ASP)-induced hepatotoxicity in adult albino rats. Forty adult male rats, weighing 150-170 g, were randomly divided into four groups as follows: first group was given distilled water and served as control group I, Group II: received aspartame (ASP) dissolved in distilled water in a dose of 500 mg /kg. b.wt./day, Group III: received NAC dissolved in distilled water in a dose of 600 mg /kg b.wt./day, and Group IV: Rats received NAC dissolved in distilled water in a dose of 600 mg /kg b.wt./day and aspartame (ASP). Administration of ASP at a dose level of500 mg/kg b.wt. to rats for 42 days significantly elevated the levels of serum alanine aminotransferase (ALT), aspartate aminotransferase (AST), gammaglutamyltransferase(GGT), tumor necrosis factor (TNF-α) and hepatic alphafetoprotein (AFP) activity which indicate injury to the liver function. Also, total cholesterol, triglycerides and low-density lipoprotein (LDL) increased significantly. On the other hand ASP decreased serum protein, albumin, high-density lipoprotein (HDL) and liver glutathione (GSH) and superoxide dismutase (SOD).These results reflects that ASP intoxication induced marked alterations in liver functions and caused liver atrophy. NAC (600 mg/kg b.wt.) which administered 1h before ASP ameliorated the hepatotoxicity induced by ASP. This was evidenced by a significant reduction in serum ALT, AST, GGT, TNF-α and hepatic AFP activity and a significant restoration in serum protein, albumin, HDL, GSH and SOD. These results indicate that administration of N-acetylcysteine has a strong potential effect against Aspartame-

induced damage to liver. This reflects the beneficial role of N-acetylcysteine in treatment of liver injury.

Amelorative effect of *Rose Marry* and *Sweet Morgram* extract on male rabbit affected with ammonia toxicity with special reference to some metabolic parameters

Darwish,A.S.; Manal ,A. Fadeel ; Arafa ,M.M.; Amal, A.,Zaki

Biochemistry, Toxicology and Feed Deficiency Department

The object of the present study was to evaluate the effect of alcoholic extract of *Rose Marry* and *Sweet MORGRAM* on male rabbits affected with ammonia toxicity on some metabolic parameters .

From a farm in Qualubia zone ,twenty New Zealand male rabbit at the average age 3 months were divided into 4 groups as follows first group (control group apparently healthy rabbit), second group reared under high air ammonia level (6.79 ±2.55ppm) the 3rd group reared under high air ammonia level and administered alcoholic extract of Rose Marry at a dose(100 mg /kg body weight) the 4th group reared under high air ammonia level and administered alcoholic extract of *Sweet Morgram* of at a dose(100 mg /kg body weight).

At the end of the experiment ,blood , serum and tissue samples were collected to determine some hematological parameters (Hb, PCV ,RBCs, WBCs), some serum biochemical parameters (Ammonia ,Urea ,Uric acid ,Creatinine ,Ast, Alt , Lactate dehydrogenase ,Glucose ,Creatinine Kinase, protein profile ,SOD, GSH, MAD ,Ca, Ph ,Mg levels),tissue samples to measure the percentage of(protein , Fat , moisture , Ash). The data revealed that there were a significant decrease in all the parameters of groups 3 and 4 . Conclusively , the alcoholic extract of *Rose Marry* and *Sweet MORGRAM* had a beneficial practical tool to minimize the deleterious effect of ammonia air level without any adverse effect on metabolic parameters and oxidative markers in male rabbits

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Ameliorative Role of β-Carotene on Some Adverse Biochemical Effects Induced by γ-Radiation in Rats.

Abd Allah, M. I.*., Al-Afifi, SH. H. * Salem, M. M. and Arafa, M. M.*,**

* Biochemistry, Feed Deficiency & Toxicology Dept., Animal Health Res. Inst., Dokki, Giza, Egypt.

** Zoology Dept., Faculty of Science, Al Azhar University.

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Abstract

In the current study,120 rats were divided into six equal groups, including; **Group 1:** neither irradiated nor treated with ß-carotene (**control group**), **Group 2:** given ß- carotene in a concentration of 8 mg/kg body weight/day for a period of 14 consecutive days, **Group 3:** irradiated through whole body exposure to γ rays (6.5 Gy) single dose, **Group 4:** given ß- carotene as group 2 then irradiated as group 3, **Group 5:** exposed to γ rays as group 3then given ß-carotene as group 2, **Group 6:** was the same as group 4 but was additionally given ß- carotene for another 14 consecutive days after irradiation. The obtained results revealed that malondialdehyde (MDA), triglycerides, total Cholesterol, and low density lipoproteins (LDL) concentrations were significantly increased. While, reduced glutathione (GSH) and high density lipoproteins (HDL) concentrations as well as superoxide dismutase (SOD) activity were significantly decreased in γ irradiated rats and all β- carotene treated groups(4, 5&6) in comparison with control levels. The above mentioned elevated and reduced parameters were significantly better in all β- carotene treated groups (4, 5&6) than γ irradiated one indicating the ameliorative effect of β- carotene against γ rays-induced oxidative stress.

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Effect of Vitamin C on gentamicin induced nephrotoxicity in broiler chicks

Sahar M. El-Sheshtawy [*]; Naglaa F. Al-Shap; Gehan G. Shehab and Soad, S. Belih*****

*Toxicology, Animal Health Research Institute , Tanta Branch ,**pathology Dep. Animal Health Research Institute ,Dokki and *** Clinical pathology, Animal Health Research Institute , Tanta Branch

Abstract

This study aimed to evaluating the effect of vitamin C on gentamicin induced.nephrotoxicity in broiler chicks. A total of 80 one-day old broiler chicks were used for this study. chicks were divided into 4 groups each of 20 chicks. First group was given gentamicin 50 mg/kg bw daily for 4 successive days . Second group was given Vitamin C 250 mg/kg bw. +. Gentamicin 50 mg/kg.bw. daily for 4 successive days Third group was given vitamin C only and forth group was left as control group. Gentamicin was administered by intramuscular injection and vit. C were orally administered in drinking water for 4 successive days. At the7th and 14th days of experimental period , blood samples were collected from 5 chicks in each group for biochemical analysis and oxidative stress, chicks were slaughtered and kidneys were taken for pathological examination. The result of biochemical analysis of group 1 revealed a significant increase in serum creatinine and uric acid. However , reveled significant decrease in Ca .It also induce a gradual significant increase in lipid peroxide malondialdehyde MDA with gradual significant decrease in glutathione GSH. Histopathological examination of group 1 reveled vacuolar degeneration and necrosis of the renal tubular epithelium associated with cellular casts. Administration of vitamin C improve all biochemical parameters levels and oxidative stress as compared with control and improves the histopathological picture of kidneys .These improvement were

prominent at 14 days . In conclusion, vitamin C has beneficial effects and could ameliorate gentamicin nephrotoxicity .

Effects of Doxorubicin and Nanoparticle Zinc oxide on DNA damage and Hepatotoxicity induced by Carbon tetrachloride in rats

Samir A. El-Masry[1];Hanan, M Sobhy[2];Mogda, k. mansour[2] and Walid M. Abdalla[1]

[1]Molecular Biology department, Genetic Engineering and Biotechnology Institute (GEBRI), Sadat City University.& [2]Biochemistry,Toxicology and Feed Defficiencydepartment. Animal Health Research Institute.

Abstract

The purpose of this study is to determine the effects of doxorubcin and nanoparticle Zinc oxide in normal and hepatotoxicity induced by Carbon tetrachloride(CCl4) in rats. The nanoparticle of ZnO (ZnO-NPs) were prepared by wet reaction of Zn acetate and sodium hydroxide. The prepared ZnO NPs were identified and characterized by Scanning Electron Microscope (SEM) with Energy Dispersire X-ray spectrometer (EDX) Fourier Transmitter Infra Red (FTIR) and UV visible , the structure of particles was 100 nm. The investigated parameters were Liver enzymes, Protein electrophoresis and DNA gel electrophoresis in normal and injected rats by CCl4. Atotal of forty eight adult male albino rats (130-165 g) were divided into 8 groups, each of 6 rats. Group one was kept as a control –ve, second and third groups were injected intraperitoneally with DOX(6mg/kgb.wt) and nZnO(5mg/kgb.wt) respectively for 3 successive days. While fourth group was injected intraperitoneally nZnO followed by DOX for the same period. On the other hand, other four groups were injected subcutaneously with CCL4 50% (0.1 ml/100g.b.wt.twice/week for two weeks)to induce DNA damge and hepatotoxicity. One of this groups was kept as a control +ve (CCL4 groups). Sexth and seventh groups were injected intraperitoneally with DOX (6 mg/kgb.wt) and nZnO (5 mg/kgb.wt) respectively for the same period. While eighth group was injected intraperitoneally nZnO followed by DOX for the same period. At the end of experimental period, blood samples were collected from each rat for

biochemical analysis and the rats were sacrificed to illustrate DNA damage in hepatocytes. Subcutaneous injection of CCL4 caused significant increase in serum levels of aspartateaminotransferase (AST), alanine aminotransferase (ALT) and alkaline phosphate (ALP) while the levels of malondialdhyde (MDA), Total Antioxidant Capacity (TAC), albumin and globulin were significantly decreased .The smear on agarose gel had been observed in CCL4 injected groups indicating random DNA fragmentation. Rats were injected DOX showed similar changes. NZnO significantly restored the serum levels of the biochemical parameters and DNA damage directed toward to normal as compared with the control +ve group (injected with CCl4). Thus, it can be concluded that zinc oxide nanoparticles followed doxorubicin intraperitoneally injection improved the alteration of some serum biochemical parameters and DNA damge induced by CCL4.

Validation of a RP-HPLC method for estimation of Gentamycin sulfate in poultry meat using UV detector

MarwaRagab , Mai Abdel Monem ,M. Ahmed Maher , Shaimaa. H. nassar, Nahla Salah ,and Fatma .H. Amro

Reference laboratory for Veterinary Quality Control on Poultry Production, Animal Health Research Institutes, Dokki

ABSTRACT

A reverse phase high performance liquid chromatographic method was developed for estimation of Gentamycin sulfate in poultry meat. Samples were prepared by an extraction with phosphate buffer/TCA followed by a solid phase cleanup and then UV detector. The separation was achieved by C18 (4.6 mm i.d., 250 mm, 5 µm, Agilent Co.) column and the isocratic mobile phase of (0.1M) of Triflouroacetic acid: methanol (92:8v/v) was used, at a column temperature of 24 C at a flow rate of 1.5 ml/min and injection volume 50µl. Detection was carried out at 280 nm. Retention time of Gentamycin sulfate was found to be approximately 6 min. and analytical conditions gave recoveries in the range of 98.9% to 103.3% at spike levels of (50-1000 µg/kg), and relative standard deviations (RSDs) lower than 1% in all the cases. The repeatability and reproducibility results were in range of 2-10% and 3-15% respectively. Additionally, the limits of detection (LOD) (25µg/kg) and the limits of quantification (LOQ) (50 µg/kg) the method has been validated for linearity, accuracy and precision. Linearity for Gentamycin was in the range of(50-1000 µg/kg),. The percentage recoveries obtained for Gentamycin sulfate found to be in range of 101%. Developed method was found to be accurate, precise, selective and rapid for simultaneous estimation

of Gentamycin sulfate residues in poultry muscles that all standards in this method were added on poultry muscles to prepare a spiked sample for levels (50-1000µg/kg).

Keywords: HPLC, Gentamycin sulfate, UV, Poultry

Synthesis and Identification of Chiral open-chain sugar-derived nitrones and their 1,3-Dipolar Cycloaddition with maleimide and maleic acid

Usama S.Altimari[*] , Arwa Al.Adroay[*], Tahia. A. Elsaid[**] and Eman Sh. M. Laz[**]

* Health and Medical Technical College, Baghdad, Iraq &**Biochemistry Department, Animal Health Research Institute

Abstract

The chiral open-chain sugar-derived nitrones (a,b) were prepared in a pure state. N-Sugar-derived isoxazolidines (2a,b-3a,b)) were synthesized regiospecifically by 1,3-dipolar cycloaddition reaction of a nitrone (a,b) with maleimide and maleic acid. N-sugar-derived isoxazolidine (3a) showed high activity against bacteria staphylococcus aurous, bacteria Escherichia coli and absolute inhibition against pathogenic fungi candida albicans growth and fungi microsporum gypseum

Keywords: sugar-derived nitrones , 1,3-dipolar cycloaddition , N-sugar-derived isoxazolidines .

The second session is in the large training hall, AHRI

الجلسة الثانية بالقاعة الكبرى للتدريب بالمعهد

Name (Prof. Dr.)	Job description	Number of researches
Harrell E. Hurst	Pharma.and toxicology dep. Louisville univ.	13
Mostafa Shalaby	Pharma.dep.Cairo univ.	
Azza Mohamed Kamal	Bioch. dep. , AHRI	
Mohamed Kamal Abu Elmagd	Bioch. dep. AHRI	

Comparative study between steroidal and non- steroidal compound in rats

Maha, M..Elkholy*, G.M. Ibrahim,K.,A. Deeb *** and Ola. F.A. Talkhan***

*Animal Health Research Institute, Chemistry Dept., Agric. Res.Center, Giza Egypt

**Planing general manager in Kahira Pharmaceutical Company.

***Animal Health Research Institute El-Mansoura

Abstract

Comparative effects of non steroidal (Ibuprofen) and steroidal (dexamethazon) compound in rats were studied. A total of 60 male albino rats, about 130_150 grams were used and classified into 3 groups. The 1st.group injected distilled water intramuscularly and left as a control. The 2nd and 3rdgroup were injected Ibuprofen and dexamethazon at a dose of 0.9 mg and 0.8 mg/100gm b. wt. intramuscularly respectively for **5** consecutive days. The samples were taken after 1,7,15 and 45 days after stopping injection.

The results revealed that, ibuprofen and dexamethasone induced significant decrease in haemoglobin, red blood cells, total leucocytic count and lymphocytes beside total protein, albumin and globulin. On the other hand, significant increase neutrophil, ALT, AST,ALP, urea , creatinine, total lipid, cholesterol ,triglyceride A/G ratio, glucose and liver glycogen in tissue.

Our results indicated that Ibuprofen and dexamethazon caused dysfunction in blood picture, liver and kidney functions in rats. The study was showing the pathogenesis of Ibuprofen or dexamethazon which could be poisonous in therapeutic doses in rodents.

Key word: Blood picture, lipid profile, biochemical parameters, steroidal drug, non steroidal drug, rats.

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Protective effect of some antioxidant compound on albino rats intoxicated with aflatoxin

Mogda K. Mansour[1]; Amany Y.[1] Nahed, M. El-Mokhttar[2] and Seham , F. El-Hadad

Departments of [1]Biochemistry, [2]Mycology,and [3]Pathology, Animal Health Research Institute, Dokki-Giza; Veterinary Laboratory, Tanta, El-gharbia Governorate, Egypt.

Abstract

Mycotoxins are unavoidable contaminants of animal and human feed and food respectively. This study was aimed to investigate the effect of Vitamin E, Vitamin C and Selenium Supplementation to drink water against aflatoxins B1 on the various serum parameters , liver tissue antioxidant and the associated pathological changes. Thirty five male albino rats weighing 120-150 g were used in the present study. Group1 (G1): rats served as control , Group2 (G2) orally administrated aflatoxin B1 dissolved in propylene glycol per Os as a dose of 50µg/kg body weight /week**,** for 10 weeks . Group3-7 : administrated with aflatoxin B1 50µg/rat/week for 10 weeks . These groups were treated as Group3 (G3):was supplemented with selenium (as sodium selenite was used as 4mg/l). Group4 (G4):was supplemented with vitamin E as 1000mg/l. Group5 (G5):was supplemented with vitamin E plus selenium. Group6 (G6): was supplemented with vitamin C as 1000mg/l. Group7 (G7):was supplemented with vitamin C plus selenium. The results showed significant elevation in the liver and kidney functions, alpha globulin and beta globulin and decrease in concentrations of serum total protein, albumin, and gamma globulin together with A/G ratio. Lipid peroxidase as MDA levels were shown after AFB1 treatment. pathological changes of liver in aflatoxicated rats was discussed briefly. It can be concluded that the hepatotoxicity induced by aflatoxin B1 seemed to be modulated effectively by the simultaneous use of antioxidants: vitamin E or C alone or incombination, with

selenium. Moreover, they are more efficient modulating the biochemical alteration , liver antioxidant enzymatic system and pathological changes.

A trial to pinpoint some causes of infertility in ewes from the New Valley government

Hanan ,A. Tag El-Din[1] ;Safaa ,M. Abo El -Soud[1] ; Samira ,A.A. Snosy[2];Khalied ,El- Ekhnawey[3] and Faten, G. El-Said[4]

Hormonal unit , Chemistry Department, Animal Health Research Institute, Dokki, Giza[1] , Animal Health Research Institute ,El –Dakhlia , New Valley government[2] , Chemistry Department, Animal Health Research Institute[3] and Chemistry Department, Animal Health Research Institute, Zagazig[4] .

Abstract

Many factors were found to affect ovarian activity negatively in farm animals. Last year's researches focused on several natural compounds (heavy metals and phytoestrogens) that may interfere with the major functions of the endocrine system and can affect female fertility .Therefore ,they were termed endocrine disruptors (EDCs) . So , the objective of the present study was to pinpoint some causes of infertility in ewes from the El-Dakhla city (New Valley – Egypt) as some EDCs (iron, lead and cadmium) may present in well-water and berseem fodder as well as some trace elements and minerals that affect biosynthesis or activity of FSH ,LH, estradiol ,progesterone ,testosterone ,T3 ,T4 and TSH .A total of thirty 3-6 years old Balady ewes (30-40 kg) were studied .The control ewes (G1 ,n =10) were fed according to their physiological status and were of normal fertility. Twenty infertile ewes were from two different farms(ten for each ,G2& G3) and had been grazed on a highly estrogenic pasture of Berseem clover (*Trifolium alexandrinum* ,Al - Abbd) rich in phytoestrogen and drink well-water directly from the same well without any treatment. Well-water, berseem and serum samples were analyzed for their heavy metals content. Serum samples were analyzed for minerals, and hormonal levels. The obtained results revealed that well-water and berseem fodder had iron levels higher than the permissible limits of WHO and Egyptian ministry of health .Meanwhile, Pb and Cd levels were within the permissible

limits .Calcium level of well-water was within the permissible limit of WHO. Serum analysis recorded drastic increase in Fe levels but the Pb and Cd levels were not detected . Insignificant increase was recorded in Ca levels in both the infertile groups. Zn concentrations were significantly decreased in G2& G3 ,Cu levels were significantly decreased in G2 and Pi levels decreased significantly in G3 only. Serum hormonal analysis showed significant decrease in LH levels in G3 with significant decrease in FSH levels in G2&G3 .Moreover , estradiol and progesterone concentrations were significantly increased in both the infertile groups. Meanwhile , testosterone levels significantly increased& decreased in G2&G3 , respectively. Significant decrease in T3 levels in both the infertile groups .Also, significant increase was recorded in T4 &TSH levels in G2&G3 in comparing with the control group. In conclusion , this study indicated that heavy metals pollution of well-water and berseem fodder with iron as well as serum zinc ,copper and phosphorus deficiency affect fertility of ewes at El- Dakhla city farms . Moreover , grassing on berseem clover (*Trifolium alexandrinum* , Al -Abbd) may be the cause of reduced ovulation rate owing to high content of phytoestrogens. So, iron and phytoestrogen act as endocrine disrupting compounds which affect gonadotrophic hormones (LH&FSH), steroidogenesis and thyroid hormones production that affect ewes fertility.

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The Prevalence of fungi in spices and study the effectiveness of some antimycotics antioxidants in elimination of these fungi and its toxins in vitro and in vivo

Nahed, M. El-Mokhttar[*] ,Nashwa A.H.Ahmedand S. EL-Araby Kammal[**]**

Departments of Mycology[*] and Biochemistry** Dep., Animal Health Research Institute, Dokki.

Abstract

The purpose of the present study is to assess fungi and Aflatoxin content in different spices present in local markets in Egypt and test herbal and chemical materials that have antimycotic antioxidant properties to eliminate or ameliorate these fungi and its toxins in vitro and in vivo. This study compromises three parts. In part I :samples of spices ; black pepper, dry ginger, cumin ,coriander (corundum), red chilly (pepper) and curcumin were collected randomly (20 of each) from local markets and super markets at Cairo governorate for investigation of fungal contamination and detection of aflatoxin . The results indicated that the most prevalent fungi were belonging to genus Aspergillus which was recovered from all samples of cumin and corundum (coriander) (100 %), black pepper and curcumin samples (90%), dry ginger samples (75%) and red chilly (pepper) samples (70%).Other genera of fungi were also recovered in lower rates of frequency namely Penicillium, Scopulariopsis , Mucor ,Cladosporium ,Candida and Rhizopus species. The fungus of *Aspergillus flavus* was recovered from samples of cumin and coriander and produced aflatoxins. The maximum levels of toxin were obtained from *A. flavus* isolated from Cumin (90%) of isolates produced mean level of (4.85±2.35ppb) followed by those isolated from Coriander (corundum) (70%) with the mean level of (2.89±2.21 ppb).The laboratory findings for inhibition of aflatoxinogenic *A.flavus* (part II) showed that zone of inhibition caused by sorbic and benzoic acids, rosemary and thyme were (12.9 - 28.4, 6.9 -30.6, 16.7 - 21.2 and 3.9 -

27.4 mm , at concentrations of 0.25% and 1.0% ,respectively for *A. flavus*).On the other hand ,the in vivo application of laboratory findings in rats using thyme,rosemary,sorbic and benzoic acids to ameliorate aflatoxicosis were undertaken(part III). One hundred rats (150-170 g) were divided into 10 equal groups. Rats of the first group were given healthy commercial pelleted basal diet and kept as a negative control. Rats of groups 2, 4, 6,8and 10 were injected intraperitoneal with a single dose of AFB1 1.5 mg/kg body weight **.**Then on the second day the diet of rats were supplemented with 5% commercial thyme powder for groups 3 & 4, 2.5 % commercial rosemary powder for groups 5&6, (2 % sorbic acid for groups 7&8) and (2% benzoic acid for groups 9&10).The period of feeding was continued for 4 weeks. The biochemical investigation of sera of the aflatoxicated group 2 showed a significant increase in ALT and no changes of AST, urea, creatinine, TAC,T3 and T_4.Rosemary powder,sorbic and benzoic acids exhibited a hepatoprotective effect .Herbal materials improved urea and T_3(active form of thyroid hormones) levels.Sorbic and benzoic acids affect negatively TAC and may it correlated with elevation in T_4 . Aforementiond results showed that most prevalent fungi were belonging to genus Aspergillus in spices marketed in Egypt. *Aspergillus flavus* was the most predominant member.Though hepatoprotective effect of antimycotics antioxidants studied, more studies recommended on pure extracts and different doses of thyme and rosemary to exert more benefits.

Effect of moringa leaves on lipid content of table eggs in layer hens

Nabila I. El-Sheikh, Eman S. El-Shazly, Enas A. Abbas*-Ghada I.A. El-Gobary**

Food Hygiene, Tanta Provinc. Lab.; Biochemistry Dept. (Toxicology unit), Animal Health Research Institute, Dokki*, Biochemistry Dept., Tanta Provinc. Lab.**

Abstract

This study aimed to evaluate the effect of low dose levels of Moringa oleifera leaves powder (MOLP) as a natural feed additive on feed efficiency, egg productivity and quality as well as lipid profile in both serum and egg yolk of sixty Lohmann Brown laying hens aged 32 weeks. Birds were assigned to four dietary groups. The dietary treatments containing varying MOLP levels, 0, 1, 1.5 or 2 g/kg diet for 45 days. It was revealed that inclusion of MOLP in layers diet at all dose levels improved egg quality indices as manifested by a significant increase in whole egg weight, shell weight and yolk colour, while induced a significant decrease in yolk weight at all dose levels and increase albumin weight at a dose level of 1.5 and 2mg/kg diet without any adverse effect on laying percentage, egg mass production,feed intake (FI) and feed convertion ratio (FCR). In addition, MOLP evoked a significant decrease in total lipid, total cholesterol, low density lipoprotein (LDL), very low density lipoprotein (VLDL) and atherogenic index (AI) in both yolk and serum all dose levels, while induced a significant increase in high density lipoprotein (HDL) in serum from all treated groups and in yolk at dose levels of 1.5 and 2 g/kg diet. In this study, MOLP effects were dose dependent. The increased shell and albumin and the decreased the yolk weight in the eggs could imply lower cholesterol content. Moringa leaves as natural feed additives was found to be a good and cheap alternative sources of protein and reduced consumption of imported synthetic supplements and

medicine and thus the demand for low fat organic eggs production for consumers health was achieved.

Keyword: Moringa oleifera- feed convertion rate- layers-egg-lipids-cholesterol

Fatty acids profile of some Egyptian fish species.

Basem G. A. Fahmy; Amal M. Hosny and Saher A. Ahahmed

Biochemistry, Nutritional Disease and Toxicology Department
Animal health Research Institute (AHRI). Dokki, Giza, Egypt.

Abstract

Four species of fish reared in southern border of coastal waters in fish farm of Kafer El Shik government (Brullous Lake, Egypt) were studied. Forty of Tilapia, (*Oreochromis niloticus)*; catfish, *(Clarias gariepinus)*; grey mullet, *(Mugil cephalus)* and thinlip mullet, *(Liza ramada)* fish were examined for their fatty acid composition under Egyptian breeding conditions.

The isolation, identification and characterization of these fatty acids were carried out by gas chromatography (GC). Most of the fish contained less than 20% lipid by weight. A large variation was observed between tilpia liver and catfish liver and between catfish muscle and grey mullet and thinlip mullet muscle. Thirty seven individual fatty acids from the muscle and liver from fish were analyzed. Fatty acid composition was analyzed and quantified using gas chromatography after being converted into fatty acid methyl ester (FAME).

The most prominent muscle fatty acids detected were Oleic acid and Myriotoleic acid in tilapia, grey mullet, catfish and thinlip mullet muscles. Additional amounts of Tricosinoicc acid, Myriotoleic acid, Henoisoanioic acid were observed. Detectable amount of Cis,4, 7, 10, 13, 16, 19 Decsahexaonic acid were present. In additions, the most redominant liver fatty acids detected were Myrisitic acid, Pentdecanic acid and Linolonic acid in tilapia, (*Oreochromis niloticus)*; catfish, *(Claries gariepinus)*; grey mullet, *(Mugil cephalus) and* thinlip mullet *(Liza ramada)*,respectively. Additional high presence of Palmetic acid and Myriotoleic acid were found. Detectable amountd of Cis, 13, 16 Decosadonic acid and Cis 11,,14 Eicosoadadieonic acid were observed.

The saturated fatty acids (SFA), monounsaturated fatty acids (MUFA), poly-unsaturated fatty acids (PUFA), w-3, w-6, w-7, w-9, EAA, DAA, EAA, EPA, EPA and DHA were illustrated and detailed discussed in muscle and liver of tilapia, (*Oreochromis niloticus)*; catfish, *(Claries gariepinus)*; grey mullet, *(Mugil cephalus) and* thinlip mullet *(Liza ramada).* In addition medicinally important polyunsaturated fatty, acid eicosapentaenoic and docosahe aenoic acids were also identified.

Key Words: Tilapia , (*Oreochromis niloticus)*; Catfish *(Clarias gariepinus),*; Grey Mullet, *Mugil cephalus)* and Thinlip Mullet *(Liza ramada) FA; fatty acid*., SFA: short chain saturated FA, MUFA; monounsaturated FA, and PUFA; polyunsaturated FA, fish, liver, Muscle, Fatty acid composition, Gas chromatography GC.

Evaluation of antimycotoxin effects of Curcuma longa and Zingiberofficinale on broilers toxicated with aflatoxin

DOAA A.H.* and GHADA A.A. **

Animal health research institute, agriculture research center,Dokki,Giza,Egypt, Al-mansoura provincial Lab.*Department of mycology, ** Department of poultry disease

Abstract

This study was conducted to evaluate the efficacy of turmeric powder (Curcuma longa) at a dose of 80 mg/kg ration ,ginger (Zingiber officinale) at a dose of 0.75gm/kg ration and hydrated sodium calcium aluminosilicate (HSCAS) at a dose of 0.5% to counteract the toxic effects of aflatoxin B1 at dose of 2.5ppm/kg ration in broiler chickens. Hundred sixty chicks of one day age were distributed into 8 groups at 7 day of age. First group kept as control , 2nd group fed ration contain AFB1, 3rd group received ration contain AFB1+ HSCAS,4th group received ration contain AFB1 + Curcuma longa powder,5th group fed ration contain AFB1+ Zingiber officinale, 6th group fed ration contain AFB1 + HSCAS + Curcuma longa + Zingiber officinale 7th group fed ration contain AFB1 + Curcuma longa + HSCAS, 8th group fed ration contain AFB1 + Zingiber officinale + HSCAS. The feeding program continued till 45 day of age. Body weight was recorded weekly, serum samples we collected for biochemical studies at the end of experiment while organs (liver, kidney and intestine) were collected for pathological studies at 21 and 45 day of age. The results cleared that chicks of the 2nd group showed significant decrease in body weight while 3rd ,4th ,5th ,6th ,7th ,8th groups showed a significant increase in body weight which appeared clearly at 45 day of age ,5th and 6th groups recorded the highest body weight .Regarding to biochemical parameters, the results revealed that the chicks of group 2 posses the lowest values of serum total protein, albumin, globulin and showed significant increase in liver enzymes AST, ALT and ALP concentration. Also, a significant

increase in serum uric acid, urea, creatnine and total cholesterol concentration level .The use of Curcuma longa and/or Zingiber with or without (HSCAS) showed a significant improvement of the values constituent and returned to normal level. In group 2 the liver, kidney and intestine showed necrotic changes. While groups treated with Curcuma longa and/or Ginger showed improvement in histopathological effects of aflatoxin B1 especialy in group (6) at 45day of age.

Key words: Aflatoxins, curcuma longa, ginger, broiler, performance, biochemical parameters, histopathological change .

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Effect of dietary protein level on growth performance, carcass characteristics, intestinal microflora, hematological Parameters and some biochemical changes of growing Japanese quail

Osama A. Saker., * Gmal .,I Mazyad., ** Adel M. El-Gamal and Mohamed M Elseify.** **

* Department of biochemistry , nutritional deficiency diseases and toxicology Animal Health Research Institute Kafr El-Sheikh.&** Department of microbiology animal health research institute Kafr El Sheikh

ABSTRACT

A total of one hundred and twenty 1-day-old apparently healthy Japanese quail were selected and randomly divided into 4 groups. Treatments were designed with four levels of crude protein (22.17, 24.2, 26.2 and 28%) respectively to study the effects of dietary crude protein level on growth performance, carcass characteristics , intestinal microflora, hematological parameters and some biochemical changes of growing Japanese quail**.** Results showed that growth performances parameters significantly improved as dietary crude protein level increased .The results indicated that dietary protein level beyond 24% has no beneficial effect on growth. Carcass traits results revealed that dressing percentage, breast muscles and leg muscles were increased significantly as crude protein level increased in the diet but weights of liver, heart gizzard and abdominal fat percentage were decreased significantly . Intestinal microflora count revealed that total aerobic bacteria, Coliform bacteria, Lactic acid bacterium and *Escherichia coli* increased significantly as crude protein level increased. Hematological examinations results demonstrated that hemoglobin concentration, red blood cells count, total leucocytic count , monocytes and lymphocytes were increased significantly as crude protein increased but basophils, eosinophils and heterophils were decreased significantly. Serum analysis showed that total protein, albumin and globulin in serum increased significantly as crude protein increased**.** It could be concluded that dietary level of 24% crude protein is recommended for growth performances and economic efficiency of

growing Japanese quail because of increased dietary protein level beyond 24% % has no beneficial effect on growth.

Keywords: Blood chemistry , Carcass yield, Dietary protein., Feed efficiency ,Hematological examination ,Japanese quail

Effect of pregnancy trimesters on some physiological analysis of kidney functions

Amany Mohamed Jasim,** Hassan I. Abass andSafaa, S.Abd-Al.Hamid**

*Medical analysis Dept.-College of Medical & Health Technology, Middle Technical University, Baghdad - Iraq

** Physiology Department – Faculty of Veterinary Medicine – Cairo University, Giza- Egypt

*** Biochemistry Department – Animal Health Research Institute , Dokki- Egypt

Abstract

Many important changes may occur during pregnancy on various organ systems of the body including kidneys. Pregnancy period has significant effects on renal structure and function. The urinary system showed significant physiological and structural changes during pregnancy.

In the present study, a total of 140 blood samples of pregnant women were collected from Al- Zahrra hospital, Iraq- during a period of July 2014 to February 2015. Pregnant women were divided according to their gestational period into three groups, first, second and third trimester group.

Kidney functions including globulin, blood urea, serum creatinine and albumin were measured in blood of these pregnant women.

The results showed highly significant increase in the level of albumin, creatinine and blood urea in first trimester as compared with control group (pregnant women with normal kidney function test) .The results showed highly significant increase in the levels of globulin and protein in second trimester and gradually decline in the third trimester as compared with control group.

In conclusion, many significant physiological changes may occur in kidney functions during pregnancy trimesters.

Physical Activities Associated with Overweight and Obesity among University Students in Jeddah

Dina M. Qahwaji, Thanaa.A.Elkholy; Elham Kensarah, Sara Al-Amoudi and Sara Al-Sharif
Clinical Nutrition Department, Faculty of Applied Medical Sciences King Abdul-Aziz University Saudi Arabia

dqahweji@kau.edu.sa

Abstract

***Background &Objectives*:** Available studies on obesity in Eastern Mediterranean Region countries indicate that obesity has reached out an alerting level among both children and adults. Factors associated with the occurrence of obesity have not been well investigated. The purpose of this study is to investigate the effect of lifestyle factors in obese male and female university students in Jeddah, Kingdom of Saudi Arabia. To explore the relationship between obesity and PA of young youth in KAU and to investigate differences due to gender. **Material & Methods:** A number of 91 adult students (48) of the surveyed parsons were male, with about (52.7%), while the female were (43), with about (47.3%) their age ranges from18-26 years from KAU attending the University in 2011-2012 completed a self-administered questionnaire, including providing correct self-reported data on height, weight and PA. The study conducted cross-sectional analysis of the correlation between obesity, defined as stated by KSA standards, and measures of physical activity and inactive behaviors (exercise-related PA; walking, running, biking, moderate and vigorous activities self-defense, weight training, housework and other activity) adjusted for age, sex and matched in relation to a range of personal characteristics.

Results: There was a significant difference in the t tests according to obesity level in physical activity steps counted by the pedometer monitors (P=0.046). The P-value for the t tests (according to gender) for Min Walking =0.021 < 0.05; that is a significant difference

(towards male); for min jogging =0.004 < 0.01; that is a highly significant difference (towards male), for min vigorous activity = 0.012 < 0.05; that is a significant difference (towards male), for min weight training =0,006 < 0.01; that is a highly significant difference (towards male) and for distance =0.037 < 0.05; that is a significant difference (towards female). Majority of participants (51.6%) were skip meal sometimes. One fourth of the students skipped breakfast, drink soft drinks seven times per week, and only eat fruit once per week. Significant differences in the PA levels of youth were evident with regard to gender. The present study has demonstrated that the occurrence of PA among KAU students is relatively high. Therefore, there is a need to the stages of PA adoption and support by university and public policies to encourage active living and discourage sedentary habits.

Keywords: Physical Activity, Sedentary, Obesity, Young Youth, KSA, Eating habits.

Prevalence of Chronic Complication among diabetes patients attending diabetic clinic at KAUH in Jeddah: A Cross Sectional Survey

Thanaa.A.Elkholy; Areej M. Bin Mahfooz; Ebtehal M. Shibriq; Manar.S.AlShahrani &Safaa. D.Alotaby.

Clinical nutrition department faculty of applied medical sciences king abdulaziz university Jeddah, kingdom of Saudi Arabia.

Abstract

Background: Diabetes is one of the most common non-communicable diseases and is a major health problem globally (**Khanam P.A. et. al, 2015**). Diabetes mellitus is a long lasting sickness and quickly expanding in both gender and all ages. It includes different physiological capacities, organs and diverse systems and is connected with health complications (**Meo et al, 2015**).

Aims: To determine the prevalence of chronic complications and comorbidity among the type 2 diabetics attending diabetic clinic at KAUH in Jeddah.

Methods: A cross- sectional descriptive study was carried out among (200) Patients (73) male and (127) female at (KAUH) and Suleiman Fageeh Hospital with diagnosed diabetes type 2 with complications to be included in the study at their first visit to the outpatient endocrinology department between October 2014 and April 2015. Patients were enrolled consecutively from outpatients and inpatients. The data was collected by questionnaire include demographics characteristics, laboratory investigations collected from the patient's medical records to measuring the prevalence diabetes complications. Hospital length of stay was recorded. The results were analyzed by SPSS statistical package version 15.

Results: Overall most of male and female participants were have 2 or more of chronic disease (79, 5% & 85%) respectively. High prevalence of hypertension among female type2 diabetes patients than males (43.3 % vs. 38.4 % consecutively). Female patient had higher percent who take medication for high blood pressure &

hypercholesterolemia than male (43.3% vs. 38.4%) and (57.5% & 53.4 %) respectively. Significant differences among our participants (male &female) in (Mean± SD) of **HbA1c** level in the blood at ($p<0.014$*). Also male patients were had higher percent of poor HbA1c level **(8.1-9%)** than females (16.4% vs. 15.0%) respectively. Likewise for very poor **HbA1c** level **(>9)** males had higher percent than females by (56.2% vs. 37%) respectively. The frequency of retinopathy among our patients was (57.5 % for males & 70.1% for females). The reported neuropathy in this study was (58.9%) for male & (69.3%) for female patients.

Conclusion: The result showed a high percentage of chronic complications among the diabetic patients of this region. The high percentage of hypertension and dyslipidemia among them are important co morbidity factors which if not controlled can cause further increase in the number of chronic complications. This emphasizes the need of national awareness program about the gravity of the problem. We recommend screening of high risk groups and emphasize importance of early diagnosis of diabetes and detection chronic complications so that appropriate treatment initiated at the earliest.

Key words: Type 2 diabetes mellitus, chronic complications, hypertension, hypercholesterolemia and glycemic control (HbA1C).

The efficacy of three mycotoxin adsorbents to alleviate T-2 toxins -induced toxicity in broiler chickens

Hanaa , R. El-Hoofy

Anim. Health Research Institute- Damanhur Branch

Abstract

T-$_2$ Toxin is one of the most harmful mycotoxin produced by Fusarium Spp. The present study was carried to monitor the effects of this toxin on some hematological and biochemical parameters. Three anti-mycotoxin products as adsorbents were examined including (DMSO)[Dimethyl sulfoxid, Mycosorb and Zeolite checked to study their combating activities against feed experimentally contaminated with T-2 toxin in dose 1 mg/Kg .Eighty of three day old unsexed broiler chicks were acclimated and randomly divided into Eight experimental groups (10 broiler per group) Group T1 , T2 ,T3 , were fed a basal diet supplemented with 10 ml / kg of 7% (DMSO) Dimethyl sulfoxide , 1 gm /kg Mycosorb and 1 gm /kg Zeolite respectively . T4 was fed ration supplemented with 1mg /kg T- 2 toxin .Groups T 5 , T 6 , T7 were fed T -2 toxin contaminated diet with (1mg /kg) the feed were supplemented with 10 ml / kg of 7% (DMSO) Dimethyl sulfoxid , 1 gm /kg Mycosorb and 1 gm /kg Zeolite respectively . Group T 8 represented the negative control fed on balanced died without any additives At the end of experiment birds were scarified and blood was collected on anticoagulant for hematological parameters and without anticoagulant for serum separation ad biochemical parameters .The total erythrocytes count, Hemoglobin content and total Leukocyte count were significantly decreased after T-2 toxin exposure for 6 weeks. Administration of T-2 toxin led to significant increase in serum Alanine aminotransferase, Aspartate transferase Lactate dehydrogenase, Uric acid, Creatinine and glucose . T-2 toxin produced significant decrease in serum protein, albumin, globulin, cholesterol, triglyceride, calcium, phosphorus and magnesium.

Supplementation with Mycosorb .Zeolite significantly improved the hematological and biochemical parameters.

Detection of aflatoxins in meat by modified HPLC method

Mai Abdel Monem , MarwaRagab , M. Ahmed Maher , Shaimaa. H. Ali, Nahla Salah,and Fatma .H. Amro

Reference laboratory for Veterinary Quality Control on Poultry Production, Animal Health Research Institutes, Dokki

Abstract

An analytical method for the determination of aflatoxins in meat was developed. Samples prepared by an extraction with dichloromethane followed by a solid phase cleanup and then fluorescence detection. Separation of the four aflatoxins(B1,G1,B2 and G2) with higher selectivity and sensitivity, and within reasonable limits of retention time, was performed. The isocratic mobile phase of water/methanol/acetonitrile (60/20/20) was used at a column temperature of 30C,with flow rate 1ml/minute and injection volume 20µl. Optimization of samples preparation and analytical conditions gave recoveries in the range of 80–90 % at spike levels of 5-40 ug/kg, and relative standard deviations (RSDs) lower than 1% in all the cases. Additionally, the limit of detection (LOD) (5ug/kg) and the limit of quantification (LOQ) (10 ug/kg) of these aflatoxins are within the legal limits set by the European Union **(EU,2006).**

Key words: Aflatoxins, validation, HPLC**.**

The third session is in the main hall, international center for agriculture

الجلسة الثالثة بالعلاقات الخارجية (القاعة الكبرى)

Name (Prof. Dr.)	Job description	Number of researches
Ibrahim El Seedy	Bioch. dep. AHRI	10
Essam Hosny	Bioch. dep. AHRI	
Hany Helmy	Bioch. dep. , AHRI	
Hassan Abbas	Toxicol. dep. Cairo univ.	

Biochemical studies on pesticides benomyl and propargite in rats

Tahia. A. El Said and Safaa. S. Abd Al. Hamid

Animal Health Research Institute -Biochemistry Department- Dokki- Giza- Egypt

Abstract

The effect of administration albino male rats a daily diet polluted with propargite and benomyl a concentration of 1.22,2.44 ,0.5 and 1.0 ppm respectively for 30 days, on the growth, biochemical parameters and its accumulation in organs.

The tested pesticides significantly increased of body weight at all levels with different variation.Both pesticides significantly increased the levels of bilirubin uric acid, creatinine, Aspartate aminotransferease (AST) and Alanine aminotransferease (ALT) while significantly decrease the level of cholesterol and Alkaline phosphate (AP).

The residues of propargite were detected in liver, kidney and spleen at low and high doses while benomyl residues were not detected in different organs except liver.

Investigating the Oxidative Stress of Heavy Metal's Pollution in *Clarias Gariepinus*

Arafa, M. M.*, Al-Afifi, SH. H. *and Ali, A. T.**

* Biochemistry, Feed Deficiency & Toxicology Dept. & ** Fish Disease Dept., Animal Health Res. Inst., Dokki, Giza, Egypt.

Abstract

In the current study, abnormal high levels of lead, cadmium, copper, zinc, iron, nickel and chromium were detected in Ismailia channel water. Significant elevation in the levels of such metals was observed in liver and musculature of *Clarias gariepinus* living in this area. Malondialdehyde and reduced glutathione concentrations as well as glutathione-S-transferase and superoxide dismutase activities were significantly increased in the liver of the fish while glutathione peroxidase and catalase activities were significantly decreased.

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The antioxidant effect of garlic powder on rats treated by different doses of chromium chloride

Amany E. Yousef, Tahaya Abdel El Hakeim and Maysa, M. Thakeb

Biochemistry Unit, Animal Health Research Institute, Dokki, Egypt

Abstract

The present study was done to illustrate the antioxidant effect of garlic powder on rats' received different doses of $CRCl_3$. Male rats' n=60 were divided to 6 groups each of 10 rats. The 1st group kept as control. The other groups received $Crcl_3$ dissolved in drinking H_2O (1mg/l and 10mg/l) and garlic powder 5% mixed with diet as follows. 2nd group ($Crcl_3$ 1mg/l), 3rd group ($Crcl_3$1mg/l + 5% garlic powder), 4th group ($Crcl_3$ 10 mg/l), 5th group ($Crcl_3$10 mg/l + 5% garlic powder) and 6th group (5% garlic powder). After 45 days rats were scarified for analysis of serum and tissue (liver and kidneys) antioxidant enzymes (GPx, SOD and MDA) and minerals (Cu, Zn and Fe). Results showed marked elevation of GPx and SOD in groups received $Crcl_3$ and garlic powder with decrease in MDA level in serum and tissue. Cu and Zn levels were increased in serum and liver tissue of most treated groups while Fe level was marked decreased in serum and tissue of most treated group. From our results we conclude that $Crcl_3$ and garlic has cooperative effect enhancing the antioxidant system and decreasing lipid peroxidation of rats. This may play an important role on improving the body health, competing free radicals that may result from exposure to envirmental pollutants which harm human and animals health.

The Positive effects of vitamin E and selenium with activated charcoal against aflatoxin induced oxidative stress and cytotoxic damage in rabbits

M. Abdou, I.; Magda N. Abdel-Hamied; Sahar, N. Mohamady; Abdullah, S. H. and Gehan N. A. Gad

Animal Health Research Institute (Zagazig provincial Lab.)

Abstract

A study was carried out to examine the hepatonephroprotective, chromosomal protective and antioxidant potential of vitamin E + selenium alone or with charcoal against aflatoxin B1 (AFB1) toxicity in rabbits. Fifty, New Zealand white rabbits were randomly allocated into five equal groups, each of ten. Group 1 was designed as the healthy control group. Rabbits in group 2, 3, 4 and 5 were received AFB1 orally at a dose of 0.05 mg /kg of body weight daily for 10 days. Group 2 was received AFB1 alone. Group 3 was treated with vitamin E + selenium at a dose of 0.05 ml / kg b.wt. intramuscularly twice with an interval of 7 days. Group 4 was treated with activated charcoal at a dose of 0.5gm/kg feed. While, group 5 was treated with both vitamin E + selenium and activated charcoal at the same doses. Blood and tissues samples were collected from rabbits of each group on the 1st and 21th day post-treatment. The results revealed that, rabbits received AFB1 alone showed significant decrease in the RBCs, Hb, TLC, lymphocytes, neutrophils and level of antioxidant (CAT and SOD) enzymes in liver tissues with significant increase in the liver function activities(ALT, AST, ALP and LDH), urea, oxidant marker (MDA) and total chromosomal aberrations compared with the other groups. Histopathological examination showed that the main affected organ due to AFB1 toxicity was liver. Hepatic degeneration with necrosis, hyperplasia of bile duct and infiltration of leucocytic inflammatory cells were showed severely in rabbits received AFB1 alone. These parameters approximated to control levels in case of rabbits

received AFB1 and treated with vitamin E +selenium either alone or with activated charcoal. The study demonstrated that administration of vitamin E + selenium alone or with activated charcoal might be useful for the treatment of aflatoxicosis in rabbits. However, activated charcoal alone was of low value.

Key words: AflatoxinB1 - rabbits – Hematology- biochemical parameters-Oxidant and antioxidant markers- chromosomal aberration

Cytogenetic and pathological studies on the effect of Gibberellic acid in rabbit

M. Abdou I, Mervat A Ayoub* and Maha M El Aalem*

Biochemistry and Pathology* Dept., Animal Health Research Institute, Zagazig Lab.

Abstract

This study was designed to clarify the effect of the plant growth hormone, gibberellic acid (GA3) on the cytogenetic and pathological profile of adult male rabbits. Thirty bucks were classified into 3 equal groups; a control and two other treated groups; the first (indirectly exposed group, IEG) was forced to feed on a previously sprayed green fodder (alfalfa) with the recommended dose of GA3, while the second (directly exposed group, DEG) was forced to drink ad libitum on 75 ppm GA3 in water for 30 successive days.

Both treated groups evoked a significant increase in the total aberrated cells and total chromosomal aberrations of bone marrow cells, however, the most predominated chromosomal aberrations were deletions, ring chromosomes, end to end associations and aneuploidy, in addition to DNA damage using comet test. The second treated group (DEG) showed a significant increase in the percentage of these aberrations not only comparing to the control but also with the first treated group (IEG). Histopathological changes in the liver, kidneys, lungs and testes were reported in both treated groups. These changes were severe in the second treated group (DEG). After one month recovery period, the deviated parameters of the first treated group (IEG) were nearly returned to the normal values, meanwhile, the second treated group (DEG) still revealed significant changes compared to either the control or the first treated group (IEG).

From this study, we can conclude that GA3 has a genotoxic and cytotoxic effects. These effects were severe in rabbits directly exposed to the hormone (DEG) compared to those fed on sprayed green fodder with its recommended dose (IEG).

Some clinico-pharmacological studies on *Moringa* plant in rabbit

Eman S. Abd Elhamid, Thoria A. Hamed and Dalia T. Mohamed

Animal Health Research Institute, Zagazig

Abstract

The experiment was conducted to study the effect of *Moringa oleifera* on hematological, biochemical parameters and the growth performance of young post - weaning rabbits. Twenty white New zeeland rabbits freshly weaned, one month aged and a body weight of 650-700 g. They divided into two groups one control (G1) and the other experimental (G2). The control group was provided with balanced ration whereas the experimental group was fed with both fresh leaves of *moringa oleifera* (2.5g/ kg of body weight) and balanced ration for 5 weeks. The results showed significant increase ($p>0.05$) in white blood cell (WBCs), red blood cell (RBCs), haemoglobin (Hb), packed cell volume (PCV) and platelets (PLT) in G2. Non-significant ($p>0.05$) influence of moringa leaves on some biochemical parameters except glucose, total cholesterol, calcium (Ca) and iron (Fe) there were significant difference. The best results of growth performance were obtained with *Moringa* supplement. The results suggest that *moringa oleifera* leaves possess good dietary protein quality for optimal growth of rabbits without any detrimental effects on the haematology and serum biochemistry of growing rabbits.

Alterations of Lipid and Mineral Metabolism during Late Pregnancy and Early Lactation in Holstein–Friesian cows

EL Nile M. B., AzzaG. M. Ayoub.Abeer, I. A., Abo_ELGheit., Allam, T. H.

Biochemistry, Toxicology and Feed deficiency Depart. Animal Health Research Institute, Zagazig Branch.

Abstract

The aim of the study was to evaluate changes in blood Lipids and minerals concentrations in Holstein–Friesian dairy cows during late pregnancy, parturition and early lactation. Fifteen clinically healthy dairy cows in good nutritional condition nearly ages, weights and body conditions. Blood samples were taken from 15 cows at 4 and 2 weeks prepartum, day of parturition and at 2 and 4 weeks postpartum. Plasma was separated and analyzed for determination of lipids and lipoproteins profile (total cholesterol, triacylglycerol, Phospholipids, non-esterified fatty acids (NEFA), high density lipoprotein cholesterol (HDL-c), low density lipoprotein cholesterol (LDL-c), and very low density lipoprotein cholesterol (VLDL-c), β-Hydroxybutyrate (βHBA), phospholipids concentrations and lipoprotein lipase activity. Also, plasma minerals, total proteins and their fraction (albumin, globulin) were determined. The obtained results revealed that, plasma total cholesterol, triacylglycerol, (VLDL-c), phospholipids concentrations and lipoprotein lipase activitywere significantly increased at late gestation and early lactation period. Meanwhile, plasma low density lipoprotein cholesterol (LDL-c) and β-HBA concentrations were significantly increased during postpartum as compared with day of parturition. Plasma NEFA and phospholipids were significantly decreased at 4 and 2 weeks prepartum, respectively. Plasma total proteins and albumin concentrations were significantly increased, while total

globulin level showed a non-significant during late pregnancy early lactation. A marked increase in plasma calcium, inorganic phosphorus, magnesium, Iron and zinc levels were observed during the late pregnancy and early lactation. While plasma cupper and manganese concentrations showed a significant increase at late pregnancy as when compared with the day of parturition.It can be concluded that late pregnancy and onset of lactation were accompanied by marked changes in plasma levels of lipids and lipoprotein profiles, proteins and their fractions and metabolic disturbance in mineral metabolism.

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Effect of propylene glycol supplementation to feed of dairy cows on some biochemical measurements

Azza G.M. Ayoub, Magda M. M. Sabah, and Amal I. El-Shorbagi

Animal Health Research Institute Ministry of Agriculture Egypt Zagazig
Biochemistry department

Abstract

The periparturient period during late pregnancy and early lactation are physiologicaly important status for health of dairy cows and inside great metabolic stress. Propylene glycol (PG) is a substance used to prevent negative energy balance in periparturient dairy cows, since it has a beneficial effect on glucose and fat homeostasis. Fifteen clinically health pregnant cows in good nutritional condition nearly ages , weights , body condition , and 30 days before expected calving day . Animals are divided into three equal groups , the first fed a basal ration , the second was administrated 100ml liquid does of PG/os and the third group was administrated 200 ml of PG/os to every cow beside basal ration . The experimental period extended from 30 days periparturient to 30 days post parturient. Blood samples were obtained 4 hours after the onset of first feed in take or / and PG administration days. Serum was separated and analyzed for glucose, total protein, albumin, globulin, total cholesterol, triglyceride, blood urea nitrogen, creatinine, and non-esterified fatty acid (NEFA).The obtained results revealed, an improvement in the metabolic status reflected by an increase in glucose and total proteins in PG 200ml treated group at 30 days post parturient. Meanwhile, significant decreases in each of total cholesterol , triglycerides , NEFA and urea in PG supplied groups (100ml and 200ml)at 30 days post parturient . In addition a significant decrease in the creatinine level was observed in the 200 ml PG treated group at 30 days post parturient. The concentrations of albumin and globulin were uniform in all groups. It can be concluded that the use of such additional nutrient (PG) in later periparturient and

in early post parturient period of cows was indicated beneficial effects in the treatment of such physiology and biochemical disturbances.

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Effects of curcumin on diazinon-induced biochemical and cytogenetical alterations in male rats

Mehanny, P.E[*]; Somaya, O. El Deeb[**]; Hanan, A. Tag El- Din[*]; Hanan, M. Sobhy[*]; Mogda, K. Mansour* and Noha, A. Mahana[**]

* Biochemistry and Food Deficiency. Dep. Animal Health Research Institute, Giza, Egypt.

** Zoology Department, Faculty of Science, Cairo University, Giza, Egypt.

Abstract

The present study was undertaken to pinpoint the possible protective effect of curcumin against subacute toxicity of Diazinon (DZN) induced adverse effect on some biochemical and cytogenetical parameters. 36 male albino rats were classified randomly into six equal groups. Group (G1) was kept as negative control, G2 and G3 were administrated a high and low dose of DZN as 35 and 17.5 mg/kg b.w. over period of 28 days (5 days/week), respectively. G4 received curcumin as 200 mg/kg diet. G5 and G6 were administrated high and low dose of DZN, respectively and co-treated with curcumin. The obtained results revealed that there was a significant increase in liver and kideny function parameters with significant decline in total protein, albumin, beta and gamma globulins together with albumin/globulins ratio (A/G) of G2 and G3 than control. Also, a significant increase in serum tumor necrosis factor-α (TNF-α), liver, kidney and spleen malondialdehyde (MDA), catalase, nitric oxide (NO) with decrease in total antioxidant capacity (TAC) and glutathione (GSH) levels in G2 and G3than control. Moreover, upturn in level of liver and kidney function was observed in G5 and G6. As curcumin is antioxidant and has anti-inflammatory effect could rebalance the state of hypoprotenmia associated with hypoalbunemia, and attenuates the oxidative indices and TNF-α induced by DZN. A significant increase in the percentage of micronucleated polychromatic erythrocytes (MPCE), and significant decrease in normohromatic erythrocytes (NCE) in G2 and G3 than

control, whiles the ratio of (PCE/NCE) increase only in G2 than control. On the other hand, co administration of curcumin mixed with diet in case of high and low dose of DZN group's cause a significant decrease in (MPCE), and increase of (NCE) in G5 and G6 in comparing to G2 and G3, while (PCE/NCE) decrease insignificant in G5 and G6 compared to G2 and G3. Histophathological examination revealed degenerative changes in the liver and kidney tissues in G2 and G3. Meanwhile, curcumin alivate this changes in G5 and G6. These results indicated that curcumin may be able to meliorate the worst biochemical and cytogentical alterations caused by high and low doses of diazinon.

Keywords*:* Diazinon –oxidative indices- curcumin -TNF- α- cytogenetic

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Effects of probiotic as food additives on Nile catfish *Clarias lazera*.

Esam H. Rizkalla©; Mogda, K. Mansour; Venees F. Yassa

Biochemistry, Nutritional Deficiency Diseases and Toxicology Dept., Animal Health Res. Inst., Agri. Res. Cen., Dokki, Giza, Egypt.

Abstract

Comparison of the concentrations of serum nitric oxide; malonaldhyde; total protein and its electrophoretical profile in Nile catfish *Clarias lazera* after supplementation with probiotic for 45 days either 1 time/week (W_1) all over the experiment or 3 times/week for the 1st two weeks then 1 time/week till the end of the experiment (W_3) were investigated. Probiotic supplementation affects on both serum nitric oxide and malonaldhyde. No effect of probiotic supplementation on serum total protein.

Twelve fractions were resolved of which 10 and 11 were the maximum numbers that appeared with consistency in females and males respectively. Polymorphism appeared in both males and females of the initial; control; W_1 and W_3 groups. Probiotic feeding altered the relative density of resolved serum protein fractions. In both W_1 and W_3 groups, the 9th fraction recorded higher values in both sexes, while fractions # 10 and 11 (in γ-globulin area) recorded lower values in both sexes. The relative densities of fractions # 5; 7 and 9-12 were significantly affected by probiotic supplementation.

Our study indicated that probiotic supplementation to fish diet is not a long-term effect and preferred to be added periodically according to farm management.

Key words: Probiotics, *Clarias lazera*, Serum total protein, Serum nitric oxide, Serum malonaldhyde.

The fourth session is in hall 2, international center for agriculture

الجلسة الرابعة بالعلاقات الخارجية (قاعة 2)

Name (Prof. Dr.)	Job description	Number of researches
Khaled Shawky	Food hygiene dep. AHRI	10
Mogeda Kamel	Bioch. dep. AHRI	
Hanan Tag Eldin	Bioch. dep. AHRI	
Mahmoud Arafa	Bioch. dep. , AHRI	

Quantitative Determination of Organophosphorus Compounds in Hard Cheese Using Gas Chromatography Coupled With Ion Trap-Tandam Spectrometry

Al-Julaifi M.Z.[1], Bazalou M.S[2]., Ibrahim .A.A.M[3] and

Sanya T. El Ghamry[4]

1-Professor of Science, Molecular Biology and Biotechnology and The General Director of Veterinary Laboratories Department at Ministry of Agriculture, Riyadh, Kingdom of Saudi Arabia.

2- Senior Researcher of Biochestry at Damietta Sea' Port Lab, Animal Health Research Institute (AHRI), Agricultural Research Center (ARC), Giza, Egypt.

3- Toxicology specialist - Veterinary Laboratories Department at Ministry of Agriculture, Riyadh, Kingdom of Saudi Arabia.

4- Researcher of Food Hygiene at Mansura Vet. Lab Animal Health Research Institute (AHRI), Agricultural Research Center (ARC), Giza, Egypt.

Abstract

Organophosphorus pesticides have been used extensively especially in tropical countries to control of agricultural pests. However, much of the food we eat contain pesticide residues. Analyses of organophosphorus compounds (OP) residues are carried out worldwide because of their potential health hazardous effect on humans. In this study, hard cheese was monitored for (OP) using ion trap GCMS/MS. Fourteen Organophosphorus pesticide residues were examined (methamidophos, trichlorofon, demeton-s-methyl, diazinon, paraxon methyl, phosphamidon, chlorpyrifos methyl malaxon, fenitrothion, malathion, methidathion, bromophos-ethyl, ethion and azinophosmethyl) to determine the degree of contamination with these danger contaminants. The study included 50 samples of ripened hard cheese which were collected from different factories production batches. From the total ion chromatogram it was found that methamidophos was the first eluted compound (at 5.931 minutes)

while azinophosmethyl was the last one (29.563). The linearity (r2) of each compound standard curve was not less than 0.999 except for trichlorofon, demeton-s-methyl that were (0.868 and 0.818) respectively.

It was found that 4 (8%) samples were contaminated with diazinon while 2 (4%) samples only were contaminated with malathion with a total percentage of 12%.The concentrations of diazinon in the four samples were 0.030, 0.046, 0.052 and 0.021 mg/kg on whole product basis where these concentrations were 0.055, 0.90, 0.094 and 0.043 mg/kg on whole fat basis respectively. Meanwhile, the concentrations of malathion in the two samples were 0.025 and 0.073 mg/kg on whole product basis while they were 0.045 and 0.130 mg/kg on whole fat basis respectively.

Bacteriological status of chicken fajitas

Eman,F.Mohamed and Dina, I.El Zahaby

Animal Health Research Institute (Shibin El-Kom branch,Food Hygiene Dept.)

Abstract

A total of random 60 samples of frozen and ready to eat chicken fajitas (30 of each) were collected from different supermarkets and restaurants at El-Monufia Governorates. The collected samples were transferred immediately to the laboratory in an ice box for bacteriological examination which includes the count and study the prevalence of *Staph. aureus* and detection of its enterotoxins , isolation and serological identification of *E.coli* and *Salmonella* in frozen and ready to eat chicken fajitas.

The obtained results revealed that *Staph.aureus* could be detected in six examined samples (20%) and four examined samples (13.33%) with mean value of $4x10^2$ $\pm 0.43x10^2$ and $3x10^2 \pm 0.18x10^2$ of examined frozen and ready to eat chicken fajitas, respectively.

Isolated *Staph. aureus* were tested for detection of enterotoxins production by using ELISA ,the results revealed that two isolates of frozen chicken fajitas were enterotoxigenic, of which one strain was able to produce enterotoxin type A (16.66 %) ,the other was type D (16.66%) producer ,on the other hand one isolate of ready to eat chicken fajitas proved to be enterotoxigenic type (A) with percentage of 25%.

Salmonella could be isolated from four examined samples (13.33 %) and three examined samples (10%) from frozen and ready to eat chicken fajitas, respectively.

While, *E.coli* could be detected in six examined samples (20%) of both frozen and ready to eat chicken fajitas.

The public health importance and hygienic significance of the isolated strains as well as the suggested measures for improving the quality and safety of the product was discussed.

Keywords: chicken fajitas, *Staph.aureus*, *Salmonella*, *E.coli.*

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Chemical and Bacteriological Evaluation of White Full Cream packed and Unpacked Soft Cheese

Eman, Sh. El-Shazly*; Manal, I. Abd El-fadeel and Eman, Sh. Laz

Food Hyagine dep. Animal Health Research Institute, Tanta*(Lab)

Biochemistry dep. Animal Health Research Institute, Dokki (AHRI)

Abstract

The aim of This work to evaluate chemical composition and bacteriological contamination of white full cream soft cheese. Twinty random samples of packed and unpacked (10 of each) white soft cheese were collected from different local markets at Kafr El Zayat cit,(EL-Gharbia Gov.), there were decreasing in protein content, volatile fatty acids and calcium % in unpacked white soft cheese with mean values (14.8 ± 1.9, 1.1 ± 0.03 and 7.4 ± 0.06) when comparison with mean values of packed soft white cheese (20.12 ±1.2, 1.7 ± 0.08 and 7.6 ± 0.04) respectively. The bacteriological examination revealed that there were a significance increase in total bacterial count, the Enterobacteriaceae, coliform count and staphylococci count in unpacked white soft cheese with mean values (7×10^5 ± 0.18, 3.12 $\times10^3$ ± 0.45, 1.27× 10^3 ± 0.1 and 3.44 $\times10^3$ ± 0.23) when comparison with mean values of packed soft cheese (3×10^3 ± 0.28, 2.05× 10^2 ±0.37, 1.42×10^2 ± 0.29 and 1.15×10^2 ± 0.26) respectively. Serological typing of E. coli strains of which isolated from unpacked soft white cheese in a percentages of 1% was belonged to O_{119} : K $_{69}$ (B_{19}). No any samples examined was positive to staphylococcus aureus. The microbiological finding showed the presence of high counts of micro-organisms investigation and poor hygienic quality.

Effect of microwave on chemical characteristics of raw milk

Kheder, Z.A.*, Rania Ghanem*, Eman Shukry**, Eman El-Khawaga** and Azza Hassan*

* Biochemistry , Nutritional deficiency and Toxicology department, Animal Health Research Institute, Mansoura lab. ** Food Hygiene, Animal Health Research Institute, Mansoura lab.

Abstract

Milk and milk products are the most popular food all over the world especially for infants and almost the high level of life most recently use the microwave in preparing the food especially the milk. So, the purpose of this paper was to evaluate the effect of microwaves on the chemical characteristics of raw milk especially on the protein content. The obtained results showed that the average of fat, protein and lactose concentrations decreased during the microwave exposure especially at 120 and 180 seconds. Also, the currently results showed high levels of aldehyde (butanal – hexanel – octanal – total aldehde) at 60, 120 and 180 second corresponding to levels of all in the raw and boiled milk.

Key words: Raw milk, microwave, milk protein, chemical characteristics.

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Study on Hormonal and Heavy metals residues in fresh beef meat

Azza E. A.; Sania T. E.andWeam M. B.

Dept. of Biochemistry and Food Hygiene Animal Health Research Institute El. Mansoura Lab.

Abstract

This study was carried out to investigate hormonal and heavy metal residues in beef meat in different seasons. Meat is a very complex and continuously changing system of molecular substances that can be used for satisfying needs of the human for metabolic energy, building material and fulfilling the other vital functions whereas today most people ask for safe and healthy food with high quality. Therefore, a total of 120 samples of fresh beef meat were collected randomly from different markets in Dakhlia Governorate (30 samples for each season). Collected samples were subjected to estimate hormonal and heavy metal residues concentrations using Gas chromatography-mass spectrometry (GC-MS) for hormonal residues and Flame Atomic Absorption Spectrometer (AAS) for heavy metals

Data analysis revealed that estradiol concenteration was highest in summer (0.18 ± 0.03) then in autumn season 0.15 ±0.02 .progestrone level was higher in autumn (0.26 ± 0.03) than in summer season (0.24 ± 0.04) .Summer season was higher than winter and spring(0.21 ± 0.02 – 0.19 ± 0.02) respectively. Testesteron was highest in autumn season(0.19 ± 0.02). Concerning heavy metals, they showed the highest concentration in summer season . Lead concetration in summer season was (0.082 ± 0.006) ppm. Cadmium in summer season was (0.069 ± 0.004) ppm and copper in summer season was(0.11± 0.008) ppm . It can be concluded that meat could be exposed to chemical pollutants, in addition to presence of some

pollutants residues in meat, these residues will be accumulated on the long run and may be carcenogenic. The use of natural growth promotor is advisable not hormonal growth promotors and to reduce the negative impacts of stressors especially heat stress, to the lowest possible degree. Proper nutrition, and optimum climatic conditions are indispensable to avoid heavy metal residues entry to food chain through contaminated feed and water. Immediate measures must be carried out for the treatment and detoxification of industrial and domestic effluents intended to be used for agricultural purposes.

Key words: hormonal and heavy metal residues - GC-MS -AAS - Meat - different seasons.

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Chemical and microbial assessment of beef and chicken shawarma sandwiches in Ismailia governorate and its impact on consumer health

Amany M. Ahmed, Nagwa A. B. El-Hakem and Ghada A. Ibrahim

Food hygiene, Biochemistry and Bacteriology Research Unit, Ismailia Provincial laboratories, Animal Health Research Institute, Egypt

Abstract

A total of 40 random beef and chicken shawarma sandwiches samples (20 of each) from different fast food restaurants in Ismailia governorate were collected and examined chemically by estimation of moisture %, carbohydrate %, protein %, fat%, and lead values. The obtained results indicated that the mean values in the examined samples were 45.53 ± 0.12 - 45.44 ± 0.11 ; 25.38 ± 0.11 - 24.02 ± 0.07 ; 18.48 ± 0.04 - 18.44 ± 0.06 ; 9.21 ± 0.03 - 10.38 ± 0.04 and 0.106 ± 0.013 - 0.059± 0.008 ppm respectively, The results of this Study indicated that ready-to eat Shawarma Sandwiches have Pb values within the tolerance limit set by the EOS (2005).

The obtained results revealed that the mean values of aerobic plate count, Enterobacteriaceae and *Staph. aureus* counts of beef and chicken shawarma were $4.8 \times 10^4 \pm 3.6 \times 10^3$, $4.2 \times 10^4 \pm 2.8 \times 10^3$; $6.8 \times 10^2 \pm 0.2 \times 10^2$, $1.3 \times 10^3 \pm 0.2 \times 10^2$ and $5.2 \times 10^3 \pm 1.5 \times 10^2$, $3.6 \times 10^3 \pm 0.8 \times 10^2$ respectively.

Salmonella represented 10% of beef shawarma sandwiches samples and 15% of chicken shawarma. The isolated serotypes of Salmonella were *S. typhimurium* and S. enteritidis. The public health significance and the possible sources of contamination of shawarma sandwiches, as well as some recommendations to improve the quality of such food articles were discussed.

Key words: beef shawarma, chicken shawarma, heavy metals, lead, Bacterial contamination, salmonella, aerobic plate count, Enterobacteriaceae count, Staphylococcus count.

Quantification of some pesticide residues in raw and heat treated milk.

Zeinab M.Abdel-hameed., Dina N.Ali, Salwa S. Thabet and Eman M. Abd-EL naser

Animal Health Research Institute, Assiut Branch.

Abstract

Detection of pesticides residues in milk of ruminants represents a human public health hazardous. In this study, milk was monitored using Gas chromatography (GC), for one organochlorine pesticide residue dielderin and high performance liquid chromatography(HPLC) for deltamethrin as pyrothroid pesticide residues to determine the degree of environmental pollution with both of them .The study included examination of 60 milk samples (30 fresh dairy milk which were collected from some farms at Assiut Governorate and 30 ultra- heated milk (UHT), which collected from different shops and supermarkets at Assiut Governorate.

The results of the study revealed that 30% of raw milk samples were polluted with dieldrin pesticide residue and 20% were polluted with deltamethrin pesticide residue while (13.33%) of UHT milk samples were polluted with dieldrin pesticide residue and 6.66% were polluted with deltamethrin pesticide residue.

The mean concentration of dieldrin and deltamethrin pesticide residues in raw milk were 210.1 ± 126.7ppb and 100.0 ± 83.8 ppb respectively, while in the ultra-heated milk samples, the mean concentration of dieldrin and deltamethrin pesticide residues were 98.0.25±63.0 ppb and 18.0 ±8.55 ppb respectively.

On comparison of the data recommended by the Food and Agricultural organization/ World Health Organization (FAO/WHO 2008), it was found that none of obtained values exceeded the recommended values. The results of this work indicated that in spite of the banning much of organochlorine and pyrothroid pesticides still contaminating the environment resulting in contamination of food

stuffs, particularly milk. There is a potential risk of the consumption of such contaminated milk on human's health particularly infants and children.

Key words: GC, HPLC, UHT milk, organochlorine pesticide, pyrothroid pesticide.

Study on clinicopathological and biochemical changes in some Marine water Fishes infested with internal parasites in Red Sea.

Hala A. Abd El-Hamed and Walaa A. El-Shaer

Clinicalpathology and Fish diseases Units, Ismailia, Provincial laboratories, Animal Health Research Institute, Egypt

Abstract

Helminthology and haematology parameters have been recognized as the important tools for assessing the fish health. Measurement of blood parameters has been used for many years as a tool for monitoring the health of fish. The present study investigated the effects of a natural infestation of *Siganus rivulatus*, *lethrinus harak* and *Gerras oyena* with internal parasites on blood parameters such as red blood cell (RBCs) and white blood cells counts (WBCs) and hemoglobin level were estimated as well as plasma glucose and serum activities of liver and kidneys function tests. Our study was conducted on 275 marine fish 100 of *Siganus rivulatus*, 100 of *lethrinus harak* and 75 of *Gerras oyena* collected from water of Safaga city at Red Sea governorate for examination of internal parasitic infestation. Parasitized fish showed decreases RBCs level (1.41 x 10^6/µL), low hematocrit (17.82%) and increases in WBCs (18.37 x10^3µL) and increases in plasma glucose levels (68.4 mg/dl), while decreased in serum total proteins (2.81 g/dl). AST activities in serum (95.1 U/L), ALT activities in serum (81.65 U/L) and Creatinine value (1.10 mg/dl) all increases compared with values in healthy non infected fish due to increase of helminthes infection. Decrease in serum urea (24.25 mg/dl) level was also found. The result revealed that fish were apparently healthy and no pathgnomic signs of infested fish except excessive mucous secretion. In case of P. M. examination of infested fish liver there was paleness with areas of hemorrhage and somewhat Congestion with peticeal hemorrhage, inflammation of Intestine. It was 46.0% of examined fish infested

with *Nematodes spp.* were recorded. The highest percentage of infestation with *Nematode spp.* was more than 150 g. and 25 cm. in case of *Siganus rivulatus*, 14. % in *Lethrinus harak.* and 60% in *Gerras oyena.*

Key words: hematological; marine fish; Fish parasite; liver function and kidney function tests

Microbial risk assessment with special focus on antibiotic residues in mastitic buffalo milk

Hanan, E.Nagib* ; Sanaa,A. Abdou **, Ahmed, O.A.Othman*; Sherifa M. Sabra******

* Animal Health Research Institute (Buffalo diseases researches Dept.),
** Animal Health Research Institute (Prov. Labs., Banha branch, biochemistry Dept.).
***Animal Production Research Institute. Dokki
****Serology unit Animal Health Research Institute. Dokki

Abstract

Fifty buffaloes(healthy and mastitic udders) were milked aseptically from separate regions of Kaliobia governorate .California mastitis test (CMT) and bacteriological examination were achieved .Upon susceptibility testing (12) antibiotics were used to explain different susceptibility patterns of the isolated bacteria

The objective of this study was the detection of oxytetracycline, sulphadimidine, penicillin G and ampicillin residues in raw buffalo's milk. 45 samples of raw milk (13 for oxytetracycline ,11 for sulphadimidine , 11 for penicillin G and 10 for ampicillin) were collected from private farms in Banha at Kaliobia Governorate. The period of exiperiment was January- March 2015 and the sample was analyzed with high performance liquid chromatography (HPLC) method. Out of the samples examined for oxytetracycline 30.76% (4 /13) were found to contain oxytetracycline residues and 54.5% (6/11) were found to contain sulfonamide residue . The amount of oxytetracycline in positive milk samples were found 452 ng/ml, 560 ng/ml, 1475 ng/ml and 2833 ng/ml which are much higher than WHO and FD recommended level. While, sulphadimidine residue was detected in the range of 3-22 ng/ml in 2 samples and 28 - 44 ng/ml in 4 samples which were lower than WHO and FD recommended level. Penicillin G and ampicillin residues did not found in the examined milk samples. This study indicates the

presence of oxytetracycline residues more than allowed amount. Regulatory authorities should ensure proper withdrawal period before milking the animals and definite supervisions are necessary on application of these drugs.

Malachite green residues in farmed fish and the effect of some different cooking ways on it

Hanan A. El-ghayaty, Salwa M. Salem and Asmaa M. Sh. Fayed

Food hygiene Research Units (port-said, Ismailia& Cairo) Provincial laboratories, Animal Health Research Institute, Egypt

Abstract

This study was carried out to determine the residues of malachite green (MG) in *Nile tilabia* (N=40) and *Mugil cephalus* (N=40) fish muscle tissues by using ELISA. Samples obtained from Ismailia and Port- said markets but they knowing as farmed fish. MG residues detected in *Tilabia* in 1 sample (2.5%) within permissible limits, in 6 samples by 15% under the permissible limits and none detected in 33 samples (82.5%) while in *Mugile* fish it detected in 2 samples within permissible limits as 5% and detected in 9 samples under permissible limits by22.5% but not detected in 29 samples (72.5%). The effects of various cooking methods (boiling, frying and microwaving) on residues of malachite green (MG) in *Tilapia* and *Mugil* were investigated. The MG residues in cooked fish were determined by ELISA. The results showed that in muscles cooked by boiling, MG was reduced by 50% in tilapia after boiling for 15 minutes, while reduced by 30% in the *Mugil*. Frying in deep oil reduced MG by 45% and 55% in tilapia and *mugil*, respectively. Microwave reduced MG by 30% and 29% after 2 minutes, 40% and 35% after 3 minutes and 50% and 46% after 5 minutes in Tilapia and *Mugil*, respectively. Our results showed that the high temperature does not guarantee a full breakdown of residue of MG and LMG which may occur in Tilapia and Mugil fish muscles. In conclusion, the overall results showed that MG residues did not exceed the Egyptian maximum permissible limits in all of the contaminated samples analyzed from the 2 different locations. Since this study is limited to farmed fish *Tilabia* and *Mugil* more investigations should be carried out to determine the residues of MG in other farmed fish species.

Keywords: Malachite Green – farm fishes – chemical residues – cooking by microwave – boiling – frying

The fifth session is in hall 3, international center for agriculture

الجلسة الخامسة بالعلاقات الخارجية (قاعة 3)

Name (Prof. Dr.)	Job description	Number of researches
Adel Fayek	Bacter. dep. AHRI	10
Emad Mokhtar	Bacter. dep. AHRI	
Kamla Mohamed	Bioch. dep. , AHRI	

Egyptian Journal Of Chemistry & Environmental Health

Second Conference Of Chemistry & Environmental Health 2015

Biochemical studies on Bovine tuberculosis in dairy cattle and its effect on Public Health

Sanaa,A. Abdou [1]; Fatma,F.Mohamed [2]; Eman,F.Mohamed [3]; Dina,I. El-Zahabi[3] and Riad, E.M 4

Prov. Labs., Banha branch, Biochemistry Dept.[2] Shebin El kom Provincial Lab. [1] Biochemistry Dep[3] Prov. Labs., Shebin El kom branch, Food Hygienic Dept. [4] Animal Health Research Institute, Dokki,Giza

Abstract

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 .

So, in this study a total of 53 tuberculin positive cows were sellected and the lymph nodes and internal organs of these cows were examined by culture method , microscopical examination and confirmed by RT- PCR. The blood samples (140) and 140 milk samples were collected from both the tuberculin positive and tuberculin negative dairy cows and were used for detection of bovine tuberculosis by ELISA at Kalubia and Menofia governorates . 30 serum samples were collected from both the tuberculin positive (15) and tuberculin negative dairy cows(15) and were used for studying some oxidative stress and biochemical parameters changes.

The obtained results revealed that 41 cows out of 53 tested animals were positive for tuberculosis by culture method (77.3 %) , 36 of them were harbored the acid fast bacilli of mycobacteria by microscopical examination (67.9 %), all isolates were confirmed by the use of RT –PCR . Tthere are 14 out of 140 tested cows were tuberculous animals by ELISA (10 %). while only 8 cases out of them were tuberculous by tuberculin test . Biochemical analysis of tuberculin positive serum when compared with the negative control serum showed a significant increase in activity of SOD, LDH enzymes and NO . Also , there were significant increase in AST , AP

activities, Cholesterol and Calcium levels. Meanwhile , there were a non-significant change in ALT activity, Total protein , albumin, globulin, BUN, Uric acid, Creatinine and phosphorous levels .

conclusion: we could be concluded that the use of ELISA assay has the superiority for diagnosis of bovine tuberculosis over the conventional culture method and tuberculin test as well as the using of real time PCR due to the obstacles of the decontamination process as well as the field problems of tuberculin test. Bovine tuberculosis infections induced oxidative stress and liver injery in tuberculin positive cows as well as the risk of infected milk consumption was discused.

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Effect Of Zyzygium aromaticum (Clove) and allium sativnm (Garlic) Extracts on Broiler Chickens Infected With E.Coli

El-Banna, H.R. Masoud, E.A.; El –shafei , A.A *and El-shemi,A.**

Animal Health Research Institute *(Zagazig Branch) And National Research Center**

Abstract

In these study forty-nine *E. coli* isolates were isolated from 80 broiler experiential chicks collected from broiler farms. These isolates were serotyped in to (01, 08, 018, 078, 086, 0111) and untyped (17 serotypes). The growth inhibitory effect of *Zyzygium aromaticum* (clove) and **allium sativnm** (*Garlic*) on isolated strain *E. coli.* Water, 80% ethanol and n-hexan plant extracts were tested against *E. coli.* Gel diffusion method, minimun1inh inhibitory concentration (MIC) values were used in these investigation. The obtained findings indicated that S. *aromaticum* and **garlic** had grown inhibitory effect against tested *E. coli.* Two hundred one day old Ross chicks were divided into 5 equal group (1, 2, 3, 4 and 5), group (1) chicks remained a negative control. Groups (2, 3 and 4) chicks infected by *E. coli* 0111• Group (3) chicks were treated with 25mg/L clove and group (4) treated with 25 mg/L *Garlic* for 3 successive days. The clinical signs, mortality rate, postmortem lesion reisolation of *E. coli,* body weight gain and F.C.R after two week of infection were recorded. In all groups The clove extracts were more effective for controlling the *E. coli* than Garlic extracts . It could be concluded that S. *aromaticwn* (clove) and **Garlic** extract had grow inhibitory against tested *E. coli,* and clove has superior activity and efficacy than the we *Garlic* in treatment infection broiler chicks with *E. coli.*

Impact of low light laser therapy (LLLT) on microorganisms causing subclinical and clinical bovine mastitis

Soumaya, S. A. El-Shafii[1] and Nagaty, S. F.[2]

[1]Bacteriology Department Animal Health Research Institute, Doki

[2]Animal Health Research Institute, Fayoum

Abstract

The aim of the study was to monitor the effects of radiation emitted by an alternative, non-pharmaceutical agent "infrared low laser radiation 830nm with 300mW" on the growth of microorganisms in vitro from milk of cows with elevated somatic cell count (SCC). Also, detectiom of microorganism diversification and SCC after the lead treatment in vivo by the laser.

Twenty six samples showed mastitis where five were clinically mastitic and 21 were subclinically mastitic. From those, 9 cows were chosen to be treated (two from clinically mastitic cows and 7 from subclinical mastitic cows).

The clinical mastitic cows showed swollen, hot and painful teat with no change in milk characterization and gradual decrease in milk yield. Two cows showed sudden drop in milk yield and 3 cows showed change in milk characters with gradual decrease in milk yield. The average of milk yield of tested cows was ranged from 7.8 - 20L during the five days before LLLT, CMT results showed strong score 3 for the nine cows and the reading of mastit test ranged from 455-850 units.

Staphylococcus aureus (S.aureus) and *Escherichia coli* (*E.coli*)were the most predominant isolates. The two organisms were isolated as single pathogen in 30.7% and 26.9% respectively of the culture of milk samples and as co-pathen with *Strept.agalacteae* and *L.hardjo* (19.2% and 9.6% respectively). *Leptospira hardjo* was diagnosed as single pathogen in a rate of 15.3%.

Antibiotic susceptibility test revealed that *S.aureus* and *E.coli* showed multidrug resistance, where all *S.aureus* (15 isolates)

resistant to tetracyclin, neomycin, chloramphenicol, amikacin, lincomycin and colistin sulfate, 14 isolates were resisitant to ampicillin, erythromycin, sulfa/trimethoprim and gentamicin, 13 isolates resistant to clindmycin, 12 isolates resistant to cephalothin and 7 isolates resistant to ernofloxacin.

On the other hand, all *E.coli* (12 isolates) resistant to tetracyclin and sulfa/trimethoprim, 11 isolates resitant to erythromycin, neomycin and chloramphenicol, 10 isolates resistant to ampicillin, amikacin and lincomycin, 9 isolates resistant to gentamycin, 8 isolates resistant to chloramphenicol and colistin sulfate, 7 isolates resistant to clindamycin and 4 isolates resistant to ernofloxacin

The increase of milk yield of each cow and normal physical character was observed during the period of LLLT and the average milk yield ranged from 6.2L up to 20L in clinical mstitic cows and 11.4L up to 17L in subclinical mstitic cows. The CMT records was decreased (score 1) and the EC decreased at the end of LLLT ranged from 330-450 units. No viable bacteria were reisolated by the end of LLLT and post LLLT (end of experiment) where the average milk yield ranged from 12 to 21L in clinical mastitic cows and from 20 to 21.4L in subclinical mastitic cows. The CMT records was negative (score 0) for both clinical and subclinical cows and the EC decreased at the end of LLLT ranged from 250 -220 units in clinical mstitic cows and from 277 to 220 in suclinical mastitic cows.

It was concluded from this study that low light laser therapy opens new perspectives in the treatment of clinical and subclinical mastitis as an alternative, non-invasive, and may be of low cost method as if compared with antibiotic treatment. Lactation was not stopped post LLLT while antibiotic therapy lactation stopped for 10-15 days post treatment to avoid antibiotic residues in milk, Also it is considered as alternative green medicine.

Key words: Low light laser therapy (LLLT), clinical and subclinical mastitis, *S.aureus, E.coli*

Diagnosis of Different Strains of Infectious Bronchitis of Broilers with Polymerase Chain Reaction (PCR) in Dakahlia Governorate

*** Rania I.M. and ** Ghada A.A.**

* Department of Pathology, & ** Department of Poultry Diseases, Animal Health Research Institute, Agriculture Research Center, EGYPT, -Mansoura Provinicial Lab.

Abstract

Infectious bronchitis virus (IBV) is one of the most important viral diseases of poultry, it causes major economic losses to poultry industry. New IBV geno- and serotypes are continually reported from all over the world and especially from Egypt. This study was conducted to investigate the prevalence of different strains of (IBV) in commercial broiler flocks in Dakahlia governorate. Fifty birds suffering from respiratory disease were collected from five farms. These birds were necropsied and examined for the Presence of pathological changes in trachea, lungs, kidneys, spleen and heart. Five Pooled samples of trachea, lungs, air sacs, heart and spleen and kidneys were tested for the presence of IBV, using the reverse-transcription polymerase chain reaction. Four of them were positive for IBV by RRT-PCR. Positive samples were amplified by RRT-PCR using specific primers for S1 gene.One was genetically characterized as IBV Variant 2 closely related to infectious bronchitis virus isolate Eg/12120s/2012spike glycoprotein (SP1) gene with identity homology of approximately 99% and Avian infectious bronchitis virus isolate IS/1494/06 spike glycoprotein gene, with identity homology of 96%.The second was genetically characterized as IBV Variant 2 closely related to Infectious bronchitis virus isolate Eg/12120s/2012 spike glycoprotein (SP1) gene with identity homology 95% and Avian infectious bronchitis virus isolate IS/885 S1 spike glycoprotein gene, identity homology 93%. Tissue specimens from positive birds were prepared, stained and examined

microscopically for histopathological changes and immunohistochemistry. Grossly, intense tracheitis with presense of mucus or caseous exudates could be seen inside trachea and respiratory airways beside focal pneumonic areas were common. Regarding histopathtological lesions, trachea showed intense catarrhal tracheitis accompanied by loss of cilia.Lungs revealed caseous plug inside primary bronchus .Air sacs showed air saculitis with pneumonia .Spleen had multifocal areas of coagulative necrosis. IBV antigen was detected by avidin biotin immunoperoxidase technique using IB Ab Igg prepared in chicken as primary monoclonal antibody. Dense brown granules were detected in lungs, trachea, kidneys and heart.

These results were consistent with virus detection by RRT-PCR and histopathological changes. Future work should include the isolation and serotyping of IBV in the region, so that a suitable vaccination program, using the common field serotypes as vaccines, can be adopted to protect against IBV caused disease.

Keywords: broilers, immunohistochemistry, infectious bronchitis, PCR, histopathology.

Bacteriological Studies in Bacillus Thuringiensis and It's Use Controlling Insecticidesin Poultry Houses

Masoud, E.A.; *El-Banna, H.R. *El –Shafei , A.A *and El-Shemi, A.**

Animal Health Research Institute *(Zagazig Branch) And National Research Center**

Abstract

The microorganisms which present on the clay soils, were studied. The result recorded that bacteria isolated from clay soils were identified ***Bacillus thuringiensis, E. coli, Pseudomonas, Klebsiella and Shigella. The B. thuringiensis*** is the highest bacteria causing mortality reached 100% to house fly and mosquitoes, while other bacteria causing 30%, zero%, zero% and zero% mortality for E. coli, Klebsiella, Pseudomonas and Shigellarespectively. Most strain of ***Bacillus thuringiensis*** isolates produce a typical crystal often heterogenous in size and shape. Extraction of total DNA from ***B. thuringiensis*** isolate for PCR analysis was done. All ***B. thuringiensis*** isolate were characterized by PCR. Parasporal bodies of ***B. thuringiensis*** isolates had biological activity when assayed againsthouse fly and mosquitoes. Field application of ***B. thuringiensis*** as toxic spray on poultry houses by using 2 x 10^3c.f.u/m showed that mortality of mosquitoes reached 100% after 4 days. It can be concluded that ***Bacillus thuringiensis*** (BT) are bacteriocidal causing mortality reached to 100% after 4 days post-treatment with concentration of 2 x 10^3cfu/ml. respectively. Most strain of ***Bacillus thuringiensis*** isolates produce a typical crystal.

Some Studies on Ornithobacterium Rhinotracheale (ORT) in Broiler Chickens

Masoud, E.A.; El-Banna, H.R.; El –Shafei, A.A and Dana M Mahdy

Animal Health Research Institute (Zagazig Branch)

Abstract

Affected 100 flocks revealed chronic whitish diarrhea. Consistent gross pathological lesions recorded were congestion and consolidation of lungs, hemorrhages in trachea, congestion and hemorrhages in liver, splenomegaly and necrotic foci on the kidneys, mortality in various flocks ranged from 3.7 – 15% detailed isolation and biochemical studies revealed that Ornithobacterium Rhinotracheale was responsible for this wide spread respiratory problem. Five ORT isolate positive PCR implications were pre elicited to be the size of 784 bp – finally it was confirmed that sequence analysis of 16 sr RNA and ORT isolates from Gen bank with identified from 94% to 98%. Antibacterial sensitivity revealed that most of the isolates were sensitive to lincospectin (lincomycin + spectinomycin) and doxycycline. Many of the isolates showed resistance to kanamycin, norfloxacin, enrofloxacin, tetracycline and chloramphenicol. Experimental infection of broiler orally with ORT evoked respiratory signs with mortality reached 20% lesions of moderated saculitis mild tracheitis and unilateral pneumonia were recorded during the observation period. On other hand of broiler infected with ORT revealed that the infected and treated broiler were lower significance than infected and treated with lincospectin. The microscopical examination revealed pathological changes can be seen in lung, trachea, liver, spleen and brain.

The Synergetic effect of propolis in vaccination of rabbits against Pasteurellosis

***Sahar S. Abd El-Hamied** and ****Shahira H. M. Hussein**

*** Department of Clinical Pathology and **Department of biochemistry,toxicology and feed deficiencyAnimal Health Research Institute (Zagazig provincial lab)**

Abstract

The present study was designed to evaluate the effect of ethanolic extract of Egyptian propolis in rabbits vaccinated with *Pasteurella multocida*, . A total of twenty clinically healthy male white New Zealand 8 weeks old rabbits were randomly divided into 4 groups each of 5 rabbits. Group (1) was injected S/C with 2mL sterile phosphate buffer saline solution (PBS) and was kept as normal control, group (2) was injected S/C with a single dose of propolis (at dose of 50 mg/kg b.wt.) , group (3) was vaccinated with *Pasteurella multocida* vaccine only(1ml/kg b.wt.), and group (4) was injected S/C with both *Pasteurella multocida* vaccine and propolis. Treatments of propolis and *Pasteurella multocida* vaccine were repeated as a booster dose after three weeks. Blood samples were collected at 2 and 4 weeks post vaccination for evaluating the leukogram, immune response and serum biochemistry in all groups of animals. The result showed that propolis could enhance the antibody titer and improve cellular immune response. No statistically significant differences in serum total protein, albumin, AST, ALT activities, urea and creatinine levels were found between the control and treated groups. In conclusion, ethanolic extract of propolis administrated in combination with inactivated *Pasteurella multocida* vaccine was effective in improving the immune response with no adverse effects on the general health conditions in rabbits.

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Effect of dietary protein level on growth performance, carcass characteristics, intestinal microflora, hematological Parameters and some biochemical changes of growing Japanese quail

Osama A. Saker., * Gmal .,I Mazyad., ** Adel M. El-Gamal and Mohamed M Elseify.** **

*** Department of biochemistry , nutritional deficiency diseases and toxicology Animal Health Research Institute Kafr El-Sheikh.**

**** Department of microbiology animal health research institute Kafr El Sheikh**

e-mail: osamaatia119@yahoo.com

Abstract

A total of one hundred and twenty 1-day-old apparently healthy Japanese quail were selected and randomly divided into 4 groups. Treatments were designed with four levels of crude protein (22.17, 24.2, 26.2 and 28%) respectively to study the effects of dietary crude protein level on growth performance, carcass characteristics , intestinal microflora, hematological parameters and some biochemical changes of growing Japanese quail**.** Results showed that growth performances parameters significantly improved as dietary crude protein level increased .The results indicated that dietary protein level beyond 24% has no beneficial effect on growth. Carcass traits results revealed that dressing percentage**,** breast muscles and leg muscles were increased significantly as crude protein level increased in the diet but weights of liver, heart gizzard and abdominal fat percentage were decreased significantly. Intestinal microflora count revealed that total aerobic bacteria, Coliform bacteria, Lactic acid bacterium and *Escherichia coli* increased significantly as crude protein level increased. Hematological examinations results demonstrated that hemoglobin concentration, red blood cells count, total leucocytic count, monocytes and lymphocytes were increased significantly as crude protein increased but basophils, eosinophils and heterophils were decreased significantly. Serum analysis showed that total protein, albumin and globulin in serum increased significantly as crude protein increased**.** It could be concluded that dietary level of 24% crude protein is

recommended for growth performances and economic efficiency of growing Japanese quail because of increased dietary protein level beyond 24% % has no beneficial effect on growth.

Keywords: Blood chemistry , Carcass yield, Dietary protein., Feed efficiency ,Hematological examination ,Japanese quail

Bacteriological and molecular detection of *pseudomonas* species from raw milk sold in Port-Said City markets.

Gihan M.O. Amal A. Megahed ** and Saad S. Nasr, * Mohammed**

**Bacteriology dept * dept. Port-Said branch, Dokki, Animal Health Research Institute.

Abstract

A total of 100 random samples of raw milk were collected from different markets in Port- Said city aseptically for isolation and identification of ***Pseudomonas*** species. The results revealed that the ***Pseudomonas*** species could be detected in a percentage of 6% from raw milk samples. Six strains were identified biochemical as ***Pseudomonas aeruginosa***. This study confirms the rapidity and sensitivity of 16s rDNA analysis in identifying strains which contribute in early monitoring, accurate analysis and control of microbial risks in food products. The described methodology has special relevance in raw milk quality control and safety. Molecular characterizations of ***P. aeruginosa*** were confirmation using (16SrDNA of ***Pseudomonas* spp.)** and (16SrDNA of ***P. aeruginosa*)** by conventional PCR. PCR assays were developed with specific primers for the detection of different virulence genes (***oprL***, ***toxA, lasI, rhlR, ExoU, ExoS*** and ***ecfX***) of ***P. aeruginosa***, which may be considered a significant in food safety threat. ***P. aeruginosa*** possesses a variety of virulence genes that may contribute to its pathogenicity. Our results showed that ***oprL*** and oxA genes were detected in all 6 strains of ***P. aeruginosa***, while ***lasI*** gene detected in strains 1,2,3,4. But ***ExoS*** gene detected only 1, 2, and 3. On other hand ***Rhl1*** gene detected in 1, 3, and 4. ***ExoU, rhlR, and ecfX*** genes not detect in any strains. This PCR method is rapid than other diagnostic methods for the identification of ***P. aeruginosa*** strains, without using additional biochemical tests and It is a useful technique for detection its virulence genes. The public health hazard

of this microorganism, as well as recommended measures to improve quality status of raw milk was discussed.

Key words: ***pseudomonas*** species, raw milk, virulence genes, PCR, Public health**.**

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Detection of virulence genes in diarrhoeagenic *E.coli* isolated from different sources using Real Time PCR

Gad El-Said, W.A. .[1]; Sahar, T.M. |Tolba[2]; Soumaya, S.A. El-Shafii[3], Mohamed A. Abdelmonem[4]; Shaimaa, R.A.[3]; Mohamed A .Kelany[4]

[1] Microbiology department, Faculty of Veterinary Medicine, Cairo University

[2] Micribiology Department, Faculty of Science, Ain Shams University

[3] Bacteriology Department, Animal Health Research Institute (AHRI);

[4] Microbiology Department, Central laboratory of residues analysis of Pesticides and heavy metals in food (QCAP)

Abstract

The present study aimed to investigate the diarrheagenic *E.coli* from different sources and study their genetic relationship and diversity. Different types of samples (cattle fecal samples and internal organs; different types of plants; conduit; environmental samples; drinking water and soil samples (1105 samples) were collected). The isolated (if you identified them, then why you subject them further identification?)serotypes were subjected for detection of different virulence genes. The isolated strains (97.5%) were serogrouped to O26 (3.1%), O111 (3.4%), O101 (1.2%), O55 (1.5%), O148 (0.45%), O158 (0.63%), O78 (1.9%), O1 (0.63%), O2 (0.45%) O157:H7 (1.08%) and O157: H- (1.62%) and 28 isolates of *E.coli* were untypable (2.5%) . *E.coli* O104:H4 2011 German strain was not detected in all DNAs extracted from all isolates.

Bovine internal organs (liver; intestine and spleen) of cattle showed the highest rate of O157: H- isolation (2%). While the rate of O157: H7 isolation was similar in calves and cattle fecal samples (2%). Internal organs of poultry (liver, intestine and spleen) showed the presence of *E.coli* O157:H7 (2%). The clinical mastitic milk showed absence of *E.coli* O157:H7, but it was isolated from market milk. In minced meat the rate of O157:H7 was 4%. , sewage and conduit in rates of 3.6%, 10% and 3.3% respectively.

Twenty six isolates express enterohemorrhagic virulence genes (stx_1, stx_2 and eae genes). The most predominant virulence

gene detected was stx_1 gene in combination with eae gene (9 isolates) followed by 6 isolates express stx_2 alone, 6 isolates harbor both stx_1 and stx_2, 3 isolates express combination of stx_1, stx_2 and eae genes, only one isolate harbor eae gene alone. It was concluded, emphasizes the importance of safe water supply, good hygiene and sanitation practices in rural communities.

Keywords: Pathogenic *E. coli*, STEC, VTEC, EHEC, Real Time PCR,

The sixth session is in the library, AHRI

الجلسة السادسة بمكتبة المعهد

Name (Prof. Dr.)	Job description	Number of researches
Nashaat Abdel Motaal	Fish disease. dep. , AHRI	7
Mahmoud Elsayed	Parasitology. dep. AHRI	
Eman Bastawesy	Virology. dep. AHRI	

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Experimental studies on whole bee venom inactivated Rift Valley fever vaccine candidate in vitro

[1]Samia Ahmed Kamal, [2]Haggag E. Bedair and Ragaa ASR Faisal

[1,3]Animal Health Research Institute (AHRI), Egypt.&[2] Plant Protection Institute, (ARC)

Abstract

In regard to the safety concerns about RVF vaccines, this work aim to use the safest natural product to inactivate the Rift Valley fever virus (RVFV). Also, our study on the effect of honeybee (Apis mellifera L) venom on some types of cell lines cultures showed it cause apoptosis at lower concentrations and digestion of the cells at relatively higher concentration. In this study, honey bee venom is used as inactivant of Rift Valley fever virus (RVFV). Beside in vitro study on this inactivated RVFV it was injected in rabbits and mice to investigate its behavior in vivo. The results showed that rabbits and mice immunized with this RVFV inactivated vaccine exhibited satisfied antibodies response. Pathological investigation of the immunized mice showed that bee venom inactivated RVF vaccine didn't cause any side effects in liver, kidneys, brain and spleen. Therefore, honey bee (Apis mellifera) venom as a natural product can be used as RVFV inactivant and recommended for animal's vaccines.

Some studies on parasitic isopods of some marine fishes

Rania, A.A* and Rehab, R.A**

Parasitology Department
Animal Health Reseach institute, Zagazige and Mansoura branch

Abstract

A total number of 150 different marine fish species represented as 50Argyrosomus regius(Lute fish) from Mediterranean Sea at Damitta Province,Egypt,50 Pagrus pagrus (Morgan fish) from Mediterranean Sea at Matrouh Province, Egypt and 50Xiphias gladius(Abo saif fish) from the red sea at Hurghada city (south of Sinai province) , Egypt . The incidence of parasitic isopods among 150 marine fish was 4%. Specimens were subjected to parasitological examinations for detection of isopod infestations. The detected parasites were Anilocra leptosome and Cymothoa indica from Argyrosomus regius and Pagrus pagrus respectively while no infestation recorded in Xiphias gladius. The infestation rate with Anilocra leptosome and Cymothoa indica was4 and 8% respectively.The parasites observed in the gill chamber of the host.. The morphological characteristics of these parasites were described in details using light and scanning electron microscopy.

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Molecular studies on Newcastle Disease virus isolated from chicken farms of Suez Canal Area in 2015

Neven Ramzy and Fawzy M. *

Institute ofAnimal health research, Dokki, Giza, Ismailia branch.
Department of Virology, Suez Canal university

Abstract

Newcastle disease (ND) is a highly contagious and causes severe economic losses to the poultry industry due to high morbidity and mortality rates. NDV is single-stranded, non-segmented, negative sense RNA viruses. Specific pathogen free (SPF) chicken eggs were used for the isolation and propagation of the circulating NDV strains in Suez Canal Area governorates (Ismailia, Suez and Port Said). A total of 532 swabs, tissue suspensions and sera from different organs of diseased chicken were used to isolate NDV strains. The inoculated embryos were hemorrhagic and smaller in size 3 days post inoculation (3dpi). Identification of NDV in tissue samples and Seroprevalence of NDV in Suez Canal Area using Hemagglutination inhibition (HI) test. Our results indicated that many virulent (velogenic) strains of NDV are currently circulating. In this study, 20 farms were represented for a molecular studies on Newcastle disease virus isolated from chicken farms of suez canal area in 2015 (ND-Ismailia-2015, ND-suez-2015)isolates from lung, trachea and proventriculus samples of broiler and layer farms exhibiting some clinical and postmortem signs.Nucleotide and amino acid sequence analysis and blast indicated that Ismailia and Suez isolates have relationships with china 2011 and they are clustered together (with 99% identity) while other vaccine strain (lasota) was in another group (with 91% identity).The nucleic acid sequences of the isolated virus detected in this study are closely related to to those from known strains of velogenic virus circulating globally from GenBank at its cleavage site and clustered with class II genogroup

VII lineage of NDV. The Ismailia 2015 isolate strain has aa Threonine (T) differ than Suez 2015 strain Alanine (A).

Key words: Newcastle disease virus, vaccine, chicken

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Mycological,biochemical,and histopathological studies on fungal disease on cultured clarias gariepinus

***Doaa A.H. and **Rawia S. M. Adawy**

*Department of Mycology **Department of fish diseases
Animal Health Research Institute, Dokki , Giza,Egypt, El Mansoura provincial lab.

Abstract

A total fifty diseased cat fish (Clarias gariepinus) were collected from private fish farms in Dakahlia governorate which suffered from cumulative mortality. All collected fish were subjected to clinical, postmortem, histopathological and mycological examination. Aflatoxins were extracted and quantitated from feed and musculature of infected fish using HPLC, blood samples were collected for biochemical and haematological parameters. The clinical observation revealed that the infected fish showed opacity of the eyes, yellowish greenish gills, hemorrhagic and yellowish skin, and the fish were slow in motion.The postmortem examination showed enlargement of the gall bladder,distention of the stomach,yellowish enlarged liver and the kidneys were swollen, dark red and friable whereas, the histopathological examination revealed a severe degenerative and necrotic changes in most internal organs. On the other hand Mycological examination of infected fish yeilded isolation of Aspergillus flavus (42%), A.parasiticus (34.8%) , A.niger (12%) and A.fumigatus (10.9%).The mean levels of aflatoxins in feed was 108.9 ppb(46.4 ppb AFB_1,1.5ppb AFB_2,58.9 ppb AFG_1,2.1ppbAFG_2),while the mean of AFs residues detected in musculature was 2o.8ppb (11.3,0.15,8.9,0.5ppb) respectively. Regarding to biochemical and hematological parameters, there was a significant decrease in serum Albumin and significant increase in AST,ALT and serum creatinine of infected fish which indicated liver and kidney damage.Also, there was significant decrease in Hb concentration and RBCs count whish indicated the high toxic effect of aflatoxins.

Keywords: Aflatoxins, Clarias gariepinus, biochemical parameters, histopahthological changes , mycological examination**.**

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Effect of *Calotropis Procera* on Rabbits Coccidiosis

Seddek, A. Sh. [1], El-Ghoneimy A. A. [2], Dina, M.W. Shibat El-hamd[3], Esraa, G. Mahmoud[4].

[1]Department of Forensic Medicine and Toxicology, [2]Department of Pharmacology, Faculty of Vet.Med., South Valley University, Qena, Egypt. [3]Department of Poultry Diseases, &[4]Department of Forensic Medicine and Toxicology, Animal Health Research Institute, Qena Laboratory, Egypt.

Abstract

Medicinal plants being an effective source of both traditional and modern medicines. They are genuinely useful for primary health care so that the objective of the present study was to evaluate the effect of *Calotropis Procera* plant on rabbits coccidiosis. Fresh leaves of *C. Procera* were collected from Qena Province, and properly cleaned and dried. The powdered leaves were mixed with rabbit ration at ratio of 10 - 20- 50 and 100g /kg rabbit ration. A total of 36 white New-Zealand male rabbits at 8 weeks old were divided into 6 groups each of 6 rabbits. 1st group used as negative control (coccidian free) and fed on ration free of *C. Procera*, 2nd group used as positive control, naturally infested rabbits with coccidia and fed on ration free of *C. Procera*, 3rd, 4th, 5th and 6th groups naturally infested rabbits and fed on pelleted ration contained 10, 20, 50 and 100g of *C. Procera* / kg ration respectively for 15 days. Clinical signs and post-mortem lesions were recorded all over the 15 days of the experimental period. Fecal samples were collected for detection and counting of *Eimeria* oocysts. Blood samples were collected for estimation of RBCs count and Hemoglobin concentration and for biochemical parameters. Samples from livers and intestines were collected for histopathological examination at the end of the experiment. Rabbits fed on 10g/kg pelleted ration of *C. Procera* had an increase in *Eimeria* oocysts count, so it hasn't effect on *Eimeria* Sp. as well as it hasn't toxic effect. While rabbits fed on 20g/kg pelleted ration of *C. Procera* showed reduction in the number of oocysts in faeces as well as it hasn't toxic effect on hematological, biochemical parameters and biological organs so it can be used as a

therapeutic agent against rabbit coccidiosis. With regarding to rabbits fed on 50 and 100g/kg pelleted ration of *C. Procera* there were an increase in the number of *Eimeria* oocysts in faeces as a result of off food of rabbits due to the bitter taste of the plant and the toxicity of these doses on rabbits so that high doses cannot be used as anticoccidial agent.

Finally, the normal values of hematological, biochemical parameters and disappearance of tissue alterations in the intestine and liver of rabbits infested with coccidian in histopathological examination after feeding of 20g/kg pelleted ration of *Calotropis Procera* suggest that this plant is safe and have a potential anticoccidial effect at this dose.

Key words: *Calotropis Procera*, rabbits, Coccidiosis.

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Study on herbicide (thiobencarb) in *Clarias gariepinus* in Kafr El-Sheikh governorate, Egypt

Sherif[1], A.H., Atia[2], A.A. and Mona, E. Abbas[3]

[1]Kafr El-Sheikh branch, fish diseases Dep.

[2]Kafr El-Sheikh branch, pathol. Dep.

[3]Kafr El-Sheikh branch, biochem. Dep.

Agriculture Research center, Animal Health Research Institute

Corresponding author: dr. ahmed hammad sheriff E. mail ahsherif77@yahoo.com.

Abstract

This work was conducted in order to investigate the impact of herbicide thiobencarb on ***Clarias gariepinus (C. gariepinus)*** immunity. Lethal concentration 50 (LC_{50}) was detected, it was 160 µg.l^{-1}. Four groups were distributed in 12 glass aquaria 1st water had no addition 0% control, 2nd 5%, 3rd 10% and 4th 15% of thiobencarb LC_{50}. LC_{50} 96 hours was 160 µg.l^{-1}. the highest thiobencarb residue was detected in gills followed by liver while muscles had the lowest residues. Thiobencarb chronic toxicity had an impact on SR% and it was decreased in linear manner 86.7, 73.3, 63.3 and 46.67 respectively. Haemogram of ***C. gariepinus*** RBCs WBCs HB and PCV MCV was decreased and MCHC had the same trend of HB and PCV while thiobencarb had no effect on MCH. Liver enzyme AST and ALT showed significant increase parallel to increased thiobencarb concentration and TP had decreased while Cholesterol and creatinine had a significant increase. Antioxidant activities GPx and CAT of ***C. gariepinus*** showed a significant increase along with increased thiobencarb concentration. Immune of ***C. gariepinus*** was drastically impacted as showed in glass adhesion test and serum bactericidal activities test. It was concluded that thiobencarb had an adverse effect on ***C. gariepinus*** health and anti oxidant (GPx and CAT) could be used as bioindicator for toxicity.

Keywords: ***Clarias gariepinus***, thiobencarb, immunity, GPx, and CAT.

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The relationship between the bioaccumulation of heavy metals in *Clarias gariepinus* tissues and endoparasitic helminths at Kafr El Sheikh Governorate, Egypt

Osman, G.Y[1].; Abd El Wahab, T.M.[2]; Mohamed, A.H[1]. and Mazen, T.A.A[2].

[1]Depart. of Zoology, Fac. of Sci., Menoufia University. & [2]Depart. of Parasitology, Animal Health Research Institute

Abstract

A total number of 200 *Clarias gariepinus* were collected a live from two different ecosystem (100 *Clarias gariepinus* from each locality),where locality1 (Drainage Canal {Al-Gharbiya Drainage Canal}) and locality2 (River Nile Branch {Bahr Teara}) and examined for presence of endoparasitic helminths, *Clarias gariepinus* infected with cestodes (infestation rate was 19% and 4% in Drainage Canal and River Nile Branch, respectively) as: *Polyonchobothorium clarias* and *Monobothrium spp.* with an infestation rate 32.9% and 67.1%, respectively in Drainage Canal and 25% and 75%, respectively in River Nile Branch and nematodes (infestation rate was 41% and 23% in Drainage Canal and River Nile Branch, respectively) as: *Procamallanus laeviconchus* and *Paracamallanus cyathopharynx* with an infestation rate 56.3% and 43.7%, respectively in Drainage Canal and 55.2% and 44.8%, respectively in River Nile Branch hence, infestation rate of endoparasitic helminths in Drainage Canal was higher than River Nile Branch. The water of Drainage Canal was more polluted with heavy metals as (Fe, Cu, Hg, Pb, Ni, Mn and Cd) than the water of River Nile Branch while, Zn within Permissible limits. Heavy metal residues in the organs of *Clarias gariepinus* in River Nile Branch were higher than Drainage Canal. Heavy metals were bioaccumulated in *Clarias gariepinus* in order: liver> kidney> muscle in the two localities (River Nile Branch and Drainage Canal).

Keywords: Heavy metals, Prevalence, Endoparasitic helminths, *Clarias gariepinus*, Kafr El Sheikh Governorate.

The seventh session

الجلسة السابعة

Propbiotics In Animal Nutrition

Hussam H. Salem*; Eman Sh. laz and Samira, S. El-Sinossy****

Consultant in Animal Nutrition * & Animal Health Research Institute**

Abstract

Probiotics are living microorganisms which influence the digestive microflora of the host animal in a beneficial way. They develop their activity exclusively in the digestive tract. In animal nutrition, probiotics used as feed additives belong to one of three different groups: lactic acid bacteria, yeasts and Bacillus spores. They differ from one another in their properties, origin and mode of action. The main activity of probiotics is the maintenance and reconstitution of the equilibrium (eubiosis) of the intestinal microflora which is achieved by various modes of action. The prerequisite for their probiotic action is reaching the gastrointestinal tract alive. Once there, the probiotics support the intestinal microflora by means of specific metabolic activities and/or stimulation of the host's immune system. Undesirable microorganisms are thus reduced and protection is given against colonisation or attachment of harmful microorganisms. Probiotics therefore contribute to averting any disruption of the intestinal microflora (dysbiosis) as may occur during specific growing periods and situations of specific stress for the animals (for instance dietary changes, weaning, regrouping of animals etc.).

A safeguard of performance and health is thus achieved. Registration of probiotics follows a uniform EU procedure. Here, probiotics are evaluated especially regarding their quality, efficacy and safety for humans, animals and the environment. Therefore, only well-defined and safe microorganisms are used, for which the bioregulative properties have been validated under conditions of common feeding practice.

Experiments Confirming the Food Restricting Properties of Jojoba

Hanan ,M. Sobhy; Mogda ,K. Mansour and Maha, M. Elkholy

Biochemistry, Toxicology and Feed Deficiency Dep.-AHRI

Abstract

After the oil has been extracted from the jojoba nuts, the residual flour still contains about 30% of proteins. Therefore, it was investigated in the seventies and eighties if this flour could serve as a venerable food substitute for humans and/or animals in the semi-arid areas, comparable with soy in the oriental countries. However, animals showed severe growth retardation and research was stopped until later research revealed strong biological activities towards certain jojoba flour compounds.

In addition, control of food intake and weight gain of animals is also important but also in the world of animals control on food intake and weight gain is important. There are several applications in the meat industry where for eg. methods are needed to limit broiler breeder pullets in their food intake in order to avoid bone malformation, high mortality rates and excessive fat accumulation. A useful autonomous limitation of the food intake could be achieved by supplementation of 4% de-oiled jojoba flour to the standard ration of broiler breeder pullets. In addition, the supplementation of simmondsin to pet food will also be appreciated by the pet-owner not only for financial reasons, but because it will also increase the lifetime of his loyal companion.

Although an efficient food restriction without the feeling of hunger can be obtained, some of the observed negative effects should be taken seriously in consideration. The earlier

described growth retardation and strong repression of the fertile capacities is NOT due to the food restricting properties of the dimethyl simmondsin but mainly to angiogenesis inhibiting properties of other simmondsin derivate present in jojoba flour. Whereas the food restricting properties have been exclusively attributed to Dimethyl simondsine, the angiogenesis inhibiting properties are induced by the desmethyl- and didesmethyl simmondsins (and their ferulates).

Fatty acids profile in the Camel

Basem G. A. Fahmy

Biochemistry, nutritional diseases and toxocology department

Animal health Research Institute (AHRI).Doqqi.Egypt

Abstract

There are around 16 million camels alive as of 2015, with 90% being dromedaries. Dromedaries alive today are domesticated animals (mostly living in the Africa, the Sahel, Maghreb, Middle East and South Asia), in Egypt, which has the camel herd gives milk, food, and transportation.

In this review article, illustrated fatty acids profile, characterizations constitution, distributions on the Camel with especial references to the main consuming product milk and meat with special interest to Camel hump.

Key Words: Camel, *FA; fatty acid*. ,SFA: short chain saturated fA, MUFA; monounsaturated FA, and PUFA; polyunsaturated FA, Milk, Meat and hump, Fatty acid composition,

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A Review of Toxocariasis in man and animal

Abdel-Rahman M.A.M and Soheir M. El-Menyawe

Parasitology Department, Animal Health Research Institute,

Agriculture Research Center, Giza, Egypt.

Summary

Toxocariasis is an important parasitic zoonosis caused by larval stages of Toxocara species. The dog ascarid, *T.canis* is the probable cause of the human toxocariasis although two other species, *T.cati* and *T.vitulorum* are also possible causes of the disease. Larval migration through soft tissues in the humans generates several clinical entities in the patient such as visceral larval migrans (VLM), ocular larval migrans (OLM) and neuro-toxocariasis. VLM is primarily the disease of children who are more likely to ingest eggs of *Toxocara* species. Generally human become infected by ingestion of embryonated eggs either from soil, dirty hands, raw fruits and vegetables or larvae from under cooked meat of paratenic hosts. It is a public health problem appears in variable frequencies depending in factors related to childrens, hygienic and behavioral habitats. The diagnosis and control of *T. vitulorum* is not easy as the larvae migrate in the tissues, remaining as dormant or hypobiotic parasites. These issues are summarized in this review, with emphasis on the history, epidemiology, clinical signs, molecular aspects, treatment and control of spread to both humans and animals. The preventive measures required through public health initiatives, employing treatment of pets and environmental intervention strategies that limit the areas where dogs and cats are allowed within the confines of urban centers.

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Phytogenics as Animal Feed Additive

Shahira H. M. Hussein *; Eman Sh. laz* Hussam H. Salem **and Tarek, I. Hasb Allah**

Animal Health Research Institute*, Consultant of Animal Nutrition **

Abstract

This article summarizes the experimental knowledge on efficacy, possible modes of action, and aspects of application of phytogenic products as feed additives for poultry. Phytogenic feed additives comprise a wide variety of herbs, spices, and products derived thereof, and are mainly essential oils. The assumption that phytogenic compounds might improve the palatability of feed has not yet been confirmed by choice-feeding studies. Although numerous studies have demonstrated antioxidative and antimicrobial efficacy in vitro, respective experimental in vivo evidence is still quite limited. The same applies to the supposition that phytogenic compounds may specifically enhance activities of digestive enzymes and nutrient absorption. Nevertheless, a limited number of experimental comparisons of phytogenic feed additives with antibiotics and organic acids have suggested similar effects on the gut, such as reduced bacterial colony counts, fewer fermentation products (including ammonia and biogenic amines), less activity of the gut-associated lymphatic system, and a greater prececal nutrient digestion, probably reflecting an overall improved gut equilibrium. In addition, some phytogenic compounds seem to promote intestinal mucus production. Such effects may explain a considerable number of practical studies with poultry reporting improved production performance after providing phytogenic feed additives. In total, available evidence indicates that phytogenic feed additives may add to the set of nonantibiotic growth promoters for use in livestock, such as organic acids and probiotics. However, a systematic approach toward the efficacy and safety of phytogenic compounds used as feed additives for poultry is still missing.

Foot and Mouth Disease in Egypt

[1]Samia Ahmed Kamal and [2]Ragaa ASR Faisal

[1] Virology department,Animal Health Research Institute (AHRI), Egypt.
[2]Biochemistry department, Animal Health Research Institute (AHRI), Egypt.

Abstract

Foot and mouth disease (FMD), one of the widest spread diseases affecting cloven-footed animals, which has detrimental effects on meat and milk production. The disease has been reported in Egypt over the last 50 years. The first detection of the disease was in 1950 when strain SAT2 caused an outbreak. The most sever outbreak in Egypt took place in February 1987. Buffaloes are the main native domesticated animals in Egypt so that it play major role as a reservoir for FMDV; buffalo keep the virus in the oro-pharyngeal region for more than 2 years. Foot and Mouth disease host is mainly animals, transmitted directly between animals, therefore, vector is not present. The reservoir hosts are present in the endemic areas. Zoonotic importance of FMD does not investigated in large scale, because the disease in man is self-limiting.

Depyrogenetion Methods

Dr. Samya El-Magdy Salama and Dr. Elham, A. Mobarez

Biochemistry, toxicology and feed deficiency department - Animal Health Research Institute - Dokki

Abstract

Pyrogens are fever-and inflammation-causing agents that cause serious health hazard, especially in the case of intravenous drugs and pharmaceutical products. While lipopolysaccharide (LPS) from the outer membrane of Gram-negative bacteria remains the prototypic pyrogen, substances such as lipoteichoic acid (LTA) and peptidoglycan from Gram-positive bacteria and others are increasingly recognized as potent immune stimuli. The presence of pyrogens in the body initiates secretion of pro- inflammatory cytokines by monocytes. When high concentrations of pyrogens enter the blood stream they cause fever, septic shock or even death.

The presence of small amounts of endotoxin in recombinant proteins preparations can cause side effects in host organism such as endotoxin shock, tissue injury, and even death. Due to these reactions, it is essential to remove endotoxin from drugs, injectables, and other biological and pharmaceutical products. Depyrogenation refers to the removal of pyrogens from solutions, most commonly from injectable pharmaceuticals.

A depyrogenation study is the key biological test, in addition to thermometric tests, for the qualification of depyrogenation devices. Depyrogenation can be defined as the elimination of all pyrogenic substances, including bacterial endotoxin, and is generally achieved by removal or inactivation. Depyrogenation, like sterilization, is an absolute term that can only be theoretically demonstrated because of test insensitivity. Because virtually all new materials involved in a production process, including factory employees, can be potential sources of pyrogen contamination, raw material screening and

depyrogenation can often go a long way to ensure that final products are free from pyrogens and does not require costly removal of or inactivation of pyrogen. The current review provides a detailed discussion of the theoretical concept and mechanism of depyrogenation.

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Heavy Metals at Kafr Elsheikh Governorate and the use of algae in fish cultured

Doaa M. Gad[a] and Sabreen E. Fadl[b]

a. Fish diseases Lab.(Regional Vet. Laboratories),Vet. Laboratory Res. Department, Animal Health Research Institute – kafrelshikh, Egypt.

b. Bioc. Lab.(Regional Vet. Laboratories),Vet. Laboratory Res. Department, Animal Health Research Institute – kafrelshikh, Egypt.

Abstract

The aim of this review is to compile some dispersed literature published about heavy metals affect fish especially that cultured in fresh water in Egypt (Kafr Elsheikh Governorate) such as Iron, Zinc, Copper, Manganese, Cadmium and Lead (Fe, Zn, Cu, Mn, Cd and Pb) in relation to the effect of using some microalgae *(Cyanobacteria)* in order to help in prevention of heavy metals adverse effect or at least to ameliorates it's adverse effect on fish. In Kafr Elsheikh Governorate the agricultural drainage water is considered as one of the most important water sources for fish farms in addition to industrial drainage water especially from Kitchener canal which collects El Gharbia governorate agricultural, industrial drainage water and sewage wastewater and sewage drainage water of Kafr Elsheikh city and industrial drainage water of spinning factories of Kafr Elsheikh. So drainage water is therefore contaminated with salts, agricultural chemicals (pesticides and heavy metals) and other pollutants as pathogens from domestic

Keywords: *heavy metals, microalgae, fish, antioxidant.*

Leptin in farm animals: Productive and reproductive effects

Hussein, Y. S.[1*], Maha A. El-Koly[2], Hanan, A. Tag El-Din[2] and Mogeda K. Mansour[2]

Biotechnology Research Department, Animal Production Research Institute, Dokki, Giza1.-and Biochemistry,Toxicol & Feed deff. Department, Animal Health Research Institute, Dokki, Giza.

Summary

The *ob* factor, Leptin, produced from white adipose tissue is classified as a "metabolism modifier" or lipostat" or "adipostat" and it have myriad effects on tissues and endocrine systems that ultimately lead to the coordination of whole-body energy metabolism. Leptin seem to be involved in pregnancy, puberty, immune modulation, inflammation, wound healing and mutation. In coordination with mammary milk leptin, plasma leptin may act as an autocrine or paracrine signaling molecule on the mammary gland epithelial cell proliferation, differentiation, growth, apoptosis and function during early lactation period; by repartitioning of plasma nutrients towards milk secretion. It seems that the basal level of plasma leptin might be important for mammary gland to function normally and it might be involved in thermoregulation, satiation, endocrine homeostasis and systemic regulation in the neonate.

Keywords: Leptin, farm animal, reproduction, mammary function

Milk adulteration: Some Chemical Adulterants of Milk

Ola,F.A.Talkhan

Chemistry Department, Faculty of Science, Hail University, Hail, Saudi Arabia
Department of chemistry,Animal Health Research institute ,Egypt

Abstract

Milk as naturally product is a complete food and can supply infants and adult with the daily requirement of nutrition. Any removal from or addition to milk without customer's knowledge which known as adulteration will not only change its content but also cause hazard effect use of milk ,adulterants is the substances used for adulteration . The common and first adulterant used for adulteration of milk is water for increase income. Following water adulteration; some adulterants will be added to mask the variation of properties of adulterated milk as sucrose, starch, ammonium sulfate, carbonate, sodium hydroxide and chloride. Others will introduced to milk for increasing shelf life as formalin, hydrogen peroxide, benzoic, salicylic and boric acid. Another dangerous material added to milk for hiding the true protein content as urea, ammonium sulfate and melamine. The serious health risk of these adulterants are gastrointestinal complains, liver and kidney damage. Nowadays our world become little town so people must be aware about this risk and milk adulteration ,also these must be opposed by authorities rules for prevention the health risk of milk adulteration .

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Various Analytical Techniques Involved In Mycotoxin Detection and Estimation

Samia A. El-Zeiny; Magda Sh. Taha; M. K. Abo El-Magd; M. M. Arafa; Nehad A. Badrawy; Abeer, S. Abd El-Rahman and Eman Sh. Laz

Biochemistry, Toxicology and Feed Deficiency Diseases Dep.
Animal Health Research Institute.

Abstract

The aim of this review was to discuss the various analytical techniques involved in mycotoxin detection and estimation. Mycotoxins to be analyzed are originally present in contaminated samples. Hence, mycotoxins must be extracted with different extraction methods and cleaned-up prior to detection techniques, if reliable results are to be obtained. Extraction procedures include extraction of mycotoxins from feeds and foodstuffs. SPE and IAC-cleanup will become of increasing importance as sample preparation techniques prior to instrumental analysis. Immunoaffinity cleanup techniques with high-resolution chromatography showed the most selectivity for mycotoxin analysis. Recently, advances using tandem or mixed selectivity immunoaffinity cartridges have demonstrated the feasibility of multi target mycotoxin assays. In the early 1980s, TLC was the most widely used chromatographic technique applied to mycotoxins because of its relatively simple, fast, and inexpensive properties; however, it has some disadvantages, such a slow sensitivity, high detection limit, and lack of potential for automation. Consequently, it is now almost replaced by the HPLC techniques. Among the available detectors, the most frequently used are PDA, UV, and Fl, which have a particular application in the field of mycotoxins. HPLC–MS has all the HPLC advantages for trace level detection and confirmation, especially for complex matrices and it can obtain qualitative data concerning the identity of mycotoxins. The great potential of LC–MS/MS for screening large amounts of samples for the presence of a number of mycotoxins has recently

been demonstrated. Immunoassays that deliver quantitative or semi quantitative results, still represent the most frequently used rapid methods. There is an ongoing development toward quick and reliable methods providing rapid yes/no decisions or semi quantitative results. Also, many projects are in progress aiming to avoid purification step, for example, to measure the analytes directly after extraction. Easy to-use methods are often either too expensive or show a lack of sensitivity. In a nutshell, the previously mentioned methods have their advantages and disadvantages, and the desired method selection should be done according to the analytical objective, sample properties, and environmental conditions. Although there are some reports for qualitative and quantitative analysis of mycotoxins, rapid and sensitive quantitative methods are still high on the wish list.

Freshwater fish fecundity affected by some infective fungal pathogens and T - 2 mycotoxin

Nashwa Samir Elias, Nahla Ramzy Elkhatib and Nadia Ahmed Abd El Ghany

Fish Diseases Research Dep. - Animal Health Research Institute – Dokki -Egypt

Abstract

Several infective fungal pathogens as well as T-2 mycotoxin proved to exert drastic effects on fish fecundity.

Icthyophonus showed white nodules with multinucleated spherical bodies (resting spores) in testes of males *Oreochromis niloticus* with moderate drop in sperm density. Among females Icthyophonus showed macro and microscopic white nodules in ovarian tissue of *Oreochromis niloticus* while in *Cyprinus carpio* showed only microscopic lesions. Absolute fecundity, hepatosomatic, gonadosomatic indices and total protein showed highly significant drop among *Oreochromis niloticus* and *Cyprinus carpio* infected with Icthyophonus.

Fusarium infection in Clarias gariepinus revealed clinical signs appeared as 100 % and 70 % among both females and males respectively. Relative and absolute fecundity as well as total protein and liver enzymes levels showed highly significant drop among both sexes. Treatment with garlic and black seed promoted growth and relative fecundity but failed to perform complete remedy of absolute fecundity.

T- 2 toxin in *Oreochromis niloticus* showed highly significant drop in relative and absolute fecundity as well as total protein. Ginger treatment appeared effective only with males where it significantly improved the sperm density as well as its live %.

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Containment evidence Based-Biosafety:- Effectiveness of Microbiological Measures for the handling of Mycobacterium isolates in the laboratories

Zaki E. R[*], Riad E.M[**], Dalia M. Mohsen[*] and Amany N.Dpagh[**]

[*]Buffaloes diseases Department and [**]Bacteriology Department
Animal Health Research Institute

Abstract

Tuberculosis is a severe infectious disease caused by species of the *Mycobacterium tuberculosis complex. M. bovis* is responsible for pulmonary disease in bovin and sometimes to tuberculous mastitis with passage of tubercle bacilli in milk.*M. bovis* is responsible for extra-pulmonary infections in human and also pulmonary infections by inhalation of infected droplets through direct contact with infected animals.

Staff working in microbiological diagnostic and research laboratories is likely to be exposed to Infection risk with pathogens. M. species are essentially an airborne Pathogen included in Risk Group 3 according to the international classification and It is transmitted via aerosols or less frequently by accidental inoculation. The definite diagnosis of tuberculosis relies on the isolation and identification of the Mycobacterium in clinical specimens. . It was showed that 80% of all accidents were due to human error and 20% to equipments problems. even if equipments troubles were partially solved by the adoption of appropriate safety equipments in many diagnostic and research laboratories, behavioral factors may be a source of concern. There are numerous records of laboratory-acquired tuberculosis infection through aerosols or skin puncture .

Biological Risk Assessment of Laboratory Activities through Species of the Mycobacterium must be considered.

The bacterial load of infected material (such as sputum specimens and cultures), and the viability of TB bacilli. Route of transmission

of TB; the location of the laboratory; The epidemiology of the disease and the patient population served by the laboratory; the level of experience and the competence of the laboratory's technicians in addition to the health of the laboratory's workers. **Biosafety Recommendations for the Contained Use for isolation of Mycobacterium species** a**nd the use of disinfection, inactivation of *M. tuberculosis* isolates and waste management** as well as The Personnel should receive regular updates and appropriate additional training, under the supervision of the head of the laboratory are discussed.

Keywords: tuberculosis -lab diagnosis - biosafety

The uncommon Mycobaterium ulcerans infection and its public health importance

Riad,E.M ., Amany,N.Dapgh and Dalia,M.M

Animal Health Research Institute

Abstract

Mycobacterium Ulcerans infection or Buruli Ulcer is the third most frequent mycobacterial disease in humans .The epidemiology of BU is poorly understood. Some evidence exists for an environmental reservoir associated with slow-flowing or stagnant water. However, culture of M. ulcerans from the environment has never been successful.

Treatment of advanced disease is often difficult and complicated by persistence and replace. Surgery is still considered the main treatment option despite its poor acceptability, high costs, and failure to prevent recurrence.

In lab diagnosis ,Mycobacterium ulcerans isolates are sensitive to decontamination methods. All decontamination methods currently used for the isolation of M. ulcerans from clinical specimensMycobacterium ulcerans belongs to a group of mycobacteria that are potentially pathogenic for humans and animals. These are sometimes called 'opportunistic mycobacteria' or 'occasional pathogens'. Most species belonging to this group are ubiquitous in nature, and may become pathogenic under special circumstances. These mycobacteria generally cause mycobacterial diseases that are not contagious.

The disease in pet animals is considered of great importance in public health issue, some records of the mycobacterium ulcerans in cats were reported and discussed the epidemiological relationship with the buruli ulcer infection in contact women in some countries.

The development of PCR for quick identification of M. ulcerans in clinical and environmental samples has greatly improved the diagnostic yield as well as our understanding of the epidemiology of Buruli ulcer.

Keywords: mycobacteria –human infection –pet animals –diagnosis.