Comparison of six different medicinal plants effects on humoral immune system performance of broiler chickens

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The purpose of this study was to compare the effects of six different medicinal plants on humoral immune system performance of broiler chickens. 420 one-day-old male broilers (308 Ross strain) were used in a completely randomized design in 7 treatments and three replicates (20 birds per replicate) for 42 days. The treatment groups consisted of a control(Group1) assigned to the basal diet and experimental groups 2, 3, 4, 5, 6 and 7 were basal diet supplemented with 1*% Mentha pulegium L.*, 1% *Thymus vulgaris*, 1% *Cicorium intibus*, 1% *Satureja hortensis*, 1% *Malva neglecta* and 1% *Urtica dioica* of aerial parts powder in the feedstuff, respectively. B_1 Newcastle vaccine was used in all groups of broilers at 10 and 25 days of age. Two birds from each replicate (6 birds from each group, totally)were randomly chosen and blood sample was taken on the 24^{th} and 34^{th} days of experimental period and Hemagglutination Inhibition (HI) test was performed on sera and the heterophil**:** lymphocyte ratio was calculated. Regarding HI test (Antibody levels against Newcastle virus vaccine), it didn't show statistical significance in different treatment groups. Regarding heterophil**:** lymphocyte ratio, only the group that had received 1% *Urtica dioica* showed statistical significance in comparison with control group ($P< 0.05$) and other groups didn't show any statistical significance. Probably, other amounts of these medicinal plants (separately or mixed together) may effectively improve the immune system.

***Keywords**: Broiler, Humoral Immunity, Medicinal plants.*

Effect of different levels of polychaete worm *perinereis nuntia* in broodstock diets of Pacific white shrimp *penaeus vannamei* on growth performance, survival and resistance to environmental stresses

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This study was conducted to investigate the use of polychaete worm *Perinereis nuntia* in broodstock diets of Pacific White shrimp *Penaeus vannamei* and its effects on growth performance, survival rate and resistance to environmental stresses in their 15 day post larvae in Kolahi restocking center in Hormozgan province. Three treatments were considered with three replicates. Larvae from broodstock fed with squid, Pen shell and cow liver were placed in treatment one, squid, Pen shell, cow liver and 8% polychaete worm in treatment two and squid, Pen shell, cow liver and 12% polychaete worm in treatment three. Larvae growth including total length and wet weight were investigated. To determine resistance against salinity stress (10, 20, 40 and 50 ppt), thermal stress (10, 20, 40 and 50 °C) and formaldehyde stress (100 ppm), larvae were exposed to these stresses for 30 minutes and the survival rate was calculated in each treatment. The highest and lowest average length and weight belonged to treatment three and treatment one, respectively and treatment one was significantly different from treatments two and three ($P<0.05$). In resistance to environmental stresses, the highest survival rate belonged to treatment three and the lowest to treatment one. Larvae survival was not different between treatments in salinity and formaldehyde stresses while treatments two and three had higher survival compared to treatment one in thermal stresses of 10 and 50°C ($P<0.05$). Based on the results, use of polychaete worm *P. nuntia* in broodstock diet of Pacific White shrimp could increase growth indices and resistance to environmental stresses in their larvae.

Key words: *Penaeus vannamei, Polychaete worm, Perinereis nuntia, Growth, Environmental stress*

Survey on histopathological lesions of silver carp and grass carp to *lernea cyprinacea* infestion in some carp's rearing farms in Shushtar

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Lernaea cyprinacea is commonly called the 'anchor worm'. Muscle necrosis, haemorrhaging, inflammation and suppuration are common. Acute pathology occasionally happens when several parasites settle close together. The necrosis of tissues can cause serious lesions that can become secondarily infected by bacteria or fungi. Inflammation and then tissue growth around the site of entry encapsulate the parasite's body.This survey in order to identify histopathologic effects of Lernea was performed on silver carp and grass carp. For this purpose 80 carp has been hunted from four ponds of shushtar city with random selection (20 fish from each pond). All fish hunted in summer season. Sampling was performed by cutted skin and muscle from parasite attachment and placed into 10% formalin buffer. Pathological slides were prepared with standard method, then analyzed under close microscopic observation. The results showed inflammation with cellular infiltration and giant cell penetration, skin's hyperplasia, new fibroblasts formation, melanosis, muscular necrosis, hyperemia, vascularization and hemorrhage which showed defense response via blood cell's defense and formation of healing tissue. Most of parasites were isolated from skin area meanwhile, the total percentage of infection to lernea was 30%.

Keywords: *Lernea, Histopathology, Phytophage, Grass carp, Shushtar*

Comparison of antifungal effects of essential oils of *zataria multiflora* boiss, *cuminum cyminum* and *eugenia caryophyllata* with formalin on aflatoxin-producing fungus *aspergillus parasiticus*

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Dangers of synthetic drugs and synthetic food preservatives, increased bacterial infections resistance to antibiotics, Due to the important fungal diseases Such as aspergillosis and Mycotoxicosis, and also mold decay of agricultural products and the capacity of essential oils against microorganisms has provided fertile ground for research. To this end, antifungal activity of essential oils of three herbs *Cuminum cyminum*, *Zataria multiflora Boisis*, and *Eugenia caryophyllata*, Compared with the formalin on the growth *Aspergillus parasiticus* was studied. To determine the minimum inhibitory concentration of essential oils and mean diameter of fungal growth, and the percentage inhibition of essential oils, poisoning solid medium was used. The results showed that essential oils tested, have Inhibitory effect at all concentrations and ability to inhibit the growth of fungal oils was more than chemical fungicides (formalin). The highest and lowest diameter of fungal growth for concentrations 125 µl/l after 8 days of incubation was associated with formalin and *Eugenia caryophyllata* respectively 62.8 and 14.1 mm. *Eugenia caryophyllata* and *Cuminum cyminum* essential oils with concentration of 250 µl/l and *Zataria multiflora Boisis* essential oil and formalin with concentration of 500 µl/l were able to inhibit completely the growth of *Aspergillus parasiticus*. So the essences of *Eugenia caryophyllata* and *Cuminum cyminum* with a high percentage of inhibitor, respectively, as the best essential oils for controlling the growth of *Aspergillus parasiticus* instead of chemical fungicides, recommended.

***Keywords**: Aspergillus parasiticus, MIC, Antifungal effects, Herbals essential oils.*

The study of alpha-tocopherol cytotoxicity on canine mammary gland cancer cells (CF41.Mg) *invitro*

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Breast cancer is the most common cause of cancer in female dogs. Created mutations in genes associated with cancer and oxidative modification of proteins and reactive aldehydes are key events that can increase cancer risk. The role of antioxidants in prevention and treatment of cancers have been reported by several studies. The aim of this study was to evaluate invitro, the antiproliferative effect of alpha-tocopherol against canine mammary gland carcinoma cell line (CF41.Mg). CF41.Mg cells were cultured in RPMI 1640 medium. The cells were treated with different concentration of alpha-tocopherol for 24, 48 and 72 h. Antiproliferative effect of alpha-tocopherol was investigated using MTT (3-(4,5-dimethyl-2-thiazolyl)-2,5-diphenyl-2-tetrazolium bromide) assay. The results indicated that alpha-tocopherol inhibited proliferation of canine mammary gland carcinoma cells so that treatment with 100 microM alpha-tocopherol for 72 h resulted in a significant decrease in cell viability. The alpha-tocopherol showed less effect after 48 h. The results of this study confirm the inhibitory effect of alpha-tocopherol on canine breast cancer cells (CF41.Mg).

Keywords: *Cytotoxicity, Alpha-tocopherol, Mammary Gland Cancer, Canine.*

Comparison of DNA extraction methods from formalin-fixed tissues

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The commence point of several molecular biology methods was necessity for high-quality DNA extraction. Ordinary, the quality of DNA were determinate with some factors such as DNA contamination from RNA, proteins, lipids and other structures which disturb in activity of digestive enzymes and polymerase. Usually, DNA extraction from paraffin-embedded blocks and formalin-fixed tissues were damaged, owing to the fact that destructive effect were entered on DNA inconsequence, they had not desirable quality. The aim of this study was to present an efficient method for extracting DNA from tissue that fixed in formalin. Two different protocols of Bioneer and General Genomic Extraction Kits were compared for DNA extraction from formalin-fixed tissues. Qualitative and quantitative evaluation was performed on DNA. For verification and evaluation of DNA, PCR for β-globin gene was fulfilled on all samples. The results showed that the quality and quantity of DNA which extracted with General Genomic Extraction kit were more desired in comparison with Bioneer kit. The amount of samples that amplified with primers β-globin, illustrate more concentration and purity of mentioned DNA extraction kit in compared with Bioneer kit. Due to the damage caused by fixing tissues in formalin, General Genomic Extraction Kit was more efficient for DNA extraction. This method can be used for DNA extraction from formalin-fixed tissues and paraffin-embedded blocks for routine research and clinical trials.

***Keywords**: DNA extraction, Tissue, Formalin.*

Phylogenetic analysis of *coxiella burnetii* isolates from dairy farms in Tehran

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Q fever is a zoonotic disease with worldwide distribution Caused by a Rickettsia called *coxiella burnetii* through the mass of aborted fetuses, urine, and feces excreted in the milk of infected animals. Thus, consumption of unpasteurized milk contamination can be a source of infection for humans. The aim of this study phylogenetic analysis *Coxiella burnetii* was isolated from dairy farms in Tehran After obtaining the desired gene sequence of the bacterium *Coxiella burnetii*, the sequences obtained were compared with sequences in the gene bank. In this study, a total of 50 dairy farms around Tehran in 150 milk samples were received from the reservoir tank and all the samples using primers specific genes, transposons IS1111a *coxiella burnetii*, the PCR test were Of the total samples, 18 samples positive *coxiella burnetii* frequently randomly selected 12 samples were sent for sequencing to Korea Macrogen company. The results showed that cow's milk is one of the potential reservoirs *coxiella burnetii* in Iran. The result of this comparison showed that the transposons IS1111A *Coxiella burnetii* gene isolated from milk farms around Tehran with more than99% sequence similarity to the gene bank.

Keywords: *Coxiella burnetii, Phylogenetic analysis, PCR*