Prevalence and Risk Factors Associated with Cryptosporidium Infection in Raw Vegetables in Yazd District, Iran.


ABSTRACT

Consumption of raw vegetables is an important route of parasites transmission. It is an important source for foodborne outbreaks in both developed and developing countries, and outbreaks of parasitic diseases in humans. The objective of the present study was to detect the presence of *Cryptosporidium* oocysts in raw fresh vegetables in Yazd city, Iran, from 2017 to 2018. A total of 275 fresh vegetable samples were collected and tested using a sucrose flotation medium of 1.21 specific gravity and a Modified Ziehl-Nielsen staining procedure. Of the 275 vegetables examined, 85 (31.5%) samples were positive for *Cryptosporidium* oocysts. Lettuce had the highest rate (n= 16, 47.1%) of contamination with *Cryptosporidium* oocysts while basil and parsley showed the lowest rates of contamination (n= 6, 20%). There was a significant association between the occurrence of *Cryptosporidium* oocysts and the investigated vegetable types. According to the locations of the vegetable field, Amir Abad and Bahaman Hospital area had the highest (n: 16, 59.3%) and lowest (n= 5, 18.5%) rates of *Cryptosporidium* oocysts contamination, respectively. The plant part showed that the root vegetables had the highest contamination rates (n= 41, 45.6%), followed by leafy vegetables (n= 44, 24.4%). The analysis further indicated a significant association between the occurrence of *Cryptosporidium* oocysts and the route of vegetable consumption. Based on these results, the edible vegetables in Yazd city are one of the potential sources of *Cryptosporidium* infections in humans. Moreover, the vegetable fields within the city of Yazd are contaminated with *Cryptosporidium* oocysts which can pose public health problems. 

*Keywords: Cryptosporidium, Oocysts, Raw vegetables, Yazd city, Iran.*

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Rapid Detection of Streptococci in Cultured Tilapia Fish Using PCR and Chemical Analysis.

**ABSTRACT**

A total of 100 cultured tilapia fishes and 20 water samples were collected from 4 different fish farms at different locations in Kafr El-sheikh Governorate for bacteriological and chemical analysis. The results of water quality parameters examination revealed that the mean values of temperature, pH, dissolved oxygen(DO), total hardness, alkalinity, and salinity were 37.4℃ ± 4.1℃, 7.63 ± 0.2, 5.5 ± 0.5 ppm, 75 ± 2 ppm, 140 ± 10 ppm, and 0.05 ± 0.008 ppm, respectively. All water quality parameters except for ammonia were within the permissible limit. The bacterial isolation results revealed 38 positive fish samples, 25 (65.78%) were Streptococcus agalactiae. Using mPCR to identify Streptococcus pyogenes isolated from tilapia fishes and 40% were positive for Streptococcus pyogenes. The incidence rate of ticks significantly increased, compared to non-infected fish niloticus, 6 (15.78%) were. On the other hand, from 8 positive farms water samples, 7 (87.5%) were Streptococcus iniae. Analysis of water samples indicated that the infected fish with the species directly from organs from fish and water samples revealed that 5 Streptococcus iniae and 1 (12.5%) was.

**RESULTS**

Streptococcus agalactiae, Enterococcus faecalis, and Enterococcus faecium species had reduced total protein, albumin, and globulin in the blood serum while total Enterococcus faecium was identified at 153 bp. The biochemical results indicated that the infected fish with the species directly from organs from fish and water samples revealed that 5 Streptococcus iniae and 1 (12.5%) was.

**DISCUSSION**

The detection of cultured tilapia fish samples using PCR and chemical analysis was effective in identifying the presence of Streptococcus pyogenes. The results showed that Streptococcus pyogenes was present in 40% of the fish samples tested. The chemical analysis of water samples further supported the findings, indicating that the presence of the species was also detected in the water environment. This study highlights the importance of monitoring both fish and water samples for the presence of Streptococcus pyogenes to prevent its spread to other fish and water bodies.
The results also demonstrated that the number of total born piglets, stillborn, and mummified piglets were more important than litter weight and average birth weight in explaining the variation of farrowing duration. Among the four factors, average birth weight had a negative association with farrowing duration, whereas the other three factors had positive associations with farrowing duration.

Modern pig farming worldwide has been facing substantial economic loss due to perinatal diseases and capability of combating the present situation of COVID19 pandemics. Reiterating essential commodity. In this regard, universities should take the lead and bring veterinarians in a decade long professional existence and crucial contributions in Nepal’s overall development. Due to COVID19, essential services, such as veterinary service, has pressurized the government of Nepal to recognize veterinary service as an essential commodity. In this regard, universities should take the lead and bring veterinarians in a decade long professional existence and crucial contributions in Nepal’s overall development. However, in Nepal, the later contributes to the employment of around 65% of the population and a multi-sectoral approach and veterinarians are best suited in this regard. It also needs to be noted that veterinarians are better positioned to handle emerging and re-emerging zoonotic diseases and capable of combating the present situation of COVID19 pandemics. Reiterating essential commodity. In this regard, universities should take the lead and bring veterinarians in a decade long professional existence and crucial contributions in Nepal’s overall development.
Staphylococcus aureus cfu/ml. Serological identification of the 20 isolates revealed that they were (54%) gene found in 13 (54%) gene-specific primers revealed a product with an approximate size of 937 bp. (determining the level of count (cfu/ml) revealed that the geometric mean of 150 dairy farms was 3.2×10

Salmonella Typhimurium isolates (100%). Phylogenetic and partial gene sequence analysis of Egyptian isolated strain indicated a great homology with the different Staphylococcus aureus

Research Paper

Essential oil, Fennel, Growth performance, Oregano, Rabbit, Thyme.

Antibiotic resistance, Seabass, Seabream, Streptomycin, Typhimurium, V. harveyi

ABSTRACT

The objective of this study was to analyze and compare the effects of fennel, oregano, and thyme dietary supplements on the feeding of rabbits. In this regard, 96 weaned rabbits (30-day-old), white New Zealand, were divided into 4 groups and submitted to the following dietary treatments: Control diet, F diet (Control diet + 5% Foeniculum vulgaris), O diet (Control diet + 5% Origanum compactum), and T diet (Control diet + 5% Thymus capitatus). The phenylpropanoid and the phenolic monoterpenes were the major components of Foeniculum vulgaris, Origanum compactum, and Thymus capitatus essential oils. The aromatic plants and their active compounds can be used as additives in rabbit nutrition.

Figure 5. Phylogenetic tree for Salmonella Typhimurium (spp.) virulence gene partial nucleotide sequence fragments generated using a neighbor joining in MEGA6. It shows a clear clustering of the Egyptian isolated strain and different Salmonella Typhimurium strains uploaded from gene bank.

Adel M. Di-Gamal and Engy F. El-Bahi (2020). Prevalence of Vibrio parahaemolyticus in seabass (Dicentrarchus labrax) and seabream (Sparus aurata) and Detection of Streptomycin-resistant Strains.

Figure 6. Phylogenetic tree for Staphylococcus aureus (spp.), virulence gene partial nucleotide sequence that was generated using a neighbor joining in MEGA6. It shows a clear clustering of the Egyptian isolated strain and different S. aureus strains uploaded from gene bank.


Typhimurium. The PCR amplification with gene-specific primers was conducted with genomic DNA, which revealed a product with the approximate size of 467 bp. The Salmonella Typhimurium strain and the different epidemiology, disease pattern of Salmonella were considered cured. On day 15, the overall cure rates for interdigital necrobacillosis with no disease recurrence recorded within the observation period, for the cure rate in the probiotic group versus oxytetracycline was 0.837. However, on day 28, treatment effect of probiotic powder to dairy cows with early-stage interdigital necrobacillosis can result in cure rates nearly as high as those for intramuscular oxytetracycline within a period of 28 days. This is the first report on the treatment effect of probiotic powder to dairy cows with early-stage interdigital necrobacillosis.

Keywords: Salmonella Typhimurium, Sequencing.
The current study was designed to evaluate the protective effects of Tribulus terrestris fruit (200 mg/kg). The substances were administered orally by stomach tube daily for 10 days. The kidney tissue in mice exposed to cadmium showed cellular aggregations of lymphocytes around the bronchus and edema in the lungs exposed to cadmium. A group was given cadmium (6 mg/kg) plus the alcoholic extract of the fruit, and the third group contained the toxic substance (cadmium 6 mg/kg) only. The substance Tribulus terrestris fruit indicated normal tissue appearance, while others showed large aggregations of lymphocytes around the bronchus and edema in the lungs exposed to cadmium. The protection rate was 80-100%. Further research should be done to discover the optimal dose of IgY to protect chickens from infection of High Pathogenic Avian Influenza clade 2.3.2 (A/Duck/Sidoarjo/2012). The best dose of the IgY to protect them from infection of HPAI clade 2.1 (A/Chicken/Blitar/2003) was tested against Pathogenic Avian Influenza A subtypes H5N1.
Research Paper

Capacity of Mentha spicata (spearmint) Extract in Alleviating Hormonal and Folliculogenesis Disturbances in Polycystic Ovarian Syndrome Rat Model.

Alaei S, Jafar Bagheri M, Sadeghi Ataabadi M and Koohpeyma F.


ABSTRACT

Polycystic ovary syndrome, a common cause of infertility among women in the reproductive age, is associated with high levels of androgens. Recognizing the anti-androgenic effects of spearmint, the present study aimed to evaluate the effects of its hydroalcoholic extract on the levels of luteinizing hormone, follicle-stimulating hormone, and testosterone and ovarian folliculogenesis in normal and letrozole-induced polycystic ovary syndrome rats. Female mature rats were divided into six groups (n=8 per group), as follows: Normal rats (I or Control), normal rats which received 250 mg/kg spearmint extract (II) or 500 mg/kg spearmint extract (III), and PCOS-induced rats (IV), PCOS-induced rats which received 250 mg/kg spearmint extract (V), or 500 mg/kg spearmint extract (VI). At the end of the experiment the animals were euthanized, and then mentioned parameters were evaluated. Administration of spearmint extract to PCOS rats resulted in a decrease of body weight and testosterone level, higher corpus luteum, and lower ovarian cysts and atretic follicles, compared to PCOS rats which received no spearmint. Accordingly, the spearmint can attenuate polycystic ovarian syndrome-related problems, such as a high testosterone level and ovarian cysts.

Keywords: Folliculogenesis, Mentha spicata, Ovary, PCOS, Rat

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Research Paper

Comparison of Serological Tests in Cattle and Ovine Brucellosis; an Abattoir Study in Algeria.


ABSTRACT

Despite the paucity of data, brucellosis is considered as a major problem in Algeria. The aim of present study was to assess the presence of bovine and ovine brucellosis in the areas close to the capital city (Algiers) where its vaccination is not implemented. A total of 402 cattle and 203 ovine sera were collected from two slaughterhouses, and examined by the Rose Bengal Test (RBT). Positive samples were then tested by Complement Fixation Test (CFT) and Hypertonic Double Gel Diffusion (DDG) with a smooth lipopolysaccharide, and the extract of native hapten was also tested by Indirect Enzyme Linked Immuno Sorbent Assay (iELISAs) with smooth lipopolysaccharide and polyclonal or protein G conjugates. Twenty-four bovine sera (5.97%) were RBT positive. Of these, 23 were positive in CFT, DDG, and 16 samples were also positive in iELISA when the assay was adjusted to 100% specificity. Only two ovine sera were RBT positive; one was CFT and DDG positive, and the other one had a CFT-titer of 1/4, and was DDG negative. This preliminary study confirmed that bovine brucellosis is a major problem in Algeria, and indicated that some field studies are needed to determine the prevalence of Brucellosis in Algeria urgently. Similarly, other studies are necessary in areas with dominance of ovine breeding system. Further studies in the areas with a dominance of ovine breeding system are necessary. The results of this work showed that simple tests like RBT and DDG are not outperformed by CFT or iELISA for assessing the apparent prevalence of brucellosis in the absence of vaccination. Finally, isolation and typing of the involved Brucella species are also necessary in order to have a complete epidemiological picture of brucellosis in Algeria.

Keywords: Abattoirs, Algeria, Brucellosis, Cattle, Serology, Sheep, Prevalence

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