Systematic Review


While some *Ehrlichia* species, such as *E. ruminantium* and *E. minasensis*, are not popular even among veterinarians, they can infect cattle. The current study aimed to review studies on *Ehrlichia* spp. to evaluate its worldwide molecular prevalence, given the lack of information about bovine ehrlichiosis and the lack of previous systematic reviews and meta-analyses on this subject. In order to determine the molecular prevalence of *Ehrlichia* spp. in cattle, a systematic review of the literature was conducted in three databases. A meta-analysis with a random-effects model was performed to calculate the pooled prevalence with 95% confidence intervals (95% CI) and measures of heterogeneity were reported. Subgroup analyses were performed in terms of *Ehrlichia* species, country, and regions. The literature search yielded 1051 papers until August 1, 2019, with 71 studies entirely eligible for review. The pooled molecular prevalence for *Ehrlichia* at the individual level (N = 6232) was 2.3% (95% CI: 1.7-2.9%) with the highest value of 82.4%. Studies identified the highest pooled molecular prevalence of 6.6% (95% CI: 0.6-12.7%) for *E. canis*, followed by *E. ruminantium* (n = 4695, 75.33%) 52 studies, with 1.7% (95% CI: 1.1-2.3%) and *E. chaffeensis* with 1.5% (95% CI: 0.0-0.3%). Moreover, the obtained result was indicative of only one study addressing *E. minasensis*. As the findings suggested, heartwater (*E. ruminantium* infection) is a notifiable disease of domestic and wild ruminants, recorded by the World Organization for Animal Health. There is a possible risk of endemic heartwater in the Americas due to the climatic features. Furthermore, *E. minasensis*, *E. chaffeensis*, and *E. canis* were observed in cattle although the two last species could be a molecular misidentification with regard to their phylogenetic relationships with *E. minasensis*.
Keywords: Bacteria, Bovine, *Ehrlichia*, Systematic review, Tick-borne

Review

Uses of Immunoglobulins as an Antimicrobials Alternative in Veterinary Medicine.

Abd El-Ghany WA


ABSTRACT
As a result of increasing the resistance to antimicrobials in the field of veterinary medicine that reflects on human health, there is a great demand to use some drug alternatives. The application of avian immunoglobulins (IgY) is regarded as an important alternative strategy. The IgYs have been produced by several techniques and applied for animals using different methods. In addition, egg yolk IgYs have many advantages over blood type ones. There are many uses of IgYs in veterinary medicine. They have been used for the prophylaxis and treatment of different infections especially the enteric ones in cattle, pigs, rabbits, dogs, rats, mice, and fish species. Moreover, several studies showed the importance of IgY for competing for the in vivo enteric pathogens in poultry and the in vitro foodborne pathogen. Therefore, it is important to put a spotlight on applications of egg yolk immunoglobulins IgY in veterinary medicine to overcome the problems of antimicrobials’ resistance as well as the tissue residues that adversely affect human health.

Keywords: Advantages, Animals, Poultry, Production, Yolk antibodies

Changes of Body Condition Scores, Serum Biochemistry and Liver Triacylglycerol in Periparturient Holstein Friesian Dairy Cows Raised in a Small-Holder Farm.

Triwutanon S and Rukkwamsuk Th

Research Paper

Triwutanon S and Rukkwamsuk Th
This Negative energy balance (NEB) inevitably occurs in periparturient dairy cows. Its consequences are related to reduced cows' performances. Most studies concerning the NEB are performed in dairy cows of large-scale farms, particularly raised under non-tropical climate. The current study aimed to investigate the changes in body condition score, serum biochemical parameters, and liver triacylglycerol (TAG) accumulation in periparturient Holstein Friesian dairy cows raised by a small-holder farm. In this regard, 10 healthy pregnant dairy cows in a small-holder farm were recruited for the study. At 4 weeks before and 1, 2, 4, and 8 weeks after calving, blood samples were collected for determination of glucose, non-esterified fatty acid (NEFA), β-hydroxybutyrate (BHBA), and insulin-like growth factor-I (IGF-I) concentrations. BCS was evaluated at 4 weeks before and 2 weeks after calving. Liver samples were collected 4 weeks before and 2 weeks after calving to determine TAG concentration. Results revealed that serum NEFA and liver TAG concentration were elevated postpartum. Serum BHBA concentrations increased postpartum and the concentration indicated that dairy cows entered NEB condition as type I ketosis with a longer period. Serum IGF-I concentrations and BCS did not differ between before and after calving. In conclusion, dairy cows raised under small-holder tropical conditions suffered from serious NEB, though the cows had low milk production, as compared with the commercial non-tropical condition.

Keywords: Blood biochemistry, Dairy cow, Liver triacylglycerol, Negative energy balance, Small-holder farm
ABSTRACT

Immune responses, including the concentrations of immunoglobuline G (IgG) were calculated in the maternal blood serum at the assigned periods. Generally, female fetus, unvaccinated buffalo dams pregnant with a male fetus, and unvaccinated buffalo dams pregnant with a female fetus, showed a reduction in the IgG concentration up to 72 hours after birth. Vaccination improved the blood serum IgG concentration in all the groups. Additionally, the ScourGuard-4K vaccination was associated with an increase in the colostrum components except for IGF-1, which was not positively influenced by the vaccination. Generally, the blood serum concentrations of IGF-1 were significantly reduced in the vaccinated groups. The colostrum components were the highest at the birth time, then it decreased gradually up to 72 hours after the birth except that for the percentage of fat and lactose which showed gradual increases up to 72 hours to reach the normal composition of milk.

Keywords: Immunoglobulin, Colostrum, Pre-partum Vaccination, Buffalo Dams, Gender of Offspring.
ABSTRACT

Blood cockle, commonly known as a filter feeder, is found in many Surabaya traditional markets. Blood cockle, Escherichia coli

Blood cockle, Escherichia coli

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Blood cockle, Escherichia coli
Stenotrophomonas maltophilia is one of the different pathogens causing respiratory disorders in the equine. The antimicrobial susceptibility test illustrated the presence of multidrug-resistant and pan-drug resistant isolates which proved the association with MDR development in the equine health sector of Egypt. The predisposing factors may be attributed to insufficient veterinary healthcare, monitoring, and regulatory services, in addition to the intervention of animal health service providers, and/or farmers’ lack.

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Bacterial Profiles in Reproductive Tract of Dairy Cattle during Artificial Insemination

ABSTRACT

The present study was carried out to discover the protective and curative effects of alcoholic extracts of garlic (Allium sativum) and black seed (Nigella sativa) against experimental liver Fluke (Fasciola hepatica) infection using rabbit model. All the experimental groups were divided into control group, positive control, sulfadimidine treatment, garlic and black seeds pretreatment, garlic and black seeds treatment. The obtained results indicated that the composition of garlic and black seeds extracts had beneficial effects on gross lesions, sporulation, oocyst counts, and histopathology of experimental groups. The results showed that the sporulation inhibition of garlic and black seeds extracts were 49.2 and 23.7% respectively. The oocyst counts decreased significantly by using garlic and black seeds extracts. The histopathological examination revealed significant pathological changes in garlic treatment, experimental groups while leukocyte counts showed a significant decrease in control positive and sulfadimidine group. Overall, the present study suggests the use of garlic as a natural feed additive in rabbit production to minimize the economic losses caused by this parasite.

Evaluation of Sensory Quality and Nutritional Value of Fish Cakes (Perkedel) Made by E. magna and black seeds in rabbits experimentally infected by E. magna

ABSTRACT

Garlic and black seeds are two plant species that were used in food preparation in Central Java of Indonesia. The sensory quality of fish cakes (perkedel) was investigated using organoleptic tests, proximate analysis, and Recommended Dietary Allowance (RDA) nutrition. The cakes were made with tuna fish, milk fish, garlic, and black seeds. The authors used the cheese as the control product. The cakes were prepared with five formulations: P1, P2, P3, P4, and P5. The study used an experimental method with the main parameters of sensory quality (organoleptic test) and nutritional value (proximate analysis) in seven different cake treatments. The results showed that the composition of tuna fish and milkfish only revealed the best nutritional value of the cakes which are composed of tuna fish and milkfish. The study used Perkedel cakes made from tuna fish and black seeds in vivo treatment, garlic pretreatment, and garlic treatment groups in comparison with other groups. Both garlic and black seed extract had beneficial effects on improving the lesions grossly and more beneficial effects, compared to black seed extract. Therefore, it is recommended to use of sporulation inhibition, compared to sulfadimidine. Body weight gain increased in control and black seed pretreatment groups. While oocyst counts of control positive and sulfadimidine group that appeared thickened and deformed with hypertrophied enterocytes containing, Overall oocysts number per gram was significantly lower in the garlic treatment and in vivo oocysts in comparison with black seed extract and high significant efficacy of sporulation inhibition, and histopathological examination.

Perkedel cakes made from tuna fish and black seeds had beneficial effects in improving the nutritional value (proximate analysis) in seven different cake treatments. The results showed that the composition of tuna fish and milkfish only revealed the best nutritional value of the cakes which are composed of tuna fish and milkfish. The study used Perkedel cakes made from tuna fish and black seeds in vivo treatment, garlic pretreatment, and garlic treatment groups in comparison with other groups. Both garlic and black seed extract had beneficial effects on improving the lesions grossly and more beneficial effects, compared to black seed extract. Therefore, it is recommended to use of sporulation inhibition, compared to sulfadimidine. Body weight gain increased in control and black seed pretreatment groups. While oocyst counts of control positive and sulfadimidine group that appeared thickened and deformed with hypertrophied enterocytes containing, Overall oocysts number per gram was significantly lower in the garlic treatment and in vivo oocysts in comparison with black seed extract and high significant efficacy of sporulation inhibition, and histopathological examination.
Identification of Somatic Antigens of Adult Fasciola gigantica Isolated from Bali Cattle.

Sriasih M and Munjizun A.


ABSTRACT

In most tropical countries, such as Indonesia, fasciolosis is generally caused by Fasciola gigantica known as tropical liver fluke. However, most fasciolosis serodiagnostic tests have been developed solely for diagnosing fasciolosis caused by Fasciola hepatica (non-tropical liver fluke), and very few have been specifically designed for F. gigantica. The aim of this study was to determine the profile of antigenic proteins from the somatic extract of F. gigantica isolated from Bali cattle (Bos javanicus). The liver flukes were collected from a slaughtering house in Mataram, Indonesia. The somatic extracts were prepared by homogenizing in buffers containing 0.05 M NaCl, 0.02 M PMSF, and 0.05% Triton X-100. The characterization of the somatic extract proteins was performed using one-dimension gel electrophoresis and followed by Western blotting to determine the profile of its antigenic proteins. There were 14 bands of the somatic extracts with an estimated molecular weight ranging from 8 to 105 kDa shown on the gel electrophoresis. The results of the Western blot show that there were five prominent protein bands. Three out of five prominent antigenic proteins with molecular weights of 8, 27, and 33 kDa are promising to enrich the existence of antigens that have immunodiagnostic value for fasciolosis. Therefore, further studies are required to examine more deeply the potency of those three antigenic somatic proteins of F. gigantica.

Keywords: Bali cattle, F. gigantica, Immunodiagnostic, Somatic extract, Western Blot


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