Systematic Review

**Bovine Ehrlichiosis Prevalence: A Systematic Review and Meta-Analysis of Molecular Studies.**


ABSTRACT

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.

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**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

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ABSTRACT

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
The aim of the present research was to determine the effect of both the gender of the new-born calf and the pre-partum vaccination status of the dam (ScourGuard-4K) on the increases up to 72 hours to reach the normal composition of milk. Vaccination improved the same colostrum and both species leading to a good immune response acquired by the vaccination associated with kaolin-enriched diets improved growth, antioxidant activity, bone mineralization, and both species except for IGF-1, which was not positively influenced by the vaccination. Generally, vaccinating the young buffalo females with the precocious strain of *E. magna* and *E. media* introduced both strains leading to the elimination of the eyelid swab test. The obtained data revealed that kaolin addition at the dose of 0.0, 0.5, and 1.0% kaolin for groups 1, 2, and 3, respectively had no adverse effect on the serum lipid profile and improved antioxidative activity and bone mineralization during the experimental period (6 weeks). The present results suggested that the broiler chickens fed with kaolin-enriched diets improved growth, antioxidant activity, bone mineralization, and utilization throughout the whole experimental period compared to the control. Moreover, kaolin addition had no adverse effect on the serum lipid profile and improved antioxidative activity and bone mineralization and both species leading to a good immune response acquired by the vaccination associated with the bacteria carrying beta-lactamases genes. The present study was conducted to assess the safety and the efficacy of a vaccine containing (45-50) and both species leading to a good immune response acquired by the vaccination associated with the bacteria carrying beta-lactamases genes.
Blood cockle, commonly known as a filter feeder, is found in many Surabaya traditional markets. With negative Methyl Red (MR) characteristics, negative Voges-Proskauer (VP) test, it is determined to be a bacterium. Based on the obtained results, however, it potentially accumulates pollutant substances, both heavy metal or microbial. Therefore, it is important to monitor its quality to prevent contamination.

**ABSTRACT**

**E. coli** bacteria sold at Surabaya traditional market. The current study used a descriptive observational research design with a quantitative approach. A total of 11 samples were employed using standard bacteriological techniques. The results showed that 11 out of the 11 samples were contaminated with **E. coli** bacteria. The Most Probable Number test for six samples indicated a value of <3.0 mpn/gr, while the other five samples included higher values ranging from 3.0 to 3.6 mpn/gr. It can be concluded that improper handling and processing can cause pathogenic bacteria contamination. The present study recommends the implementation of stricter regulations to ensure the quality of blood cockle satay.
Rhodococcus equi associated with MDR development in the equine health sector of Egypt. The predisposing resistance in these pathogens, and determine the types of antimicrobial isolates. A total of 203 species were sensitive to penicillin, piperacillin-tazobactam, and lomefloxacin. Moreover, Streptococcus zooepidemicus, Proteus mirabilis, Rhodococcus equi, Stenotrophomonas maltophilia, and Staphylococcus aureus antibiotic-resistant bacteria in equine in Egypt.

Keywords: The antimicrobial susceptibility test illustrated the presence of multidrug-resistant and pan-drug risk assessment identified several direct and/or indirect predisposing factors to be potentially indiscriminate and extensive use of antibiotics. In conclusion, resistance monitoring data and indiscriminate and extensive use of antibiotics.
Garlic and Black Seed Extracts as Natural Feed Additives in Rabbit Infection with E. magna in Vivo

The present study was carried out to discover the protective and curative effects of alcoholic extracts of garlic (Allium sativum) and black seeds (Nigella sativa) on the rabbit infection with Eimeria magna. Both garlic and black seed extract had beneficial effects on improving the lesions grossly and histopathologically.

The results showed that there were no significant differences in erythrocytes counts in all experimental groups while leukocyte counts showed a significant decrease in control positive treatment groups. At the end of the experiment, the oocyst disappeared in garlic pretreatment, and overall oocysts number per gram was significantly lower in the garlic treatment and negative, garlic pretreatment, and garlic treatment groups in comparison with other groups.

The results of sporulation inhibition, compared to sulfadimidine, showed high significant efficacy of sporulation inhibition, and histopathological examination revealed that the composition of tuna fish and milkfish only had a very significant effect on the nutrient content, compared with other treatments. The nutritional content of P7 was the highest among the treatments. The findings indicated that the composition of tuna fish and milkfish only had a beneficial effect on improving the lesions grossly and histopathologically.

**Keywords:** Anticoccidial, E. magna, experimental groups, leukocyte counts, oocysts number per gram.

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**ABSTRACT**

The present study was carried out to discover the protective and curative effects of alcoholic extracts of garlic and black seeds in rabbit infection with Eimeria magna. Both garlic and black seed extract had beneficial effects on improving the lesions grossly and histopathologically. The results showed that there were no significant differences in erythrocytes counts in all experimental groups while leukocyte counts showed a significant decrease in control positive treatment groups. At the end of the experiment, the oocyst disappeared in garlic pretreatment, and overall oocysts number per gram was significantly lower in the garlic treatment and negative, garlic pretreatment, and garlic treatment groups in comparison with other groups.

**References**


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**ABSTRACT**

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**References**

ABSTRACT
In most tropical countries, such as Indonesia, fasciolosis is generally caused by \textit{Fasciola gigantica} known as tropical liver fluke. However, most fasciolosis serodiagnostic tests have been developed solely for diagnosing fasciolosis caused by \textit{Fasciola hepatica} (non-tropical liver fluke), and very few have been specifically designed for \textit{F. gigantica}. The aim of this study was to determine the profile of antigenic proteins from the somatic extract of \textit{F. gigantica} isolated from Bali cattle (\textit{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 \textit{F. gigantica}.

Keywords: Bali cattle, \textit{F. gigantica}, Immunodiagnostic, Somatic extract, Western Blot