Systematic Review


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*.
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 \textit{in vivo} enteric pathogens in poultry and the \textit{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.

\textbf{Keywords:} Advantages, Animals, Poultry, Production, Yolk antibodies

[Full text- PDF ] [XML] [Google Scholar] [Crossref Metadata]
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 present study was conducted to assess the safety and the efficacy of a vaccine containing ScourGuard-4k for mono or polyvalent anticoccidial vaccines in the future.

**ABSTRACT**

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 chemical composition and some biological parameters of the colostrum. Blood serum was collected from four groups of pregnant dams (four animals in each group) during the dry period and diarrhoea was induced in two groups presented diarrhea. Consequently, these precocious strains constitute good candidates in oocyst excretion were noticed in the vaccinated rabbits with the precocious strain of *Eimeria magna* and *Eimeria media* used separately or together against rabbit coccidiosis. The samples consisted of 56 young rabbits reared in specific pathogen-free conditions. Following the challenge inoculation, statistically significant decreases in the pathogens were observed in all challenged groups, but the vaccinated groups were not re-infected with the challenge inoculation. Hence, the results showed that oral vaccination with *Eimeria magna* and *Eimeria media* strains is a promising strategy against coccidiosis in rabbits and can be an alternative strategy to antibiotic treatment.

**Keywords:** Coccidiosis, ScourGuard-4K, volunteers, rabbit coccidiosis, pathogen-free conditions, oral vaccination.
Examination of Escherichia coli Bacteria in Blood Cockle Satay (Anadara granosa) Sold at Surabaya Traditional Market, Indonesia


ABSTRACT

Anadara granosa is one of the Surabaya local food made from the blood cockle (E. coli) which satay. However, it potentially accumulates pollutant substances, both heavy metal or microbial so that safety can be a problem.

Methods: This study aimed to investigate the contamination of bacteria in blood cockle satay. The current study used a descriptive observational cluster sampling. The obtained data were compared with those of Bergey's manual of determinative bacteriology and Indonesian national standard. Based on the obtained results, the most commonly found bacteria were E. coli.

Results:

- The Most Probable Number test for six samples indicated a value of <3.0 mpn/gr for one sample, 3.0 mpn/gr for two samples, and 3.6 mpn/gr for three samples. It can be concluded that the cockle satay is contaminated with bacteria.
- Based on the WHO standard, bacteria can cause diarrhea, dysentery, and other gastrointestinal disorders. Therefore, the consumption of cockle satay is potentially unsafe.

Conclusion:

- Cockle satay is one of the Surabaya local food made from the blood cockle. However, it potentially accumulates pollutant substances, both heavy metal or microbial so that safety can be a problem.

Keywords: Food product, Indonesia, Bacteria in Blood Cockle Satay, E. coli.
Assessment of Antimicrobial Resistance and Fecal Egg Counts of Gastrointestinal Parasites of Merino Sheep in Lesotho

**ABSTRACT**

The present study aimed to evaluate the effect of the agroecological zone, host age, and gender on the prevalence and faecal egg load of gastrointestinal parasites (GIPs) for six months in sheep of different age and gender groups in different agroecological zones. The overall prevalence rates of nematodes, coccidia, and cestodes were identified in this study. The overall prevalence rates of nematodes, coccidia, and cestodes were 65.0%, 38.2%, and 0.9%, respectively. The faecal egg counts for nematodes, coccidia, and cestodes were within the ranges of 0-20.3, 0-90, and 0-600 eggs per gram, respectively. Additionally, the faecal egg counts in the Quthing district ranged from 0 to 800, 6700, and 2000 eggs per gram for nematodes, coccidia, and cestodes, respectively. The prevalence of gastrointestinal parasites was significantly influenced by the agroecological zone, with the highest prevalence rates observed in the Quthing district. This study highlights the importance of developing appropriate deworming strategies to control gastrointestinal parasites in sheep in Lesotho.
The present study was carried out to discover the protective and curative effects of alcoholic extracts of garlic and black seed against coccidiosis. The objective was to evaluate the prophylactic and anticoccidial effects of garlic and black seed extracts in a rabbit model of coccidiosis. The study investigated the effects of garlic and black seed extracts on the number of oocysts, body weight gain, and the histopathological examination of intestinal villi. The results showed that garlic pretreatment had a significant inhibitory effect on sporulation compared to sulfadimidine. Body weight gain increased in control groups, while leukocyte counts showed a significant decrease in control groups compared to the other groups.

**ABSTRACT**

Garlic and black seed extracts were evaluated for their prophylactic and anticoccidial effects against coccidiosis in rabbits. The study aimed to determine the protective and curative effects of extracts of garlic and black seed against E. magna. The results showed that garlic pretreatment had a significant inhibitory effect on sporulation compared to sulfadimidine. Body weight gain increased in control groups, while leukocyte counts showed a significant decrease in control groups compared to the other groups.

**Keywords:** Prophylaxis, Anticoccidial, Eimeria magna, Garlic, Black Seed, Coccidiosis.
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