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 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
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 chemical composition and some biological parameters of the colostrum. Blood serum was sampled from vaccinated buffalo dams pregnant with a male fetus, vaccinated buffalo dams pregnant with a female fetus, non-vaccinated buffalo dams pregnant with a male fetus, and non-vaccinated buffalo dams pregnant with a female fetus. Colostrum samples were collected at the birth time and 6, 12, 24, 48, and 72 hours after birth for chemical analysis.

Colostrum samples were richer in IgG and IGF-1 levels and had a higher percentage of total solids, solids-not-fat, and ash content compared to milk. Additionally, vaccination improved the same colostrum parameters. The levels of insulin-like growth factor hormone (IGF-1) and total protein, fat, and lactose showed a gradual increase up to 72 hours to reach the normal composition of milk.

**Keywords:** Colostrum,scour-guard, male calves, female calves, buffalo dams, immunization.
Tekelan Leaves (Chromolaena odorata) Infusion and 10% Povidone-Iodine on Incision Wound Healing Process of Mice (Mus musculus)


**Figure 1**: Effects of ethanolic extract of the Chromolaena odorata on various level of repair.

**Keywords**: Povidone-iodine, Skin, Wound healing.
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 of knowledge about drugs. The misuse and overuse of antibiotics have led to the evolution of antibiotic-resistant bacteria in Egypt. The antimicrobial susceptibility test illustrated the presence of multidrug-resistant and pan-drug-resistant isolates which proved the risk assessment identified several direct and/or indirect predisposing factors to be potentially associates with Antimicrobial Drug Resistance.

**Keywords:** ampicillin-sulbactam, piperacillin-tazobactam, and cefoperazone.
**ABSTRACT**


**Keywords:** Black seed, Garlic, Anticoccidial, Prophylactic, Rabbit, Coccidiosis.

The present study was carried out to discover the protective and curative effects of alcoholic extracts of black seed and garlic on the growth and health of rabbits experimentally infected with *E. magna*. The study was conducted to determine the incidence of coccidiosis, oocyst, and sporulated oocyst in experimental groups while leukocyte counts showed a significant decrease in control feeding as a prophylaxis and treatment for coccidiosis.

**Results:**
- In vitro pretreatment groups, compared to the control positive, sulfadimidine treatment, and black seed extract, garlic treatment showed more beneficial effects, compared to black seed extract. Therefore, it is recommended to use garlic treatment,
- Microscopically. The results obtained in the present study proved that garlic pretreatment had a positive effect, compared to sulfadimidine. While black seed extract showed high significant efficacy in inhibition, compared to sulfadimidine. Moreover, it also produced energy of 162 kcal/100g.

**Conclusion:**
- The present study was carried out to discover the protective and curative effects of alcoholic extracts of black seed and garlic on the growth and health of rabbits experimentally infected with *E. magna*. The study was conducted to determine the incidence of coccidiosis, oocyst, and sporulated oocyst in experimental groups while leukocyte counts showed a significant decrease in control feeding as a prophylaxis and treatment for 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