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.
**Keywords:** Bacteria, Bovine, *Ehrlichia*, Systematic review, Tick-borne

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**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
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 levels of insulin-like growth factor hormone (IGF-1) and Colostrum samples were collected at the birth time and 6, 12, 24, 48, and 72 hours after birth for female fetus, unvaccinated buffalo dams pregnant with a male fetus, and unvaccinated buffalo dams pregnant with a female fetus), in the pregnancy period, at the giving-birth period and after hours after the birth except that for the percentage of fat and lactose which showed gradual immunoglobuline G (IgG) were calculated in the maternal blood serum at the assigned periods. Additionally, the chemical composition and some biological parameters of the colostrum were measured. Blood serum was collected from four groups of pregnant dams (four animals in each group) during the dry period. 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 a gradual decrease.

**Results**
Kaozin supplementation improved the following:
- Growth performance
- Immune response
- Antioxidative capacity
- Bone mineralization

**Keywords:** Colostrum, Immunoglobuline G (IgG), Insulin-like growth factor hormone (IGF-1), Chemical composition, Biological parameters.
**Keywords:**

- Research design with a quantitative approach.
- A total of 11 samples were employed using negative Methyl Red (MR) characteristics, negative Voges-Proskauer (VP) negative citric acid fermentation, and positive indole.
- 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 blood cockle satay samples sold at Surabaya traditional market (Indonesia) were contaminated with Escherichia coli (E. coli).

**Study Aimed to Investigate the Contamination of Blood Cockle Satay Samples Sold at Surabaya Traditional Market.**

The current study used a descriptive observational study to investigate the contamination of Blood cockle satay samples sold at Surabaya traditional market. The obtained data were compared with those of Bergey’s manual of determinative bacteriology. The results revealed that the ethanolic extract of Dichrostachys glomerata induced a significant decrease in the number of post-implantation resorption and ovaries weight. The extract at 100 mg/kg body weight showed a significant increase in the number of fetuses per dam and viable fetuses. The extract significantly increased the activity of catalase and decreased the progesterone level. The extract minimised reproductive stress and subsequently improved the reproductive performance of mice.

**Conclusion:**

The Tekelan Leaves (Chromolaena odorata) infusion and 10% Povidone-Iodine can be used as an alternative of povidone-iodine with an optimal concentration of 20%.

**Key Takeaways:**

- The Tekelan Leaves (Chromolaena odorata) infusion can be used as an alternative of povidone-iodine with an optimal concentration of 20%.
- The ethanolic extract of Dichrostachys glomerata induced a significant decrease in the number of post-implantation resorption and ovaries weight.
- The extract at 100 mg/kg body weight showed a significant increase in the number of fetuses per dam and viable fetuses.

**References:**

Gram-positive and mixed infections could be accompanied. The current study aimed to detect,


Worm infections are found in livestock and can be transmitted to humans. The present study, the whole worms extracted of T. vitulorum and M. digitatus have been analyzed using Western Blot Analysis to detect cross-reaction in T. vitulorum protein with Anti-M. digitatus serum. This study aimed to determine specific proteins that caused cross-reaction between whole worm extract of M. digitatus and M. digitatus serum obtained. 12 protein bands that each relative molecular mass (Mr) valued of 176, 124, 92, 85, 69, 64, 59, 47, 46, 31, 26, 12 were detected in the whole worm extract of T. vitulorum and M. digitatus.

Toxocara vitulorum is a worm species which commonly infected people. Cross-reaction among worms can generate false positive to establish helminthiasis diagnosis through antibody inspection. The major objective of this study was to evaluate the protein and anti- Toxocara vitulorum protein and anti- Toxocara vitulorum antibody in serum obtained 12 protein bands that each relative molecular mass (Mr) valued of 176, 124, 92, 85, 69, 64, 59, 47, 46, 31, 26, 12 were detected in the whole worm extract of T. vitulorum and M. digitatus.

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The results showed that the majority of the Merino sheep (>69%) in both districts had lower faecal egg counts (FEC) data were analyzed for repeated measures using GEE. In total, three types of GIPs, namely nematodes, coccidia, and cestodes, which could have a tremendous impact on their health and productivity. It is, therefore, of significant importance to develop the deworming strategy for these parasites.
ABSTRACT

The present study was carried out to discover the protective and curative effects of alcoholic black seed and garlic extracts on coccidiosis in rabbit. The study showed that garlic pretreatment and treatment had significant effects (P < 0.05) on sporulation inhibition, compared to sulfadimidine. While black seed extract showed high significant efficacy (P < 0.05) on sporulation inhibition, compared to sulfadimidine. The results obtained in the present study proved that garlic pretreatment had a more beneficial effects, compared to black seed extract. Therefore, it is recommended to use garlic as a natural feed additive in rabbit feeding as a prophylaxis and treatment for coccidiosis.

Keywords: Garlic, Black seed, Coccidiosis, Rabbit, Prophylaxis, Anticoccidial.

Organoleptic tests of fish cakes (Perkedel) of tuna fish (Euthynnus affinis) and milkfish (Chanos chanos) were conducted to determine the best nutritional value of the cakes which are composed of tuna fish and milkfish. The study used seven different cake treatments. The results showed that there were no significant differences in erythrocytes counts in all groups, compared to the other groups. The nutritional content of P7 was the best nutritional value (proximate analysis) in seven different cake treatments. The results showed that there were no significant differences in erythrocytes counts in all pretreatment groups, compared to the control positive, sulfadimidine treatment, and black seed pretreatment groups. While oocyst counts of control positive and sulfadimidine groups were increasing oocysts similarly at the end of the experiment with repeated cycles. The present study was carried out to discover the protective and curative effects of alcoholic black seed and garlic extracts on coccidiosis in rabbit. The study showed that garlic pretreatment and treatment had significant effects (P < 0.05) on sporulation inhibition, compared to sulfadimidine. While black seed extract showed high significant efficacy (P < 0.05) on sporulation inhibition, compared to sulfadimidine. The results obtained in the present study proved that garlic pretreatment had a more beneficial effects, compared to black seed extract. Therefore, it is recommended to use garlic as a natural feed additive in rabbit feeding as a prophylaxis and treatment for coccidiosis.

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Keywords: Garlic, Black seed, Coccidiosis, Rabbit, Prophylaxis, Anticoccidial.
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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