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

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

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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

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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
ABSTRACT

Immunoresponse, Blood Serum Changes, and Bone Development in Broiler Chickens Treated with Natural Kaolin


In the current study, the effects of different inclusion rates of Egyptian kaolinite in broiler chickens' diet on growth performance, immune response, some blood serum changes, and bone development were evaluated. A total of 240 unsexed one-day-old Avian 48 chickens were used in this experiment. The chickens were individually weighed and divided into four groups, each consisting of 60 birds. The groups received one of the following treatments: group 1, fed on the basal diet; group 2, fed on the basal diet +0.5% kaolin; group 3, fed on the basal diet +1.0% kaolin; group 4, fed on the basal diet +1.5% kaolin. Kaolin supplementation improved the following:

- Growth performance
- Immune response
- Antioxidative activity
- Bone mineralization

Results

Kaolin supplementation improved the following:

- Growth performance
- Immune response
- Antioxidative activity
- Bone mineralization

Conclusions

Kaolin supplementation, particularly at 1.0% and 1.5% levels, significantly improved the body weight gain and feed conversion ratio, hematological parameters, blood serum changes, and bone development in broiler chickens.

Keywords:

Growth, Performance, Haematological, Kaolin, Bone Development, Chickens, Treatment.
Cockle satay is one of the Surabaya local food made from the blood cockle (*Mus musculus*). A research design with a quantitative approach was employed. A total of 11 samples were used, employing determinative bacteriology and Indonesian national standard. Based on the obtained results, improper handling and processing can cause pathogenic bacteria contamination. The present study aimed to investigate the contamination of *Escherichia coli* in blood cockle satay samples sold at Surabaya traditional market (Indonesia). The obtained data were compared with those of Bergey's manual of bacteria. It was concluded that the blood cockle satay samples sold at Surabaya traditional market potentially accumulates pollutant substances, both heavy metal or microbial.

### Keywords:
- Mus musculus
- Bacteriology
- Indonesian National Standard
- Blood Cockle Satay
- Surabaya Traditional Market
- Escherichia coli

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Research and Evidence on Using Platelet Rich Plasma as a Therapeutic Modality for Veterinary Applications


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Examination of *Escherichia coli* Bacteria in Blood Cockle Satay (*Anadara granosa*) Sold at Surabaya Traditional Market, Indonesia


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### Figure 1: Effects of ethanolic extract of *Dichrostachys glomerata* on various levels of reproductive performance

- Female gitten pig
- Exhaomic extract of *D. glomerata*
- Female gitten pig
- Improving reproductive characteristics female gitten pig

### Table 1: Effects of ethanolic extract of *Dichrostachys glomerata* on various levels of reproductive performance

<table>
<thead>
<tr>
<th>Condition</th>
<th>Control</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fetal weight</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fetal crown-rump length</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ovaries weight</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

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### Figure 2: Schematic diagram of wound healing process

- White Blood Cells
- Pilsurs
- Activated Platelets
- Growth Factors
- Angiogenesis
- Collagen Synthesis
- Bone regeneration
- Stimulates Procollagen Synthesis
- Cell Differentiation
- Mitogenesis
- Cell Growth

---

Skin infections are most commonly caused by *Staphylococcus aureus*. The most commonly used synthetic drugs to overcome skin problems is povidone-iodine with an optimal concentration of 20%.

### Keywords:
- Chromolaena odorata
- Histopathology
- Povidone-Iodine
- Skin
- Wound healing

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*Teklak Leaves (Chromolaena odorata) Infusion and 10% Povidone-Iodine on Incision Wound Healing Process of Mice (Mus musculus)*


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The results showed that the total observation value in the P0 and P2 groups was lower than the P1 group. Therefore, it can be concluded that the ethanolic extract of *Dichrostachys glomerata* fruit infused in 10% povidone-iodine and 0.9% saline solutions have a positive effect on the number of incision wound healing of mice. The interactions of ethanolic extract of *Dichrostachys glomerata* fruit infused in 10% povidone-iodine with 0.9% saline solutions showed a significant difference with the control group (P0). The ethanolic extract of *Dichrostachys glomerata* fruit infused in 0.9% saline solution showed no significant difference with the control group (P0) and the group treated with 200 mg/kg body weight (P1) but showed a significant difference with the group treated with 400 mg/kg body weight (P2) and 600 mg/kg body weight (P3).
services, in addition to the intervention of animal health service providers, and/or farmers’ lack
were sensitive to vancomycin 33.3% while 16.7% to erythromycin and doxycycline,
bacteria were analyzed using susceptibility test for different antibacterial agents. The findings
K. pneumoniae
is sensitive to aztreonam and 20% of isolates sensitive to Piperacillin-tazobactam. All
Proteus mirabilis
Staphylococcus aureus
indicated that 38 (74.5%) animals were positive for the isolation of bacteria causing respiratory
different samples were collected from 42 horse foals, 5 adult horses, and 4 donkey foals from
Rhodococcus equi
(100%) were sensitive to cefotaxime, meropenem, and doxycycline. All isolates of Enterococcus
Pseudomonas aerugenosa
Streptococcus equi
of knowledge about drugs. The misuse and overuse of antibiotics have led to the evolution of
Keywords:
maltocephalia,
was only sensitive to oxytetracycline and lomefloxacin.
factors may be attributed to insufficient veterinary healthcare, monitoring, and regulatory
ampicillin-sulbactam, piperacillin-tazobactam, and cefoperazone.

ABSTRACT
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Age, Agroecological zones, Gastrointestinal parasites, Gender, Lesotho,

Prevalence and Faecal Egg Counts of Gastrointestinal Parasites of Merino Sheep in

The present study aimed to evaluate the effect of the agroecological zone, host age, and

The majority of the Merino sheep (>69%) in both districts had lower faecal egg

productivity. It is, therefore, of significant importance to develop the deworming strategy for

significant differences for the GIPs prevalence. Moreover, faecal egg counts (FEC) data were

nematodes, coccidia, and cestodes, respectively. In the Maseru district, the overall faecal egg

counts (100-800) per gram. The agroecological zone affected the nematode infestation in both

nematodes and protozoal coccidia, which could have a tremendous impact on their health and

The prevalence and faecal egg load of gastrointestinal parasites (GIPs) for six months

districts. Coccidia in the Quthing was higher in the mountain areas. In the Maseru district, the

prevalence and faecal egg load of gastrointestinal parasites (GIPs) for six months

was higher in juveniles, compared to adults. Age and gender did not affect the prevalence and

were examined using the McMaster technique. The data were analyzed through generalized

ABSTRACT
nematode infestation was not age-dependent; however, in the Quthing district, the prevalence

were 53.9%, 46.5%, and 4.3% in the Maseru district, respectively.

The present study aimed to evaluate the effect of the agroecological zone, host age, and

from 0 to 8.000, 6.700, and 2.000 eggs per gram for nematodes, coccidia, and cestodes,

Mahlehla MA

Prevalence and Faecal Egg Counts of Gastrointestinal Parasites of Merino Sheep in

Anggraini DM, Kusnoto IH, and Sarudji S.

ABSTRACT
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protein and anti-
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Key words:
M. digitatus.
T. vitulorum
M. digitatus
serum by using the western blot technique.

This study aimed to determine specific proteins that caused cross-reaction between

ABSTRACT
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Toxocara vitulorum
M. digitatus.
T. vitulorum
M. digitatus
Western blot
Western Blot Analysis to Detect Cross-reaction in Toxocara vitulorum Protein

Cross-reaction, Mecistocirrus digitatus, Specific protein, Toxocara vitulorum,

Mahlehla MA, Mahumba MS, Phubile YW, Khabedzi PG, Mabadi I, and Motloua

Klebsiella pneumoniae subsp.
Milk fish, Organoleptic test, Proximate analysis, RDA nutrition, Tuna fish

Numerous developmental stages of sporulation inhibition, compared to sulfadimidine. Body weight gain increased in control E. magna, Nageib BR, El-Hendy AHM and Hassanin AAA. In vitro Keywords:

Experimental groups while leukocyte counts showed a significant decrease in control pathological changes in in vivo more beneficial effects, compared to black seed extract. Therefore, it is recommended to use to minimize the economic losses caused by this parasite.

Positive feeding as a prophylaxis and treatment for coccidiosis E. magna revealed microscopically. The results obtained in the present study proved that garlic pretreatment had a group that appeared thickened and deformed with hypertrophied enterocytes containing infected by Similarly, the pretreatment groups. While oocyst counts of control positive and sulfadimidine pretreatment groups, compared to the control positive, sulfadimidine treatment, and black seed [Full text-

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) in rabbits experimentally, Rabbit Leishmania infantum/chagasi [Full text-

Evaluation of Sensory Quality and Nutritional Value of Fish Cakes (Perkedel) of Tuna Fish (Euthynnus affinis) and Milk Fish (Chanos chanos) [Full text-

Evaluation of In Vivo Prophylactic and Anticoccidial Effects of Black Seed and Garlic Extracts in

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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