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## **The effects of 5% Closantel liquid suspension against natural infection of gastrointestinal nematodes, cestodes and liver flukes in sheep**

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Gastrointestinal parasite infections in sheep are responsible for severe clinical syndromes and profound production losses. Anthelmintic resistance is now widespread, so control requires integrated management strategies. For this reason the present study was conducted on 28 mature young female sheep for determining the effects of different doses (1, 1.5 and 2 times of therapeutic dose) of closantel liquid suspension (Behrood Atrak Co.) on gastrointestinal nematodes, cestodes and liver flukes. At the beginning of the study, fecal samples were taken and the number of eggs per gram of faeces (EPG) was determined using saturated salt solution and saturated zinc sulfate solution, respectively. Fecal samples were taken at 12, 24 and 36 hours and 7 and 14 days after treatment and EPG was determined. Results showed that the 5% closantel liquid suspension in different doses could significantly reduce the number of nematodes and cestodes EPG at 12 hours after the beginning of treatment. But the effect of this drug on trematodes EPG was begun at 24 hours after the beginning of treatment ( $P < 0.001$ ). These findings showed that the resistance to closantel was not a major problem in our area.

**Keywords:** Closantel, Anthelmintic drug, Sheep, Endoparasite

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## **A study of the antimicrobial activity of essential oil of *Eucalyptus Camadulensis* against *Escherichia coli* infection in broiler chicken**

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Minimum Inhibitory Concentration (MIC) were determined for essential oil of *Eucalyptus* (*Eucalyptus Amanuensis*) against *Escherichia coli*. *E. coli* was separated of Colibacillosis infection of poultry. In this experiment in vitro condition use the range of 20%, 10%, 5%, 2.5%, 1%, 0.3%, 0.1%, 0.01% of *Eucalyptus* oil and 5 $\mu$ L of oil were poured in the wells in bacteria culture and plates were incubated at 37C for 24 h at the end of 24 h the diameter of the resulting zone of inhibition. Data showed that *Escherichia coli* was sensitive to *Eucalyptus* oil and MIC of this oil was 2.5%. the study indicate that essential oils of plant can use as potential antibacterial (anti-*E. coli*) instead of antibiotics. this results must repeat in vivo condition.

**Keywords:** *Eucalyptus* oils, *Escherichia coli*, Broiler, Colibacillosis