

ANTHELMINTIC ACTIVITY OF ADHATODA VASICA AGAINST GASTROINTESTINAL NEMATODES OF SHEEP

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Abstract

The anthelmintic activity of *Adhatoda vasica* was evaluated against the gastrointestinal nematodes of sheep through egg hatch and larval development tests *in vitro* and faecal egg counts reduction test *in vivo*. *In vitro* studies revealed that aqueous and ethanolic extracts at the concentration of 3.12, 6.3, 12.5, 25.0 and 50.0 mg / ml exhibited ovicidal and larvicidal effects ($p < 0.05$) against the eggs and larvae of gastrointestinal nematodes. The highest effective dose (ED50) value of *A. vasica* extract was recorded on the eggs of *Chabertia ovina* (18.20 mg / ml) with both aqueous and ethanolic extracts whereas the lower value was recorded on the eggs *Ostertagia circumcincta* (11.14 mg / ml) with ethanolic extract. Similarly, the higher ED50 value of *A. vasica* extracts was recorded against the larvae of *Oesophagostomum columbianum* (19.50 mg/ml) and the lower value against the larvae of *H. contortus* (12.88 mg / ml) with aqueous and ethanolic extracts respectively. *In vivo* studies revealed that experimental animal groups treated with the doses of 200 mg/kg of either aqueous or ethanolic extracts of *A. vasica* exhibited higher ($p < 0.05$) reduction rate on faecal egg counts (FEC) as compared to untreated groups (negative control). The highest reduction rate on FEC of treated animal groups recorded was 62.0 and 58.0 per cent with ethanolic and aqueous extracts respectively at the dose of 200 mg/kg on the 14th day post treatment whereas at the treatment doses of 50 and 100 mg/kg, the reduction rate ranged between 4.51 to 37.26 percent from 3rd onward to 14th day post treatment. The current study showed that *A. vasica* whole plant extracts possess anthelmintic activity, thus justifying their use in traditional and veterinary practices.