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Terminalia catappa: chemical composition, *in vitro* and *in vivo* effects on *Haemonchus contortus*

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Highlights

- *In vitro*, *Terminalia catappa* extracts had anthelmintic effects similar to Thiabendazole in a multidrug-resistant *Hameonchus contortus* egg hatch tests.
- Phytochemical prospection revealed tannins, alkaloids, flavonoids, saponins, phenols, and terpenoids in all plant extracts.
- Terpenoids, alkaloids, saponins, and fatty acids in seed extracts may account for its anthelmintic activity in vitro.
- When fed at 2g/ Kg of body weight for 5 days, dried whole fruit powder was ineffective to control *Haemonchus contortus* in sheep.
- At 44 g/ animal, dried fruit powder of *T. catappa* presented no toxicity to sheep.

Abstract

Haemonchus contortus is the most important nematode in small ruminant systems, and has developed tolerance to all commercial anthelmintics in several countries. *In vitro* (egg hatch assay) and *in vivo* tests were performed with a multidrug strain of *Haemonchus contortus* using *Terminalia catappa* leaf, fruit pulp, and seed extracts (*in vitro*), or pulp and seed powder in lambs experimentally infected with *H. contortus*. Crude extracts from leaves, fruit pulp and seeds obtained with 70% acetone were lyophilized until used. In vitro, the extracts had LC_{50} = 2.48 µg/mL (seeds), LC_{50} = 4.62 µg/mL (pulp), and LC_{50} = 20 µg/mL (leaves). *In vitro*, seed