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PLANTS VERSUS ZOMBIES INTESTINAL WORMS!



A research project by scientists from the University of Pretoria has determined that certain plant species can be a useful boon for livestock in the fight against intestinal worms.

The roundworm parasite *Haemonchus contortus*, also known as the barber's pole worm or wireworm, is a highly pathogenic nematode afflicting ruminants. It is a blood-sucking parasite that attaches to the abomasal mucosa causing anaemia, oedema, and death in heavily infested sheep and goats.

BLOOD-SUCKING PARASITE, INDEED

Infection with roundworms, known as haemonchosis, is responsible for massive economic losses in small ruminant farms around the world. A major issue restricting control of these parasites is growing resistance against chemical anthelmintics.

South Africa is fortunate to host a remarkable diversity of plant species, coupled with rich cultural traditions encompassing the use of these plants, to treat various illnesses of animals and humans. Plants are known to be a source of highly useful medicinal chemical compounds, having delivered such well-known medications as quinine, morphine, and codeine.

The aim of our research project was to test extracts of selected plants, including those used in traditional ethnoveterinary

medicine against worm infestations in livestock, for efficacy against the barber's pole worm.


The active compounds were then isolated from the most promising plant species and chemically characterised. Faeces were collected from sheep infected with *Haemonchus contortus* and used as a source of nematode eggs. The guidelines of the World Association for the Advancement of Veterinary Parasitology were used to test the ability of the plant extracts and purified compounds to inhibit the hatching of *Haemonchus contortus* eggs as well as the development of larvae into the infective stage.

WORM-BUSTING PLANTS

From a wide range of plant species targeted for investigation, the common bulrush (*Typha capensis*) and rubber fig (*Ficus elastica*) had very promising activity against the parasitic nematodes.

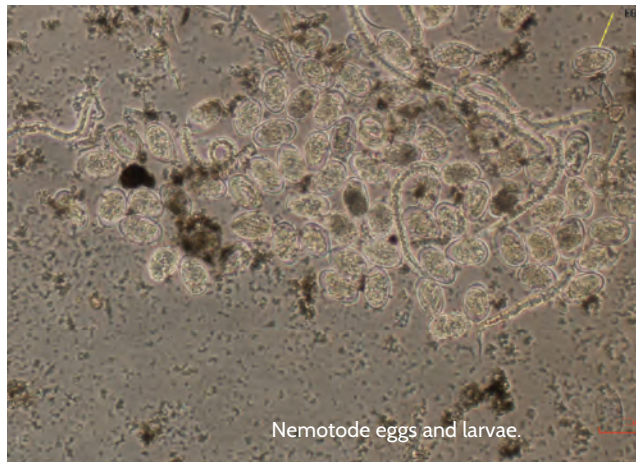
Some pure chemicals were identified from the most active extracts and these could, potentially, be further developed into new scaffold anthelmintic drugs.

Alternatively, the extracts or fractions of the active extracts could be formulated into low-cost remedies to help in reducing the worm burden of affected small ruminants.

Many more plant species still remain to be tested in the continuing search for useful medications to combat parasite infestations. 



Nematodes under the microscope.



Nematode eggs and larvae.