

MANAGING HAEMONCHUS BURDEN IN LAMBS USING A COPPER OXIDE WIRE PARTICLE BOLUS

An alternative method of parasite control?



HAEMONCHUS CONTORTUS

Residing in the mucosal layer of the abomasum *H. contortus*, Barbers pole worm/wireworm, feeds on blood

There is limited host resistance/ resilience to infection which leads to anaemia, abomasal damage reduced growth rates, impaired reproduction and possible death

Anaemia caused by *H. contortus* can be severe, 20 worms can lead to a 1ml blood loss/day

High parasite fecundity leads to heavily contaminated pastures

H. contortus is resistant to many currently available anthelmintics

COPPER OXIDE WIRE PARTICLES (COWP)

Copper can be an alternative method of parasite control

Important micro nutrient for health BUT there is a risk of copper toxicity in some breeds

Availability of other elements such as Mo, S and Fe influence the uptake and toxicity of Cu

There is less risk using COWP at the recommended dose as the form of copper in COWP is poorly absorbed by sheep

With climate change there is likely to be an increase in *H. contortus* infections in temperate regions

THE CASE STUDY

Having previously lost 30 lambs to haemonchiosis an organic farmer and his vet wished to trial the use of COWP in Easycare sheep.

488, 8 week old lambs were weighed and those with even tag numbers were treated with COWP, while the remainder acted as controls.

12 sentinels were chosen from COWP and 12 from the untreated group. Faecal samples were analysed for *H. contortus* by larval culture every 2 weeks.



PARASITE BURDENS

Lambs receiving COWP apparently had higher growth rates in the first month but there was no overall difference in the groups over time.

COWP are not regarded as effective against other gastrointestinal nematodes (GIN) - lambs in the trial had increasing mixed parasite loads which necessitated the lambs being drenched two months into the trial.

Larval cultures indicated presence of *H. contortus* in all lambs.



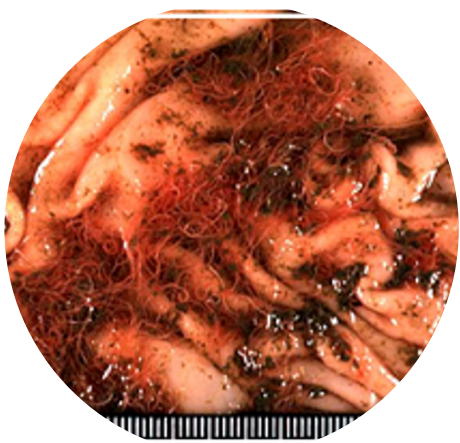
COWPS image American Consortium for small ruminant parasite control

***H. contortus* causes severe anaemia, infected animals have pale conjunctiva utilised in FAMACHA scoring**

Infected animals may exhibit 'bottlejaw'

POTENTIAL AND LIMITATIONS

- COWP are generally recommended as one of a suite of control measures
- If large burdens of other GINs are present the gut pH may change meaning that the copper may not be released from the wire particles
- FAMACHA is a diagnostics method whereby only certain sheep or goats in a flock are selected for treatment, with selection based on the degree of anaemia displayed in the mucous membrane of the eye
- When managing parasites holistically COWP should be used as part of a FAMACHA programme and animals showing some anaemia (score 3) treated with COWP any higher scores (4/5) should be treated with effective anthelmintics immediately
- FAMACHA should not be relied on exclusively as individual animals differ in their presentation of anaemia



***Haemonchus contortus* in abomasum**
(image Indiana Animal Disease Diagnostic Laboratory)

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