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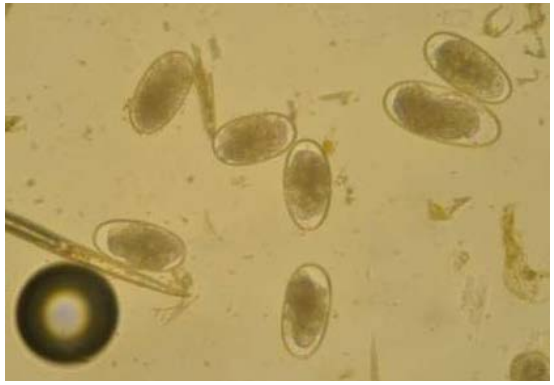
An extensive investigation into parasite control practices, the parasites present and their dewormer sensitivity on UK Thoroughbred studs



VAC reporter C Marr

By Professor Jacqui Matthews

Prj: 755

Overview

- There is increasing evidence that worms are becoming resistant to anthelmintics, the dewormers that are used to control parasite investigation. The current status of anthelmintic resistance in breeding Thoroughbreds in the UK required detailed investigation.

- This study was performed to investigate parasite control practices, parasites present on studs and the sensitivity of these parasites to the dewormers currently available for use in horses.

- This study is relevant to the Thoroughbred because all horses are susceptible to worm infections and heavy worm infection can cause loss of body condition and serious disease.

Aims and objectives

- Perform a questionnaire survey on management practices on a cohort of studs
- Calculate the prevalence of cyathostomins (small red worm) and ascarids (*Parascaris equorum)*
- Conduct anthelmintic sensitivity study on a sub-group of premises by undertaking faecal egg count reduction tests, a sensitive method to identify drug resistance.
- Use larval migration inhibition test to assess levels of sensitivity to ivermectin in cyathostomin populations from the studs

Summary of what was done

- Questionnaire conducted on 61 studs to obtain understanding of current practices. Statements supported by statistical analysis

- Faecal samples analysed from 1221 horses @ 22 studs. Distribution of strongyle eggs amongst individuals in relation to age, gender & management investigated in detail

- 426 faecal egg count reduction tests performed on samples from 288 horses at 14 studs.
  - Tested ivermectin, moxidectin , pyrantel & fenbendazole. In some, measured strongyle egg reappearance
  - L3 from 6 studs tested in migration assay for ivermectin sensitivity

Main outcomes

- We have reliable evidence on the prevalence of roundworms and their distributions in horses of different categories and their drug sensitivity
- Management practices at many studs are likely to increase the spread of dewormer resistance and efforts now need to be made to disseminate best practice control
- Horses on all studs harboured cyathostomin infections but, in all populations, egg distribution was focussed within specific horses, i.e. certain individual horses harbour most of the worms.
- This confirms that targeted treatments have potential to control worms on studs
- Cyathostomin resistance to all THREE classes of dewormer was found on some of the studs tested

Impact on the Thoroughbred

- Because of dewormer resistance, worm control needs to comprise a balance of restricting burdens in susceptible horses with applying treatments in a manner more selective than mass treatments that are applied traditionally

- There is a critical need to deploy strategies that are less dependent on dewormers and more reliant on management-based control. A prerequisite to developing these is an understanding of the distributions of the relevant worm species in field settings and their sensitivity to the drugs available. This project has provided vital information relating to all of these issues.

Potential next steps

- More sustainable control programmes need to be implemented immediately
- Integrated (environmental & chemical) control is crucial because we have identified resistance to all types of dewormers
- We need to use these data to design rational platforms and diagnostic tools to slow the spread of resistance, and to train those qualified to prescribe anthelmintics to make more informed decisions with respect to treatments.

Training SQPs and vet nurses in faecal egg count methods at Moredun

To find out more about equine parasites:

J.B. Matthews, Facing the threat of equine parasitic disease

http://onlinelibrary.wiley.com/doi/10.1111/j.2042-3306.2010.00356.x/full