

# WORMING

## **The problems we face:**

Keeping our horses disease-free  
Preventing further resistance to wormers

## **How can we achieve the balance?**

Increased monitoring of worm infections  
Increased monitoring of the effectiveness of wormers.  
Responsible, veterinary-supervised worming programmes.

## **DISEASES ASSOCIATED WITH HIGH WORM BURDENS**

- Small strongyles (redworms) - Diarrhoea, weight loss, colic, poor condition, death
- Tapeworms - Colic, death
- Pinworm - Itchy bottoms, possible colic
- Bots - Rarely cause clinical disease
- Habronema - Very rare cause of conjunctivitis/inflammatory lesions in the stomach
- Lung worm - Rare cause of coughing in horses grazing with donkeys
- Large strongyles - Very rare now, previously a cause of serious colic
- Ascarids - Colic in youngsters
- Strongyloides - Diarrhoea in foals

## **WORMER RESISTANCE**

Why has it happened?

- Over-worming because wormers were de-regulated from prescription-only and made available over the counter
- Worming before the Egg Reappearance Period (ERP) of the last wormer used
- Blanket worming all horses
- Under-dosing
- Under-estimating the horse's weight
- Horse not swallowing the entire dose

What can we do about it?

- Improve pasture-management
- Dose correctly
- Targeted worming
- Faecal Worm Egg Counts (FWEC)
- Saliva/blood ELISA to assess tapeworm burden/exposure
- Faecal worm egg count reduction tests (FWECRT) to make sure worming has been effective
- An ELISA test for encysted redworm is currently being developed and will be available within 2 years.

## WORMING PROGRAMMES

Designing a safe worming programme requires a thorough understanding of:

- Individual and herd factors such as age, concurrent disease or medications
- Pasture management (poo-picking, co-grazing, paddock rotation, stocking density)
- Actions of all classes and types of wormers
- Life-cycles of all internal parasites (eggs, larval & adult stages, intermediate hosts)
- The latest veterinary research
  - Re-emergence of large strongyles, a cause of serious colic, is occurring in Denmark due to such infrequent worming with negative worm-egg-counts.

At New Forest Equine Vets, we have a thorough, up-to-date understanding of parasitology, and will advise on a safe worming programme once we have collected enough information to understand your individual situation. This ensures our best advice to minimise the risk of disease both now and in future by managing resistance-issues.

For a tailor-made worming programme or to register for complimentary correctly timed reminders for wormers, faecal worm egg counts, faecal worm egg count reduction tests and tapeworm ELISA, please complete the online questionnaire at [www.nfev.co.uk](http://www.nfev.co.uk)

### 1. TARGETED WORMING FOR HORSES OVER 3 YEARS OF AGE

*'Responsible management of worms now and in future, by controlling emerging resistance'*

Despite several large companies providing worm-egg-counting services there remains a lot of misunderstanding, some of it quite dangerous, among owners regarding results. There are many limitations that need to be understood to ensure a safe targeted programme, which is why we encourage veterinary guidance and interpretation of test results.

#### **A safe targeted worming programme is based on:**

- Annual treatment of encysted redworms with moxidectin at the correct time of year.
- Good pasture management currently and historically
- Treatment of tapeworms based on ELISA results (or with an annual/biannual treatment).
- Treating for redworm during the grazing season only on the basis of FWEC results.
- FWEC reduction tests in the grazing season to ensure any wormers administered have worked.
- Removal of bot eggs from the coat.
- Specific treatment of other worm infections such as pinworm when indicated based on confirmation of infection.

#### **Faecal Worm Egg Count (FWEC)**

What does a FWEC actually tell us?

- They identify low egg-shedders;
  - Leaving these horses untreated maintains 'refugia' on the pasture.
  - Refugia are worms that have not been exposed to selection pressure by worming, so they dilute resistant worms on pasture, slowing down development of resistance.
- They identify high egg-shedders which need to be treated to reduce pasture-contamination.
  - A FWEC reduction test should always be used after worming to check that a wormer has been effective.

What are the limitations of a FWEC?

- They do not measure worm-burden; they identify horses that are contaminating pasture.
- Results can fluctuate by 50%
- They give no information about potentially fatal encysted redworm or tapeworm infections.
- They need to be repeated at regular intervals; occasional testing (such as once a year) is not sufficient to develop an understanding of the horse's ability to manage their own parasite burdens.
- They are unreliable when diarrhoea is present.
- False negative results can occur when:
  - Sampled less than 2-4 weeks after the ERP (egg reappearance period) of the last wormer, because worms will still be immature and therefore not shedding eggs.
  - Tested in the wrong season (winter) when egg-shedding is reduced.
  - Manure samples incorrectly sampled and stored, because eggs are unevenly distributed in manure and can hatch/desiccate if not stored correctly.
    - For reliable results, sample manure less than 12 hours old, mix 3 balls, store in an airtight bag and refrigerate until delivered without delay.

### **Faecal Worm Egg Count Reduction Test (FWECRT)**

Resistance of redworms to wormers has now been reported at up to 100% to fenbendazole, up to % to pyrantel and 4% for ivermectin. Resistance has also now been reported to moxidectin and there are no new drugs being developed for worming.

- Administering a wormer is no guarantee that worming has been effective.
- It is recommended that a FWECRT is performed after every wormer administered during the grazing season to make sure it has worked.
- A FWECRT is performed on a faecal sample obtained 14 days after worming.
  - If the egg count has not significantly reduced investigation is indicated to determine whether this is due to:
    - resistance
    - inadequate dose
    - wormer spat out

If the egg count has not reduced significantly, further treatment may be indicated to ensure that egg-shedding and worm burdens are managed safely.

### **Tapeworm ELISA**

- Measures antibodies (part of the horse's immune response) to mature tapeworms.
- A simple salivary test is now available that:
  - Detects horses with burdens of over 20 tapeworms.
  - Enables strategic treatment with pyrantel (as an initial milder drug) of horses with high burdens to reduce colic risk following treatment with praziquantel
  - Identifies horses with low burdens to be left untreated.

What are the limitations?

- Test must be performed at least 4 months after the last treatment for tapeworm. It is a little-known fact that a single dose of pyrantel has 85% efficacy against tapeworms, therefore treatment even with a single dose needs to be taken into account.
- Immature tapeworm burdens are not identified.
- As with almost any test, results are not 100% reliable and therefore veterinary-supervision

and interpretation of results are strongly recommended to manage the risks.

## 2. STRATEGIC DRUG-BASED WORMING

Strategic drug-based worming unavoidably places more selection pressure on worms than targeted worming, so is associated with a higher risk of contributing to the development of resistance.

However, we recognise that targeted worming programmes are not suitable in all situations, for example foals and youngsters or when pasture management is particularly poor.

We may therefore recommend a strategic drug-based worming programme, focused on managing current parasitic disease risks.

We carefully consider the risks, and design drug-based worming programmes to provide effective treatment whilst minimising resistance as far as possible:

- Wormers are correctly timed to be given after the ERP (egg-reappearance-period) of the last wormer (minimising resistance risk).
- Some worms (immature stages) will be left untreated by wormers and therefore contribute to 'refugia', going some way toward maintaining a population of parasites on the pasture that have not been exposed to selection pressure.
- All significant types of worms will be treated.
- If we are familiar with your horse we can advise on the correct dose
- We can provide tips, or assist with administration to ensure the full dose is swallowed; seeing a teaspoon sized blob that the horse has dropped can be as much as the whole wormer.
- WEC reduction tests to ensure wormers have been effective and identify any early signs of resistance developing.



### NEW FOREST EQUINE VETS

Practice 24hr Tel: 01425 600080

Dr Verena Jolly BVSc Cert AVP(EP) MRCVS Tel: 07703 320362

Dr Beth Robinson BVSc Cert AVP(EP) MRCVS Tel: 07342 958633

info@nfev.co.uk www.nfev.co.uk

NEW FOREST  
EQUINE VETS