

FACT SHEET

Worming and Worm Egg Counts



Internal parasites are ubiquitous, horses are exposed throughout their lives and form immunity to very few types of parasite. The main types of parasite in adult horses are:

Tapeworm (usual species *Anoplocephala perfoliata*)

The life cycle involves the horse ingesting a forage mite which contains the early stage of the lifecycle of the parasite. Clinical signs are not common but infection can result in diarrhoea and colic.

Bots (species *Gastrophilus*)

Eggs are laid on the coat of the horse and then ingested when the horse grooms itself or another horse. The eggs hatch and the larvae live in the stomach, where they can cause ulceration.

Roundworm

There are many species of roundworm, some are very harmful and others are more of an irritation.

- **Pinworms** (*Oxyuris equi*). Worms migrate to the area surrounding the anus and lay eggs there. This causes irritation and tail rubbing.
- **Large Redworm/Large Strongyles** (*Strongylus* species). Larvae migrate through the body, the exact path depending on the species, before returning to the gut. This process can cause damage to the liver, diarrhoea, weight loss, colic or even death.
- **Small Strongyles/Cyathostomes**. Over 50 species affect horses. This parasite causes damage when the larval stage, which lives inside the gut wall, emerges in the spring. This can cause weight loss and diarrhoea.

Traditionally, vets and horse owners have relied on chemical wormers to try and make horses 'worm free'. Concerns about parasites becoming resistant to wormers combined with there being no new wormers in development mean that this is no longer a viable option. We now need to move toward managing horses with an acceptable (low) level of parasite burden.

Resistance to wormers in parasites is a random genetic mutation, which gives the parasite an advantage over others of the same species. If a horse has some resistant parasites and some normal parasites when a wormer is given, the normal parasites will be killed and the resistant parasites will remain. These resistant worms will breed, resulting in more resistant worms on a property. If the same drug is given again too rapidly this selection pressure will increase, resulting in increasing numbers of resistant worms.

When a wormer is given, there are always some parasites which are described as '*in refugia*' i.e. not exposed to the drug. These include parasites in the very early stages of life (e.g. eggs) and parasites on pasture. These *refugia* are likely to have low level of resistant to wormers, due to low level of drug exposure. The *refugia* will breed with any resistant worms, therefore reducing the number of resistant worms in the next generation.

The concept of *refugia* means that modern worming programs are generally based on three main concepts:

- **Pasture management.** Removing droppings from pasture as frequently as possible will remove eggs passed in dung from the pasture and break the life cycle. Horse worms cannot live in other animals, so rotating grazing with farm stock will also reduce the parasite burden present on pasture.
- **Strategic testing.** Worm egg counts will identify animals with significant parasite burdens and can also be used to monitor for signs of resistance. As a general rule, horses with a parasite burden over 200 eggs per gram of faeces require treatment. Horses with a smaller burden than this do not require treatment; their parasite burden is considered insignificant and is left in *refugia*.
- **Effective use of wormers.** Drugs should be used on horses with moderate or above worm egg counts. It is important to use the correct drug at the correct time of year, and to accurately dose each horse to avoid resistance.

Each yard is slightly different, so we would recommend setting up an individually tailored program.