Worms are internal parasites that can do major damage to the internal organs of the horse. All horse owners have seen the signs of worm infestation. This includes a dull hair coat, weight loss, tail rubbing, diarrhoea and colic. But not all horses will show these obvious signs and some will be apparently healthy while the worms are doing their damage on the inside.

There are many species of worms that can afflict horses. The most common ones are:

- **Small strongyles (small red/blood worms).** These are very common, up to 2.5 cm long, thin worms. They can develop from larvae to adults in five weeks. The larvae can remain in cysts in the gut wall. Therefore any deworming programme must also address these encysted larvae.

- **Large strongyles (large red/blood worms).** The adult worm can be up to 5 cm long. Larvae of these worms migrate through the blood vessels, damaging the lining of the arteries (especially those supplying the gut). Worm control must also be effective against these larvae.

- **Large roundworms (ascarids).** Very large, white, round worms, up to 40 cm long. The eggs of these worms have a very tough shell and can survive for long periods in stables and on pastures.

- **Pinworms.** These live in the colon of the horse. Female worms lay their eggs around the anus of the horse, irritating the horse and causing it to rub its tail.

- **Tapeworms.** These do major damage to the intestines and are one of the major causes of surgical colic. The worms are flat, on average 8 cm long (but can grow up to 20 cm in length) and 1.5 cm wide.

- **Bots.** Although an internal parasite, these are not worms, but part of the lifecycle of a fly. The fly lays her eggs on the skin of the horse (it can be clearly seen on the horse’s hair), from where they are licked off by the horse.

**Adaptable creatures**

All of these parasites can be present at the same time, at different stages of their lifecycles. They adapt to their environment and can develop resistance against the various products used as part of the deworming programme. This is genetic and is transmitted to the next generation.

Resistance develops as a result of a number of factors, the most important of which are:

- Continuous use of dewormers with the same active ingredient: Worms which develop resistance to this ingredient will survive and increase in numbers, while the ones that are not resistant will all die off.
- Deworming too often: This has a similar effect in that the non-resistant worms will die off sooner.
- Incorrect use of the dewormer (especially under-dosing).
- Lack of measures to control stages of the worms that live in the environment: Keep in mind that more parasites live outside than inside the horse, as some worms can produce hundreds of thousands of worm eggs per day.

The fact that worms can develop resistance, requires us to change our thinking on worm control. Many of the recommendations that were made in the past do actually play in favour of the worms and increase not only the risk that they will develop resistance, but also increases the number of resistant worms in the environment.

**Challenge resistance**

This has led to the approach where not all horses on a property are dewormed at the same time. Should one deworm all horses at once, you will be killing off all the non-resistant worms. This will leave only resistant worms, a situation that will eventually make worm control impossible. By allowing the non-resistant worms to also remain on the property, you create a situation where there is competition for the host among the worms, thereby making it more difficult for the resistant worms to gain the upper hand.
In planning a control programme for worms, one has to take all factors into consideration. These include:

- The number of horses involved and the way they are managed. It is easier to design an effective deworming programme for a single stabled horse than one for a horse farm where some horses are stabled, others are in paddocks and more are on pasture.
- The previous approach to deworming on the property.
- Whether obvious problems are experienced with worms or not.

**Manure examination is a useful tool in the management of worms. Worms are seldom visible in the manure, but one can count the number and type of worm eggs present in the manure.**

**Manure egg counts**

Manure examination is a useful tool in the management of worms. Worms are seldom visible in the manure, but one can count the number and type of worm eggs present in the manure. By determining the faecal eggs-per-gram (EPG) count, one can get an indication of the degree of parasite infestation in a horse or group of horses.

This can provide useful information, not only before one starts deworming, but also as an indication of whether the dewormer used was effective. Keep in mind, though, that a negative faecal examination does not automatically mean that the horse is free from worms, as the horse might be harbouring immature stages, which do not produce eggs.

**A control programme**

**Smaller yards**

Start off by taking some fresh manure to your veterinarian and ask him to determine which worms are present and to also do a faecal EPG count. Collect manure from every horse in the yard, if at all possible; if too many, take manure from as many as is practically possible and select those horses which show one or more symptoms that indicate that worms might be present. This information will give you a clear indication on the status of the yard.

Keep in mind that one cannot determine the presence of tapeworms in this way. Deworm all horses that have an EPG count higher than 200. Use a dewormer registered for treatment against all the common worms other than tapeworms. If possible, weigh your horses to enable you to give an accurate dose of the dewormer.

Repeat the manure examination two weeks after deworming. Be sure to take manure from all the horses that were dewormed. The EPG count for the dewormed horses should now have dropped. If not, call in advice, as you might be dealing with a resistance problem and you will have to switch to a product with another active ingredient.

Two months later, take manure samples from all the horses that were not dewormed during the first round, but also include horses showing symptoms linked to worm infestation. Again, deworm the ones with EPG counts of 200 or more, using the same dewormer.

Make sure that you do a manure examination on each horse at least once every six months, as not all horses will show symptoms and you might miss out on one or two horses with a serious worm load if you do not check them all.

**Large farms**

On a large farm where a large number of horses are kept on pasture, it is not possible to do faecal examinations on all the horses. On these farms one should deworm half the horses now, with the other half two months later. In this way all horses will be dewormed once every four months.

**General**

Do not use a dewormer with a different active ingredient each time you deworm. Stick to the same product for as long as it has the desired effect of reducing the worm burden to below a count of 200 EPG. Switch to another active ingredient if the current one no longer has this effect. Then stick to the new product until this no longer has the effect you want, and only then make another change (back to the previous one, as you should now no longer have resistance to this one).

In smaller yards you should use a combination product that contains the active ingredient you have been using to date as well as one that is effective against tapeworm every third time you deworm. On large farms, use such a combination product twice a year.

By following the above approach, you will control the worms in your yard. Your yard will never be worm-free, but you will also not be favouring the ones with resistance against the worm remedy. Also make sure that you clean up your paddocks and pastures (see elsewhere in this edition), as this forms an important part of worm control.