

Parasite Control and Faecal Egg Counts

Client Information Sheet

A lot has changed in our understanding and recommendations in terms of parasite control over the last decade or so and it can be hard to keep up with what is best practice. Below is some information to help navigate the latest information and recommendations.

There is a recommendation to worm less these days, do I need to deworm my horse?

Are parasites really a problem?

Deworming your horse is essential to maintaining its overall health and well-being. Parasites, especially in large numbers can impact your horse's digestion, nutrient absorption and energy levels and over time can lead to weight loss, colic, poor coat condition and even more severe health complications.

Large strongyles (*Strongylus vulgaris*), often referred to as “blood worms,” are widely recognized as the single most pathogenic nematode of the horse. Though their numbers have largely reduced due to our “routine deworming” with incidences of clinical disease low, recent trends in countries like Sweden and Denmark are showing reemergence of the parasite due to reduced dewormer use. The strongyle's life cycle involves migration through the arteries near the intestine, where they cause serious damage, including blood flow obstruction, arterial wall damage and thrombus formation. This can lead to intestinal infarction, requiring surgery to determine if the disease is treatable as medical management is ineffective.

In young horses, ascarids and small strongyles (cyathostomins) pose the most significant threat. These horses are particularly vulnerable as they have not yet developed immunity to these parasites. With insufficient parasite programs, large amounts of small strongyles can become encysted in the walls of the intestinal tract and emerge in mass numbers resulting in severe illness such as rapid and severe weight loss and even death. In foals and young horses, ascarid infections can lead to colic and as well as intestinal obstruction, with these worms growing up to 25cm in length and 4mm in diameter with large numbers able to completely obstruct the small intestine. Horses with these colic symptoms may respond to medical management however at times surgery may be required to resolve the issue.



Deworming and resistance

Gone are the days where the recommendation was to deworm your horse every 6-8 weeks as over the last 50 years our indiscriminate use of dewormers has unfortunately led to the development of resistance. Similar to antibiotic resistance, anthelmintic resistance is the ability for parasites inside your horse to survive deworming treatments that were previously

effective in killing them. This occurs due to selection pressure, where the resistant worms survive and continue to reproduce resulting in parasite populations largely consisting of resistant worms. The more we deworm, the faster this resistance develops.

The concerning part of this is that drug companies have not been able to develop any new products for deworming our horses and as such we have to take steps to reduce the frequency of deworming and hopefully slow down the development of widespread resistance.

Is my horse at risk?

The risk class associated with your horse will help determine the frequency of deworming required each year. Each horse and situation is different but here are some generalizations for each group:

Low risk horses have consistently low faecal egg counts (FECs), are between 5 and 15 years of age, do not co-graze with youngsters, live in a closed herd environment with low stocking density and with good quarantine practices observed on the property as well as manure removal from paddocks frequently.

Moderate risk horses are generally over 15 years of age, have low to moderate FECs, live in an environment with occasional movement of stock, moderate pasture management, medium stocking density and only sporadic removal of manure.

High risk horses are less than 5 years of age with high FECs, live in an environment with frequent stock movement, high stocking density, poor pasture management and no quarantine practices, co-graze with youngsters or on a property with previous resistance identified and minimal or no removal of manure from the pasture.



Strategic parasite control programs

Depending on the risk factors associated with your horse as well as FEC results, an appropriate deworming plan can be implemented for your horse to minimize the development of disease but also reduce the frequency of treatment. The aim of these types of programs is not to fully eliminate the parasites (unfortunately not possible), but to reduce them to levels that are considered safe and unlikely to cause clinical disease.

Maintaining a population of parasites within the horse herd that has had minimal exposure to deworming treatment, known as 'refugia,' is crucial. Every time we worm a horse, it is selecting for the resistant parasites as these are the ones that aren't killed and then go on to reproduce, contaminating the pasture with more resistant parasites. By reducing the frequency of worming, particularly of horses in the low risk category, we create a larger refugia population. This slows the development of resistance to treatments as the untreated parasites are less likely to be resistant, so 'dilute out' the resistant parasites on the pasture.

What is a faecal egg count (FEC)?

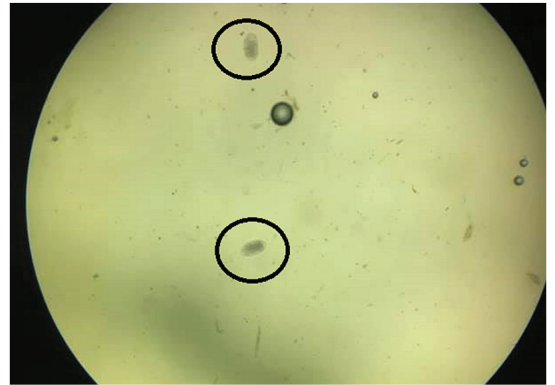
A FEC is used to determine the shedding status of an individual, whether this be low, moderate or high. It is measured in eggs per gram of faeces and is not an indication of your horse's worm burden but rather just the shedding status of eggs. High shedders are responsible for most of the parasite eggs shed onto pasture and thus require more frequent treatment than those in the low to moderate category as leaving the high shedders unchecked means the pasture will be heavily contaminated for all horses. We frequently get FEC results back in the 1000's- just think about that- over 1000 eggs in 1 gram of faeces... times that by 1500g of faeces per poop... times 15 poops/ day... Every day... that is an astronomical amount of parasites being put on the pasture. By strategically worming the high shedders and at risk horses, this allows us to balance reducing the level of infective parasites on the pasture for all horses, whilst still maintaining refugia by leaving the lower

shedders untreated. FEC's allow us to identify the high, moderate and low shedders so we can develop a strategic plan for each horse and overall for the property.

To perform an FEC, a small sample of manure is required from your horse (we only use 3 grams, but better to have too much than not enough! Half a sandwich bag full which is taken from different faecal balls is ideal) This is processed and then examined under a microscope to determine how many eggs per gram are within the manure and thus the shedding status of each horse. Limitations to FECs however are that they only detect primarily strongyle and ascarid eggs. Infections by tapeworm, pinworm, bots and encysted cyathostomes (which don't pass eggs in the faeces) cannot be determined on a FEC.

Faecal egg count reduction testing (FECRT)

FECs can also be used to test the effectiveness of different deworming products and are currently the only way this can be determined. To perform this test, a FEC is performed before and after deworming and the results are compared to determine if a sufficient reduction in the number of eggs shed has occurred. If not this can be indicative of resistance and further investigation may be required.



Current recommendations

It is the responsibility of all horse owners to reduce the use of deworming compounds to the lowest possible level required to prevent clinical disease.

Current recommendations for adult horses are to perform 2 to 4 FECs per year to determine their shedding status and treat at least once yearly with an effective dewormer with its effectiveness tested using an FECRT.

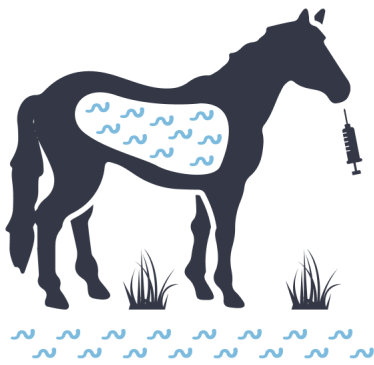
Younger horses on the other hand develop their immunity to parasites over time making some exposure helpful to promoting this however they are more susceptible to parasite related disease. They also excrete higher numbers of eggs onto pasture meaning they must be carefully monitored. Treatment is recommended at roughly 3 and 6 months of age and then FECs should be performed every 3 months after this to facilitate treatment choice.

Pasture management

Pasture management is a major component in reducing pasture contamination and increasing refugia within our horses. Dung removal is by far the most effective way to reduce larval numbers. Resting paddocks can also help to reduce parasitic numbers as well as cross grazing with cows or older horses that are less susceptible. Harrowing manure can also help to reduce the level of eggs on the paddocks, however care must be taken to not just move the manure and therefore parasites around. Harrowing before hot, dry weather can also be effective at exposing and killing the eggs.

Quarantine

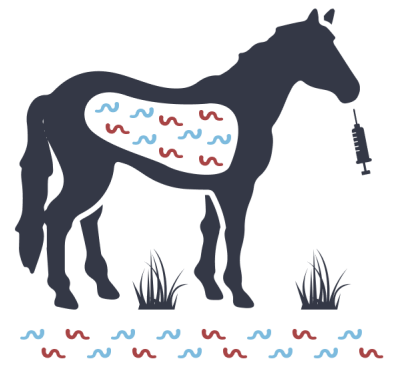
Any new horses should be treated in a way that will minimize the risk of resistant worms contaminating the pasture. General recommendations include separation from other resident horses, deworming with 2 separate products in a 2 weekly interval, collecting all manure and disposing away from grazing areas and performing an FECRT to confirm efficacy of treatment.



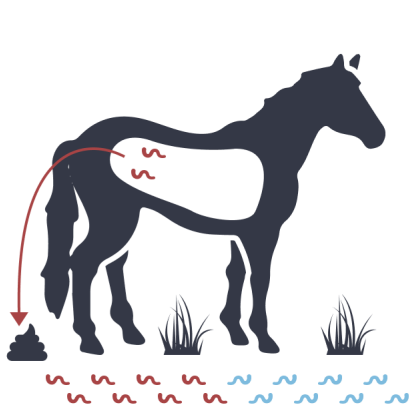
A horse is dewormed



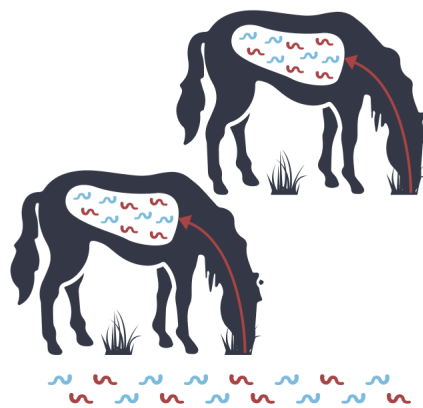
If some worms survive the treatment, they may be resistant to the chosen wormer.



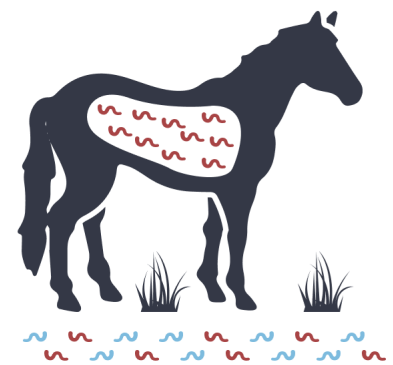
With continual treatment with the same family of wormer the numbers of resistant worms will increase.



These worms reproduce resulting in pasture contamination with resistant worms.



The horse eats a mixture of resistant and susceptible worms.



The wormer fails as resistance levels increase.



Image courtesy of Virbac Australia. For more information you can visit the Virbac Horse Health Hub: <https://au.virbac.com/horsehealthhub>