

Horse Owner's Guide To Worming

Bimeda Equine is proud to promote best practice targeted worming regimes, to help protect both today's horses and future generations.

Bimeda Equine
Proudly Promoting
Responsible Worming
Practices



Brought to you by the makers of;

Bimectin® **Embotape**
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The Bimeda Equine Horse Owner's Guide To Worming

Welcome to the Bimeda Equine Horse Owner's Guide To Worming!

With an array of wormers available and different worming plans to refer to, worming your horse can seem a daunting task. However, our guide is here to take the stress and confusion out of worming for you.

The **Bimeda Equine team** are passionate about equine welfare, for both current and future generations.

We are committed to providing horse owners with the knowledge to help safeguard wormers from resistance and protect their horse's welfare; both now and into the future.

Through this guide we aim to help you understand;

- when you should test your horse,
- when you should worm them
- how to select an appropriate treatment when it is required.

For further advice we recommend you speak to your SQP or vet.



Why Do We Need To Be Concerned About Worms?

When worms are present in excessive numbers they can have an impact on the health and welfare of your horse. They may cause damage to the lining of the gastrointestinal tract and decrease the amount of nutrition that the horse can absorb.





This can result in:

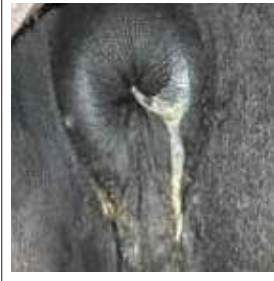


- Colic
- Poor performance
- Diarrhoea
- Poor body condition
- Death

In spite of this, it is **acceptable for horses to have some worms**. We need to learn to live with an acceptable worm burden, which has no impact on the horse's health, rather than try to achieve worm-free horses.



Understanding Your Horse's Worms

	<p>Small Strongyles</p> <ul style="list-style-type: none"> The most common worm is the Small Redworm (cyathostomin spp) which can lead to encysted small Redworm disease if untreated. When ingested, the larvae burrow into the lining of the intestines. They either develop and re-emerge to continue the life cycle, or stay in a state of hibernation in the intestinal lining-hypobiosis. When temperatures increase in the spring, these hypobiotic larvae can all emerge at once, causing severe damage to the intestinal wall which can cause weight loss, diarrhoea, shock and death. You cannot directly test for the presence of hypobiotic larvae in the intestinal walls and only certain anthelmintics will treat these hibernating parasites.
	<p>Large Strongyles</p> <ul style="list-style-type: none"> The large red worm (strongylus vulgaris) is a very serious parasite but is thankfully no longer very common. The eggs are ingested by the horse and once hatched, they burrow into the walls of the gastrointestinal tract. Migration through the blood vessels occurs, until mature, and can cause massive internal damage before they return to live in the intestinal wall.
	<p>Large Roundworm</p> <ul style="list-style-type: none"> The large roundworm (parascaris equorum) is a problem for young horses. As the immune system develops with age, infection is limited. Once ingested, the larvae migrate to the liver, through the lungs and back to the intestines. This can cause a great deal of internal damage and can result in weight loss, pot belly, intestinal obstruction, colic and even death.
	<p>Tapeworm</p> <ul style="list-style-type: none"> Most horses will be exposed to tapeworm eggs and infection is common in the very old and the very young. Heavy infection can result in ulceration of the GI lining, colic, obstruction, rupture, anaemia and unthriftiness. Light infection is common and if limited is unlikely to produce any clinical signs. The eggs are encased meaning they will not show up on a faecal worm egg count even if infected.

	<p>Pinworm</p> <ul style="list-style-type: none"> The pinworm is a relatively harmless parasite which lives in the large intestine and passes out of the anus to lay its eggs. No eggs will be found on a faecal worm egg count as the adult female worm crawls out of the anus to lay eggs. It can cause severe itching around the anus which can occasionally lead to self-trauma. Sellotape can be gently pressed on the skin around the anus to pick up eggs and if present a number of treatments can be used.
	<p>Bot</p> <ul style="list-style-type: none"> The bot (stomach worm) is not a worm but a species of fly. Over winter the larvae burrow into the stomach lining (where they spend 8-10 months) and are then passed out via the faeces and will hatch in the summer. Significant trauma and ulceration of the stomach can occur following infection. Infected horses can often show no signs which is why treatment should be given over the winter months to kill them.
	<p>Lungworm</p> <ul style="list-style-type: none"> Thankfully uncommon Adult worms live in the respiratory tract where they produce eggs which are coughed up, swallowed then passed on to the pasture. Faecal egg count and a variety of other diagnostics can be carried out by a vet if this is suspected and an appropriate treatment determined.

Photos of bots, large roundworm and tapeworm kindly provided by University of Liverpool Diagnostics Lab



Which Actives Treat Which Parasites?

	Ivermectin	Moxidectin	Ivermectin/ Praziquantel	Moxidectin/ Praziquantel	Pyrantel	Fenbendazole
Small Redworm	✓	✓	✓	✓	✓	✓
Encysted Small Redworm	✗	✓	✗	✓	✗	✓**
Large Redworm	✓	✓	✓	✓	✓	✓
Large Roundworm	✓	✓	✓	✓	✓	✓
Tapeworm	✗	✗	✓	✓	✓*	✗
Bots	✓	✓	✓	✓	✗	✗
Pinworm	✓	✓	✓	✓	✓	✓
Lungworm	✓	✗	✓	✗	✗	✗

*A double dose of Pyrantel is required to effectively treat tapeworms

**A 5 day course of Fenbendazole is required to effectively treat encysted small redworm

How Worming Requirements Vary By Season

Once you have established that your horse needs treatment for worms, it is essential to select a wormer which treats the types of parasites infecting your horse.

Winter

Use a wormer which can treat encysted small redworm larvae. These parasites cannot be found on faecal egg count (FEC) so treatment is obligatory.

Spring

If you have tested for tapeworm and it is positive, or if you have not been able to test, then you must treat for tapeworm in Spring.

You must also carry out a FEC to determine if you need to treat for other parasites or just tapeworm

Summer

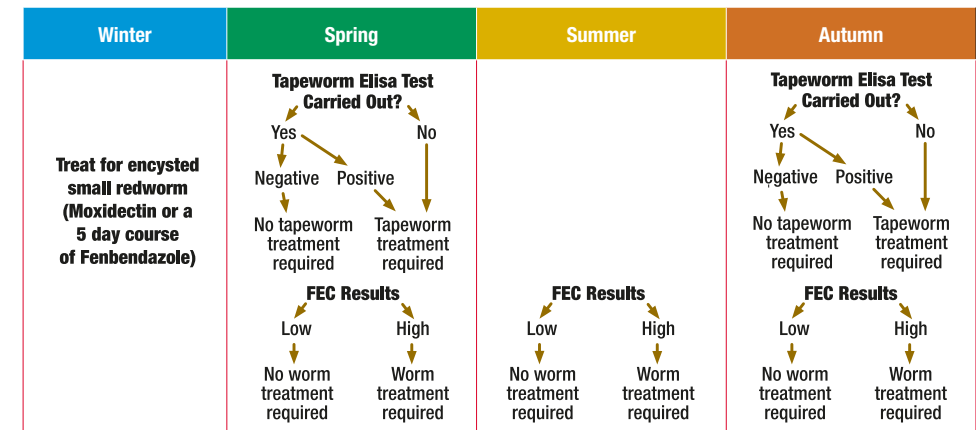
Carry out a FEC to see if you need to treat for worms.

Autumn

If you have tested for tapeworm and it is positive, or if you have not been able to test, then you must treat for tapeworm in Autumn.

Carry out a FEC to see if you need to treat for other parasites or just tapeworm

Key Worming Protocol By Season



Assessing the Parasite Burden

What is a FEC?

FEC stands for 'faecal egg count' and it allows us to measure how many worm eggs are present per gram of faeces. The adult worms in the intestines produce eggs which are passed out via the faeces and measuring this tells us about the parasite burden in the horse. It can also be known as FWEC (Faecal Worm Egg Count).

Why are faecal egg counts (FEC) important?

We have already explained that we do not want to achieve parasite-free horses but rather to maintain those parasites at an acceptable level. We can only determine the level of parasite burden by carrying out a FEC.

How to carry out a faecal egg count

You can carry out FEC through your local vet and some animal health stores. Give them a call and they will give you advice on how to collect the sample and may have kits/containers to collect it.

Collect a fresh faecal sample in an airtight container or clean plastic bag if you don't have a container provided.

Keep the sample cool and transport for examination as soon as possible after collection.



What Do My Horse's Faecal Egg Count Results Mean?

Ask for advice following the results of a FEC as the interpretation and action required can vary depending on the age of the horse, the health and your management.

The table below serves as a general guide.

If the result is low then no action is required and you should re-test in 8-10 weeks.

If the result is high you should worm the horse with an appropriate wormer and re-test in 8-10 weeks.

Age of Horse	Faecal Worm Egg Count Results**	
	Low Result	High Result
1-5 Years old	Less than 200 epg*	More than 200 epg
5-19 Years old	Less than 400 epg	More than 400 epg
20+ Years old	Less than 200 epg	More than 200 epg

*epg = eggs per gram

**Parameters differentiating between low and high results may vary. Ask your vet or SQP for advice

Understanding How To Detect A Tapeworm Infection

Tapeworms do not continuously shed eggs in to the faeces like other worms. Instead of shedding single eggs, tapeworms shed a whole segment of their body (proglottid) which is packed full of worms.

If tapeworm eggs are not detected in the FEC it could mean the horse is not infected or that infection simply has not been detected.

You can easily test for tapeworms with an **ELISA test** which can now be carried out on saliva as well as blood. When a horse becomes infected with tapeworm it will produce antibodies to try and protect itself.

The ELISA test is capable of detecting these antibodies. It is worth noting that once infection is treated it will take some time for the antibodies to return to a normal level and so the test tells us if the horse has been exposed to tapeworm - not whether it is currently infected.

A positive result and a lack of recent tapeworm treatment allows us to assume that the horse is infected.



Anthelmintic Resistance – What Is It?

Parasites can become resistant to certain worming treatments which would have previously been able to kill them at the normal dosage. This is worrying because no new worming treatments have been developed recently. We could find ourselves in a situation where we have no effective treatments for worms in our horses, which would seriously compromise their health and welfare.

What Speeds Up The Rate At Which Resistance Occurs?

- Worming when there is no need for treatment
- Worming too frequently
- Worming with the same class of wormer repeatedly
- Under-dosing (wrong weight, wrong dose, spit out)

What Happens If We Use A Wormer When It Is Not Required?

If we use a wormer when it is not required we do more harm than good and give the resistant worm population a helping hand to thrive. This is why it is so important to carry out regular FEC's to check if your horse needs worming. If it does we need to ensure we are selecting the correct active ingredient to control the parasites identified.

Minimising The Development of Resistance & Refugia

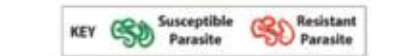
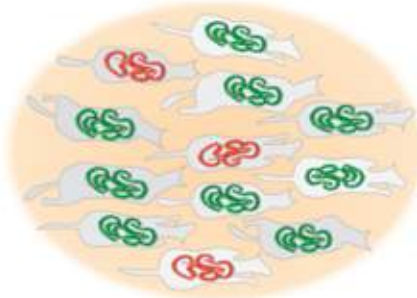
In order to minimise resistance we must maintain **Refugia**.

By this we mean it is important to allow a population of worms susceptible to wormers to remain, in order to compete with the resistant worms.

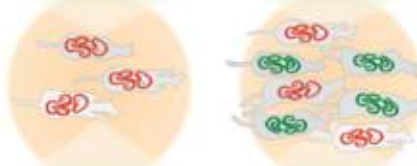
This is vital to help protect our horses and the future generations.

The Importance of Preserving Refugia

Parasite population within the group:



Treat the entire group, so no refugia is preserved.



Treat only 50% of the group so some refugia is preserved.



The Bimeda Equine Guide to Dosing

Worm According To Your Horse's Weight

It is vital to provide the correct amount of wormer for your horse's weight to protect against resistance and ensure treatment is successful.

If you are lucky enough to have a **weigh bridge** you can use it to obtain an accurate weight.

If you do not have access to a weigh bridge you can buy a **weigh tape** which gives you a good estimate.



The Step-By-Step Guide To Worming

1. Set the worming tube to the correct dose for your horse's weight.
2. Once you are ready stand next to your horse and guide the syringe in to the mouth, point it to the back of the tongue and press the plunger to dispense the wormer.
3. Observe your horse to ensure no wormer is spat out.
4. If this is not possible you can add the wormer to food.
5. You should add the wormer to a small amount of food and observe your horse to make sure it is completely consumed. then feed the rest of the ration.
6. Some wormers can be very toxic to other animals so ensure they have no access to any which has been spat out or left over in food.



Pasture Management

Adult worms in the gastrointestinal tract pass their eggs in to the faeces which in turn pass on to the pasture. These eggs on the pasture act as a source of reinfection.

In order to minimise the burden of worm eggs on the pasture there are some key steps which can be implemented:

- Regularly clear away faeces. 'Poo pick' (at least twice weekly, but ideally as often as possible).
- Never fertilise the pasture with horse faeces.
- Where possible rotate grazing to break the parasite life cycle. (If you have more than 1 field available rotate between them. If not, subdivide your grazing in to smaller areas and rotate horses around it).
- After worming allow your horses to pass the parasites and then move them to clean pasture (allow 48 hours after treatment).
- Consider grazing your horse with other species such as sheep/cattle which can 'mop up' some of the worm burden. Remember though that this is not without other risk- sheep and cattle can carry liver fluke which can also infect horses.



New Arrivals

Managing New Arrivals

When new horses arrive on the yard it is impossible to know for certain their worming history. You should take steps to ensure they introduce no new parasites, which may have resistance, to your yard.

Option 1

Carry out a Faecal Worm Egg Count and a tapeworm ELISA test to check for infection and treat, if appropriate, based on those results.



Option 2

Administer a broad spectrum wormer which will completely clear the gastrointestinal tract of parasites.



5 Key Steps Towards Effective Worm Control

1) Dose Your Horse Accurately For Its Weight

It is important you give your horse the correct dose of wormer as under-dosing could speed up the rate at which worms can develop resistance. Weigh bridges are ideal, but if you do not have access to one, a weigh tape will give a good estimate.

2) Diagnostics

Faecal worm egg counts (FWECC) and the tapeworm ELISA test are integral to targeted parasite control. You must monitor your horse's worm burden to know when you should treat them and when there is no need for treatment. This approach will help to reduce the rate of development of resistance

3) Yard Management- Worm All New Arrivals

It is difficult to know the full history of any new arrivals - every horse should be wormed with a broad spectrum wormer upon arrival.

4) Pasture Management- Remove Droppings

By regularly picking up droppings you physically remove the source of worm infestation. Rotating your horses on to different grazing will also help to limit pasture contamination.

5) Follow a Strategic Worming Plan- Consult a Vet or SQP

Speak to your vet or SQP to help determine the best approach to managing worms in your horse.



Make Some Notes!

Notes...

References

1. E T Lyons et al (2008). "Evaluation of parasitocidal activity of fenbendazole, ivermectin, oxiabendazole, and pyrantel pamoate in horse foals with emphasis on ascarids (*Parascaris equorum*) in field studies on five farms in central Kentucky", *Parasitology Research* 103: 287-291.
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3. A.S. Perigrine et al (2014). "Anthelmintic Resistance in Important Parasites of Horses: Does it Really Matter?" *Veterinary Parasitology* Vol 201, issues 1-2, p1-8
4. M.K.Nielson et al (2014). "Anthelmintic resistance in equine parasites—Current evidence and knowledge gaps". *Veterinary Parasitology* Vol 204, p55-63



About Bimeda Equine

Bimeda Equine provides a wide range of equine products to equine vets and animal health professionals, including wormers, veterinary pharmaceuticals and nutritional products.

The Bimeda Equine team are passionate about equine welfare, for both current and future generations.

We are committed to providing horse owners with the knowledge to help safeguard wormers from resistance and protect their horse's welfare- both now and into the future.

Bimeda Equine Supports The Responsible Use of Anthelmintics

Care should be taken to avoid the following practices because they increase the risk of development of resistance and could ultimately result in ineffective therapy:

- Too frequent and repeated use of anthelmintics from the same class, over an extended period of time.
- Under-dosing; this may be due to underestimation of body weight or misadministration of the product.

This information was provided by Bimeda - makers of Bimectin Oral Paste and Embotape*

*Bimectin Oral Paste (18.7mg/g Ivermectin) is a POM-VPS medicine.

*Embotape (11.4g/syringe Pyrantel Embonate) is a POM-VPS medicine.

For full product information including dose rates, see the SPC data sheet on the VMD website or the data sheet on the Bimeda Website (Bimeda.co.uk). Alternatively, visit bimedaequine.co.uk

Use Medicines Responsibly. Noah.co.uk

Special thanks to University of Liverpool Diagnostics lab for providing photographs of the bot, large roundworm and tapeworm.

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