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# Chapter 11. Foals, Weanlings, Yearlings and Youngstock

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## Overview

This chapter describes the parasites, appropriate tests and treatments of foals (up to 5 months old), weanlings (5-12 months), yearlings (1-2 years old) and youngstock (2-5 years of age). The recommendations are based on available evidence, and the authors have attempted to communicate the strength of evidence available. Young horses are particularly susceptible to acquiring nematode parasites, and foals and weanlings are prone to acquiring some specific types of parasites that are uncommon in older horses.

Please note that these guidelines are general recommendations only and should be adapted to the circumstances pertaining to the animals in question. Stud farms and high-risk yards (e.g. where there are multiple horses, frequent movement, high prevalence of parasite-associated disease, high stocking rates or multiple resistance) may require specialist parasitology input. The prescriber must be familiar with the horse ages, history of anthelmintic use, history of parasite-associated disease, environment and management conditions before prescribing treatments. Anthelmintic resistance is common in the parasites affecting youngstock in the UK, including ascarids, cyathostomins, and potentially tapeworms. Treatments need to be based on an assessment of the risk of parasite infection. For example, multiple foals and youngsters raised on the same premises (especially in successive years) will likely be exposed to higher infection intensity compared to a mare and single foal managed on their own and may therefore require a different parasite control programme and different timings of treatments and diagnostic testing. Dependent on the time of year the foals are born, they will be exposed to differing infection pressures on pasture.

Readers are referred to Chapter 10: Donkeys and hybrids for specific advice with regard to management of endoparasites in these species. Whilst much of the information is applicable, there are some key differences that are out of scope for this chapter. Ascarids can be seen at all ages of donkeys, albeit more common in youngstock and geriatric animals.

**Age category definition glossary:**

- Foals are defined as being 1 day to 5 months old
- Weanlings 5 months to 12 months old
- Yearlings 12 to 18 months old
- Youngstock refers to horses over 18 months and up to 5 years of age

**Please note that anthelmintic resistance is common**: See summary Table 1 which highlights appropriate testing and treatment according to age group and risk profile.

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# Chapter 11.1. Summary of prevalent parasites, tests and treatments

The prevalent parasites, appropriate tests and treatments, categorised by age group and risk assessment have been summarised for reference in the table below. Further detail regarding the basis for each of these recommendations can be found in this chapter.

There are large knowledge gaps in relation to developing best practice guidelines for parasite control in young animals (especially in situations where there is anthelmintic resistance), and the authors have attempted to use what limited evidence is available coupled with collective opinion to produce the current guidelines – these will be updated and revised regularly as new evidence becomes available.

For the purposes of these guidelines, animals from 6 to 18 months of age have been divided into high-risk and low-risk groups with respect to ascarid and cyathostomin infections. High-risk would include animals living on stud farms and premises with multiple young horses (e.g. more than two foals/weanlings, multiple yearlings/youngsters, poor pasture management, etc), whereas low-risk would include premises with small numbers of foals/weanlings and yearlings/youngsters, with good pasture management, and no previous history of parasite associated disease or known anthelmintic resistance. Youngstock over 18 months of age should adopt a diagnostic-led treatment plan (coupled with good pasture management) but should automatically receive an autumn/winter cyathostomin larvicidal treatment.

For weanlings and yearlings deemed high-risk, regular, blanket treatments for cyathostomins can be applied, whereas in low-risk scenarios, a diagnostic-led, targeted treatment programme can be used. However, it must be recognised that blanket treatment of young horses will increase the pressure to develop anthelmintic resistance, so every effort should be made to reduce the overall risk by optimising non-chemical parasite control methods (i.e. poo-picking, low stocking densities, resting pastures and use of "clean pastures", co-grazing with ruminants, etc., see below).

Table 1: Summary of the prevalent parasites, appropriate tests and treatments by age group.

| Age | Parasites | How to test | Appropriate treatment |
|---|---|---|---|
| **Foals 2-5 weeks** | *Strongyloides westeri* | If needed, FEC at 2-5 weeks of age (but not recommended as a routine). | Treatment not recommended unless associated with clinical signs – infection is usually self-limiting. |
| **Foals 2-2.5 months** | Ascarids (*Parascaris* spp.) | Routine FEC testing is not appropriate for this age. | First anthelmintic treatment at 2-2.5 months. Fenbendazole or a pyrantel salt (in view of the widespread resistance to macrocyclic lactones). |
| **Foals 4-5 months** | Ascarids (*Parascaris* spp.) | FECRT recommended at this time. This FECRT should not be used to determine which animals are treated, but to assess anthelmintic efficacy. | Second anthelmintic treatment at 4-5 months (regardless of FEC results). Fenbendazole or a pyrantel salt. |

| | | | |
|---|---|---|---|
| **Weanlings 6-7 months** | Ascarids (*Parascaris* spp.) and cyathostomins | FEC at 6-7 months, to determine if ascarid eggs are present and/or if strongyles predominate, and determine strongyle egg count<br>Perform ascarid FECRT if not done at 5 months. | **LOW RISK – DIAGNOSTIC-LED TREATMENTS**<br>**Ascarid only:**<br>If ascarid eggs are present, treat with fenbendazole or a pyrantel salt.<br>**Cyathostomins only:**<br>If high strongyle egg count (e.g. 200-500 EPG see box below) administer a macrocyclic lactone.<br>If using moxidectin – check data sheet regarding minimum age.<br>A pyrantel salt (or fenbendazole) could be used but only if efficacy is indicated by FECRT.<br>If low strongyle egg count (e.g. 200-500 EPG), no specific cyathostomin treatment is required.<br>**Both ascarid and cyathostomins** (i.e. ascarid eggs and high strongyle egg count present):<br>Depending on the resistance profile, weanlings may have to be treated by two different drug classes, i.e., fenbendazole for ascarids and macrocyclic lactone for cyathostomins. However, a pyrantel salt (or fenbendazole) could be effective against both parasite categories, but this needs to be verified by FECRT. |
| | | | **HIGH RISK – BLANKET TREATMENTS**<br>Blanket treat for cyathostomins at this age with either a pyrantel salt (if ascarid eggs also identified) or a macrocyclic lactone.<br>If using moxidectin – check data sheet regarding minimum age. |
| **Weanlings 8-12 months** | Ascarids and cyathostomins | FEC every 2-3 months (depending on risk assessment) – to inform treatment decisions (by establishing when ascarids decrease and cyathostomins increase).<br>This is an ideal time to perform a cyathostomin FECRT. | **LOW RISK – DIAGNOSTIC-LED TREATMENTS**<br>**Ascarid only:**<br>If ascarid eggs are present, treat with fenbendazole or a pyrantel salt.<br>**Cyathostomins only:**<br>If high strongyle egg count (e.g. 200-500 EPG – see box below) administer a macrocyclic lactone.<br>A pyrantel salt (or fenbendazole) could be used but only if efficacy is indicated by FECRT.<br>If low strongyle egg count (e.g. 200-500 EPG - see box below), no specific cyathostomin treatment is required.<br>**Both ascarid and cyathostomins** (i.e. ascarid eggs and high strongyle egg count present):<br>Depending on the resistance profile, weanlings may have to be treated by two different drug classes, i.e., fenbendazole for ascarids and macrocyclic lactone for cyathostomins. However, a pyrantel salt (or fenbendazole) could be effective against both parasite categories, but this needs to be verified by FECRT. |
| | | | **HIGH RISK – BLANKET TREATMENTS**<br>Blanket treat every 2-3 months for cyathostomins with either a pyrantel salt (whether ascarid eggs are identified or not) or a macrocyclic lactone.<br>If using moxidectin – check data sheet regarding minimum age. |

| | | | |
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| **Weanlings 8-12 months (continued)** | | For weanlings that have been grazing over the summer, perform a FECRT to assess treatment efficacy against adult cyathostomins. | **ALL WEANLINGS 8-12 MONTHS**<br>If risk of cyathostomin exposure over the summer, administer a routine autumn/winter dose of moxidectin (with or without praziquantel[1]– see below) or 5-day fenbendazole to target mucosal larvae. |
| | Tapeworms | Autumn tapeworm ELISA testing (saliva or serum) and FEC (using the "Proudman technique") for tapeworm eggs. If either indicate significant tapeworm infection, do a 14 day post-treatment FEC (i.e. FECRT) after administering an appropriate anthelmintic. | If borderline or moderate/high antibody level or presence of tapeworm eggs in faeces, administer a double dose of a pyrantel salt or a macrocyclic lactone+praziquantel[1] combination product; N.B. both options may also have efficacy against cyathostomins if this has been demonstrated by FECRT. |
| **Yearlings 12-18 months** | Ascarids (waning) and cyathostomins | FEC every 1-3 months (depending on risk assessment) – if a diagnostic-led treatment protocol is used, monthly FECs should be performed to identify rapid increases in strongyle egg counts that require immediate treatment) Perform FECRT with a pyrantel salt or macrocyclic lactone. | **LOW RISK – DIAGNOSTIC-LED TREATMENTS**<br>**Ascarid only:**<br>If ascarid eggs are identified, treat with fenbendazole or a pyrantel salt.<br>**Cyathostomins only:**<br>If strongyle FEC is high (e.g. 200-500 EPG - see box below) administer a macrocyclic lactone. A pyrantel salt (or fenbendazole) could be used but only if efficacy is indicated by FECRT.<br>**Both ascarid and cyathostomins:**<br>Depending on the resistance profile, yearlings may have to be treated by two different drug classes, i.e. fenbendazole for ascarids and macrocyclic lactone for cyathostomins. However, a pyrantel salt (or fenbendazole) could be effective against both parasite categories, but this needs to be verified by FECRT.<br>Administer a routine autumn/winter dose of moxidectin or 5-day fenbendazole to target mucosal larvae (coupled with FECRT to assess efficacy against adult worms). |
| | | | **HIGH RISK – BLANKET TREATMENTS**<br>Blanket treat every 2-3 months for cyathostomins with either pyrantel salt (including if ascarid eggs also identified) or a macrocyclic lactone. |
| | | | **ALL YEARLINGS 12-18 MONTHS OLD**<br>If animal has grazed over the summer, administer a routine autumn/winter dose of moxidectin or 5-day fenbendazole to target mucosal larvae. |
| | Tapeworm | Bi-annual tapeworm ELISA testing (spring and autumn) and FEC (using the "Proudman technique") for tapeworm eggs. If either indicate significant tapeworm infection, do | If borderline or moderate/high antibody level or presence of tapeworm eggs in faeces, administer a double dose of a pyrantel salt or a macrocyclic lactone/praziquantel[1] |

[1]*Praziquantel is currently available in authorised fixed-combination products also containing ivermectin or moxidectin; no single-active praziquantel product is currently authorised for use in horses in the UK. If, after considering the use of an authorised product and then all the earlier steps in the prescribing cascade, an extemporaneous preparation is deemed appropriate, single-active praziquantel may be used. Only veterinary surgeons can prescribe under the cascade, with appropriate clinical justification, informed client consent, and (where relevant) compliance with food-producing animal requirements, including specification of a withdrawal period. No recommendations can be made regarding a minimum age for safe use of this extemporaneous preparation for use in foals and yearlings.*

| | | | |
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| **Yearlings 12-18 months (continued)** | | a 14 days post-treatment FEC (i.e. FECRT) after administering an appropriate anthelmintic. | combination product (N.B. both options may also have efficacy against cyathostomins if this has been demonstrated by FECRT). |
| **Youngstock 18 months – 5 years** | Cyathostomins (dominant) | FEC every 3 months.<br><br>Perform FECRT to assess the efficacy of at least one chemical annually. | If strongyle FEC is high (e.g. 200-500 EPG - see box below) administer fenbendazole or a pyrantel salt or a macrocyclic lactone, if efficacy is indicated by FECRT.<br>Routine autumn/winter administration of moxidectin or 5-day fenbendazole to target mucosal larvae (coupled with FECRT to assess efficacy against adult worms). |
| | Tapeworm | Bi-annual tapeworm ELISA testing (spring and autumn) and FEC (using the "Proudman technique" for tapeworm eggs). If either test indicate significant tapeworm infection, do a 14 days post-treatment FEC (i.e. FECRT) after administering an appropriate anthelmintic. | If borderline or moderate/high antibody level, administer a double dose of a pyrantel salt or a macrocyclic lactone/praziquantel[1] combination product (N.B. both options may also have efficacy against cyathostomins if this has been demonstrated by FECRT). |

### Faecal egg count thresholds

- There is no single threshold eggs per gram (EPG) value that can be applied to all weanlings, yearlings and youngstock in all situations
- The FEC in animals in this age group are expected to be considerably higher than mature horses, which has implications on the contamination of pastures
- There is no evidence of a connection between the FEC and the risk of acute larval cyathostominosis
- The decision whether to prescribe an appropriate anthelmintic should be made on a case-by-case basis
- A critical balance should be reached between the use of anthelmintics to reduce pasture contamination and maintaining the health of individuals/co-grazing animals, versus the risk of promoting anthelmintic resistance.

# Chapter 11.2. Parasite species to consider in foals and youngstock

In order of appearance, primary target parasites are ascarids, strongyles, and tapeworms (see Figure 1).

## *Strongyloides westeri* (threadworm)

*Strongyloides westeri* (*S. westeri*) is a rare cause of disease in foals. Infected mares are asymptomatic. Foals may be infected lactogenically or through the environment. There is one study that has suggested an association between foal diarrhoea and high *S. westeri* FECs (e.g. >2000 EPG) but there is limited further work to support this finding or to establish causality (Netherwood *et al.*, 1996). Infection is typically self-limiting.

Routine monitoring for this parasite is not considered to be necessary apart from situations where there is a history of possible *S. westeri* associated disease on the premises or associated with an individual mare. If needed, monitoring of *S. westeri* egg shedding is recommended between 2-5 weeks of age. Kirtland *et al.*, (2022) found that "foals born to dams that had not received peripartum ivermectin were significantly more likely to yield a positive *S. westeri* FEC result"; however, no clinical disease was noted in any of the foals with positive FECs in this 5-year study. Therefore, the clinical benefits of peripartum treatment of mares are unclear at this stage, and this practice, therefore, cannot be recommended as a routine intervention.

## *Parascaris* spp. (ascarids)

The most important parasites of foals are nematodes of the genus, *Parascaris* spp. (ascarids). This large roundworm is common on stud farms. While larval migration and infection can cause poor condition and respiratory disease, the major concern is intestinal impaction which carries a poor prognosis, even with surgery. Eggs have the potential to persist in the environment over the winter and potentially for years and infect the following season's crop of foals (Reinemeyer, 2009; Nielsen 2016b). Strict pasture hygiene such as poo-picking, resting and rotating pasture that foals graze, and reducing stocking density is very likely to benefit. Ascarids eggs are very resilient and can persist on the same pasture for at least one year (probably longer), so grazing foals on the same pasture in successive years should be avoided. Resistance to all three anthelmintic classes (benzimidazoles, tetrahydropyrimidines and macrocyclic lactones) has been reported in some areas, with macrocyclic lactone resistance reported globally (Nielsen, 2022) and anecdotally common in the UK. FECRT are essential to identifying efficacious anthelmintics. Effective anthelmintic treatment of individuals with large ascarid burdens have been observed to sometimes trigger acute intestinal impaction in some cases, especially when using products with a paralytic mode of action (e.g. ivermectin, pyrantel salts) (Cribb *et al.*, 2006; Nielsen, 2016b).

Adult horses appear to develop immunity to *Parascaris* spp. and significant burdens are rare in this age category. Ascarids are most commonly encountered in the first 6-7 months of life, after which they are naturally eliminated, but individuals may be occasionally affected at later life stages, especially if immunosuppressed. There is no correlation between ascarid egg counts and ascarid worm counts on an individual basis (Nielsen *et al*., 2010).

## Cyathostomins (small strongyles)

Virtually all grazing horses are exposed to cyathostomins, with many horses encountering infection all their lives. After the first 6-7 months of age, ascarids are naturally eliminated and cyathostomin and tapeworm infections start to increase. Recently weaned foals and yearlings should always be turned out onto "clean" grazing with the lowest possible levels of parasite contamination because animals of this age group are at high risk of developing parasite-associated disease. Cyathostomins have a period of larval development in the large intestinal wall. Hundreds of thousands of larvae can accumulate, especially in young horses (<5 years old). In some cases, mucosal stage larvae have been shown to undergo delayed development of up to several years (reviewed by Matthews and Mair, 2025) before they resume development and complete the life cycle allowing massive accumulation of larval stages. In a small number of horses, exposed to high-risk factors (see CANTER risk table) cyathostomins can cause a life-threatening disease (weight loss and protein-losing enteropathy, diarrhoea and colic) known as acute larval cyathostominosis. In the acute presentation the case fatality rate is approximately 50% (Lawson *et al*., 2023).

## Tapeworms

*Anoplocephala perfoliata* is the most common equine tapeworm. Infection occurs when horses ingest cysticercoid-infected oribatid mites whilst grazing. Animals, of all ages, are at high risk of acquiring tapeworms and developing tapeworm-associated disease. Resting contaminated paddocks for prolonged periods should lower reinfection risk, although it has been shown that *A. perfoliata* eggs remain viable for up to nine months under non-freezing conditions (Dunn, 1978). The lifespan of mites infected with cysticercoids is unknown, making it difficult to determine how long paddocks should be rested before they are free of tapeworms. Infection has been associated with various forms of ileo-caecal and caecal colic. Tapeworms produce erosions of the intestinal mucosa at the site of attachment, and when present in relatively high numbers, can result in colic, including impaction or intussusceptions (ileo-caecal, caeco-caecal and caeco-colic). One paper found an association between tapeworm and spasmodic colic (Proudman *et al*., 1998). Immature worms can establish at 5-6 months of age, and positive ELISAs maybe seen at this time.

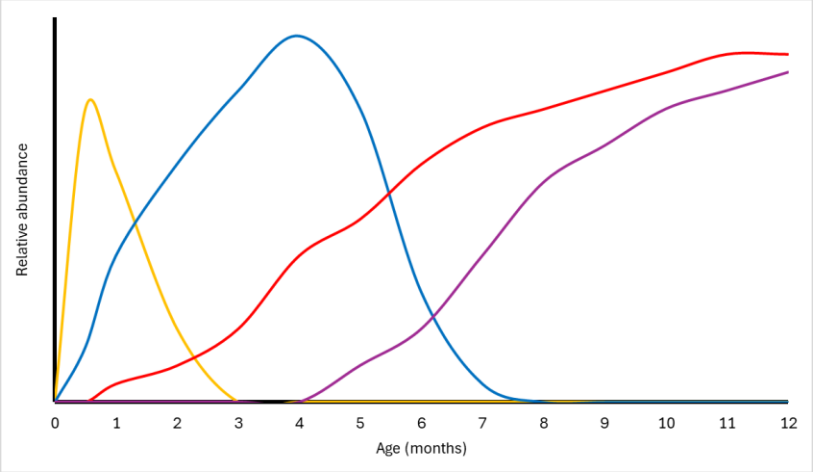


Figure 1: An approximate representation of the typical relative abundance of different helminth groups at different ages (not to scale).
Key: Yellow: *S westeri*, Blue: Ascarids, Red: Cyathostomins, Purple: Tapeworm

## Strongylus vulgaris (large strongyle)

Although the prevalence of *S. vulgaris* is currently low in the UK, reductions in the overall use of anthelmintics based on targeted and diagnostic-led treatments might potentially increase the risk and incidence of this parasite. Youngstock may be particularly at risk due to their higher susceptibility. Excellent pasture management is essential to reduce the risk. Grazing foals and youngstock on the same pasture in successive years should be avoided. *S. vulgaris* eggs cannot be differentiated from cyathostomin eggs using FECs, so monitoring for these parasites by larval culturing and at least once a year treatment of all horses on the premises should be considered. Currently there is no known resistance in this parasite to any of the three main anthelmintic classes. Good records of prescription and treatment history linked to identities of animals treated is key to assessing the risk posed by migrating large strongyle larvae and whether larval culture is necessary.

Since youngstock frequently co-graze with mares, and may share the same pastures as stallions, it is vital that parasite control in these older horses is optimised to minimise the contamination of paddocks with parasite eggs and larvae that could subsequently infect younger animals.

## Pasture management

It is appreciated that maintaining productive grazing and sward-length is the priority. There is limited evidence to support various pasture management methods; however, incorporating as many of the following steps as possible, would reduce the level of larvae and eggs in the pasture, and could reduce the reliance on anthelmintics.

**Poo picking:**

- Dung collected from foal paddocks (ideally daily, and at least 3 times a week).

- Dung collected from all paddocks (ideally 3 times a week, and at least weekly).
- Keep high shedders in a separate grazing group, with dung collected daily.

**Paddock rest and rotation:**

- Foal/nursery paddocks should not be grazed by yearlings at all – create a pasture break of 12 months so that foals and weanlings do not graze the same pasture that yearlings have grazed the previous year.
- After nursery period – move mares and foals to new pasture, ideally not grazed by the previous year's foals.
- Separate mare and yearling grazing.
- Weanlings would ideally move onto pasture vacated by mares, rather than the previous year's yearlings.
- As a rule of thumb pasture breaks should be over at least one summer (current indications suggest a 9-month rest from grazing would substantially reduce tapeworm activity in the pasture).
- Allow paddocks to have a season's break from youngstock grazing every other year.

**Co-grazing with other ruminant species (where possible): sheep act as a hoover for larvae or eggs remaining in the short grass.**

- Graze sheep with heavy shedders if safe to do so (Forteau *et al.*, 2020, and Pacek *et al.*, 2020).
- Use sheep as a pasture break, grazing immediately after horses have vacated a paddock, and before the next group of equine occupants.

**Mechanical management:**

- Muck-spreading - Never spread horse dung back onto paddocks (intended for equine grazing).
- Chain-harrowing - If you need to harrow make sure it is in very hot, dry weather and ideally graze sheep on the pasture after harrowing and before reintroducing equines for grazing or leave at least a seasons break before horses are returned to the pasture.

Pasture management plans should be discussed between owner and prescriber to ensure an awareness of pasture rotation plans in place. This information should be used alongside diagnostic results and treatment history.

The balance between maintaining the efficacy of anthelmintics whilst keeping levels of worm activity to a low level is precarious and can increase in difficultly each year.

## Chapter 11.3. Using testing and monitoring tools effectively

All testing must be relevant to and consider the treatment schedule.

Faecal egg count reduction tests (FECRT) are an essential part of parasite management and must form part of the diagnostics for managing youngstock. Testing at least one relevant anthelmintic class annually is advised for both ascarids and cyathostomins, and where high levels of infection are encountered, tapeworms. Faecal egg counts can be used from 2-5 weeks of age where there is concern regarding *S. westeri* (see chapter 11.2. Parasite species to consider in foals and youngstock); however routine faecal egg counts are not necessary until after 4 months of age, to assess efficacy of prescribed anthelmintics, and after 6 months of age to track the expected natural decline of ascarids and the subsequent dominance of strongyles, (see Figure 1).

### Foals up to 9 months of age

Faecal egg counts **before 3 months of age** are likely to result in false negatives due to the long pre-patent period of ascarids (10-12 weeks). This is because ascarids in foals <3 months of age are larvae and immature adults that do not produce eggs. Therefore, in foals up to 4 months of age, targeted treatments informed by FEC testing are not recommended. Waiting for ascarid egg excretion to inform treatment could therefore lead to clinical disease. Instead, to target *Parascaris* spp., the worm control plan should include treatment of all foals with an effective anthelmintic (fenbendazole or pyrantel salt) at 2-2.5 months and at 4-5 months of age, following risk assessment of the likelihood of a high ascarid burden.

In young foals where FECs are likely to be negative and older foals (e.g. 3-5 months of age) where FEC results are low but there is clinical suspicion of a high ascarid burden, transabdominal ultrasonography is a useful tool for visualising and semi-quantifying small intestinal ascarid burdens (Nielsen *et al.*, 2016b). A scoring system for assessing the number of adult worms present has been developed and validated and can be used to assess the potential risk of an impaction in the small intestine following anthelmintic treatment.

It should also be noted that there is no correlation between ascarid egg counts and ascarid worm counts on an individual basis (Nielsen *et al.*, 2010), so if the faecal analysis identifies any ascarid eggs, the animal should be considered “positive” for ascarids and appropriate treatment administered.

For foals **older than 4 months old,** FEC analysis is important because it will provide information about the predominant parasite category present (i.e. *Parascaris* spp. or cyathostomins), which each need to be targeted with a particular anthelmintic. Faecal egg count analysis will also provide valuable information on the levels of egg excretion

onto pasture, therefore helping to inform management practices, for example, rotation and routine poo-picking, especially in high-risk environments. Ascarid FECs tend to peak in foals of about 4-5 months of age, after which they decline and eventually become negative (Fabiani *et al.*, 2016). As in younger foals there is no correlation between ascarid egg counts and worm counts in individuals (Nielsen *et al.*, 2010).

Between **4 and 9 months of age**, FEC testing is recommended at a frequency of every 8–12 weeks (depending on an assessment of risk) to determine the predominant parasite type present to inform anthelmintic choice. The most meaningful use of FECs is to monitor the transition from ascarid-dominated parasite burdens to strongyles and the appearance of tapeworms at 5-8 months of age. This is due to the often-contrasting anthelmintic resistance profiles between ascarids and strongyles, where products that perform well against ascarids often do not work well against strongyles, and vice versa (Nielsen, 2022). Therefore, anthelmintic choice will depend on the parasite species identified by the FECs – this is likely to be cyathostomins in which case pyrantel salt or a macrocyclic lactone would be appropriate, but if ascarids are detected then fenbendazole or a pyrantel salt may be required; if both parasites are present, then a pyrantel salt might be the most appropriate choice (depending of their efficacy against both of these parasite groups). It is also important to perform FECRTs in this age group to identify the resistance profiles of ascarids and cyathostomins on the premises; FECs are likely to be higher and therefore FECRT and egg reappearance periods are easier to assess, towards the older age range in this group. Similar to ascarids, it should be noted that there is poor correlation between cyathostomin egg counts and the total cyathostomin worm counts in individual animals.

## Recently weaned foals and yearlings

Recently weaned foals and yearlings are likely to be high strongyle egg shedders, often exceeding 1000 EPG, so routine monitoring (ideally every 2-3 months) using FEC tests is important. However, in the UK, many foals will be weaned in the autumn/early winter, a time when a cyathostomin larvicidal treatment may be considered. In one study in the USA, mucosal larval development and accumulation appeared to be less prominent in foals and yearlings (Nielsen and Lyons, 2017), although clinical cases of larval cyathostominosis have been occasionally described in yearlings (Byrne *et al.*, 2025). These treatments should therefore be informed after a risk assessment by a prescriber who is in regular contact with the stud/premises, has extensive knowledge of the management practices applied, and has requested access to records of medicines previously prescribed together with any relevant history of parasite-associated disease on the property. If a cyathostomin larvicidal treatment is required, a five-day course of fenbendazole would be appropriate if results of FECRTs identify susceptibility of these parasites to this drug; alternatively, moxidectin or a moxidectin-praziquantel

combination may be used if tapeworm treatment is indicated by testing (note: moxidectin is not authorised for use in foals under 4 months of age).

Regular FECs to determine the predominant parasite type present are important in yearlings, since there can occasionally be a second wave of ascarid infection in this age group. This age group is more vulnerable to parasite-associated diseases, so control programmes for youngstock need to be the most rigorous and excellent paddock management is especially important for pastures being grazed by broodmares and foals or yearlings. Grazing animals in this age group on the same pasture in successive years should be avoided. Foals and yearlings should be considered separately when using the risk assessment-based approach (see Chapter 1 - Assessing the need for anthelmintic use) which is specifically aimed at adult horses.

NB. Specialist advice should be sought in cases of persistent high counts or when loss of efficacy of dewormers is detected. Veterinary advice must be obtained if there are signs of clinical disease.

## Tapeworm testing

Youngstock can be tested for tapeworm infections using the antibody ELISA (serum or saliva) and tapeworm FEC/FECRT (ideally using the "Proudman" egg counting technique) for tapeworm eggs.

Saliva testing can be carried out once the animal is weaned. Prior to weaning the test will be affected by antibodies in the mare's milk.

Serum ELISA can be carried out from 4 months of age. Following colostrum intake at birth, foals will possess maternal antibodies to tapeworms. These are expected to reduce at around 6 weeks after colostrum intake unless the foal becomes infected, at which point the antibody levels will increase 1-2 months after the infection.

Treatment should be targeted based on regular monitoring of test results as levels of infection can vary between yards or farms (Matthews *et al.*, 2023). In animals less than one year of age, it is likely that they would be tested once in the autumn (provided that they are over 4 months of age at that that time). However in animals older than one year, testing should be performed at least once a year, preferably twice a year, to indicate levels of infection at herd level, as well as to indicate individuals that require treatment to reduce the risk of disease. If a foal has a high tapeworm ELISA or tapeworm FEC result in autumn, a tapeworm ELISA and tapeworm FEC should be conducted the following spring ("yearling" year) and treatment for tapeworms administered if required. Test-based treatments should be applied instead of blanket treatments for tapeworm infections as reductions in anthelmintic efficacy against these parasites have been reported (Nielsen, 2023).

Standard nematode egg counting methods, such as the McMaster technique, have limitations for detecting tapeworm eggs, but other coprological methodologies (such as the Proudman technique) can be used. Since the tapeworm ELISA measures antibodies to the parasite, results cannot be used to check efficacy of deworming, as reduction in antibody levels following successful treatment takes several weeks (saliva-based test) or months (serum-based test), during which time re-infection may occur. To test for anthelmintic resistance to tapeworms using a FECRT, modified faecal analysis methods such as the Proudman or modified Proudman test are advised (Proudman and Edwards, 1992).

## Summary of anthelmintics used in foals, weanlings, yearlings and youngstock

Table 2: Anthelmintic use summarised according to class, treatment drug and parasite.

| Class | Drug | Parasite (Check efficacy with FECRT) |
|---|---|---|
| Benzimidazole | Fenbendazole | Ascarids, cyathostomins (5-day course potentially larvicidal) |
| Pyrimidine | Pyrantel embonate | Ascarids |
| | | Tapeworms (double dose) |
| Macrocyclic Lactones | Ivermectin | Cyathostomins |
| | Moxidectin | Cyathostomins (potentially larvicidal) |
| Isoquinoline-Pyrozines | Praziquantel[1] | Tapeworm |

*N.B:*

- *Check the dose rate of the specific product being used as dose rates vary.*
- *Alongside choosing the appropriate anthelmintic for the target parasite(s), it is important to remember that there are differing minimum age restrictions on anthelmintic products. The summary of product characteristics (SPC) of the anthelmintic should always be consulted prior to prescription to ensure the product is authorised for use in the age of the animal in question. For horses of any age that may not have been signed out of the food chain in a passport (passports must be obtained by 31 December in the year of birth or within six months of birth, whichever is later), is it also important to check the SPC prior to prescription for withdrawal periods.*