Parasite Control and Monitoring

Daniel Scovenna of Torch Vets offers a case to illustrate using the Animal Health and Welfare Pathway as an opportunity to establish a parasite control and monitoring programme in a suckler herd

Fascioliasis due to liver fluke (*Fasciola hepatica*) and parasitic gastroenteritis are costly and widespread diseases that most British cattle farmers must regularly deal with. Parasitic gastroenteritis in the UK is mostly caused by *Cooperia onchophora* and, later in the season, by *Ostertagia ostertagi*. Whilst the link between parasitic diseases and poor animal health and performance is well established, as vets, we are not often asked to discuss parasite control and monitoring programmes. This case gave me the opportunity to initiate farmer engagement, addressing an area that is often overlooked.

AHWP

The Animal Health and Welfare Pathway review was carried out in a spring calving pedigree Devon herd. The herd is split into two groups: one comprises approximately 20 cows and their calves and a second one is made up of a similar number of youngstock born during the previous calving seasons. The latter are sold for slaughter at approximately 24-30 months of age or kept as replacements.

The bulls are sourced from BVD, IBR and Leptospirosis accredited herds. No vaccination programme is implemented. However, a physical separation exists with neighbouring properties, no equipment is shared with other farms and all calves are BVD antigen tested at birth. The calving period is approximately 6 weeks, starting in early April. All cows had a living calf in 2023.

The herd runs on an extensive grazing system and groups are rotated depending on grass availability. The farmer has routinely administered a treatment for gastrointestinal nematodes and liver fluke to both adults and youngstock at housing but would like to reduce wormer usage, because of concerns of wormer resistance, risk of unnecessary use, and environmental pollution.

A farm visit was carried out in February 2024, approximately 10 weeks after housing. Both livestock groups were kept in the same shed at that time, with nose-to-nose contact. While a scale is available on farm, growth rates were not regularly monitored. However, all stock were in good body condition with no clinical signs of parasitic gastroenteritis (diarrhoea, poor condition).

Six blood serum samples were taken from 2023-born calves to be tested for BVD antibodies, pepsinogen, and liver fluke antibodies. Ten individual faecal samples for pooled worm egg count were also collected from the same group together with 10 faecal samples from 2022 born youngstock for pooled worm egg count and liver fluke egg sedimentation.

No respiratory disease that might have been consistent with lungworm infestation (*Dictyocaulus viviparus*) had been reported on the farm in recent years.

Results

2023 Calves	Pepsinogen i.u. tyrosine*	BVD antibodies	Liver fluke antibodies
1	0.70	Negative	Negative
2	1.00	Negative	Negative
3	0.80	Negative	Negative
4	0.60	Negative	Negative
5	0.80	Negative	Negative
6	1.90	Negative	Negative
Pooled Worm Egg Count: 200 eggs per gram – FecPack®			

**SRUC Pepsinogen reference: < 1.0 iu. Low; between 1.0 and 2.0 moderate; > 2.0 high*

2022 born youngstock	Pooled Worm egg count – FecPack ®: zero	Fluke sedimentation: negative

Interpretation

Calves born in 2023

- While worm egg count can be a poor indicator of worm burden and pooling reduces sensitivity further, counts of 200epg (eggs per gram) and above are considered a risk for pasture contamination and clinical disease (Sabatini *et al.,* 2023).

- Pepsinogen levels shortly after at the end of the first grazing season can indicate whether exposure to *O.ostertagi* has been too high thus causing production losses, or too low with consequent poor development of immunity (Charlier *et al.,* 2010). This test was carried out later in the season than recommended, potentially allowing pepsinogen levels to drop. Equally, the low average level might indicate insufficient exposure and possible risk of clinical disease in the second grazing season (Charlier *et al.,* 2010).
- Negative liver fluke sedimentation test on older stock and negative antibody test on younger stock suggests that the risk of fluke infestation is low.
- BVD negative antibody screen – no recent BVD circulation.

Actions

- Targeted treatment of 2023 born calves using a macrocyclic lactone drug, leaving the best performing animals untreated – preferably at least 10% to reduce the risk of resistance. The drug was chosen for its activity on potential hypobiotic *O.ostertagi* larvae (COWS, 2014).
- Monitor for signs of Type II *O.ostertagi* (diarrhoea, loss of condition, loss of appetite) as no accurate test can detect future likelihood of the disease.
- No anthelmintic treatment was warranted for adults and 2022 born stock.
- Implement a more robust identification system to determine field parasite risk, as shown in Table 1.

	High-risk	Medium-risk	Low-risk
Spring	Grazed by first-year youngstock in the previous year	Grazed only by adult or yearling cattle the previous year (inc. cows with calves at foot)	New leys and forage crops. Sheep or conservation only in the previous year
From mid-July	Grazed by untreated, first-year, weaned calved	Grazed by adult cattle	Ungrazed silage/hay fields or grazed by sheep, newly sown forage crops or arable by products

Table 1. *AHDB – 2024*

- Move 2023 calves to low-risk pasture at turnout and gradually move them to mid-risk pasture at the end of summer.
- Adult cows with 2024 born calves can be kept on medium risk field as calves' ingestion of larvae will be minimal at the beginning of the grazing season. Co-grazing with adults would also reduce overall burden on the field.
- If possible, move cows with calves at foot to lower risk field in mid-summer, when calves' larval ingestion will increase
- Use high risk fields for silage making only in early 2024.

Regular handling of the animals in summer is not practical on this farm. This poses some limitations for ongoing monitoring. However, the following actions were recommended:

- Monitoring growth rates in 2024 and 2023 born calves by measuring weight at birth/turnout and housing. This would both identify best performing animals that may not require worming (Charlier *et al.,* 2023) thus reducing wormer-driven selective pressure and provide data to benchmark overall herd performance. The target for growth rate was set as 0.70 Kg/day (AHDB, 2023).
- Monitoring worm egg counts in 2023 calves from 60 days post turnout (Sabatini *et al.,* 2023). Earlier exposure to nematodes may have been insufficient to allow full development of immunity. Monitoring could be done by collecting 10 samples on the field to carry out pooled worm egg count. Average counts over 200 would suggest field contamination and higher risk of clinical disease later in the season. Treatment would be required in this case, leaving the animals on the same field for 3-4 days before moving to allow reinfestation with wormer susceptible worms. If counts are low, the process can be repeated at monthly intervals.
- If treatment is needed, a short acting product is preferable to reduce the speed of development of resistance (SCOPS, 2022).
- Reduction tests may be utilised in this context to assess whether wormer resistance is likely.
- Worm egg count should also be carried out in 2024 born calves in late summer, when larval ingestion will increase, and treatment may be required.
- Collecting serum samples at housing to be submitted for pepsinogen testing to determine whether further treatments may be required and/or grazing management reviewed.

- Monitoring for signs consistent with lungworm (cough, dyspnoea) or gastroenteric nematodes (diarrhoea, loss of condition, poor growth).
- To quarantine all incoming bulls and treat for fluke, gastrointestinal nematodes, and lungworm.

Liver fluke

No evidence of recent infestation was determined on this visit. However, precautionary measures such as avoiding grazing fields prone to waterlogging, regularly emptying, and cleaning all water troughs and preventing animals from accessing natural bodies of water were discussed.

Repeat antibody monitoring in 2024 and 2023-born calves at housing was recommended.

BVD

General biosecurity was considered satisfactory despite the herd being unvaccinated. In the absence of BVD immunisation, the importance of maintaining biosecurity measures was restated to keep risk to a minimum. Repeating youngstock screening at housing as done on this visit, was discussed as an additional tool to assess whether any transient infection may have occurred during the 2024 grazing season.

The Role of the Animal Health Pathway Review

It is important to note that this is a farm specific plan, mostly based on parasite avoidance, which may not be applicable to more intensive rearing system, the time of the year at the time of the review and the limitation in handling animals during the grazing season influenced the interpretation of results and limited the applicability of stricter monitoring tools.

Parasite patterns are also prone to change depending on weather conditions, temperature, and previous treatment protocols. It is therefore possible that amendment will be needed to this plan, depending on monitoring results throughout 2024. However, this case still allowed client engagement, a more evidence-based approach to parasite control and monitoring and the overall reduction of anthelmintic usage on farm.