

M3 Parasite Monitoring – Method

This method is for monitoring a large ewe flock, annual lambing, predominately on pasture.

Three monitoring time points are suggested:

1. At spring lambing when parasites are coming out of dormancy and the ewes' immune system is compromised because of late gestation. Periparturient egg rise.
2. At weaning between 60 and 90 days of lactation – Mid -summer. Parasites on pasture are reaching peak levels and ewes still have a drain on their system from lactation.
3. Early fall. Ewes should be recovering from gestation and lactation and be in maintenance mode. Pasture parasite levels should be declining and parasites may be starting to enter their dormant phase.

The three time periods may coincide with different environments and management practices.

Basic method:

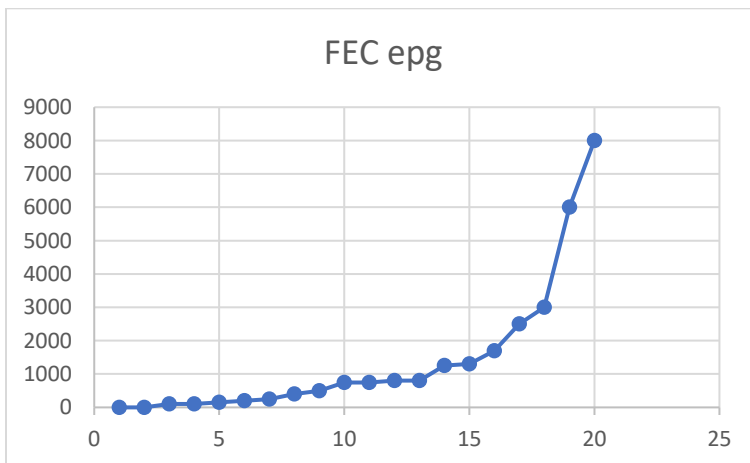
At each time period randomly collect 20 fresh fecal samples from the ewe flock. (30 samples will give a more accurate estimate of the parasite population profile but 20 samples are a reasonable compromise). Individually analyse each sample using a Modified McMaster FEC. Record the data and enter into an Excel spread sheet.

| Sample | FEC epg |
|--------|---------|
| 1 | 0 |
| 2 | 8000 |
| 3 | 800 |
| 4 | 750 |
| 5 | 1250 |
| 6 | 3000 |
| 7 | 200 |
| 8 | 500 |
| 9 | 100 |
| 10 | 1300 |
| 11 | 400 |
| 12 | 0 |
| 13 | 150 |
| 14 | 6000 |
| 15 | 100 |
| 16 | 250 |
| 17 | 750 |
| 18 | 800 |
| 19 | 1700 |
| 20 | 2500 |

Select Data and with drop down menu select sort from Smallest to Largest

| Sample | FEC epg |
|--------|---------|
| 1 | 0 |
| 12 | 0 |
| 9 | 100 |
| 15 | 100 |
| 13 | 150 |
| 7 | 200 |
| 16 | 250 |
| 11 | 400 |
| 8 | 500 |
| 4 | 750 |
| 17 | 750 |
| 3 | 800 |
| 18 | 800 |
| 5 | 1250 |
| 10 | 1300 |
| 19 | 1700 |
| 20 | 2500 |
| 6 | 3000 |
| 14 | 6000 |
| 2 | 8000 |

Highlight the FEC epg column, select Insert – Chart- scatter chart



Discuss the treatment trigger point with your vet and estimate the population that can be left untreated. (For example a treatment trigger point of 500 epg)

Run the flock through a chute, check BCS, FAMACHA, Dags. Treat as required but try to leave close to the estimate untreated.

Ensure to record the tag number of treated animals. Record the % of flock treated.

At lambing record the number or lambs per ewe with the tag number of the ewe. This is the minimum data that should be collected. Any other production information on the lambs is beneficial.

Repeat the FEC testing, estimate of population to treat and treatment procedure at the other two time points.

Data Analysis

At end of season, analyse data for the three testing and treatment time points as well as production data. Example interpretation.

| Lambing | Weaning | Fall | Interpretation |
|---|---------------|---------------|---|
| >80% treated | > 80% treated | > 80% treated | Widespread environmental contamination, possible resistance issues |
| >80% treated Higher % for high production ewes | > 10% treated | >10% treated | Reasonable pasture management over summer, possible nutrition problems at lambing or contamination of winter holding area |

Work with your vet to adjust parasite management plan for each time period to correct potential problems. This may take a few years to correct issues.

Use production and treatment history to select for and cull breeding animals. This should be used with caution until environmental contamination is corrected.

| | |
|---|---|
| High production ewe Low treatment history Retain progeny for replacements | High production ewe High treatment history Breed to resistant ram |
| Low production ewe Low treatment history Breed to high production ram | Low production ewe High treatment history Cull |

This is not a quick solution but this method should help:

Identify management problems for a given time period

Estimate the population that can be left untreated (maintain refugia to slow down development of resistance)

Select replacement animals for parasite resistance (or cull for susceptibility) without selecting against production

Analyse data over time to measure response to management changes

Provide sufficient data to discuss parasite management plans with your vet