

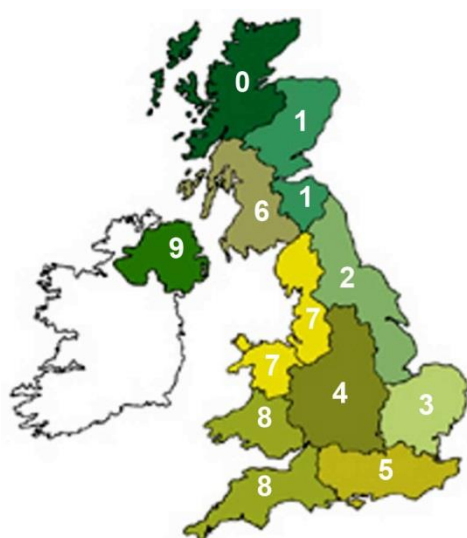
As part of AMTRA's online CPD Programme for livestock SQPs, each month AMTRA will send you the Parasite Forecast which will highlight the parasitic challenge facing livestock in your area for that month. At the end of the Parasite Forecast you will find a series of multiple choice questions (quiz button) based on its contents. Answer the quiz online and you will be emailed a certificate with your score. This will form part of your SQP CPD requirement. The Parasite Forecast has been developed by NADIS (National Animal Disease Information Service) and is written by leading veterinary parasitologists and based on detailed data from the Met Office

NADIS Parasite Forecast – April 2019

Use of meteorological data to predict the prevalence of parasitic diseases

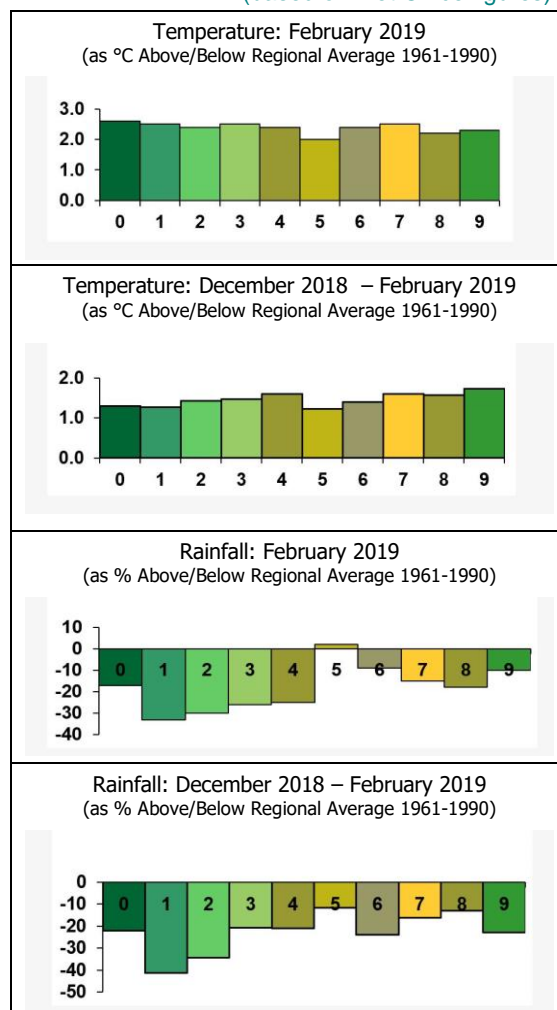
Regional Weather

(based on Met Office figures)



REGIONS

- | | |
|----------------|-------------------------|
| 0 N W Scotland | 6 S W Scotland |
| 1 E Scotland | 7 N W England & N Wales |
| 2 N E England | 8 S W England & S Wales |
| 3 E Anglia | 9 N Ireland |
| 4 The Midlands | |
| 5 S England | |



February started off cold, with some snow showers. The rest of the month was very mild. The provisional UK mean temperature was 6.0 °C, 2.4 °C above the 1981-2010 long-term average. This pattern was observed across all regions in both February and for the previous 3 months from December to February. Rainfall was 82% of the long-term average rainfall nationally in February. This was the case across most of the UK, particularly on the east coast, although the south of England was comparable to the long-term average. Rainfall for the previous 3 months from December to February was below average across all regions.

April Parasite Forecast/Update

The most recent version of this monthly parasite forecast may be accessed at www.nadis.org.uk

SHEEP

Parasitic Gastroenteritis (PGE)

Parasitic gastroenteritis in lambs is a major consideration at this time of year. This can have a number of causes. Having disease prevention and control strategies in place will help to reduce risk of disease and subsequent losses. Such strategies include pasture management, anthelmintic treatments and diagnostic monitoring. Specific risks and their control strategies include:

1. Nematodirosis

Unlike most PGE-causing roundworms, *Nematodirus battus* infections pass directly from one season's lambs to the next. This is due to the specific development requirements of eggs at pasture, which survive on pastures over winter to develop and emerge as infective larvae the following spring. Under optimal conditions, eggs develop more rapidly and hatch both earlier in the grazing season, and in larger numbers. Under such circumstances, pastures can become highly infective in a short space of time and, if this mass emergence or "peak hatch" occurs at a time when lambs are starting to graze extensively can lead to widespread and severe disease. It is therefore important to identify potentially contaminated pastures and avoid grazing lambs on these during peak risk periods for disease. Both NADIS and [SCOPS](#) produce risk forecasts for *Nematodirus* based on local climatic conditions to help predict when "peak hatch" periods are likely to occur:

- A. Due to the record temperatures experienced in February, the [SCOPS forecast](#) is already predicting moderate to high risk for nematodirosis in many parts of the UK, with [cases already confirmed](#) in some areas.
- B. The provisional NADIS *Nematodirus* forecast is based on Met Office data for daily 30cm soil depth temperatures taken from 202 weather stations across the UK between 1st – 15th March 2019.
 - Due to the mild conditions in February, soil temperatures in March have remained high.
 - The NADIS forecast is also therefore predicting early hatch, particularly further south, with peak hatch predicted to have occurred in March in some areas.
 - This forecast will be updated in April using temperature data for the **whole of March 2019**.

2. Other PGE-causing roundworms

The so called "periparturient rise" (PPR) in worm egg count which occurs in pregnant ewes caused by a suppression of the ewe's immunity around lambing leading to increased pasture contamination (Figure 1).

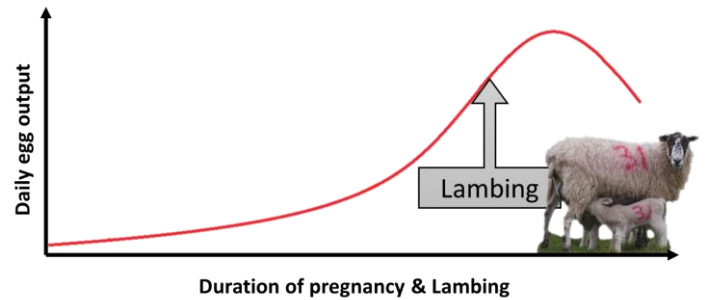


Figure 1: The "periparturient rise" (PPR) in ewes is the increase in daily egg output in pregnant animals that occurs around lambing.

3. Coccidiosis

Another parasitic disease of importance in growing lambs is coccidiosis. This is caused by protozoal (single celled) parasites and the rapid accumulation of their infective "oocysts" in the environment leading to overwhelming infection and disease. Unlike roundworm infections, coccidiosis can affect housed animals as well as those at pasture.

This disease is commonly associated with high intensity husbandry systems and stocking densities as well as stress factors such as poor colostrum supply, adverse weather conditions at wet muddy paddocks previously grazed by sheep and/or extended housing periods.

Advised actions include:

- **Monitoring for disease:**
 - Nematodirosis: Typically affects 6-12 week old lambs on pastures grazed by the previous season's lamb crop. Signs include sudden onset diarrhoea, dehydration and death. Affected animals normally present with heavily soiled back ends, lack of appetite and a profound thirst (Figure 2).
 - Other PGE-causing roundworms: Infected ewes will show little or no obvious signs of disease, but are likely to have very high worm egg counts. Infected lambs will show similar signs of gastrointestinal disease as nematodirosis, particularly anorexia, diarrhoea, dehydration, weight loss and death, although disease generally becomes apparent later into the grazing season.
 - Coccidia: Typically affects 4-8 week old lambs. Signs include anorexia, weight loss, diarrhoea (with or without blood) and death in severe cases.



Figure 2: *Nematodirus battus* infection can cause sudden onset, severe diarrhoea in first season lambs often with characteristic soiling around the back end.

- Due the similarities in presenting signs and ages of affected animals, in grazing lambs it is important to determine whether coccidia or *Nematodirus* infection is present and causing disease.
 - In severe disease outbreaks post mortems can provide valuable information as to the cause.
 - Grazing and/or management history can also provide key information when determining the likely cause.
 - Worm egg counts can be helpful in distinguishing between different parasite infections (Figure 3).

However:

 - Disease caused by *Nematodirus* generally starts before eggs can be detected.
 - If coccidial oocysts are detected, further testing to determine if these are a disease-causing species is also advised when deciding whether or not to treat.
 - Concurrent infection with both coccidia and *Nematodirus* is not uncommon.

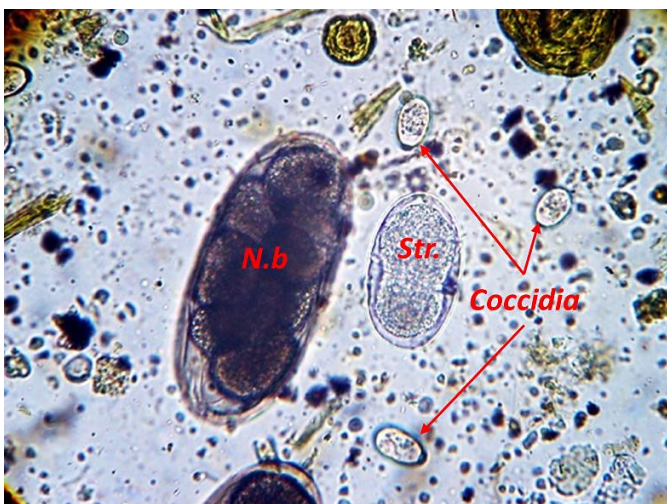


Figure 3: Faecal egg counts are a useful way of evaluating various parasitic infections. This method can be used to identify *Nematodirus* eggs (N.b) and those of other PGE-causing roundworms (Str.) as well as coccidial oocysts (arrows).

- For nematodirois in lambs:
 - Consult the [SCOPS](#) and NADIS *Nematodirus* forecasts to determine when the peak risk period is likely to be in your area and monitor for signs of disease.
 - Identify high risk pastures, namely those grazed by the previous season's lambs, and avoid grazing the current season's lambs here during peak risk periods.
 - Where no safe grazing is available, prophylactic treatment with a group 1-BZ product may be advisable depending on the age of lambs and peak risk period in your area. For more information please speak to your vet or SQP.
 - Where disease occurs, treatment with group 1-BZ is usually effective. **However**, reports of treatment failures have been reported in the UK.
 - It is therefore essential to ensure correct dosing by weight and administration using correctly calibrated drenching equipment.
 - Consider performing egg counts at 7-10 days post-treatment to confirm efficacy (Figure 3).
 - Where treatment failure is suspected, please seek veterinary advice.
- When treating PPR in ewes, SCOPS recommend avoiding blanket treatment to minimise risk of selecting for anthelmintic resistance:
 - Leave a proportion of the ewes untreated
 - Targeted treatment of specific groups of animals can be an effective way of achieving this. For example, animals with high worm egg counts (Figure 5), low body condition score, twin/triplet or first season ewes
 - As a rough guide, leaving at least 10-20% of the flock untreated is suggested to dilute any selection for anthelmintic resistance.
 - If choosing to treat with ewes with a group 3-ML, seek veterinary advice first- long-acting worming products can be passed onto lambs through milk, indirectly leading to unwanted selection for anthelmintic resistance.
 - Providing high protein feed in the run up to lambing can help reduce egg shedding in leaner

- ewes by supporting their immune system.
 - Avoid turn-out onto pastures grazed by last season's lambs. These may still have relatively high infectivity due to presence of overwintered larvae.
 - These pastures will become useable later in the grazing season as overwintered larvae die off.
 - Where grazing is limited, reserve safe pastures (e.g. reseeded pastures or those grazed previously by cattle) for ewes with twin lambs.
- For coccidiosis:
 - Reduction of stocking densities, batch rearing of lambs by age and avoidance of heavily contaminated pastures/premises can reduce risk of disease outbreaks.
 - A number of anticoccidial products including feed medication are available for both prevention and treatment of coccidiosis. For more information on these, please speak to your vet or SQP.

CATTLE

Parasitic Gastroenteritis (PGE)

If previously untreated, young stock that have been housed over winter following their first or second grazing season may still be at risk from type-2 ostertagiosis. This condition results from the emergence of large numbers of encysted larvae from the stomach wall *en masse* ahead of turn-out the following spring. This disease presents as intermittent diarrhoea with loss of appetite and rapid loss of body weight (Figure 4). Whilst numbers of animals affected is usually low, mortality in affected animals can be high without prompt treatment with either a group 3-ML or some group 1-BZ products. For more information, please speak to your vet or SQP and see the [COWS group guidelines](#).



Figure 4: Young stock not dosed at housing may be at risk from type-2 ostertagiosis towards the end of the housing period.

Looking ahead, young stock going into their first or second grazing season are at greatest risk of PGE (Figure 6). It is therefore important to plan around these animals when devising an effective, sustainable parasite control plan for your farm. The COWS group currently recommend one of two options. Choice of strategy is largely dependent upon individual farm objectives and the feasibility of their implementation:

- Set stocking with strategic anthelmintic treatments. This option is particularly useful on farms where grazing choice is limited. The aim is to minimise pasture contamination up to mid-July, by which time the over-wintered larval populations should have declined to insignificant levels. Cattle treated strategically should therefore remain set-stocked and only moved to safe pastures (e.g. hay or silage aftermaths) later in the grazing season as these become available. To be effective, this strategy needs to be initiated early in the grazing season, within 3 weeks of turnout, to avoid build-up of worm eggs on pasture. Strategic treatments include administration of a bolus wormer at turnout or repeated administration of shorter duration group 3-ML products at a 6-8 week interval.
- A "wait and see" approach aiming to avoid use of anthelmintics unless needed. Whilst reducing selection pressure for anthelmintic resistance, this approach is heavily reliant on monitoring and diagnostic testing to prevent disease and significant production losses. Where available, this approach can make use of pasture rotation to prevent animals being exposed to a significant build-up of infective larvae later in the grazing season, although this needs to be planned well in advance to ensure safe grazing options are available when needed. Targeted selective treatments based on weight gain and/or body condition score and overall health status can be used to minimise and direct anthelmintic treatment to where it is most needed. Similarly, treatments informed by worm egg counts can reduce pasture contamination without applying a significant selection pressure on the parasite population with respect to anthelmintic resistance.



Figure 5: PGE in cattle causes diarrhoea and up to a 30% reduction in the growth rates of young stock. Commonly affected animals include growing dairy heifers in their first grazing season (left) and weaned autumn-born suckler calves in their second grazing season (right).

Irrespective of which approach is taken, over the course of the grazing season regular performance testing through weight gain, diagnostics (e.g. worm egg counts) and post-treatment efficacy testing are hugely

valuable and important tools to ensure your chosen control plan is working- Incorrectly controlled PGE can severely impair performance and productivity in both calves and adult cattle. For more information, please speak to your vet or SQP and see the COWS website (www.cattleparasites.org.uk).

Lungworm

On farms with a history of lungworm infection, vaccination offers a valuable tool for protection against disease in calves (Figure 6). Since the lungworm vaccine is live, it must be purchased fresh ahead of each grazing season. Planning and ordering the number of doses required for your farm in advance is therefore advisable.

- All calves over 8 weeks old entering their first grazing season should be given two doses of lungworm vaccine four weeks apart, with the second dose being given at least two weeks before turnout.
- In some instances, such as where anthelmintic regimes may have prevented full immunity being acquired over the previous grazing season, a further one off vaccination may be recommended in is sometimes recommended.
- For more information, please speak to your vet or SQP and see [“COWS” group guidelines](#).

Joint SCOPS and COWS statement on Liver Fluke

A forthcoming press release from the COWS and SCOPS groups concerning liver fluke emphasised the importance of chronic fluke infection. Such infections may show no obvious signs of disease, yet can have a profound impact on animal health, welfare and productivity.

The dry conditions last autumn led to lower predicted risk than usual, but the mild winter may have allowed continued development and a longer risk period than is typical. Consequently, infections may have occurred later into the season than normal, meaning treatments given during the “usual” risk period in autumn may not have been effective in controlling disease, with evidence emerging from some areas of the UK supporting this view (Figure 6).

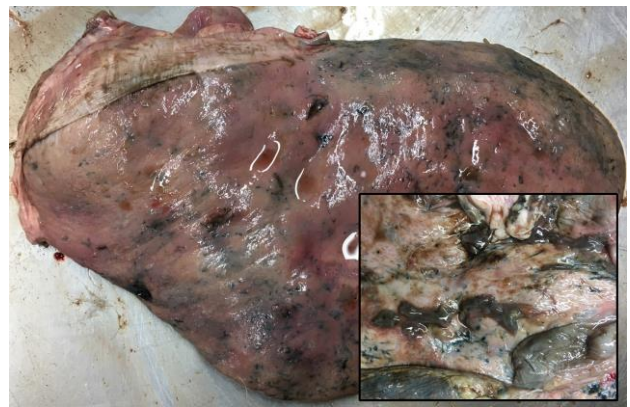


Figure 6: Mixed adult and late-juvenile fluke infection detected in a Texel X shearling from Northumberland in February 2019. The milder winter months may have allowed for a longer infection period than usual. If in doubt, consider diagnostic testing to determine your current disease status (Photo credit: Ben Strugnell, Farm Post Mortems Ltd).

Advised actions include:

- Monitor for signs of chronic disease:
 - Weight-loss, anaemia and fluid accumulation (e.g. bottlejaw).
- Diagnostic testing can be useful in identifying infection in animals displaying no obvious signs of disease:
 - Fluke egg counts can be used to identify chronic infections in groups of animals through composite sample analysis
 - The coproantigen ELISA can be used to detect pre-patent infections
 - Post-mortems and abattoir feedback can provide valuable information
- Where treatment is indicated:
 - Consider use of a flukicide product other than triclabendazole to preserve its effectiveness for when it most needed.
 - Albendazole (at the higher fluke dose rate) and oxyclozanide are effective against adult flukes.
 - Nitroxylnil and closantel have some efficacy against late maturing flukes and may be of added benefit in some cases.
 - For more information and advice please speak to your vet or SQP and see the COWS and SCOPS group websites.

[Don't forget to try the interactive quiz](#)

Local farm conditions may vary so consult your veterinary surgeon. Parasite control should be part of your veterinary health plan.

To watch a webinar (video) based on this article and take an electronic quiz worth 3 CPD points, click

WEBINAR

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