

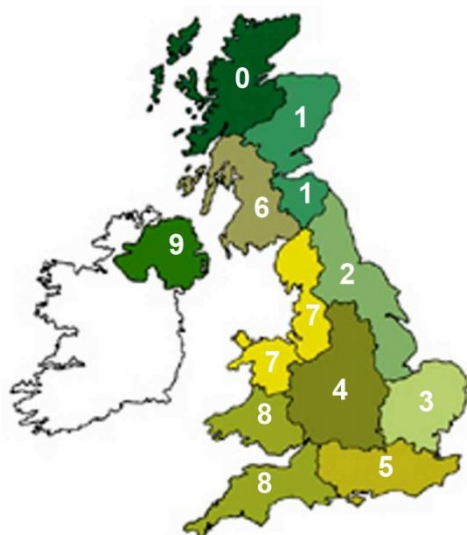
As part of AMTRA's online CPD Programme for livestock SQPs, each month AMTRA will send you the Parasite Forecast which will highlight the parasitic challenge facing livestock in your area for that month. At the end of the Parasite Forecast you will find a series of multiple choice questions (quiz button) 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 – January 2020

Use of meteorological data to predict the prevalence of parasitic diseases

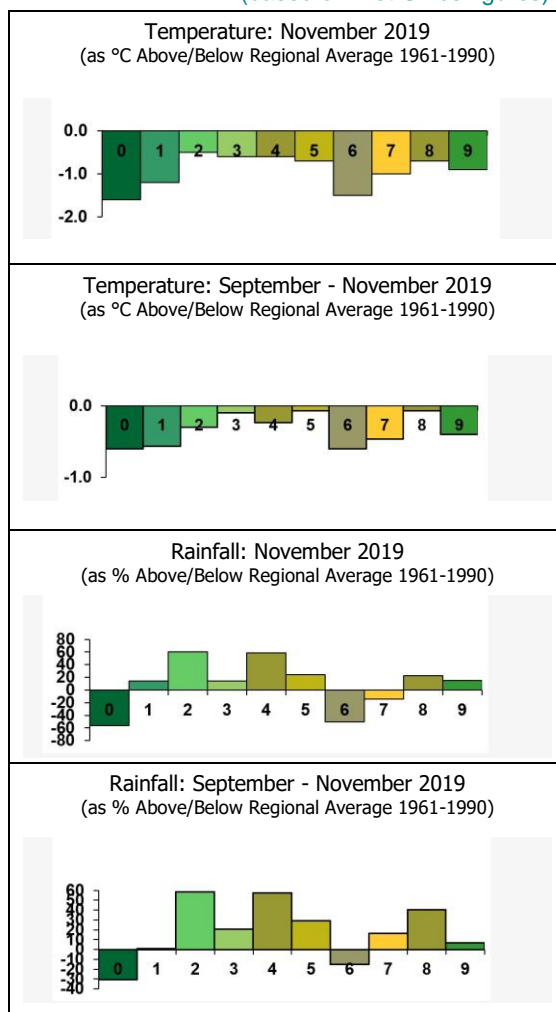
Regional Weather

(based on Met Office figures)



REGIONS

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



January Parasite Forecast/Update

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

Weather Report

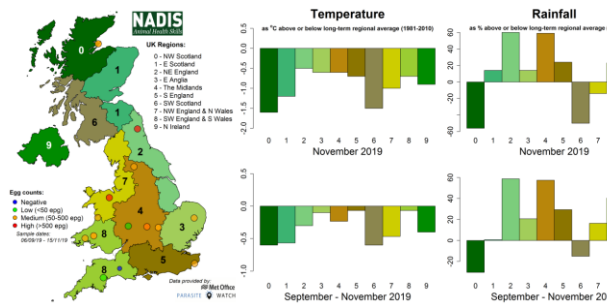


Figure 1: Temperature and rainfall by region for previous months. Egg count data shows the most recent counts for roundworms in sheep at each location between the sample dates stated.

November started out mild, turning colder with sleet and snow in many areas before becoming milder with wet spells towards the end of the month.

The provisional UK mean temperature for November was 5.3°C, 0.9°C below the long-term national average (1981-2010).

Regionally, below average temperatures were observed across all regions of the UK both in November and for the preceding 3 months (September – November). UK mean rainfall was 97% of the long-term average, although this varied between regions, with above average rainfall generally in the east and further south, particularly the midlands and north-east of England, and below average rainfall further north and west both in November and for the preceding 3 months.

Parasite control planning

Winter provides a good opportunity to review and plan on-farm parasite control strategies ahead of coming grazing season. Preparation will help you to develop a robust yet practical programme to reduce disease burdens, costs and selection for anthelmintic resistance.

Please speak to your vet or SQP about devising a parasite control plan to work for your farm. More information on sustainable parasite control in sheep and cattle can be found on the [“SCOPS”](#) and [“COWS”](#) websites, and cattle and sheep-specific [parasite control planners](#) are available through NADIS (Figure 2), which can help devise and visualise your plan for the coming year. Important issues to bear in mind include:

- Seasonal risk and farm history. Different parasites cause problems at different times of year and under different conditions. Considering specific issues you have encountered in the past and when these occurred

can help you plan for the future. The NADIS parasite forecast can be a useful resource to highlight specific seasonal and regional parasite risks.

- Identify at-risk animals. Generally, younger animals are often more susceptible to parasitic diseases, particularly calves and lambs entering their first (and potentially second) grazing season.
- Choice and rotation of anthelmintics. Make sure you are familiar with the products available, their active ingredients and indications for their use. Appropriate choice of wormers and product rotation will help reduce selection for anthelmintic resistance on your farm.
- Bio-security and quarantine measures. Holding and quarantine treatment of purchased animals prior to turnout on to pastures will help prevent introduction of anthelmintic resistance on to your farm.
- Diagnostic and performance testing. Ideally, routine diagnostic testing should be at the centre of any sustainable parasite control scheme. Diagnostic tests such as worm egg counts provide useful information when deciding treatment and pasture management options. Performance testing can also help provide a more targeted approach to worm control through identification of those animals worst affected. If used correctly, diagnostics and performance monitoring can identify issues before they become severe, reduce the amount of anthelmintics required and improve timing of dosing, ultimately reducing costs and boosting productivity.
- Identify “safe” and “contaminated” grazing. Contaminated pastures are those grazed previously by infected animals, including pastures grazed the previous season. Safe pastures are those which have not been grazed previously, such as freshly seeded leys, and silage and hay aftermaths. Pastures previously grazed by sheep are generally safe for cattle and vice versa with respect to roundworms, although it is important to note this is not

necessarily the case with liver fluke. Planning of pasture management and rotation should be planned in conjunction with testing, performance monitoring and treatment regimens.

- Other work planned through the year. Incorporating parasite control into other seasonal activities such as spring turnout, shearing, winter housing etc. can help implementation. An important aspect of for any successful parasite control plan is that it is adhered to. Simplifying and doubling up with other activities where possible will help facilitate this.

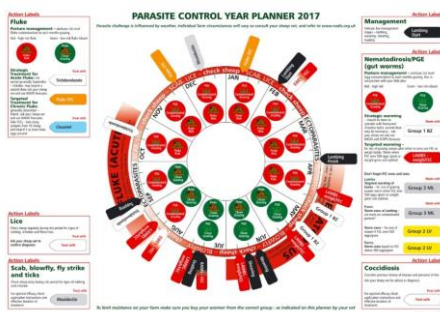


Figure 2: Cattle and sheep specific parasite control planners are available through NADIS and can help develop a sustainable, practical on-farm strategy.

Liver fluke

The liver fluke forecast for autumn 2019 predicted high risk in Scotland, northwest England & north Wales, moderate risk in Northern Ireland and low risk everywhere else (Figure 3).

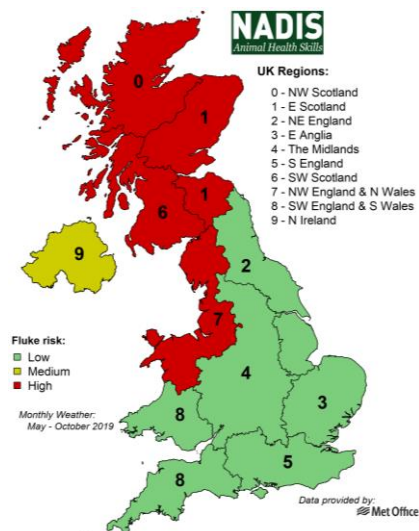


Figure 3: 2019 UK autumn fluke risk forecast by region.

It is therefore advised that farmers with livestock still grazing in high and medium risk regions are vigilant for signs of disease, as well as farms in other areas with either a history of liver fluke, or permanently wet pastures. It is also important to be on the lookout for chronic infection at this time of year. Chronically infected animals may show no obvious signs of disease, but can have significant reductions in productivity (Figure 4). Furthermore, chronically infected sheep and cattle can remain infected for months or even years if untreated, meaning housed animals may still be affected. Such animals can also be an important source of pasture contamination in the coming season. If in doubt, please seek veterinary advice.



Figure 4: Chronic fluke infection in sheep caused by adult flukes living in the bile ducts. Such animals may show no obvious signs of disease so it is important to check for infection through diagnostic testing.

Advised actions include:

- Monitoring for signs of disease:
 - Sudden death in heavy acute infections
 - General dullness, anaemia and shortness of breath
 - Rapid weight loss, fluid accumulation (e.g. bottlejaw)
- In the absence of any obvious signs, chronic infection should still be considered in untreated animals that have previously grazed high risk pastures.
 - Fluke egg counts can be used to diagnose chronic infection in individual animals, or groups of animals using pooled faecal samples (Figure 5).
 - Alternative diagnostic tests such as the serum or coproantigen ELISA are also available, and may be useful in diagnosing acute fluke infections. For more

information on diagnostic options and sampling, please speak to your vet.

- Routine clostridial vaccination to prevent Black disease and should be considered if not already in place.

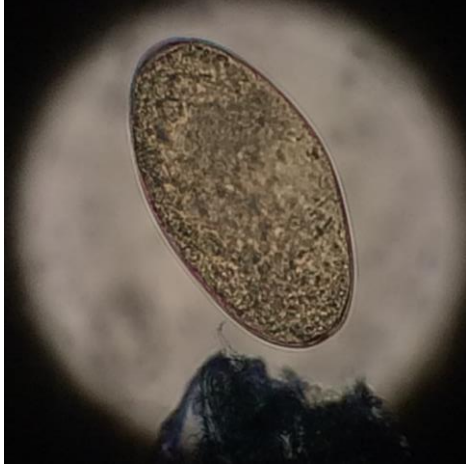


Figure 5: Chronic fluke infection can be identified through egg sedimentation using either individual or pooled faecal samples.

Where fluke infection is identified:

- Treatment with triclabendazole is recommended for acute disease, as this is the only product effective against both adult and immature stages of the parasite.
- In housed animals consider use of a product other than triclabendazole to treat chronic infection due to concerns over emerging drug resistance.
 - If treating cattle with an adulticide product like closantel, the “COWS” group recommend repeated or delayed treatment at 6-7 weeks post-housing (www.cattleparasites.org).
 - For sheep, the “SCOPS” group suggest using closantel or nitroxynil at 3 weeks post housing, with a further treatment to kill any residual adult parasites in the spring (www.scops.org).
- Due to concerns over emerging drug resistance, testing for treatment efficacy through pre- and post-treatment diagnostics is also advised.
- For more information about how best to implement the various treatment and control options and conduct efficacy testing on your farm, please speak to your vet.

SHEEP

Parasitic gastroenteritis (PGE)

The dropping temperature observed in previous months mean larval development on pastures is likely to have stopped at this time. However, colder weather can increase larval survival over winter, meaning previously infective pastures are likely to remain so into the following season. In particular, *Trichostrongylus* species can continue to be a risk in store and replacement lambs and, sometimes, yearlings at pasture over the winter (Figure 6). It is therefore important to maintain vigilance for signs of disease in at risk animals grazing potentially contaminated pastures. Egg count data from the [Parasite Watch](#) from September to November 2019 shows moderate to high egg counts on a number of farms across Great Britain (Figure 1).

It is also important at this time of year to consider encystment and the arrested development of roundworm infections in yearling lambs. Animals carrying high levels of encysted larval infections are potentially at risk of scours similar to type-2 ostertagiosis in cattle, and these populations can also be an important source of early pasture contamination in the next grazing season. Since animals with encysted larval infections can be egg count negative, it is important to consider at-risk animals based on previous grazing history, treatments and levels of infection observed towards the end of grazing. If indicated, a number of anthelmintics carry a licence of efficacy against arrested larval stages. For more information on anthelmintic selection and treatment options please speak to your vet or SQP.



Figure 6: Trichostrongylosis is a common problem in store and replacement lambs in the autumn and winter months

Advised actions include:

- Monitoring for signs of disease:
 - Loss of appetite

- Diarrhoea (black scour)
- Dehydration
- Rapid weight loss
- For active ongoing infections, such as *Trichostrongylosis*, consider worm egg counts and weight gain in at-risk animals to determine infection status and need for treatment.
- When assessing the risk of encysted larval stage infections:
 - Egg counts are not a reliable indicator.
 - Consider groups of at-risk animals, their previous grazing and treatment history
 - Use an anthelmintic licenced for use against larval encysted stages
 - If you are unsure, please seek veterinary advice

SCAB and LICE

Scab (mite) and louse infestations can become a significant problem in sheep flocks housed over the autumn and winter months, typically from September-April. Whilst the signs of scab and louse infestations are similar, treatment options may differ considerably since scab mites live on the skin, whilst lice reside within the fleece. This makes diagnosis an important first step towards treatment.

Sheep scab is caused by psoroptic mites (*Psoroptes ovis*). Infestations cause loss of condition, secondary skin infections and potentially death if not treated. Signs include severe itching, wool loss, restlessness, biting and scratching of affected areas and weight loss or reduced weight gain. When examined, the fleece may be wet, sticky and yellow due to serum discharge and the skin may become thickened and corrugated (Figure 7). Studies show scab mites can remain infective in the environment for up to 17 days. Consequently, fields, sheds and pens where infected sheep have been kept and handled should be considered a potential source of infection to other sheep during this period.

Louse infestations in the UK are mainly caused by chewing lice (e.g. *Bovicola ovis*) and may present in a similar, but less severe way to scab. Thin sheep tend to be most greatly affected, with widespread louse infestations often indicative of another underlying problem within the flock.



Figure 7: A severe case of sheep scab characterised by wool loss, serous exudate and thickening of the skin.

To reach a diagnosis:

- For scab, diagnosis can be made through microscopic examination of skin scrapings from suspected animals to detect the mites (Figure 8), or by detection of antibodies in blood samples with an [ELISA test](#).
- Chewing lice reside in the fleece and can be identified from wool samples taken from affected areas. Lice can sometimes be seen with the naked eye and confirmed by microscopy (Figure 8).
- For more information concerning diagnosis, please speak to your vet.
- **It is important to remember sheep scab is notifiable in Scotland.**



Figure 8: Psoroptic mites (left) can be identified from skin scrapings, whilst louse infestations can be confirmed in affected fleece (right). Photos courtesy of Dr Joseph Angell.

Where treatment is required:

- First, ensure the correct diagnosis has been reached.
- Injectable macrocyclic lactone (3-ML) products are effective against sheep scab with [varying periods of protection](#). For more information concerning treatment with 3-MLs please speak to your vet or SQP.
 - It is important to remember that 3-MLs are also an

important class of anthelmintics and, if used, should be considered as a roundworm treatment also.

- There is evidence showing the emergence of resistance in scab mite to group 3-MLs in the UK. It is therefore vitally important to ensure correct diagnosis and treatment protocols are adhered to, and that veterinary advice sought if treatment failure is suspected.
- Louse infestations can be controlled with [topical products containing synthetic pyrethroids](#). These products are most effective on shorn sheep.
- Plunge dipping with diazinon is effective against both scab and louse infestations.

CATTLE

Parasitic gastroenteritis (PGE)

For growing cattle housed after their first or second season, treatment with a product containing either a 3-ML or 1-BZ anthelmintic is recommended as these are effective against encysted larval infections which may have been acquired in the latter stages of the grazing season. If untreated, heavy burdens of encysted larvae can cause type-2 ostertagiosis due to triggered mass emergence in late winter/ early spring (Figure 9). Encysted larval *Ostertagia* infections cannot be assessed by worm egg count.



Figure 9: Type-2 ostertagiosis is a potentially serious disease that occurs in housed young stock in the late winter early spring. It is caused by triggered mass emergence of encysted larval infections acquired at the end of the previous grazing season. It is important to consider at-risk animals at this time and treat appropriately to avoid clinical disease.

Ectoparasites

Louse and mite infestations in cattle are not uncommon during winter housing (Figure 10). Generally low level infections are not of major concern, but heavy louse infestations may indicate an underlying management or health issue and, where sucking lice are present, may cause anaemia compounding existing problems.

A range of pour-on and spot-on synthetic pyrethroid products are available with efficacy against lice, whilst group 3-ML pour-on worming preparations are also effective, and injectible group 3-ML preparations are effective against sucking lice.

A relatively small number of injectible and pour-on group 3-ML based products are available in cattle against mange mites, with some and pour-on synthetic pyrethroids preparations also effective. Where mange infestations are a cause for concern, please seek veterinary advice concerning further diagnosis, as the type of mite causing disease will help to inform treatment choice. Psoroptic mange in particular can cause severe disease (Figure 10) and in outbreaks treatment is usually necessary for all in-contact animals to achieve elimination.

Where treatment of ectoparasites is indicated, it is advisable to follow up with further examination and diagnostic testing. Resistance to synthetic pyrethroids has been identified in lice, whilst treatment of psoroptic mange with group 3-MLs can produce varied results often requiring multiple treatments. It is also important to note that scab mites can live in the environment for 2-3 weeks, meaning good disinfection and biosecurity measures are important for control. For more information on ectoparasite control in cattle please speak to your vet or SQP, and see the ["COWS" guidelines](#).



Figure 10: Ectoparasites (louse and mite infestations) in housed cattle usually produce only mild, self-resolving signs (left). However, some parasites and circumstances, such as psoroptic mange (right) can lead to more severe disease and the need for appropriate treatment informed by diagnosis.

[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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