SQP – CPD Programme

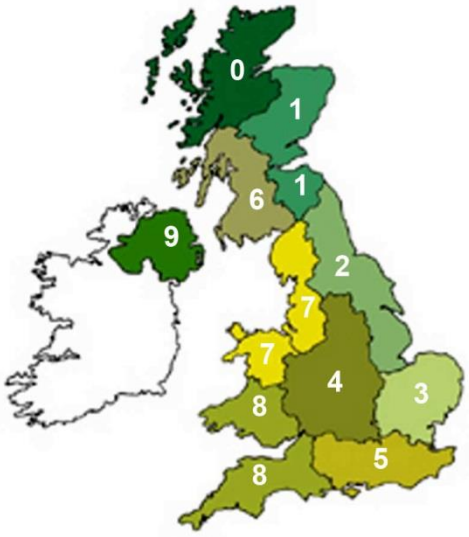
As part of AMTRA`s online CPD Programme for livestock SQPs, each month AMTRA will send you the Parasite Forecast which will highlight the parasitic challenge facing livestock in your area for that month. At the end of the Parasite Forecast you will find a series of multiple choice questions (quiz button) 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. Merial Animal Health is committed to the provision of up-to-date independent knowledge for Animal Health Advisors to enable timely and best practice advice to be given to livestock farmers. As such Merial Animal Health is proud to sponsor NADIS and the Parasite Forecast.

NADIS Parasite Forecast - December 2018

Use of meteorological data to predict the prevalence of parasitic diseases

Regional Weather

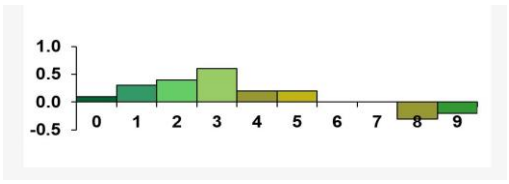
(based on Met Office figures)



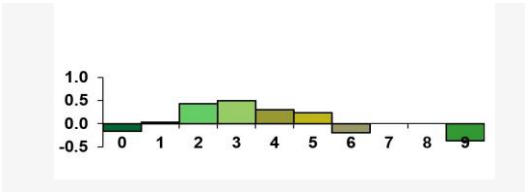
REGIONS

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		

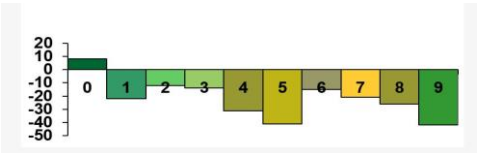
Temperature: October 2018
(as °C Above/Below Regional Average 1961-1990)



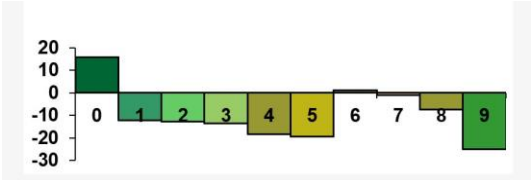
Temperature: August – October 2018
(as °C Above/Below Regional Average 1961-1990)



Rainfall: October 2018
(as % Above/Below Regional Average 1961-1990)



Rainfall: August – October 2018
(as % Above/Below Regional Average 1961-1990)



The average temperature for the UK in October was 9.6ºC, 0.1ºC above the long-term national average (1981-2010). Regionally, temperatures varied around their respective averages for October by up to 0.5ºC (East Anglia) with a similar pattern for the previous three months (August-September). Despite the torrential rain experienced in mid-October, overall UK rainfall was 82% of the long-term average for the month. This pattern was also observed regionally with the exception of northern Scotland. Regional rainfall for the previous three months was also lower than the long-term average with the exception of northern Scotland, where rainfall was above the long-term average and southwest Scotland, northwest England and north Wales where rainfall was equivalent to the long-term average. Overall, the seasonally typical temperatures are likely to have allowed continued development of parasites on pasture where present. The lower than expected rainfall is likely to have reduced the risk of diseases associated with wetter conditions like fluke, although local weather patterns and conditions should be taken into account when considering on-farm disease risk.

December Parasite Forecast/Update

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

Supported by QMS ***Improving sheep and cattle health***

Liver fluke: final Autumn forecast

The fluke forecast for autumn 2018 is based on monthly rainfall and temperature data from May-October 2018. This year's forecast predicts **Medium** risk for liver fluke in southwest Scotland and **Low** risk across all other areas of the UK (figure 1).

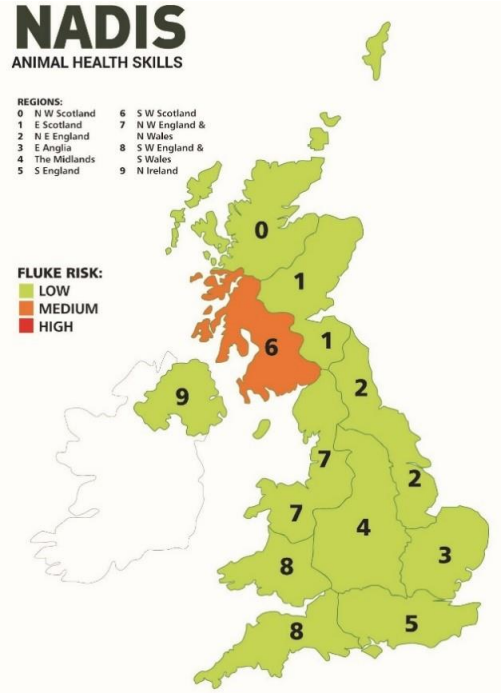


Figure 1: Regional risk for liver fluke in autumn 2018. It is important to remember this forecast is a guide, and local conditions should be considered when evaluating on-farm disease risk.

Whilst fluke risk is predicted to be low across most of the UK, it is important to take local factors into account when considering on-farm disease risk. Development of liver fluke and its intermediate host, the mud snail (*Galba truncatula*) on pasture is dependent upon temperature and moisture, with warm wet conditions optimal. On farms with permanently wet pastures and/or permanent water bodies (figure 2) snails may have continued to develop over the summer and autumn, potentially leading to high pasture infectivity. Current abattoir feedback shows fluke infection is being detected on a regular basis (figure 3).

Figure 2: Areas of permanently wet pasture can provide optimal conditions for mud snails, and by extension liver fluke. Such areas can be found on some farms year-round even with low levels of rainfall, such as this farm in Argyle, September 2018. Photo courtesy of Dr Philip Skuce, Moredun Research Institute.

Continued vigilance for signs of disease and on farm contingency plans in the event of an outbreak are therefore of great importance. Liver fluke affects both sheep and cattle (figures 3 & 4), meaning pastures grazed by one are a potential source of infection to the other. Sheep are more susceptible to acute infection, caused by large numbers of migrating juvenile flukes, leading to sudden death in heavy infections. Both cattle and sheep can harbour chronic infections for months or even years if left untreated. Chronically infected animals may show no obvious signs, yet such infections can adversely affect productivity by reducing fertility, growth and milk yields. It is also important to consider the risk of Black disease at this time of year (figure 3). Both sheep and cattle infected with Liver fluke are predisposed to this fatal disease.

Figure 3: In spite of the seemingly unfavourable conditions, fluke infection is still being detected in cattle this season (left). Photo courtesy of Control of Worms in cattle Sustainably ("COWS"). Risk in cattle (and sheep) of Black disease (right) increases significantly in animals infected with Liver fluke. Photo courtesy of Ben Strugnell, Farm Post Mortems.

Risk of infection can be reduced by identifying high-risk fluke pastures and avoiding grazing these during peak risk periods. Mud snails are generally found in damp, muddy areas (figure 2). Cattle farmers grazing sheep on their pastures overwinter should bear this in mind when selecting which pastures to graze them on.

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
- In the absence of any obvious signs, chronic infection should still be considered where animals have been grazing at risk pastures. In such instances, the decision to treat can be informed by diagnostic testing such as worm egg counts, evidence of poor body condition score and/or sub-optimal productivity.
- Routine clostridial vaccination will help prevent Black disease and should be considered if not already in place. For more information please speak to your vet.
- Routine diagnostic testing will give a greater insight into current infection status:
  - Infection severity and stage can be easily determined at post-mortem (figures 3 & 4).
  - Antibody ELISAs are available for testing individual sheep and cattle

through blood sampling and can be used to monitor herd-level infection status in dairy cattle through testing of bulk milk tank samples.
    - A faecal antigen test is also available for testing individual animals.
    - Worm egg counts can be used to diagnose chronic infection using faecal samples from either individual animals, or to determine infection status in groups of animals a pooled sample from ten animals representative of the overall group.
        - It is important to remember egg counts cannot used to diagnose acute disease.
    - For more information on diagnostic options and sampling, please speak to your vet.

Figure 4: In sheep, acute fluke infection (left) is caused by juvenile flukes migrating through the liver. Chronic fluke infection (right) is caused by adult flukes living in the bile ducts.

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.
- Due to concerns over emerging drug resistance, consider use of a product other than triclabendazole to treat chronic infection.
- Use of alternative products to triclabendazole can also be used at housing, since these animals will no longer be acquiring acute juvenile infections. If taking this approach it is necessary to either repeat or delay treatment so that all flukes are of a sufficient age for the drugs to be fully effective.
    - 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).
    - The SCOPS groups suggest using closantel or nitroxynil at 3 weeks post housing in sheep, with a further treatment to kill any residual adult parasites the following 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 larvae of many disease-causing roundworms, particularly *Trichostrongylus* species, which may continue to be a risk in store and replacement lambs and, sometimes, yearlings into the winter (figure 5). It is therefore important to maintain vigilance for signs of disease in at risk animals grazing potentially contaminated pastures.

It is also important to consider that, as the weather becomes colder, newly acquired larval infections of abomasal roundworms (including *Haemonchus* and *Teladorsagia*) will begin to encyst, resuming development in the spring. Such populations can be an important source of pastures contamination the following spring, and in yearling lambs with heavy infections may cause scours in a similar manner to type-2 ostertagiosis in cattle. Such infections can be targeted over the winter with treatments effective against arrested larval stages. Such products are available across most major worming groups. For more information on anthelmintic selection and treatment options please speak to your vet or SQP. It should also be noted that in the case of such infections FECs can be negative.

Figure 5: 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
- Consider worm egg counts and weight gain in lambs to determine infection status and need for treatment.

Where anthelmintic treatments are required:

- Move to safe pasture (eg. silage aftermath) if available.
    - Leave animals on dirty pasture for 2-3 days prior to moving.
    - Aim to leave at least 10% of the flock untreated
- Check efficacy through worm egg counts:
    - Re-test 10-12 individuals at 7-14 days post treatment depending upon the product used.

Scab and Lice

Scab (mite) and louse infestations can become a significant problem in sheep flocks over the autumn and winter months, typically September-April. Whilst the signs of scab and louse infestations (pediculosis) are similar, treatment options vary due to scab mites living beneath the surface of 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*; figure 6). Infestations cause loss of condition, secondary skin infections and eventually 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.

Figure 6: 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.

Louse infestations in the UK are caused by chewing lice (e.g. *Bovicola* ovis; figure 6) and may present in a similar way to scab. Lean or emaciated sheep tend to be most greatly affected, with widespread louse infestations often indicative of an underlying problem with flock management.

To reach a diagnosis:

- For scab, diagnosis can be made through microscopic examination of skin scrapings from suspected animals to detect the mites (figure 6), or by detection of antibodies in blood samples with an ELISA test.
- Chewing lice reside in the fleece and can identified from wool samples taken from affected areas. Lice can sometimes be seen with the naked eye and confirmed by microscopy (figure 6).
- For more information concerning diagnosis, please speak to your vet.
- **It is important to remember sheep scab is notifiable in Scotland.**

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

Where treatment is required:

- First, ensure the correct diagnosis has been reached.
- Injectable macrocytic 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 factored into your roundworm control strategy.
    - There is new evidence suggesting emergence of resistance in scab mite populations to treatment with 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 products containing either a 3-ML or 1-BZ anthelmintic is recommended at housing. These products are effective against encysted stage larvae acquired in the latter stages of the grazing season.

If untreated, heavy burdens of encysted larvae can cause type-2 ostertagiosis in later winter or the following year due to triggered mass emergence. Due to the short time spent at pasture and likely minimal quantities of grass consumed, Autumn born calves are unlikely to require any anthelmintic treatment. As with sheep stomach worms, encysted *Ostertagia* burdens cannot be assessed by worm egg count.

Group 3-ML pour-on preparations have the added advantage they are also effective against both sucking and chewing lice, infestations of which are not uncommon in cattle during winter housing (figure 8).

Figure 8: Pour-on preparations of 3-ML wormers are also effective in controlling sucking and chewing lice

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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**