AMTRA

SQP – CPD Programme

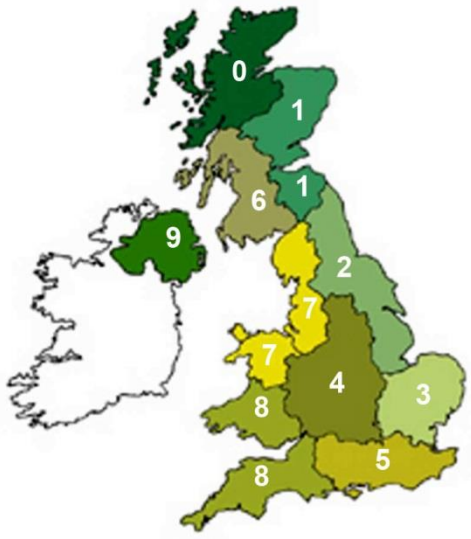
As part of AMTRA`s online CPD Programme for livestock SQPs, each month AMTRA will send you the Parasite Forecast which will highlight the parasitic challenge facing livestock in your area for that month. At the end of the Parasite Forecast you will find a series of multiple choice questions (quiz button)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

NADIS Parasite Forecast – October 2019

Use of meteorological data to predict the prevalence of parasitic diseases

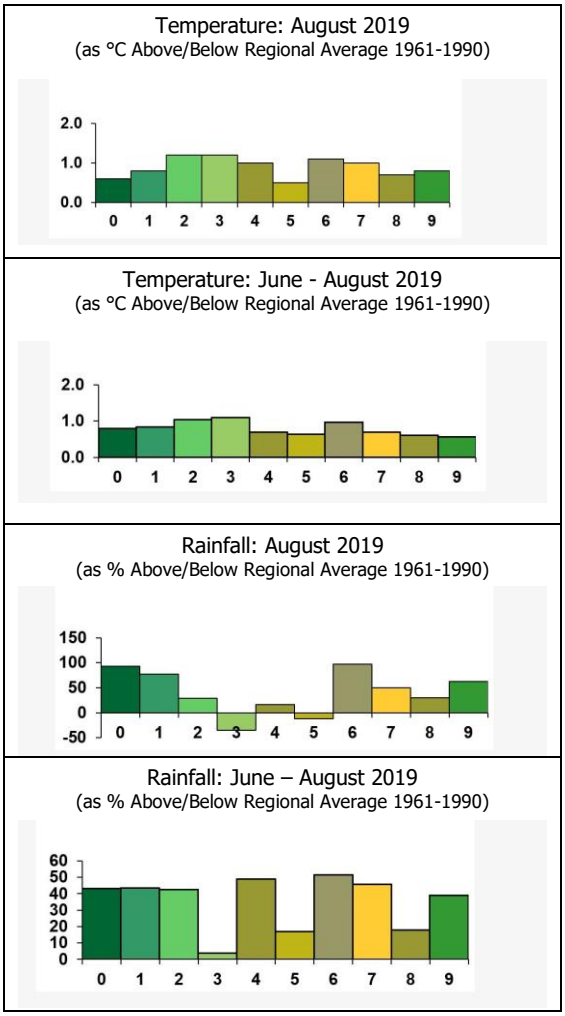
Regional Weather

(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		



October 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*

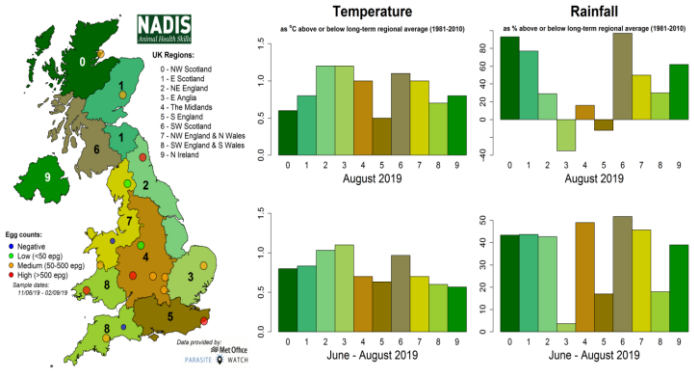


Figure 1: Egg count data shows the most recent counts for roundworms in sheep at each location between the sample dates stated. Temperature and rainfall by region for previous months.

Weather report

August began with a mixture of sunshine and some scattered thundery showers, then became more unsettled with longer spells of rain. Wet and windy weather was especially common in Scotland by mid-month. A hot sunny spell then extended across much of the UK in the latter stages of the month, giving way in the last few days to cooler temperatures and thundery weather, again notably in Scotland and Cumbria.

The provisional UK mean temperature for August 2019 was 15.8ºC, 0.9ºC above the 1981-2010 long-term average. Regionally, above average temperatures of at least 0.5ºC higher than their respective long-term averages were observed in all areas. This was also the case for the preceding 3 months from June to August. Rainfall was 153% of the average expected for August across the UK, although this varied across regions with very high rainfall for August recorded in Scotland and Northern Ireland, and below average rainfall in East Anglia and southeast England. A similar pattern of variation was observed for regional rainfall over the preceding 3 months, although recorded rainfall was above seasonal average for all regions over this period.

Provisional Autumn fluke forecast

The provisional fluke forecast for Autumn 2019 is based on temperature and rainfall data from May – August 2019 and indicates the risk of liver fluke resulting from development in snails on pasture over the course of the grazing season. Liver fluke and its intermediate host, the mud snail (*Galba truncatula*; Figure 2) are highly dependent upon temperature and rainfall, with warm wet conditions optimal for development.

Figure 2: Mud snails (Galba truncatula), the intermediate host of liver fluke on pastures recovered from a farm in Lancashire, August 2018. Photo credit: Bethan John, University of Liverpool.

Due to the very high levels of rainfall and temperatures observed in some regions, this year's forecast is predicting high risk in Scotland, northwest England & north Wales, moderate risk in Northern Ireland and low risk everywhere else (Figure 3).

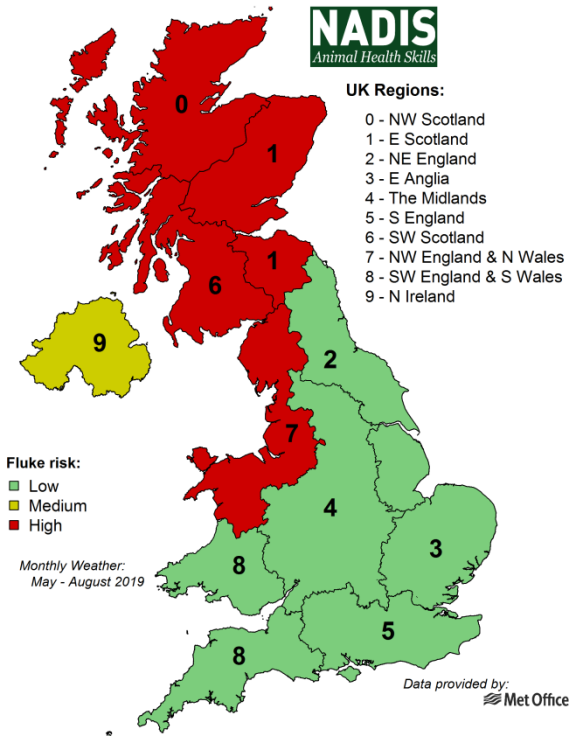


Figure 3: Provisional 2019 UK Autumn fluke risk forecast by region.

It is therefore strongly advised that farmers with livestock grazing in high and medium risk regions are vigilant for signs of disease in the coming months, particularly in animals grazing “flukey” pastures and/or if there is a history of fluke infection on your farm. Whilst the autumn fluke forecast is predicting low risk in some parts of the UK, it should be noted that local conditions are also very important when determining on-farm fluke risk. Previous history of fluke infection and presence of permanently wet areas and/or permanent water bodies where snails may reside will increase risk from liver fluke considerably. Such factors therefore also need taking into account when considering on-farm risk. If in doubt, please seek veterinary advice.

Advised actions include:

- Monitoring for signs of disease. Both sheep and cattle are susceptible to infection with liver fluke, although acute outbreaks are more common in sheep:
    - Sudden death in heavy infections
    - General dullness, anaemia and shortness of breath
    - Rapid weight loss, fluid accumulation (e.g. bottle jaw)
- Routine diagnostic testing to give a greater insight into the current infection:
    - Antibody ELISAs are useful in detecting infection in the early stages, and are available for sheep and cattle through blood sampling, or to monitor herd-level infection status in dairy cattle through testing bulk milk tank samples.
    - Faecal antigen testing and worm egg counts can also be used to diagnose infection in individuals, although it is important to note these may give a negative result in the early stages of infection.
    - Post-mortem of lost stock in acute outbreak allows for a definitive diagnosis (Figure 4).

Figure 3: Acute liver fluke infection may be easily detected at post-mortem. Acute disease is more common in sheep (pictured) compared to cattle.

- Where acute disease occurs, treatment with triclabendazole is recommended as this is the only product effective against both adult and early immature stages of the parasite. **However**, due to growing concerns over drug resistance it is essential such treatments are carried out correctly:
    - Always ensure correct dosing by:
        - Following the manufacturer’s recommendations,
        - Checking equipment is correctly calibrated prior to use
        - Dosing by weight of the animal
    - It is also strongly advised such that any treatments given are accompanied by resistance testing at 21 days post-treatment to monitor efficacy.
    - Where drug failure is present or resistance suspected, please seek veterinary advice for alternative treatment options.
- Risk of infection can be reduced by identifying high risk “flukey” pastures and avoiding grazing these during peak risk periods.
    - Mud snails are generally found in damp, muddy areas such as the borders of permanent water bodies, wet flushes (often identifiable through presence of rushes and other water loving plant species), ditches, boggy areas etc.
    - Pastures previously grazed by fluke infected sheep should be considered a risk to cattle and vice versa.

Quarantine treatments

When buying in new stock, it is important to remember that any animals coming onto your farm could be a potential source of new parasites and/or drug resistance. As a consequence, quarantine measures should be undertaken. This includes worms, including drug-resistant strains and ectoparasites (i.e. lice and mite infestations).

For sheep, current ”gold standard“ practice advised by Sustainable Control of Parasites in Sheep (SCOPS) is as follows:

1. To prevent introduction of resistant roundworms, administer sequential treatments with a 4-AD (monepantel) AND 5-SI (derquantel in combination with abamectin) product.
2. Where introduction of sheep scab is of concern, treat either with injectable moxidectin, or an organophosphate dip.
3. Hold purchased animals away from pasture for 24-48 hours post treatment, then turn out to “dirty” pasture previously grazed by sheep.
4. Maintain purchased stock separately for at least 30 days to monitor for disease before mixing.
5. For additional details on these and alternative treatment options see the SCOPS quarantine guidelines, and seek veterinary advice.

Where liver fluke is also a concern:

1. Resistance to triclabendazole is increasingly common in the UK. Unless there is strong evidence suggesting otherwise it is best to assume brought-in animals are infected with triclabendazole-resistant liver fluke.
2. Treat animals with either:
    a. 2 doses of closantel, 6 weeks apart
    b. 2 doses of nitroxynil, 7 weeks apart
    c. Alternative strategies using a combination of products may help prevent introducing resistance to any one particular flukicide. For more advice on this, please seek veterinary advice.
3. Hold purchased animals away from pasture, or a dry, well drained pasture until at least 4 weeks after the second treatment.

For cattle, Control of Worms Sustainably (COWS) guidelines highlight the importance of knowing disease status of purchased animals or their farm of origin.

1. For roundworms, particularly those infected with lungworm and/or 3-ML resistant *Cooperia*:
    a. House animals on arrival and implement control measures ahead of turn out in spring.
    b. Treat with effective anthelmintic. **N.B.** for 3-ML resistant *Cooperia,* treatment with either a 1-BZ or 2-LV product is advised.
    c. Test efficacy of treatments
2. For ectoparasites such as mites and lice, treat with a 3-ML or permethrin product to prevent spread during winter housing
3. For liver fluke, specific guidelines have been developed for bought in cattle based on the three basic principles of HOUSE, TREAT and TEST.

For more information concerning the implementation of effective on-farm quarantine procedures please speak to your vet.

SHEEP

Parasitic Gastroenteritis (PGE)

This year's warm and wet summer months are likely to have extended risk of PGE-causing roundworm infections later into the grazing season than would normally be expected by enabling larger than usual numbers of larvae to survive on pastures to the end of the season. Egg count data from Parasite Watch in June – September 2019 show medium and high egg counts in sheep flocks being detected across Great Britain (Figure 1).

It should be noted that this increased autumn risk may apply to several PGE-causing roundworms, including *Trichostrongylus, Teladorsagia circumcincta* and *Haemonchus contortus* through prolonged survival of larvae at pasture, whilst nematodirosis can also be observed on occasion at this time due to an autumn egg hatch. It is therefore important to stay alert for signs of PGE, particularly in at-risk animals grazing "dirty" pastures (Figure 5).

Figure 5: Favourable conditions over the summer mean sheep may still be at risk from several PGE-causing roundworm infections

Advised actions include:

- Monitoring for signs of disease.
    - *Teladorsagia* and nematodirosis tends to affect young animals such as first season lambs
    - *Haemonchus* infections can affect animals of all ages
- Consider worm egg counts if infection status is unknown
- Where anthelmintic treatments are required:
    - Move to safe pasture (eg. silage aftermath) if available.
        - Avoid dosing with long-acting group 3-ML products
        - Leave animals on dirty pasture for 2-3 days prior to moving.
        - Aim to leave at least 10% of the flock untreated
- If anthelmintic treatments are administered, it is advised to check efficacy through worm egg counts:
    - Re-test 10-12 individuals at 7-14 days post treatment depending upon the product used.
    - If anthelmintic resistance is suspected, strategic use of group 4-AD or 5-SI wormers may be indicated under veterinary guidance. For more information see the SCOPS guidelines, and seek veterinary advice.

CATTLE

PGE and Lungworm

The wetter than usual conditions experienced so far this grazing season may have prolonged survival of infective larvae on pastures.

This is important, as young stock may still be at risk from PGE, with infections at this time potentially causing type-1 ostertagiosis and/or type-2 ostertagiosis over the winter period (see advice below on housing). Similarly, lungworm infection can continue to be a risk into November (Figure 6). Outbreaks are difficult to predict, but may be associated with wetter summers and following periods of wet weather. High-risk animals include unvaccinated calves in their first season and cattle bought-in from farms with no history of the disease. Disease onset can be rapid and severe, with early signs including widespread coughing in the group, initially after exercise then at rest, increased

respiratory rate and difficulty breathing, rapid loss of weight and body condition, milk drop in lactating cattle and death in heavy infections.

Figure 5. Early signs of lungworm infection include coughing, elevated respiratory rates and difficulty breathing. Depending on history, both youngstock and adult cattle can be at risk.

Advised actions include:

- Continue monitoring for signs of disease
- If infection status is in doubt, faecal samples can be taken to detect either worm eggs in the case of PGE, or larvae in the case of lugworm infection. Also consider:
    - Post-mortems
    - Milk sample ELISA tests are also available for detecting ostertagiosis and lungworm infection in dairy cattle.
- In the event of an outbreak of clinical disease:
    - Treat all animals within the affected group
    - As a minimum, remove affected animals from contaminated pasture to safe grazing (e.g. silage aftermath), or house in a well-ventilated building.
    - Consider the COWS group's "5 Rs".
- In cases of lungworm, severely affected animals may require additional treatments (e.g. anti-inflammatories and antibiotics).
- For more information, discuss this with your vet or SQP, see the COWS group guidelines and NADIS lungworm webinar.

Dosing at housing

Housing presents both opportunities and challenges for control of important parasitic disease on farm.
Worm burdens acquired over the grazing season may be targeted effectively at this time without risk of animals becoming re-infected, with the added benefit of improved feed efficiency and growth rates. As is the case during the grazing season, any treatments administered should be based on evidence of infection, such as diagnostic testing (e.g. worm egg counts), grazing and management history.

- For growing cattle housed after their first or second grazing season, treatment with products containing either a Group 3-ML or Group 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 later into the housing period due to triggered mass emergence. It is important to note that encysted worm burdens cannot be assessed by worm egg count.
- Whilst housing prevents further infection with pasture-associated parasites, risk of louse and mite infestations may increase at this time (Figure 7). These parasites can spread directly from animal to animal very easily once they are penned in close proximity to one another in what are relatively dry, warm conditions. It is worth bearing this in mind when selecting worming treatments at this time of year: In addition to their activity against gut worms selected products (some injectable and spot-on, pour-on group 3-ML preparations) are also effective against lice. For more information, please speak to your vet or SQP.
- Provided animals are not suffering any obvious effects, cattle exposed to liver fluke infection during the grazing season can be dosed during winter housing with a product other than triclabendazole. This allows triclabendazole to be used more sparingly, reducing selection for resistance and preserving its efficacy on farm for when it is most needed.
    - Due to their lower activity against juvenile stages of liver fluke, if using a product other than triclabendazole at housing it is necessary to either repeat or delay treatment to ensure all flukes are treated effectively. For example, if treating with closantel COWS recommend delaying treatment for 6-7 weeks post-housing before treating.
    - Some of these alternative products, such as albendazole, oxyclozanide also have the added benefit of being licenced for use in lactating animals provided milk withhold periods are observed. It is important to check labelling of individual products.
- In all cases of treatment at or during housing, efficacy testing should also be considered since ineffective treatments may result in a residual burden of potentially resistant parasites which will contribute to pasture contamination at turn-out the following grazing season.
- For more information please speak to your vet, or visit the COWS website.

Figure 7: It is important to consider ectoparasite (lice and mite) control during winter housing

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