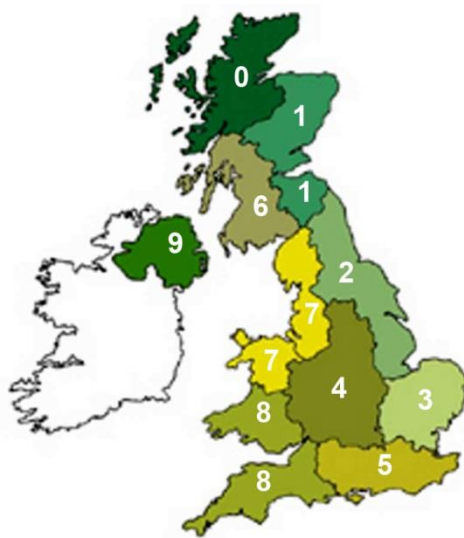


As part of AMTRA's online CPD Programme for livestock RAMAs (SQPs), each month AMTRA will send you the Parasite Forecast which will highlight the parasitic challenge facing livestock in your area for that month. At the end of the Parasite Forecast you will find a series of multiple choice questions (quiz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

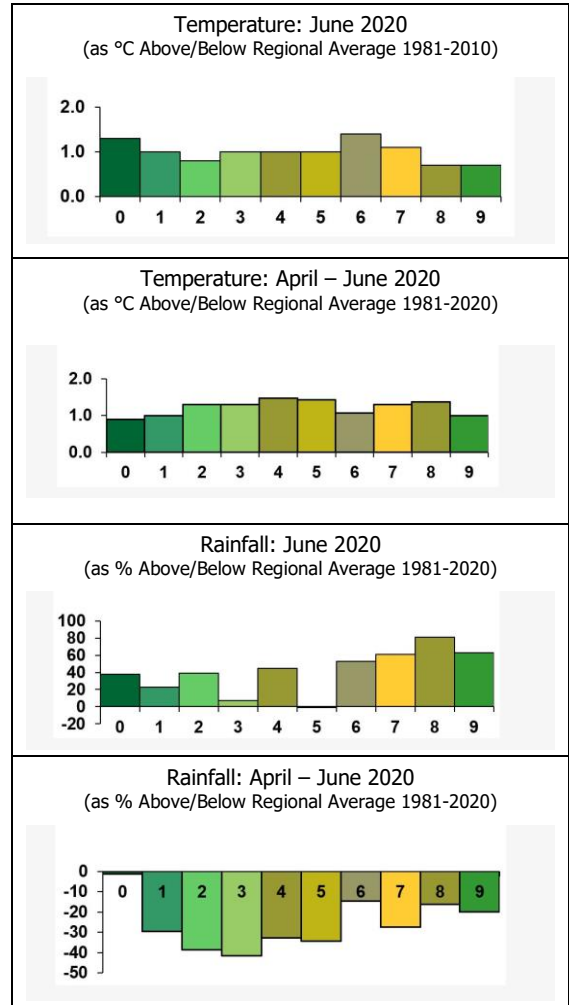
Use of meteorological data to predict the prevalence of parasitic diseases

### Regional Weather (based on Met Office figures)



#### REGIONS

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



The most recent version of this monthly parasite forecast may be accessed at [www.nadis.org.uk](http://www.nadis.org.uk)

### Weather report

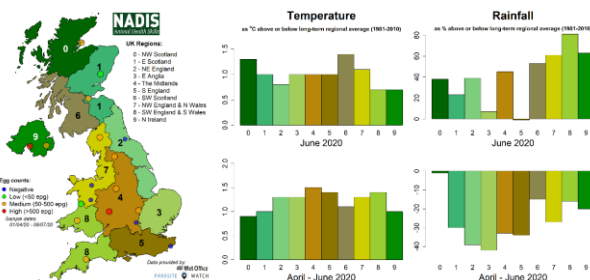


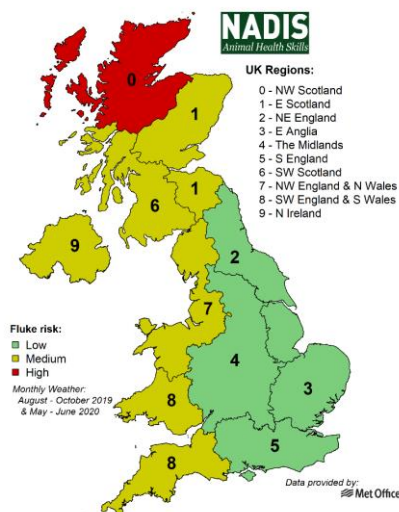
Figure 1: Egg count data shows the most recent counts for roundworms in sheep at each location between the sample dates stated.

The very sunny and warm weather of late May continued into the start of June, but rain and humid conditions soon began, with only a few sunny days towards the end of the month. Therefore, both rainfall and temperature were higher than usual for June. Over the 3 month

average, it was both warmer and drier than normal for the time of year.

## Summer fluke forecast

The summer fluke forecast is based on rainfall and temperature for last summer and autumn, and for early summer 2020. This forecast is designed to indicate risk from fluke lifecycle stages that have survived over the winter in infected snails. Usually this is a less risky period than that expected in the autumn. It should be noted, however, that the relatively mild winter could lead to higher pasture contamination and disease risk this season than usual.



**Figure 2: Summer fluke forecast 2020 by UK region.**

The summer fluke forecast for 2020 is predicting high risk in north western Scotland and moderate risk across the rest of Scotland, the whole of Wales and Northern Ireland and the west of England (Figure 2). Farmers in these areas should be vigilant for signs of disease, particularly if you have a known history of fluke infection, and/or if you have animals grazing “flukey” pastures.

Both sheep and cattle are susceptible to infection with liver fluke.

Acute disease outbreaks may occur at any time from late summer onwards. The disease is caused by the migration of large numbers of immature fluke. It is more common in sheep than in cattle, and occurs due to the consumption of large numbers of infective cysts (metacercariae) that are found in grass on “flukey” pastures (Figure 3). Signs include:

- Sudden death in heavy infections
- General dullness, anaemia and shortness of breath

- Rapid weight loss, fluid accumulation (ascites) and bottle jaw
- Large numbers of animals may be affected



**Figure 3: Infective stages of liver fluke (metacercariae) start to accumulate on “flukey” pastures from late summer/ early autumn onwards as they are shed with increasing frequency from their snail intermediate hosts.**

Advised actions include:

- Monitor for signs of disease.
- Diagnostic testing to understand the situation on farm:
  - Post-mortem in acute outbreaks allows for a definitive diagnosis.
  - Worm egg counts are not useful for diagnosing acute fluke disease, as the stage of infection is too early for flukes to have matured enough to be producing eggs.
  - However, testing a composite sample can give an idea of general infection levels
- Where acute disease occurs, treatment with triclabendazole is recommended as this is the only product effective against both adult and immature stages of the parasite.
  - Due to growing concerns over drug resistance, if in any doubt over whether treatment has been effective, take faecal samples from 10-12 animals per group, about 3 weeks post treatment to ensure no fluke eggs are present. Ask the vet how to take these samples for the most accurate results.

- Where drug failure is present and resistance suspected, please seek veterinary advice.
- Risk of infection can be reduced by identifying high risk “flukey” pastures and avoiding grazing them during peak risk periods.
  - Mud snails are generally found in damp, muddy areas such as the borders of rivers, streams, ponds and ditches, wet flushes (often identifiable through presence of rushes and other water loving plant species), boggy areas etc.
  - Pastures previously grazed by fluke infected sheep should be considered a risk to cattle and vice versa.
- Performance indicators should be assessed regularly, ideally every 3-4 weeks.
  - Generally only 40-60% of lambs should require treatment based on performance monitoring. You should aim to leave **at least** 10% of the flock untreated to reduce selection for anthelmintic resistance.
- Egg counts can be performed on a pooled faecal samples taken from 10-12 individual animals to monitor infection in the group as a whole.
  - These should be done every 2-4 weeks
  - Try to select faeces randomly – do not target particular lambs. Diarrhoea may make the count less accurate.
  - A worm egg count >700 is considered high, but a low egg count needs careful interpretation, so please discuss with the vet or SQP.

## SHEEP

### Parasitic Gastroenteritis (PGE)

Lambs are susceptible to severe disease if they become heavily infected with worms – look out for loss of appetite, diarrhoea, dehydration and weight loss. Even lower worm burdens can affect performance, noticeable as reduced weight gain

PGE risk peaks over the summer months, falling off into the late summer and autumn. The relatively warm and wet conditions experienced over previous months may have increased the rate of development on pastures, and survival of, the infective stage larvae.

Groups of lambs grazing “dirty” pastures, namely those grazed by ewes earlier in the season, or lambs over the previous season, are at highest risk. Weaning can provide an opportunity to reduce the risk of disease in these animals through a combination of anthelmintics and grazing strategies.

Egg count data from [Parasite Watch](#) show medium and high egg counts observed in groups of sheep across Great Britain between May and June (Figure 1).

Advised actions include:

- Monitor for signs of disease. If lambs in a group show signs of disease, the whole group should be treated.
- Implement targeted selective treatments (TSTs) by monitoring performance using indicators such as weight gain and worm egg counts for evidence of infection.
- To reduce selection for anthelmintic resistance:
  - Leave animals on dirty pasture for 4-7 days post-treatment prior to moving.
  - Avoid dosing with long-acting group 3-ML products, or if you do, make sure to leave at least 10% of the flock untreated
- Where anthelmintic treatments are administered, it is strongly advised to check efficacy:
  - Re-check worm egg counts at 7-14 days post treatment

depending upon the product used. An effective product should reduce egg counts by at least 95%. Less than this may indicate resistance is starting to develop.

- Where resistance to one or more products is suspected, strategic use of group 4-AD or 5-SI wormers may be indicated.
  - Such strategies should always be planned under veterinary guidance. For more information see the [SCOPS guidelines](#), and veterinary advice.
- Ewes should not require treatment for roundworms until next year.
- Rams are more susceptible to roundworm infections than ewes (Figure 4). It is generally advisable to check burdens in these animals through a composite worm egg count at this time of year.



**Figure 4:** Whilst lambs are the main risk group for PGE, rams may also be susceptible. If in doubt, check for infection using worm egg counts.

## Haemonchosis

*Haemonchus contortus* or the barber's pole worm is another type of roundworm and causes severe anaemia. Whilst it is less common than other roundworms in the UK it is now found in all regions. Pasture burden can build up very quickly and infected sheep can lose up to 250 ml of blood per day. on. Haemonchosis can affect both lambs and ewes.

Advised actions include:

- Monitoring for signs of disease:
  - Generally acute onset with anaemia and general fatigue.
  - Oedema or fluid accumulation (including bottle jaw).
  - Sudden death in heavy infections.
  - Haemonchosis does **not** usually present with diarrhoea.
  - Chronic infections may also occur, characterised by progressive weight loss, anaemia and loss of appetite.
- Haemonchosis can appear similar to fasciolosis.
- Diagnosis to distinguish can be achieved through:
  - Post-mortem in cases of sudden death associated with severe outbreaks (Figure 5).
  - Worm egg counts. Although *Haemonchus* eggs look the same as those of other roundworms, counts are usually much higher.



**Figure 5.** The classic "barber's pole" appearance of female *Haemonchus contortus* makes identification straightforward at post-mortem. It is 1.5 to 3cm long and is found in the abomasum

Haemonchosis can be treated with most anthelmintic products, although some resistance to white drenches (1-BZ) has been reported in the UK. Some flukicidal products, such as nitroxylnil and closantel are also effective against *Haemonchus contortus* and can be used to target *Haemonchus* specifically, thereby avoiding treating for PGE at the same time (hence reducing the risk of resistance)

## Moniezia tapeworms

Tapeworm segments may be seen in the faeces of lambs during summer months (Figure 4). These are acquired through consumption of infected intermediate hosts (oribatid mites) living on the pasture that became infected the previous year and survived overwinter.

*Moniezia* species tapeworms only rarely cause disease, if very high burdens occur. Treatment with a white drench (1-BZ) used for roundworm control will have the added benefit of clearing these tapeworm infections.



**Figure 6:** Tapeworm segments (*Moniezia*) are commonly seen in faeces passed by lambs during the summer months. Photo credit: Kit Bradley, Suffolk, July 2019 (@shepherdesskit).

## Blowfly strike

Last update 15<sup>th</sup> July: We are now rapidly approaching the peak of the strike season and warm wet weather is ideal for flies and maggots. Extreme care is needed in the next few weeks to watch out for strikes in both lambs and ewes. Body strikes also usually become increasingly common as the season progresses

Blowfly strike is caused by the green bottle fly laying eggs in minor wounds or soiled fleece. Risk is greater in warm, wet conditions. The [NADIS blowfly alert](#) is based on daily temperature and rainfall data and is updated every 2 weeks over the course of the grazing season. At the time of writing, high risk was predicted over southern and mid England, Northern Ireland and Wales, and medium risk in Scotland and northern England.

Advised actions include:

- Inspect stock daily for evidence of strike, particularly during high-risk periods.

- Consult the [NADIS blowfly alert](#) for up-to-date disease risk in your area.
- On-farm disease risk can be reduced significantly by:
  - Management of fly populations from early in the season
  - Prevention of diarrhoea through good parasite control
  - Dagging, crutching, shearing and treating lame sheep promptly
- A number of [chemical formulations](#) can be used to aid in the prevention of blowfly strike.
  - These should be used in conjunction with the management points listed above.
  - Many of these products can also be used to treat blowfly strike where it occurs.
- For more information and advice, please speak to your vet or SQP.

## CATTLE PGE

Larval pasture burdens for most cattle roundworms tend to peak in early to mid-July, although levels of *Ostertagia ostertagi* larvae can remain high until the end of the grazing season. The wetter than usual conditions in June may also have prolonged survival of infective larvae on pastures. Consequently young stock in their first grazing season may still be at risk of disease, particularly autumn and winter-born weaned calves entering their first grazing season, and spring-born beef suckler calves entering their second grazing season (Figure 7). Set stocking on permanent pasture also increases risk.



**Figure 7:** PGE in cattle causes diarrhoea and up to a 30% reduction in the growth rates of youngstock. 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).

Advised actions include:

- Monitoring for signs of PGE in at-risk groups:
  - Loss of appetite
  - Loss of weight and body condition
  - Profuse diarrhoea
- If practising set stocking with strategic dosing animals should have relatively low larval burdens.
  - Worm egg counts to monitor infection and effectiveness of control is advised.
    - Perform counts on faecal samples (10g) taken from 10-15 calves selected for treatment.
    - Repeat sampling of animals with a previously high egg count (e.g. more than 200 eggs per gram) at 14-17 days post treatment (7-10 days for 2-LV group products) to assess the reduction in egg count post-treatment.
  - Leave animals set stocked until they can be moved to “safe” pastures (hay or silage aftermaths) when they become available.
- Where strategic dosing is not implemented, risk of disease will peak during the summer months.
  - It is therefore very important to monitor for signs of disease in such animals at this time of year.
  - Monitoring liveweight gain and/or worm egg counts will help to identify infections before clinical signs occur and reduce production losses.
- Where dosing with anthelmintics is indicated:
  - In the event of an outbreak of clinical disease treat all animals in the affected group.
  - Use the [COWS group's “5 Rs”](#) to ensure your worming strategy is both effective and sustainable. These include:
    - Considering the type of wormer used – ongoing repeated use of the same active/ wormer group or

use of certain wormers at inappropriate times may increase selection for resistance.

- Dosing appropriately by weight of each animal and ensure correct calibration of dosing guns/syringes/applicators
- Consider worm egg counts to check for effective anthelmintic dosing. Discuss this with the vet or SQP, or see the [COWS group guidelines](#).

## Lungworm

Lungworm infection (or “husk”) can occur in animals at pasture over the summer months (Figure 8). Outbreaks are difficult to predict, but recent wet weather means an increased risk at the current time. High stocking density is also a risk factor for outbreaks of disease, as infective larvae build up more quickly on pasture.

On farms with a history of lungworm, unvaccinated calves that have not been part of strategic dosing programmes should be considered at risk of disease, as should older bought-in cattle from farms without a history of lungworm.

Immunity develops rapidly following exposure, but it can also wane again if cattle are removed from infected pasture for more than a few months. Immunity cannot develop if anthelmintic treatments are given very regularly.



**Figure 8: Lungworm infection can affect grazing cattle in the summer months. Whilst youngstock are generally at highest risk, in some circumstances adult cattle such as this suckler cow may also be at risk. Diagnosis can be reached based on finding adult worms in the lungs at post mortem (circled). (Photo credit: Ben Strugnell, Farm Post Mortems, July 2019)**

Advised actions include:

- Monitor for infection. Signs include:
  - 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
  - Death in heavy infections
- Where infection is suspected:
  - Affected cattle should be immediately removed from contaminated to “safe” pasture (e.g. aftermath) or housed in a well-ventilated building.
  - Treat all animals within the affected group
    - Most roundworm products are effective.
    - Severely affected animals may require additional treatments (eg. anti-inflammatories and antibiotics)
    - Consider withdrawal periods in lactating animals.
  - Infection can be confirmed by:
    - Post-mortem of dead animals
    - Observation of larvae in saliva or faecal samples in patent infections
    - Serum and milk sample antibody ELISAs are also available.

- Most cattle recover in time, although some are left with permanent lung damage
- After treatment and recovery, cattle can safely be returned to the same pasture, as immunity develops within 4-8 weeks
- For more information, please speak to your vet or SQP, see [“COWS” group guidelines](#) and see our recent [NADIS lungworm webinar](#).

## Flies

There are around 20 common species of fly that feed on cattle. They feed either on blood (biting flies) or on sweat, skin secretions, tears or saliva (nuisance flies). They cause irritation to cattle, leading to increased restlessness and decreased resting and feeding time, thereby potentially affecting milk yield or weight gain. Several flies also spread disease, including summer mastitis and eye infections.

Flies are difficult to control. Minimising the presence of dung heaps, where some fly species and midges breed, will reduce their numbers, and strategically placed screens, electrocution traps and fly papers can control flies within buildings. Other species breed in soil and outdoor dung so control impractical. Insecticide impregnated ear tags, tail bands, pour on, spot on and spray on preparations to reduce fly nuisance to cattle. See the [COWS group website](#) for details of the available products.

Warm, still conditions are ideal for flies. To reduce the risk of summer mastitis, consider grazing heifers and dry cows on more exposed, windier pastures if possible.

[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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