RAMA (SQP) – CPD Programme

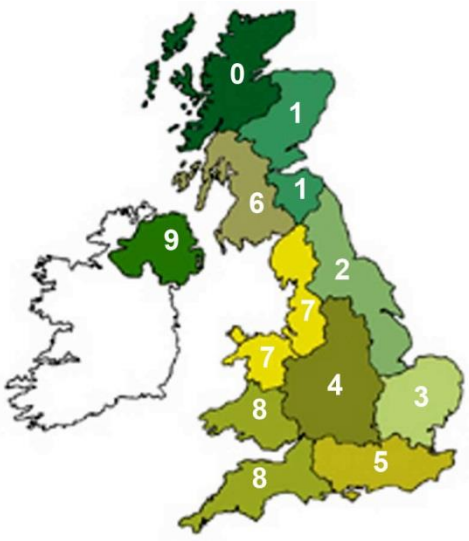
As part of AMTRA`s online CPD Programme for livestock RAMAs (SQPs), each month AMTRA will send you the Parasite Forecast which will highlight the parasitic challenge facing livestock in your area for that month. At the end of the Parasite Forecast you will find a series of multiple choice questions (quiz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

Use of meteorological data to predict the prevalence of parasitic diseases

Regional Weather

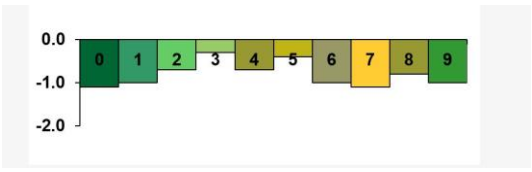
(based on Met Office figures)



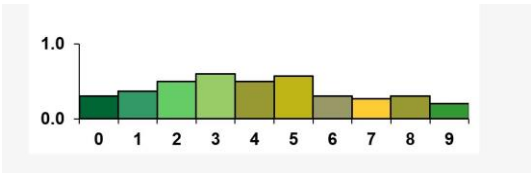
REGIONS

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		

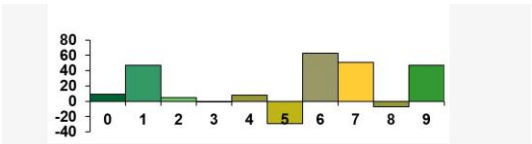
Temperature: July 2020
(as °C Above/Below Regional Average 1981-2010)



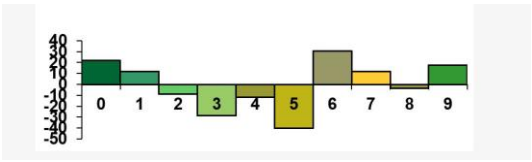
Temperature: May – July 2020
(as °C Above/Below Regional Average 1981-2020)



Rainfall: July 2020
(as % Above/Below Regional Average 1981-2020)



Rainfall: May – July 2020
(as % Above/Below Regional Average 1981-2020)



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

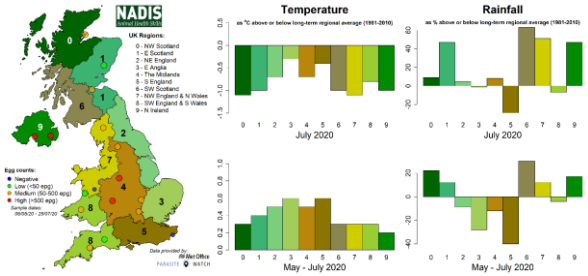


Figure 1: Egg count data shows the most recent counts for roundworms in sheep at each location between the sample dates stated.

Weather report

July began with mainly cloudy weather, showers and longer spells of rainfall giving way to dry sunny weather in southern England and latterly further north, although central and northern counties remained unsettled and often cloudy.

The provisional UK mean temperature was 14.3 °C, 0.8 °C below the 1981-2010 long-term average. Below average temperatures

were observed across all regions in July, although mean temperatures for the preceding 3 months (May – July) remain above the long-term average for all regions.

Rainfall was 122% of average in July, and was a notably wet month in eastern and south-western Scotland and in north-west England. For the preceding 3 months (May – July), rainfall varied considerably between regions, being above average in Scotland, northwest England and Wales and Northern Ireland, and below average in central and east of England.

Summer fluke forecast

The summer fluke forecast published last month is based on temperature and rainfall data from August – October 2019 and May – June 2020. This is predicting high risk in northwest Scotland, moderate risk across the rest of Scotland, Wales, Northern Ireland, northwest and southwest of England (Figure 2). The provisional UK autumn fluke forecast will be published in next month's parasite forecast. Whilst average temperatures recorded in July are below average, it should be noted that average temperatures still remained favourable for fluke and snail development on pastures.

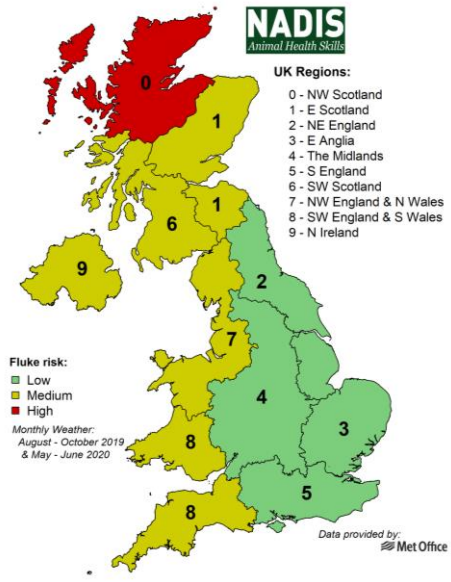


Figure 2: Summer fluke forecast 2020 by UK region.

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, although acute outbreaks are more common in sheep, with signs including:

- Sudden death in heavy infections
- General dullness, anaemia and shortness of breath
- Rapid weight loss, fluid accumulation e.g. bottle jaw)

Advised actions include:

- Monitoring for signs of disease.
- Routine diagnostic testing:
    - Measuring monthly serum antibody responses in first season lambs and calves is recommended to monitor for acute fluke risk.
    - Post-mortem of lost stock.
    - Worm egg counts cannot be relied upon for the diagnosis of acute disease, but are useful for monitoring chronic infection in individuals, or groups of animals by composite faecal sample.
- 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 it is also advised such treatments are accompanied by resistance testing at 21 days post-treatment to monitor efficacy.
    - 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 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 these animals could be a source of

new parasites and/or drug resistance. As a consequence, quarantine measures should be undertaken.
As with all anthelmintic dosing, it is important to check you are dosing correctly by weighing animals, calibrating your dosing and weighing equipment, and administering treatments following the manufacturer's recommendations.
For sheep, current 'gold standard' practice is as advised by Sustainable Control of Parasites in Sheep (SCOPS) concerning roundworms and sheep scab involves:

1. Treatment on arrival
    a. To prevent introduction of resistant roundworms, administer sequential treatments of both 4-AD (monepantel) AND 5-SI (derquantel in combination with abamectin) products.
    b. Where introduction of sheep scab is of concern, treat either with injectable moxidectin, or an organophosphate dip.
2. Holding purchased animals away from pasture for 24-48 hours post treatment
3. Turning quarantined animals out to "dirty" pasture grazed previously by sheep.

Where introduction of triclabendazole-resistant liver fluke in sheep is of concern:

1. Treat new animals with either:
    a. Two doses of closantel, 6 weeks apart, or
    b. Two doses of notroxynil, 7 weeks apart.
2. Hold purchased animals away from pasture, or on grazing free of mud snails (dry, well drained pastures) until at least 4 weeks after treatment.
3. Maintain purchased stock separately for at least 30 days to monitor for disease before mixing.
4. For additional details on these and alternative treatment options see the SCOPS quarantine guidelines, and seek veterinary advice

For cattle, Control of Worms Sustainably (COWS) guidelines highlight the importance of knowing disease status of purchased animals or their farm of origin, but are generally based on the principles of house, treat and test. The major areas of concern with bought-in cattle are:

- Group 3-ML resistant *Cooperia*
- Lungworm
- For ectoparasites, particularly psoroptic mange
- Liver fluke and triclabendazole resistance

COWS group guidelines involve:

1. Housing animals on arrival and implement control measures ahead of turn out in spring.
2. Treat with an effective anthelmintic. For example:
    a. For 3-ML resistant *Cooperia* treatment with either a 1-BZ or 2-LV product is advised.
    b. For mites and lice use a 3-ML or permethrin product on arrival to prevent spread during winter housing
3. Test efficacy of treatments.

Additional liver fluke specific guidelines have been developed for bought in cattle. For more information on these, please visit the COWS group website and speak with your vet or SQP.

Sheep

Parasitic Gastroenteritis (PGE)

Risk of PGE in lambs usually peaks in the summer months, the relatively warm and wet conditions experienced in the preceding months will have favoured larval development and dispersal on pastures, whilst the relatively cool temperatures experienced in July may have helped to prolonged their survival later into the season than usual. Egg count data from the Parasite Watch in May – July shows variation across the UK, but moderate to high counts present in all areas (Figure 1).

Consequently, it is important to stay alert for signs of PGE, particularly in groups of lambs grazing "dirty" pastures, namely those grazed by ewes earlier in the season, or lambs over the previous season.

Advised actions include:

- Monitor for signs of disease.
- Implementation of targeted selective treatments (TSTs) by monitoring performance indicators such as weight gain, or worm egg counts for evidence of infection.
    - TSTs based on performance indicators require routine monitoring, ideally every 2-4 weeks, and accurate record keeping.
        - Generally only 40-60% of lambs should

require treatment based on weight gain. 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.
        - Try to select faeces randomly – do not target particular lambs. Diarrhoea may make the count less accurate.
        - Treatment based on worm egg counts may be indicated where average worm egg counts are greater than 500-700 epg. If you are unsure how to interpret your egg count results, please speak to your vet or SQP.
- For lambs grazing dirty pasture, consider dosing and moving to safe pastures (e.g. silage aftermath) as these become available. When performing dose and move, to reduce selection for anthelmintic resistance:
    - Leave animals on dirty pasture for 2-3 days post-treatment prior to moving.
    - Avoid dosing with long-acting group 3-ML products
    - Leave at least 10% of the flock untreated
- Where anthelmintic treatments are administered, it is advised to check efficacy 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.

Haemonchosis

Unlike other PGE-causing roundworms, the barber's pole worm (*Haemonchus contortus*) affects both lambs and ewes. Whilst less common, the blood feeding behaviour of *H. contortus* means heavy pasture burdens can result in sudden and severe disease with little to no prior warning (Figure 3).

Figure 3: Left: Haemonchosis in a ewe displaying signs of bottle jaw (Photo credit: Emily Gascoine, Synergy Farm Health; @Em_the_SheepVet). Right: Adult worms recovered from the stomach of a severely anaemic lamb at post-mortem (Photo credit: JP Crilley, Larkmead Veterinary Group; @flock_health)

Advised actions include:

- Monitoring for signs of disease:
    - Generally acute onset with anaemia and general fatigue.
    - Oedema or fluid accumulation (including bottle jaw; figure 3).
    - 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 further distinguish can be achieved through:
    - Post-mortem in cases of sudden death associated with severe outbreaks (Figure 3).
    - Worm egg counts. These are generally very high but can be variable in the early stages of acute disease. *H. contortus* eggs can be differentiated from other species of intestinal roundworm through special diagnostic techniques. For more information, please speak to your vet.
- If you do not have this parasite on your farm, ensure you have adequate quarantine measures in place to prevent buying it in with new stock.

Haemonchosis can be treated with most anthelmintic products, although some evidence of resistance to white drenches (1-BZ) has been reported previously in the UK. Some flukicidal products, such as nitroxynil and closantel are also effective and should be considered in certain cases.

Blowfly strike

The NADIS blowfly alert is updated every 2 weeks over the course of the grazing season. As of mid-August, very high risk was being predicted across the UK with the exception of northern Scotland, where high risk was being predicted.
Soiled back ends resulting from PGE and foot rot lesions are both common sites for blowfly strike (Figure 4). Failure to treat promptly is a welfare issue and can lead to disrupted grazing, loss of condition, secondary infections and death.

Figure 4: Wounds and footrot lesions are a common site for blowfly strike.

Advised actions include:

- Consult the NADIS blowfly alert for up-to-date risk.
- Inspect stock daily.
- Dagging, crutching, shearing, prompt treatment of lame sheep and good parasite control will reduce risk.
- A number of chemical formulations can be used to aid in the prevention and treatment of blowfly strike.
    - Some synthetic pyrethroid products carry a licence for use against sheep ticks.
- Cases of blowfly strike can be reported here https://www.farmanimalhealth.co.uk/blowfly-tracker

Cattle

PGE

PGE-causing roundworms of cattle, especially *Ostertagia ostertagi* can remain on pastures in large numbers until the end of the grazing season. Young stock in their first grazing season may therefore still be at risk of type-1 ostertagiosis, particularly autumn and winter-born weaned calves entering their first full grazing season and spring-born beef suckler calves entering their second grazing season. This risk is increased in animals set stocked on permanent pasture until the end of the grazing season (Figure 5).

Figure 5: 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
- Animals which have been set stocked on the same pasture and received strategic dosing up to this point should be moved to “safe” pastures (hay or silage aftermaths) as they become available.
- Where strategic dosing is not implemented, risk of disease peaks during the summer months, but can remain high on previously grazed pastures until the end of the season.
- Monitor liveweight gain and/or worm egg counts to identify infections and the effectiveness of your chosen control strategy over the course of the grazing season.
- Where dosing with anthelmintics is indicated:
    - Considering the COWS group’s “5 Rs” to ensure your worming strategy is both effective and sustainable.
    - Use worm egg counts to check for effective anthelmintic dosing.

- For more information, discuss this with your vet or SQP, and see the COWS group guidelines.

Lungworm

Risk of lungworm infection (or "husk") peaks for animals at pasture in the late summer and autumn. Outbreaks are difficult to predict, but may be associated with wetter summers and following periods of rainfall as infective larvae are dispersed from faeces onto pastures in large numbers (Figure 6).

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.

Figure 6: Pilobolus fungi growing on faecal pats help to disperse infective lungworm larvae onto pastures in large numbers helping pasture infectivity build rapidly on pastures under optimal conditions (Photo credit: Bruce Thompson @Friesian_man).

Calves that have been vaccinated ahead of turnout should be protected against clinical disease, although it is important to note anthelmintic use in these animals over the grazing season should have allowed for some natural infection to develop a fully protective immunity for subsequent grazing seasons.

Advised actions include:

- Monitor for infection. Early signs include:
    - Widespread coughing in the group, initially after exercise then at rest.
    - Increased respiratory rate and difficulty breathing (Figure 7).
    - Rapid loss of weight and body condition
    - Milk drop in lactating cattle
    - Death in heavy infections
- Where infection is suspected:
    - 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.
    - Affected cattle should be removed from contaminated to "safe" pasture (e.g. aftermath) or housed in a well-ventilated building.
    - Infection can be confirmed by:
        - Post-mortem of dead animals
        - Observation of larvae in saliva or faecal samples in patent infections
        - A serum antibody ELISA is also available.
- For more information, please speak to your vet or SQP, see "COWS" group guidelines.

Figure 7. Early signs of lungworm infection include widespread coughing and elevated respiratory rates and difficulty breathing. Depending on their history, both youngstock and (in some cases) adult cattle can be at risk of infection.

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

To see the full range of NADIS livestock health bulletins please visit www.nadis.org.uk

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