

NADIS Parasite Forecast – May 2013

Use of meteorological data to predict the prevalence of parasitic diseases

Regional Weather

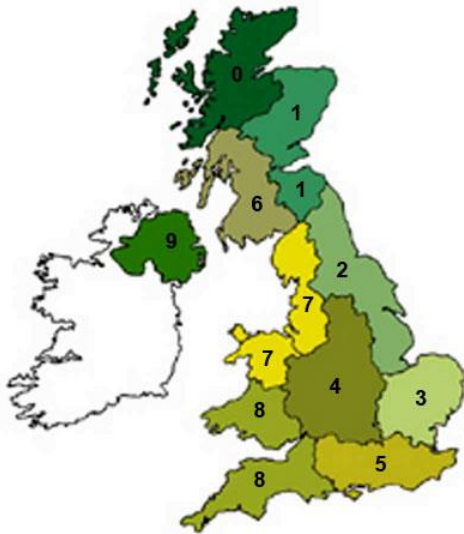
(based on Met Office figures)

March was exceptionally cold across the UK this year, the coldest March since 1962, and the coldest month since December 2010. All regions were 2 to 3 °C below their 1961-1990 long-term averages. The UK mean temperature of 2.2 °C was 5.5 °C below the March figure for 2012.

Three-month average temperatures across the UK are below the long-term average in all regions, especially in England and Wales.

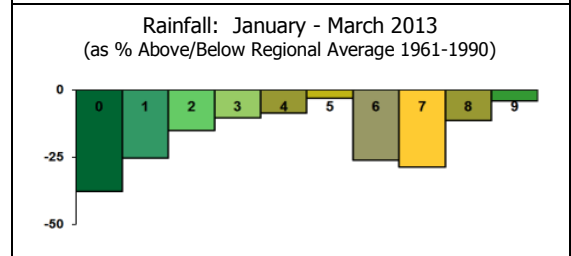
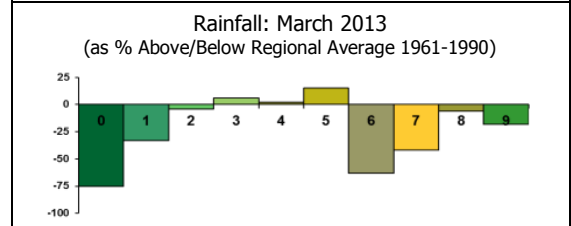
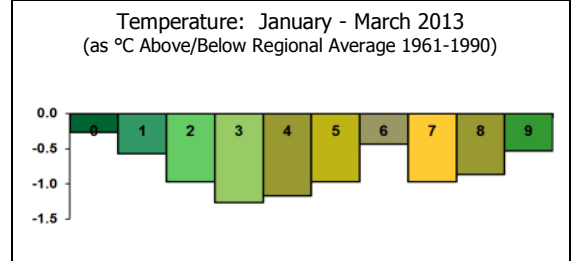
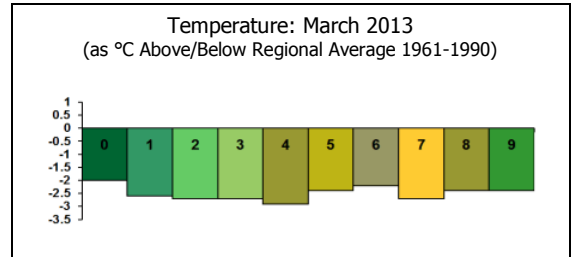
The month was drier than expected in the north and west of the UK, with Scotland receiving less than 40 per cent of expected rainfall. There were significant snowfalls in some regions.

Over the last three months, all regions have been drier than would be expected, particularly Scotland and north-west England/north Wales, which received only 75 per cent or less of expected rainfall over the period.



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 | |



Early **April** has seen cold conditions continuing, although from the second week conditions are forecast to change, with warmer and more unsettled weather resulting from a change to low pressure systems dominating.

The first half of **May** is often cool with northerly winds, while the second half is often dry and warm, with high pressure.

May Parasite Forecast/Update

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

SHEEP NEMATODES

Nematodirus battus

England and Wales

There is likely to be a **high risk of *Nematodirus* disease** in lambs this spring, as cold conditions cause a late hatch of the parasite eggs on the pasture. Risk is likely to start when temperatures have reached around 10 °C for about a week.

Incidence is generally high when spring is late, as the hatch of larvae is delayed until main-crop lambs are consuming significant amounts of grass. It has also been suggested that in years with an early spring, it may rapidly become too warm for hatching to continue, leading to a low incidence of disease.



A risk assessment for nematodiosis should be carried out based on farm and pasture history, forecasts, and the age of the lambs during the risk period (photo - PR Scott)

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Forecasts for England and Wales are based on December to March monthly average temperature deviations and March average soil temperatures in central and north-east England. Both predict a high incidence this year.

An updated forecast will be produced in early May, which will be available at www.nadis.org.uk.

The high-risk period is often assumed to be the 6-8 weeks following hatching, although cool and damp May and June weather may extend this risk period by extending the period of larval survival on the pasture and/or allowing hatching to continue for longer. This is only a general guide; however, it does suggest that large numbers of lambs will be grazing during the highest risk period this year.

Lambs are usually considered most at risk between 6 to 12 weeks old, although younger lambs can be at risk as soon as they start grazing when pasture infectivity is high.

Eggs passed by lambs in the spring generally do not hatch until the following spring, therefore the best control method is to avoid grazing lambs on pasture used for young lambs the previous year, or ideally the previous two years.



The best control method for nematodiosis is to avoid grazing ewes and lambs on pasture used for pre-weaning lambs the previous year, or ideally the previous two years

If this is not possible, a risk assessment should be carried out based on farm and pasture history, forecasts, and the age of the lambs during the risk period. Prophylactic treatments can then be given as required, aiming to cover the period when the high-risk age range and the high-risk time period overlap. In spring born lambs this may result in a single treatment in low-risk years, and three or more treatments in high-risk years, around three weeks apart.

For example, this year lambs born at the beginning of April over much of the country may be treated first in mid-May. This year the late hatch means that prophylactic cover may need to extend into July.

The prophylactic treatment approach is always at risk of breaking down due to the sudden appearance of larvae on the pasture, so the safe grazing approach is to be preferred. Using faecal egg count monitoring to time *Nematodirus* treatments is risky, as severe disease may be caused by worm larvae even before eggs appear in the faeces of the lambs.



This year the late *Nematodirus* hatch means that prophylactic cover may need to extend well into July (photo - PR Scott)

Low numbers of nematodiosis cases may be diagnosed in any month of the year. A smaller autumn *Nematodirus* hatch has long been recognised, especially following autumn rain after a dry summer (as occurred in 2006). Recently there seems to have been an increase in *Nematodirus* disease in older lambs, perhaps associated with the loss in some worm populations of the requirement for eggs to be chilled before they hatch. How this affects the incidence of spring nematodiosis is not clear, although VIDA diagnosis data show a positive correlation between the height of the spring peak in monthly nematodiosis diagnoses and the height of the autumn peak the same year.

Scotland and Northern Ireland

Although the available data do not produce forecast figures for these areas, the same principles apply i.e. low spring temperatures result in a late hatch, and a high overall incidence of disease. There is therefore a **high risk of disease this year**. Northern areas will experience a later hatch than that forecast for England and Wales – in average years a June peak in nematodiosis is more common in Scotland, whereas a May peak is often seen in England and Wales



In average years a June peak in nematodiosis is common in Scotland (photo - PR Scott)

Benzimidazole (BZ) anthelmintic resistance has been identified in UK *Nematodirus battus*, although it seems very uncommon. When treating clinical disease, it is advisable to check post-treatment faecal egg counts to confirm that treatment has been effective.

Parasitic gastroenteritis

In the spring, significant numbers of overwintered larvae will migrate onto herbage and infect lactating ewes, and if pastures are heavily contaminated they may also cause spring/early summer disease in grazing lambs. Large overwintering larval populations are less likely in most areas this year, given that they have previously been associated with dry conditions during the preceding late summer/autumn.

Eggs deposited by the lactating ewes and lambs will develop slowly initially, but will begin to develop more quickly as the weather warms up. The development of strategies to keep pasture larval contamination down to a level that allows acceptable lamb performance, while also allowing the deposition of some anthelmintic-susceptible worm eggs on the pasture to dilute any resistant parasites present, requires veterinary input on an individual farm level.

If BZ anthelmintics are to be used for treatment in outbreaks of nematodiosis, the faecal egg count of several lambs should be checked to indicate whether *Teladorsagia* infection is present or not. If it is, it is likely to be BZ-resistant on most farms, and the use of another class of drugs should be considered.

CATTLE NEMATODES

Veterinary health plans for the control of PGE and lungworm should be tailored to individual farms. If gut worm larval populations are not multiplied up through being ingested by naive (first grazing season) cattle, then they will reduce with time and pastures will be safer to graze from around mid-summer. If low contamination pastures are not available at turnout, wormers will have to be used in these naive animals to suppress the build-up of the population until this time, or the animals moved to an aftermath or similarly ungrazed field around midsummer (perhaps with a partial group wormer treatment).

Rainfall patterns over the summer will help determine the timing of the peak in pasture larval infectivity, with wet summers producing an earlier peak that may affect calves managed using an evasive strategy before they are moved to safe pasture.



Ostertagiosis in a weaned beef calf at pasture during early September – plans should be made now to avoid this occurring later this year (photo - PR Scott)

As lungworm is a more unpredictable parasite than gut worms, vaccination should be considered, particularly on farms with a previous history of disease. Alternatively, a strategic worming/monitoring programme may be used to protect against the disease. Treated animals should always be monitored according to good husbandry practices.



Veterinary herd health plans for the control of PGE and lungworm should be tailored to individual farms (photo - PR Scott)

LIVER FLUKE

Snail breeding and fluke development start when temperatures rise above around 10 °C, where conditions are wet enough; however, average daily maximum temperatures throughout March were well below this figure right across the UK.

Daily mean temperatures generally reach 10°C at some point during April, allowing development to occur. However, more significant development usually occurs in May, when monthly mean temperatures usually reach 10°C. The level of summer rainfall is then important in determining how much subsequent development takes place.

There are potentially large numbers of infected stock this year, following last season's high fluke incidence. Stock grazing snail habitats can be treated with an adult flukicide now to reduce pasture contamination with fluke eggs, as it is the snails infected at this time that produce cercariae that lead to acute fluke infections of livestock in the autumn. Additionally, snail habitats may be fenced off, if practical.

The high efficacy of triclabendazole against early immature fluke is not generally needed at this time of year, and selection for resistance against this important drug can be reduced by saving it for use in the autumn.

The fluke-infected overwintering snail population may be large this year given the wet conditions during autumn in most areas. These snails will produce cercariae in May/June, and the level of rainfall in these months will help determine the risk from this overwintered population. A forecast will be produced when the June weather data are available.

ECTOPARASITES

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Headfly

In the UK, headfly can present a major problem in horned breeds during the summer months.

Risk factors include:

- Summer months
- Horned breeds
- Head wounds
- Adjacent woodland
- Recent ear tagging/notching causing localised infection



Horned sheep are at much greater risk from headflies.

Grazing patterns are disturbed and affected sheep often isolate themselves and remain in shade where available. They may stand with the head held lowered with frequent head shaking and ear movements. Alternatively, sheep adopt a submissive posture in sternal recumbency with the neck extended and the head held on the ground. Kicking at the head often greatly exacerbates damage caused by headflies and such action may also traumatise the skin of the neck and ears. Fleece quality is adversely affected and the loss of body condition will reduce ovulation rate and subsequent litter size costing the farmer money. Serious headfly problems cause:

- Disrupted grazing
- Condition/weight loss
- Reduced ovulation/fewer lambs

Local farm conditions may vary so consult your veterinary surgeon. Parasite control should be part of your veterinary health plan

NADIS hopes that you have found the information in this forecast useful. Now test your knowledge by attempting the quiz below. You will be emailed an animal health certificate for this subject if you attain the required standard.

Click here [Health Quiz](#)

To view a **WEBINAR** (video) of the full Parasite Forecast please click [WATCH THE WEBINAR](#)

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Sheep bothered by headflies often adopt a submissive posture.



Headfly-affected sheep in the foreground with another unaffected sheep managed in the same group.

Pour-on fly control preparations, such as high *cis* cypermethrin or deltamethrin, must be applied before the anticipated headfly season and especially to horned sheep with re-application as directed by the manufacturer's instructions. Housing is essential once sheep present with large skin lesions to allow time for complete healing.