March 2010

March mean temperatures were around 1°C above 1961-1990 regional average figures across the UK. Temperatures were particularly mild during the second half of the month, although some nights were cold. Now that the cold December has dropped out of the three-month mean temperature figures, they also show warmer than average conditions across the UK over that period.

Rainfall for the month was well below expected levels across the UK. Eastern Scotland received rainfall equalling the 1961-1990 average for the region, but the rest of the UK was drier than expected particularly central and eastern England, where large areas saw less than 20 per cent of the rainfall normal for the month. Three-month rainfall was around 20 to 30 per cent below expected levels in East Anglia, the Midlands and the south-west, but around 10 to 20 per cent above expected levels in central and southern Scotland.

The first ten days of April have seen temperatures well above average with below-average rainfall, although rainfall has been above average in north-west England, northern/western Scotland and Northern Ireland.

Forecasts for the rest of the month predict mostly dry and settled weather in the south and east, with more normal amounts of rain and cooler conditions in the northern/western regions.

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 Update and Forecast

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

SHEEP NEMATODES

Nematodirus battus

England and Wales

The Nematodirus disease risk in lambs this spring is forecast to be average.

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 than in years with an early spring, it may rapidly become too warm for hatching to continue, leading to a low incidence of disease.

Forecasts for England and Wales based on December to March monthly average temperature deviations (I1), which therefore include the effect of the low December temperatures, predict a slightly above average incidence of nematodiosis in lambs. However, those based March average soil temperatures in central and north-east England (I2) suggest that the incidence is likely to be below average this year. Soil temperatures (30 cm) in central England rose above 6 °C on the 11th March this year, which also suggests a below-average incidence. Dry ground conditions due to the low rainfall in many parts of England and Wales may delay hatching and increase the disease risk to main crop lambs. On balance, an average incidence seems most likely.

It must be remembered that, as happened in 2008, cold or dry April conditions could increase the risk of nematodiosis in spring lambs further when the warmer weather and rains eventually appear.

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

The forecast peak of pasture larval infectivity in north-east England is around the 12th-15th April (it is often around 2-3 weeks earlier in the Midlands and the south). The high-risk period is often assumed to be the 6-8 weeks following this, 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.

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.

The best control method is to avoid grazing 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. Three-weekly 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 up to three in high-risk years.

For example, this year lambs born at the beginning of April over much of the country may be treated in mid-May and early June. A change to cooler weather or a prolonged dry spell may mean a third dose is required in late June, particularly in northern regions. 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.

Low numbers of nematodiosis cases may be diagnosed in any month of the year. An autumn peak in pasture Nematodirus larval infectivity 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 clinical autumn nematodiosis 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 nematodirosis is not clear, although VIDA diagnosis data show a positive correlation between the height of the spring peak in monthly nematodirosis 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. below-average spring temperatures result in a late hatch, and an above-average overall incidence of disease. 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.

Possible benzimidazole (BZ) anthelmintic resistance is being investigated 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.

Last year’s forecast was for an above-average incidence of spring nematodiosis in lambs. This appears to have been accurate, as figures show the incidence of nematodiosis in Great Britain during April-June 2010 was above that seen in any of the previous eight years. The same is true for England/Wales, while in Scotland, only three of the previous eight years had higher incidence figures (VLA and SAC, GB Surveillance - Small Ruminant Diseases, Quarterly Report 14:2).
The best control method for nematodirosis is to avoid grazing ewes and lambs on pasture used for pre-weaning lambs the previous year, or ideally the previous two years.

Parasitic Gastroenteritis

In the spring, significant numbers of overwintered larvae will migrate onto herbage and infect lactating ewes, and if pastures are heavily contaminated, may also cause spring/early summer disease in grazing lambs. 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.

Large overwintering larval populations have previously been associated with dry conditions during the preceding late summer/autumn. This was generally not the case in 2010, so spring teladorsagiosis risk in lambs may not be as high as in some years. However, if BZ anthelmintics are to be used for treatment in outbreaks of nematodirosis, the faecal egg count of several lambs should be checked to indicate whether significant patent 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.

Nematodirus egg (large, 150-200μm), trichostrongylid egg (medium, 80-100μm) and coccidial oocysts (small, 20μm diameter). Identification of these structures in lamb faecal samples during the spring/early summer can be important in devising appropriate treatment regimes.
CATTLE NEMATODES
Veterinary health plans for the control of PGE and lungworm should be tailored to individual farms. At this time of year they may involve the vaccination of calves against *Dictyocaulus* and the planning of an evasive PGE control strategy, or the planning of a suppressive regime for both PGE and lungworm control.

The cold 2010-11 winter cannot be relied upon to have significantly reduced pasture larval contamination. 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.

FLUKE
Snail breeding and fluke development start when temperatures rise above 10 °C, where conditions are wet enough. Daily mean temperatures will generally reach this level at some point during April. Average daily maximum temperatures for March in England and Wales were already above 10 °C. This means some fluke development will have been occurring. The level of summer rainfall is then important in determining how much subsequent development takes place.

There are potentially quite large numbers of infected stock this year, following last season’s moderate/high fluke forecast. 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. Alternatively, 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 also be relatively large this year in those areas that experienced wet conditions during autumn. 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.

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