March 2010

The first two weeks of March were mostly dry, fine and cold. After this, temperatures rose so that mean temperatures for the whole month were close to the 1961-1990 average in the north and west of the UK, and about 1°C above average in central and eastern England. Mean temperatures over the three months January to March were still below the long-term average in all regions.

The second half of the month saw significant rainfall, with snow in the north at the end of the month. Rainfall for the whole month was well above normal in some eastern parts of northern England and southern Scotland, and parts of Northern Ireland. Apart from this, rainfall was generally below average in March. Rainfall over the January to March period has been above average in eastern English regions, but below average in other areas.

The first week of April has been generally wet and cold, with temperatures rising towards the end of the week. Forecasts for the rest of the month predict mostly dry and settled weather with some rain and cloud spreading from the south, returning to dry and settled conditions with below-average temperatures later in the month.

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**

Forecasts for England and Wales based on December to March monthly average temperature deviations ($I_1$) and March average soil temperatures in central and north-east England ($I_2$) suggest that the incidence of nematodirosis in lambs is likely to be above average this year.

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. Mean UK temperatures have been well below average from December to February, suggesting a high incidence of disease. However, the second half of March was significantly warmer, which reduced the forecast from high to above-average.

It must be remembered that, as happened in 2008, a cold or very dry April could still increase the risk of nematodirosis in spring lambs 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](http://www.nadis.org.uk).

Soil temperatures (30 cm) in central England didn’t rise above 6 °C until around the 19th March this year, which also suggests an above-average forecast for nematodirosis incidence.

The forecast peak of pasture larval infectivity in north-east England is around the 21st 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. This is only a general guide; however, it does suggest that large numbers of lambs may 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.

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, 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.

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 nematodirosis 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 nematodirosis 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 nematodirosis is more common in Scotland, whereas a May peak is often seen in England and Wales.

No anthelmintic resistance has been found in UK *Nematodirus battus* populations. Benzimidazole (BZ) drugs may be used for *Nematodirus* control, even in flocks with BZ resistance in other worm species.

Last year, mild spring conditions resulted in a forecast for a moderately early hatch of *Nematodirus*, associated with a below-average incidence of spring nematodirosis. This appears to have been accurate, as figures show the number of diagnosed incidents of nematodirosis during April-June 2009 was below the average number for the previous seven years in both England/Wales and in Scotland (VLA and SAC, GB Surveillance - Small Ruminant Diseases, Quarterly Report 13:2). For Great Britain as a whole, only two of the previous seven years saw fewer diagnosed incidents (2002 and 2007).

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**Nematodirus egg (large, 150-200μm), trichostrongylid egg (medium, 80-100μm) and coccidial oocysts (small, 20μm diameter). Identification of these eggs in lamb faecal samples during the spring/early summer can be important in devising appropriate treatment regimes**
**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.

The wet July last year combined with the generally dry September/October may have led to significant pasture larval populations building up which then survived to over-winter.

If large over-wintering *Teladorsagia* larval populations are present then this will result in a higher risk of spring teladorsagiosis this year, which may appear concurrently with nematodirosis in the same age of lambs. If benzimidazole 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.

**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.

It is unlikely that the cold 2009-10 winter will 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 egg 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, and regional monthly maximum temperatures in April are also regularly above 10°C. This means some fluke development can occur. However, more significant development 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. 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. 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.

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