February 2011

February was generally a mild month, particularly in central England. Mean England and Wales temperatures were 2.7 °C above the 1961-90 average, while Northern Ireland was 2.1 °C above its long-term average, and Scotland was 1.7 °C above. Mean 3-month temperatures were still below average in all regions, due to the very cold December.

Rainfall was more than double the 1961-90 average in large parts of southern Scotland and north-west England. The rest of the UK received closer to the expected amount of rainfall for the month, and the south-west England/south Wales region was actually drier than the long-term regional average. Three-month rainfall figures show central and southern UK was drier than expected, as was northern Scotland and Northern Ireland. The large amount of rainfall in northern England/southern Scotland this month means that the three-month mean rainfall these regions is greater than expected.

The first week of March has generally been cold and cloudy in the southern UK, a little milder and wetter in the north. There have been some sunny spells. April often sees cold showery spells, with historical data suggesting these are most common between the 10th and 20th of the month, and in the last week, going into May. The changing climate may affect this, however.
April Parasite Update and Forecast

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

SHEEP NEMATODES

**Nematodirus**

Last year, the cold December to February but warmer March resulted in a forecast for a moderately late hatch of *Nematodirus*, associated with an above-average overall incidence of spring disease. This prediction proved to be correct, with the incidence of nematodirosis in Great Britain during April-June 2010 well above the levels seen during the same period in 2009 and 2007, and comparable to levels seen in 2008 and 2006 (VLA and SAC, GB Small Ruminant Disease Surveillance Quarterly Report, 14:2). Incidence over this quarter in England was in fact greater in 2010 than in any year back to at least 2002.

Mean UK temperature anomalies for December to February show a rising pattern this season, similar to that seen in 2008/9, which led to a below-average incidence year. This compares to the negative anomalies seen in 2009/10, leading to an above-average incidence year (Figure 1). This suggests we may see a below-average incidence of nematodirosis this spring; however, March and April temperatures can alter this picture. A forecast for overall incidence and peak hatch will be made in early April and included in the next parasite forecast.

**Figure 1**

Mean UK temperature anomalies December to February

<table>
<thead>
<tr>
<th>Month</th>
<th>Temperature Anomaly (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>December</td>
<td>-1</td>
</tr>
<tr>
<td>January</td>
<td>0</td>
</tr>
<tr>
<td>February</td>
<td>2</td>
</tr>
</tbody>
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May and June usually see by far the largest number of nematodirosis incidents, however significant numbers can also occur in April. The best control method is to avoid grazing lambs on pasture used for young lambs the previous year, or ideally the previous two years. If this is not possible, and March and April are mild allowing early hatching, then February and early March born lambs may need a prophylactic anthelmintic drench before the end of April. Colder (or very dry) weather over this period may make this early drench unnecessary, although prophylaxis will be needed in the following couple of months, when greater numbers of lambs will be grazing, and therefore at risk. Benzimidazole (Group 1) wormers are usually recommended for *Nematodirus* prophylaxis, although a possible UK case of benzimidazole resistance in *Nematodirus battus* is being investigated.

Using faecal egg-count monitoring to time *Nematodirus* treatments is risky, as the disease is primarily caused by worm larvae, and significant damage can occur before eggs appear in the faeces.

**Parasitic Gastroenteritis (PGE)**

Although pre-infective larvae of parasitic nematodes may be susceptible to sub-freezing temperatures, infective third-stage *Teladorsagia* larvae on pasture may survive quite well through cold winters as long as they do not dry out. A blanket of snow can increase the survival rate. The prolonged freeze this winter cannot therefore be relied upon to reduce overwintering larval populations to safe levels.

Overwintered larvae will be picked up by late pregnant or lactating ewes in significant numbers, unless conditions are extremely dry or they are grazing safe pastures. Development of these eggs, initially slow, will occur more quickly as temperatures increase through March and April. The eggs passed by the ewes will maintain the infectivity of the pasture, which would
otherwise fall to low levels as overwintered larvae become active in the spring and use up their energy reserves.

The aim of dosing ewes around lambing time is to reduce this contamination, as discussed in the March forecast, although any treatment will increase selection for wormer resistance in the parasites. In order to avoid undue selection for anthelmintic resistance, the need for a dose can be assessed taking into account the likely level of infection on the pasture. If ewes are treated, SCOPS recommends that this dose is targeted; for example, on thinner, younger or multiple bearing ewes. This means that not all ewes are dosed and some anthelmintic-susceptible parasites survive. For those ewes that are treated, those on contaminated pastures may need a persistent anthelmintic to prevent immediate re-infection; those turned out onto clean pasture may only require a short-acting one.

**Blanket treatment of all ewes at turnout may well carry an unacceptable risk of selecting for anthelmintic resistance. Ewes in good condition or with singles may not need dosing, particularly if pastures are not heavily contaminated.**

**LIVER FLUKE**

Maximum temperatures at the time of writing (early March) are around 10 °C or above in many parts of the UK. Snail and fluke development on the pasture will be beginning where ground conditions are wet. This will continue through April, although most significant development occurs after mean temperatures reach the 10 °C level, and that occurs towards the end of April or in May.

Chronic fascioliases is the predominant form of the disease in the spring, and cases of ill-thrift should be investigated. Fluke eggs passed onto pastures now will develop over the summer and lead to infective metacercariae from August, usually causing acute disease from September. This is the major risk period for acute fluke in sheep, and an initial forecast for disease incidence will be published after July meteorological data are available. Fluke populations in many places should be starting from a high level this year, and another wet summer could lead to even more significant problems.

Occasional cases of acute fluke disease from overwintered metacercariae are seen in April, however metacercariae from the winter infection of snails do not usually appear on pasture until May/June with acute disease usually seen from July. Although most infected snails are expected to die by the end of June, a wet May and June this year would allow the infection to pass onto the pasture and may create some early risk to stock. A forecast for this will be produced in early July.

Stock on premises with a known fluke population will already have been dosed in the autumn/winter and should not need dosing again until next month. Newly diagnosed cases of chronic fluke disease can be treated with any available flukicide, although triclabendazole should not be used as a high level of activity against immature fluke is not required.

**Coccidiosis** is a significant risk in April, in February/March born lambs, or in older lambs when the feeding of medicated creep is stopped. It is a disease of intensive husbandry, and adverse weather conditions leading to poor colostrum supply, poor grass growth, wet muddy paddocks and/or extended housing periods can increase incidence.
CATTLE NEMATODES

Worm control for the grazing season needs to be arranged, as part of a veterinary health plan taking into account the type and age of stock, and the history of the available pasture.

To control ostertagiasis, dairy calves and autumn-born suckled calves will require preventative treatment in their first grazing season unless they are on safe grazing. If pasture contamination is suppressed until at least mid-summer, most pasture larvae should have died off by that time and the pasture should remain safe for the rest of the season. Alternatively, calves can be dosed and moved to aftermath at mid-summer, although a proportion should be left undosed to carry some anthelmintic-susceptible worm larvae onto the new pasture.

Spring-born suckled calves will not usually need preventative treatment for gut worms in their first grazing season (apart from a housing dose) but they will probably need some control in their second grazing season.

Vaccination (Huskvac) is often the best way to control lungworm in dairy replacements and in suckler herds with a history of disease, as disease can occur during the late grazing season even if the above control methods for ostertagiasis have been followed.

Worm problems will generally be greater in wet summers, although significant autumn problems can occur following a dry summer - larvae can survive longer locked in faecal pats, and when rain or storms appear later in the season, disease can occur in calves after their bolus or depot injection treatment has run out, leading to potentially large overwintering larval populations on pasture.