NADIS Parasite Forecast – January 2012

Use of meteorological data to predict the prevalence of parasitic diseases

Regional Weather

(based on Met Office figures)

REGIONS

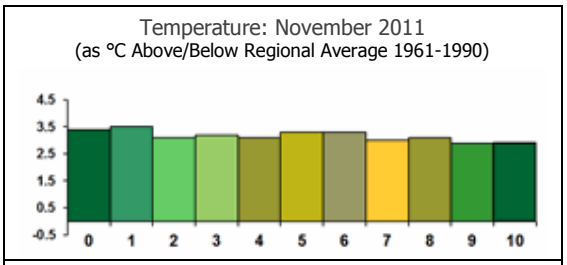
0 N W Scotland
1 E Scotland
2 N E England
3 E Anglia
4 The Midlands
5 S England
6 S W Scotland
7 N W England & N Wales
8 S W England & S Wales
9 N Ireland
10 Wales

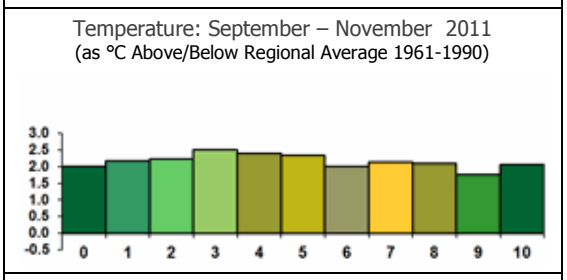
Mean regional November temperatures were around 3 to 3.5 °C above 1961-1990 long-term averages for the month across the UK.

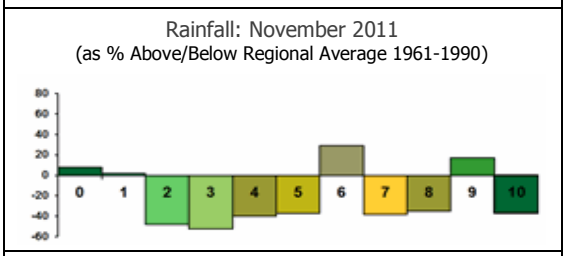
This has pushed up regional three-month mean temperatures to around 2 to 2.5 °C above their long-term averages across the country.

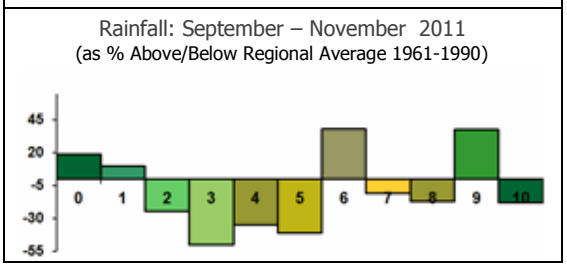
Scotland and Northern Ireland were wetter than expected in November, particularly in the west of Scotland. England and Wales in contrast received less than 60 per cent of expected rainfall for the month.

The three-month rainfall shows a similar pattern, with Scotland and Northern Ireland wetter than the long-term average would predict, while England and Wales have been drier. East Anglia and south-east England have received 40 to 50 per cent less rain than expected over the period.









Forecasts for **December** suggest unsettled and windy conditions in the north, with more settled drier conditions further south.

The period around the **5th to the 17th January** is often a wet and windy period, and the following week often dry and frosty. Gales and snow often affect the UK in the final week of the month. However, the changing climate may be affecting these patterns.

Long-term forecasts vary, but generally predict that winter temperatures and rainfall are both likely to be below average.

January Parasite Update and Forecast

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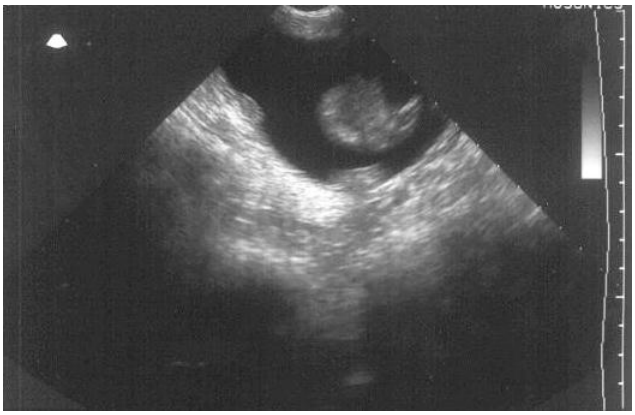
The most recent version of this monthly parasite forecast may be accessed at www.nadis.org.uk

LIVER FLUKE

As forecast earlier in the year, liver fluke disease may remain a threat, particularly in the north and west of the UK, with possible deaths due to acute and sub-acute disease continuing into the winter, and ill thrift and poor production due to chronic disease in the winter/spring and later. Of course, localised areas that have remained wet for long periods over the summer and autumn will present a threat to livestock in any part of the country.

Sub-acute fluke disease is often seen at this time of year, with a mixture of adult and immature fluke in the liver causing condition loss, dullness, anaemia, abdominal pain and sometimes death. The first sign of a fluke problem on a farm might be seen in January when poor scanning results are obtained.



A fluke problem in a flock might only be recognised in January when poor scanning results are obtained

Drier autumn conditions in many areas, particularly in the south, are likely to have resulted in relatively low overwintering populations of fluke-infected snails, therefore reducing the risk of early disease next year from the winter infection of snails. A fluke forecast for the winter infection will be produced in early July next year, which will also take into account the climatic conditions in the spring/early summer as infection emerges from the snails.

Mean daily maximum temperatures for November were above 10 °C in all regions, indicating that some fresh fluke infection may have been passing from snails onto the pasture. Only in the south-east/central southern England region was the mean November temperature above 10 °C, and ground conditions suitable for snail/fluke development were unlikely to be widespread there following the prolonged dry spell.

Metacercariae already on the pasture will survive for a variable length of time, and some will overwinter. Cases of acute fluke from the summer infection may therefore occur through January or even later, particularly in the high-risk regions. Localised permanently wet fluke habitats (such as poorly drained ditches) in all regions present a risk, and the fencing-off of such areas provides some control of infection without increasing selection for flukicide resistance.

Farms with a history of fluke or those at risk from infection (ideally with evidence of fluke infection from monitoring via post mortem examinations, blood liver enzyme levels and fluke eggs) should consider a winter (December/January) dose to remove adult and immature fluke. Sheep in high-risk areas may remain exposed to potentially risky pastures through the winter and consideration should be given to administering a repeat dose to these animals 4-6 weeks later.

The need for activity against immature fluke at this time means that in theory triclabendazole may be the drug of choice; however, a risk assessment regarding the level of challenge should be performed. Consideration may be given to using one of the other drugs with activity against immature fluke (closantel, nitroxynil) in order to reduce selection for triclabendazole-resistant fluke, even though they are much less effective against young immature fluke less than 6 weeks old.

The treatment of any outbreaks of acute or sub-acute fascioliasis should involve a move to fluke-free ground if possible. If closantel or nitroxynil rather than triclabendazole are used to treat clinical disease then follow up treatments are usually needed to remove those fluke too young to be treated by the first dose. If a move is not possible, then 3-weekly treatment may be needed throughout the risk period.

Similarly, grazing cattle considered at risk should be dosed for fluke now with a product with some activity against immature fluke. Housed cattle, if not already dosed after housing, may be dosed with closantel or nitroxynil (if already housed for 6 weeks or more) or a benzimidazole such as albendazole (if already housed for 12 weeks or more), thus avoiding the use of triclabendazole and reducing selection pressure for resistance. Serum or bulk milk ELISA testing and slaughterhouse reports are practical methods of detecting fluke-infected herds

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SHEEP NEMATODES

In recent years, the warmer climate has extended the period of the year during which eggs can develop. Mean November temperatures close to 10 °C may have allowed significant hatching to occur during the month. Pasture larval levels will continue to decrease through January, although larvae can survive for extended periods under snow. When mean temperatures are around 5 °C or less, contaminated pastures will be of low infectivity as larval movement and metabolism will be minimal.

Faecal egg count monitoring of batches of lambs on contaminated pasture is an invaluable tool in controlling PGE without the overuse of anthelmintics, as recommended by SCOPS. Around 10 fresh samples can be collected from the pasture following gathering in a field corner for 10 minutes and these can be examined ideally individually, otherwise pooled at the laboratory or vet practice. Decisions about dosing and further sampling can then be made with veterinary advice.

Populations of *Haemonchus contortus* at this time of year survive principally as inhibited larvae in hoggs, ewes and tups rather than as larvae on pasture. This means that potentially infected sheep should be treated with a larvicidal anthelmintic (not levamisole) before type 2 disease can occur in spring – a dose at lambing time may be adequate but may risk being too late. It also means that the population in refugia at this time (the worm population not exposed to anthelmintic) is very small and the selection pressure for anthelmintic resistance created by this dose is therefore relatively large. This illustrates the point that effective worm

control achieved by the use of anthelmintics always selects for anthelmintic resistance, and avoiding the introduction onto a farm of *Haemonchus* by effective quarantine treatments (see the SCOPS guidelines and previous parasite forecasts) is much the better option.

Low temperatures and snow coverage result in a much reduced immediate risk of winter PGE. However, infective larvae can survive freezing conditions, and the micro-climate under snow can be conducive to their survival. This means pastures can become infective again once the snow clears and temperatures rise above around *5 °C*

CATTLE NEMATODES

Some *Ostertagia* larvae ingested by susceptible stock during autumn will have halted development and overwintered (as early L4) in the abomasal wall of infected animals. These resume development in late winter/spring and can cause outbreaks of acute scour with some deaths (type 2 ostertagiasis). Those regions that have seen a dry summer followed by late return to wetter ground conditions in the autumn may have seen a late peak in pasture larval numbers and an increased risk of type 2 disease in animals still grazing at that time. Susceptible animals exposed to helminth-contaminated pastures during the later 2011 grazing season will be at risk shortly unless they have been dosed with a larvicidal anthelmintic at housing or at least before the late winter.

Lungworm levels at pasture should now be low, although a few cases are usually seen in January.

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