

# NADIS Parasite Forecast – December 2011

Use of meteorological data to predict the prevalence of parasitic diseases

## Regional Weather

(based on Met Office figures)



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

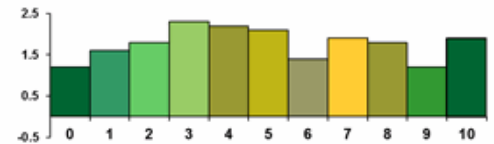
October began with some very warm days, and the monthly mean temperature was more than 1 °C above the 1961-1990 average in each region. The Midlands, south-east England and East Anglia were more than 2 °C above expected levels.

Over the last three months, the mean temperature has been above expected levels in all regions, again especially in the Midlands and eastern England.

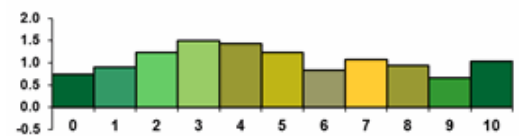
October rainfall was very mixed across the UK; more than 50 per cent above expected levels in western Scotland and Northern Ireland, but around 50 per cent below expected levels in south-east England and East Anglia.

The three-month rainfall picture similarly shows figures well above average in Scotland and Northern Ireland, but well below in the Midlands and south-east.

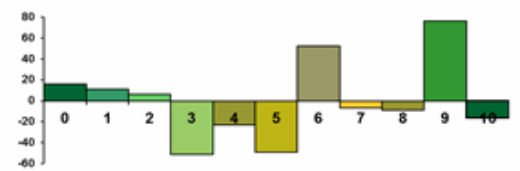
Temperature: October 2011  
(as °C Above/Below Regional Average 1961-1990)



Temperature: August - October 2011  
(as °C Above/Below Regional Average 1961-1990)



Rainfall: October 2011  
(as % Above/Below Regional Average 1961-1990)



Rainfall: August - October 2011  
(as % Above/Below Regional Average 1961-1990)



The first two weeks of **November** have continued to be generally mild with cloudy and damp conditions, but with occasional clearer, colder spells. Forecasts for the rest of the month suggest mild wet conditions in the north and west, with brighter but colder conditions in the south and east.

The second week of **December** is traditionally wet and windy, and the last week often brings gales and heavy rain or sleet. The intervening weeks are usually quiet and frosty, although these patterns may be changing.

**Long-term forecasts** vary, but generally predict that winter temperatures and rainfall are both likely to be below average in 2011-12

## December Parasite Update and Forecast

The most recent version of this monthly parasite forecast may be accessed at [www.nadis.org.uk](http://www.nadis.org.uk)

### LIVER FLUKE

As forecast earlier in the year, liver fluke disease may remain a threat, particularly in Scotland, western England and Wales (and most likely Northern Ireland). Deaths due to acute and sub-acute disease may continue into the winter, with 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.

Region	Initial $\Sigma M_t$ estimate (early August)	Final $\Sigma M_t$ (early November)
0 Scotland N	444	444
1 Scotland E	481	481
2 England E&NE	355	263
3 E Anglia	326	150
4 Midlands	319	159
5 England SE&S	350	216
6 Scotland W	485	485
7 England NW, Wales N	432	432
8 England SW, Wales S	418	396

The initial fluke forecast figures produced in early August as a worst-case scenario (using maximum values for August, September and October) are close to the final figures produced in early November for the high risk regions, although areas in the Midlands and eastern England dropped from initial moderate forecasts to final figures in the low risk category following dry conditions.

Analysis of percent average rainfall has also indicated that high incidence fluke years can be expected when the sum of the percent average rainfall for May, June and July is over 300, AND the similar sum for August, September and October is also over 300. These conditions were met in Scotland, Northern Ireland, northern England and North Wales this season.

Wet autumn conditions in some regions may result in a large overwintering population of fluke-infected snails, therefore increasing the risk of early disease next year from the winter infection of snails if May and/or June are also wet. A fluke forecast for the winter infection will be produced in early July next year, which will take into account the climatic conditions in the spring/early summer as infection emerges from the snails.

Mean October temperatures across the UK, except northern and western Scotland, were above 10 °C allowing some degree of cercarial production to continue. Metacercariae already on the pasture will survive and remain infective for a variable length of time, many until the end of December, and some will overwinter. Cases of acute fluke from the summer infection may therefore occur through January or even later, particularly in those areas that have maintained widespread suitable snail habitats through the autumn. 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.

Even in the absence of acute fluke disease, smaller burdens of fluke acquired in the autumn/winter may lead to subacute disease, often from December onwards but occasionally earlier, or chronic disease, often seen in the late winter and spring. 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 or fluke eggs) should consider a winter (December/January) dose to remove adult and immature fluke. This year those sheep in the 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.



***This ewe with subacute fluke disease shows depression, loss of appetite and weakness.***

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), even though they are much less effective against young immature fluke, in order to reduce selection for triclabendazole resistance.



**Subacute fluke disease around mating time can be a cause of reduced scanning percentage in ewes.**

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.

If cattle were housed 6 weeks ago and not given triclabendazole, a closantel or nitroxynil treatment given now that the flukes are at least 6 weeks old should clear the cattle of infection. Depending on previous treatments and grazing conditions, out-wintered cattle may require a December/January flukicide treatment.

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## **SHEEP NEMATODES**

Pasture larval levels in December are likely to be down from their late summer/autumn peak, but pastures that were heavily contaminated may well be infective enough to cause clinical disease through the winter, although infectivity is relatively low when temperatures are below 5 °C and larval movement and metabolism are minimal.

Third stage larvae survive well in cold and wet conditions, with pasture levels actually falling off more steeply in the early spring as the temperature begins to rise. Although the warmer climate has extended the period of the year during which eggs can develop, dropping November temperatures will significantly reduce further development.

In those areas that have experienced a dry summer/early autumn, it should be remembered that such conditions have been associated with an increased incidence of PGE the following season, presumably due to a late larval peak resulting in a higher overwintering population.

Outbreaks of trichostrongylosis and mixed parasitic gastroenteritis in store and replacement lambs may be

seen in December, and acute outbreaks of nematodiosis have been reported at this time in previous years. 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 ten fresh samples can be collected from the pasture following gathering in a field corner for ten minutes and these can be examined at the laboratory, vet practice or on farm, ideally individually or otherwise pooled. Decisions about dosing and further sampling can then be made with veterinary advice.

Acute haemonchosis becomes less of a risk as the weather becomes cold, as any fresh infections become inhibited in the sheep during development. These inhibited larvae can emerge in the spring causing type 2 disease around lambing time with potentially serious consequences. Investigating the presence or absence of *Haemonchus* on a farm is an important part of the flock health plan.

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## **CATTLE NEMATODES**

The incidence of lungworm disease in December usually falls to low levels again after its peak in August to October. Coughing in grazing or undosed housed animals should still be investigated. The expected stormy weather in December may release larvae from faecal pats, leading to local high-risk conditions for susceptible out-wintered stock.

There is a risk of type 2 ostertagiasis in any youngstock that grazed contaminated pastures in the autumn and did not receive a larvicidal dose of anthelmintic at housing. This may be a particular issue for calves

moved back to earlier grazings prior to housing, and calves in areas where a dry summer/autumn has led to the late release of larvae from faecal pats.

The housing dose also clears any lungworm infections that are present. In most cases, adults do not need a housing dose although this may have implications for ectoparasite control and veterinary advice should be sought. Group 3 (macrocyclic lactone) wormers are usually recommended for the housing dose due to their larvicidal activity. Outwintered cattle should not be left on potentially heavily contaminated grazing.

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