

# BLUETONGUE: TIME FOR PHARMACEUTICAL INDUSTRY TO STEP UP

The bluetongue virus is spreading fast on Dutch sheep and cattle farms. Why is there no drug or vaccination against it? And how is WUR impacted by this livestock disease? 'All suspected cases have to be confirmed by our laboratory.' Text Anne van Kessel

The livestock disease bluetongue is back and has been confirmed on nearly 1500 farms in the Netherlands. Another 700 farms have reported suspected infections based on symptoms shown by their animals. The virus seems to be spreading faster than it did during the first outbreak from 2006 to 2008. How does the virus spread and why is there still no vaccine?

## What kind of disease is bluetongue?

Bluetongue is a viral disease affecting ruminants such as sheep, cattle and goats. But it can also affect camelids such as camels and llamas, and giraffes and okapis can suffer too. Sheep can fall especially sick. They become feverish and lame, and their mucus membranes often get damaged. Their tongues swell up and sometimes turn blue. The death rate among sheep is between 20 and 50 per cent. 'We don't have precise

figures, unfortunately,' says Melle Holwerda, head of the National Reference Laboratory for Vector-borne and Zoonotic Viral Animal Diseases, at Wageningen Bioveterinary Research. 'It's difficult because animals that were not tested before they died are not included in the official figures.' There is still no drug against this disease. All vets can do is prescribe anti-inflammatories and painkillers, but they often have little effect. 'The only thing livestock farmers can offer is tender loving care,' says Holwerda. 'And if necessary, euthanasia to release an animal from its suffering.'

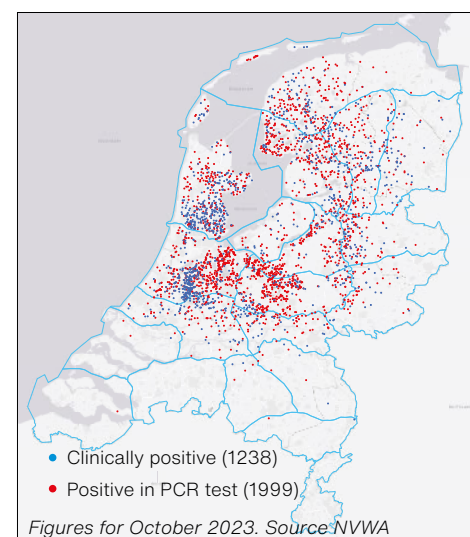
## Where does the virus occur?

Bluetongue is endemic in regions with a mediterranean climate such as countries around the Mediterranean Sea and some countries in Africa and Asia. In regions with a moderate climate there

are incidental outbreaks. The last time that happened in the Netherlands was from 2006 to 2008. Holwerda: 'Then the outbreak started in South Limburg and affected 400 farms.' Thanks to a vaccine and the development of natural immunity among the animals, the virus disappeared from the country again in 2008. 'This time the outbreak started in the centre of the country and has probably affected more than 2000 farms already.'

## How does the virus spread?

The bluetongue virus enters its host via a biting midge: the tiny fly that drives camp-




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'AS TO THE ORIGINS OF THE VIRUS, WE'RE COMPLETELY IN THE DARK'



'Sheep can fall especially sick. They become feverish and lame and their mucus membranes often get damaged. Their tongues swell up and sometimes go blue. There is still no drug against it.' ♦ Photo Resource

ers mad in Scotland and Scandinavia. The disease is not a zoonosis and cannot transfer from sheep to humans or from midge to humans, Holwerda emphasizes. There are more than 30 subtypes, or serotypes, of the virus. The 2006-2008 outbreak was of serotype 8. The current outbreak is of serotype 3, which was previously found in Italy, says Holwerda. 'But that was a different variant to the one we're seeing here now. As far as origins are concerned, we're completely in the dark.'

### How is WUR impacted?

No bluetongue has been found at WUR so far, nor among animals at the university's extramural locations, says Menno van Maanen, operations manager at the Animal Sciences Group. The main effect of the epidemic at the moment is that Wageningen Bioveterinary Research is doing more analyses than usual. Holwerda: 'All suspected cases have to be confirmed by our laboratory.'

### Why isn't there a vaccine?

In 2008, the outbreak of serotype 8 was stopped with a newly developed vaccine. 'That vaccine doesn't offer

any protection against type 3 because the serotypes are so different,' says Holwerda. 'There are vaccines in African countries but my colleagues and I question their safety.' Those vaccines are made from deactivated live virus. The idea is that animals vaccinated with them become immune to the pathogen. 'Not much research has been done on the safety and effect of these vaccines, so we can't use them. Because if they don't work well, they could actually contribute to the spread of the disease.'

According to Holwerda, it's time for the pharmaceutical industry in the Netherlands to step up. 'If they have any potential vaccines on their shelves, I would very much like to collaborate on testing them. If they work and prove safe, then it's up to the government to speed up the approval of a vaccine.' He thinks this could take months or even a year.

### Busy in the lab

'It's very busy here in the lab,' says Melle Holwerda, head of the National Reference Library for Vector-borne and Zoonotic Viral Diseases at Wageningen Bioveterinary Research (WBR). 'Every day we get 150 to 200 samples from all over the country to do a PCR test on. Up to now, only the samples from Limburg haven't tested positive at all. In the rest of the country, the disease is everywhere.' People are coming to help from all the departments at WBR. 'It's nice to see help coming from all quarters. You need all the helping hands you can get to deal with all the samples.'

### What can livestock farmers do right now?

The colder it gets, the less active midges become. 'And yet we have seen before that midges can survive a harsh winter, by sheltering in a warm barn, for example.' And livestock farmers might be able to do something about that. 'The most important thing is ventilation. Midges can't cope with a cold wind; they literally get blown away,' says Holwerda. But farmers won't be able to wipe out all infections this way. 'We won't be rid of this quickly.' ■