

Monitoring

ANIMAL HEALTH

The Veekijker: detecting animal disease

Linda van Wuijckhuise has been working for GD since 1986 and joined the Veekijker Cattle in 2002. "It's essential for the sector that we can guarantee good animal health and safe animal products. I'm always curious and I'm fascinated by the process of detecting animal disease. Together with five colleagues, I'm responsible for the Veekijker. We work on a national level, and are familiar with the Netherlands as a whole, thanks to our contact with practitioners and farmers. If a disease only occurs 25 times a year, there's a good chance that practitioners will only encounter it once in their career. By calling and consulting us, we can quickly check whether there is anything wrong, and respond accordingly."

Through participation in the *European Veterinary Surveillance Network*, the Veekijker also consults with countries around us, in order to monitor trends there and to ascertain whether they are faced with the same new phenomena as the Netherlands. In all her years at GD, Linda has been asked an amazing

variety of questions. The two cases she will never forget? "Discovering the bluetongue outbreak, which had a major impact on several animal sectors because it is a notifiable disease. We were receiving symptoms that could indicate this disease, and therefore had to report our suspicions to the government. Investigation by the Dutch Food and Consumer Product Safety Authority (NVWA) officially confirmed bluetongue on 17 August 2006. And the Schmallenberg virus. Nobody had heard of it. The Veekijker heard and studied the clinical presentation, and it was German detective work that eventually led to the virus, which is spread by midges. Right from the start, we were able to keep the sector well informed on what was going on.

For effective monitoring purposes, the Veekijker needs the eyes and the ears out in the field. If, as a farmer or vet, there is anything that you are not sure about, please do not hesitate to call the Veekijker. Our vets will consult with you and provide suitable



advice. The overview this gives us provides new insights, direction to our research and contributes to improving animal health in the Netherlands, by sharing insights and expertise.



Linda van Wuijckhuise,
GD Veekijker cattle specialist

Haemoglobin uraemia

In the second quarter of 2019, the Veekijker received several reports on cows passing reddish-brown urine, along with lethargy, lack of appetite and in many cases death. A necropsy of these cows also indicated a fatty liver, and sometimes signs of a calcium deficiency. Besides the standard causes of red urine (tick borne diseases, intoxication, kidney inflammation), a possible explanation for the symptoms could be an imbalance between the intake and excretion of phosphorus; especially when feed intake is reduced around calving and quick start-up of the milk production after calving.

When other causes have been excluded or are extremely unlikely, check whether the feed ration and feed management can guarantee sufficient dry matter intake. It is also important to determine the actual phosphorus level of the feed ration in order to determine whether this suits the needs of the dry and fresh cows.

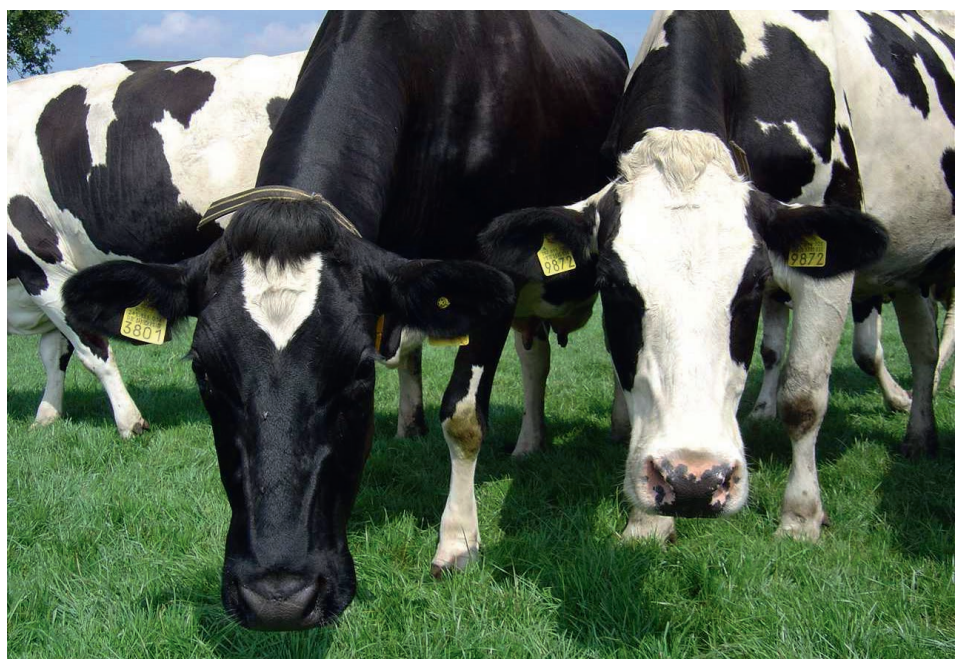


Illustration 1. Dairy cattle

Oak processionary caterpillars

Over the summer, the Veekijker received many questions from farmers and vets regarding the oak processionary caterpillar, but no reports of problems among ruminants, pigs and poultry that were directly related to the caterpillars.

The oak processionary caterpillar is the caterpillar of an inconspicuous moth (*Thaumetopoea processionea*). At the beginning of the summer, they hatch from eggs laid the previous summer. The caterpillars spend their days in silk nests in oak trees, and leave the nests at night time to feed on oak leaves. The moth (adult phase) appears in July and August. The oak processionary caterpillar has been present in southern European countries for many years, but is now spreading further and further to north-west Europe. The caterpillar has been found in the Netherlands since the 1990s, but its numbers have increased dramatically in recent years.

Oak processionary caterpillars have thousands of tiny barbed bristles that can permeate the skin and mucous membranes of people and animals. The bristles contain proteins that are extremely irritating and allergenic for humans, cats, dogs and horses. These bristles are not

only present on the caterpillar itself but also in the vicinity of oak trees with nests. They can therefore cause problems in humans without there having been direct contact with the caterpillar itself. In animals, problems such as irritation and allergic reactions have been documented in horses and dogs, mainly on the lips and mouth. The caterpillars are a

favourite food of great tits, so birds are assumed to be less sensitive. As yet, there is no record of ruminants, pigs and poultry having developed symptoms. Further research could be undertaken in order to completely exclude this, but there is no reason to do so for the time being.

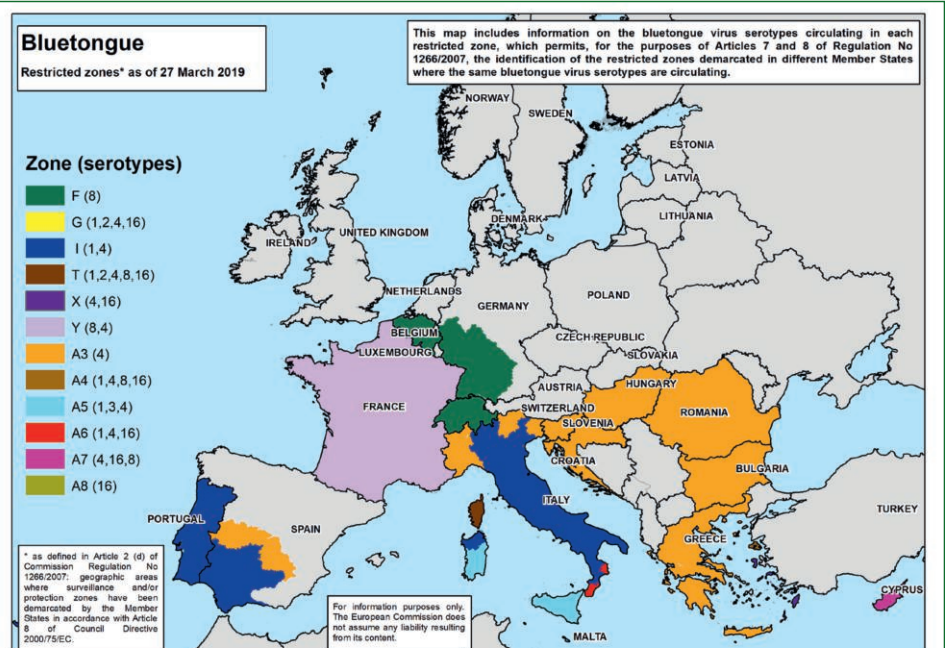


Illustration 2. Oak processionary caterpillars

Bluetongue

There have not been any cases of bluetongue in the Netherlands so far. However, the disease has been detected once again in south-west Germany and south-east Belgium. The ec.europa.eu website shows the most recent map of the distribution of the various bluetongue virus serotypes in Europe, see illustration 2.

Illustration 3. Current bluetongue situation in Europe, March 2019



Suspicion of Parafilaria bovicola

A vet called the Veekijker about a Blonde d'Acquitaine breeding bull that had been imported from France last year and was suspected to have Parafilaria bovicola. This disease is found in southern Europe, but is also on the increase in for instance Germany and Austria. The animal had the typical skin nodules, see illustration 3; this could be accompanied by a bloody discharge. The vet wanted to know whether the disease is notifiable and whether treatment was possible. Parafilaria bovicola does not need to be notified, but is a cause for concern. It is a condition caused by tiny worms under the skin. The worm larvae are transmitted by flies

found in the Netherlands. The flies become infected by eating the bloody discharge containing microfilaria. After multiplying in the fly, the fly transmits the infection to cattle mainly by feeding on ocular fluid. The period between infection and clinical presentation is seven to ten months, and there is no test available in the prepatent period. Although not executed in this case, the diagnosis can be made by taking a smear of the bloody discharge and examining it microscopically in order to detect eggs containing larvae. Treatment using ivermectin or levamisole is possible, but according to the available literature is not preventing spread.



Illustration 4. Parafilaria bovicola

Data analysis: favourable animal health status is associated with lower mortality

Once every three months, the Epidemiology department analyses animal health data from various sources, in order to conduct the [data analysis for the Highlights Report – Cattle](#). This data is processed anonymously. Routinely, a number of indicators of mortality in cattle of various ages and at various types of farms are monitored. The influence of farm characteristics such as milk production level, farm size and region, on each of the indicators, but also the animal health status for BVD, IBR, salmonella (only dairy cattle) and paratuberculosis (only dairy cattle) are studied.

The analyses not only monitor the trends, but also provide insight into the degree to which the health status is associated with the indicators. One of the analyses checked whether farms with a 'free status' or 'unsuspected status' for various diseases had more or less mortality than farms without such an animal health status.

Figure 1 shows the results of these analyses. A green bar to the left describes a reduced risk. In addition, a longer bar shows a greater effect than a shorter bar.

Figure 1 shows that dairy farms with a favourable status for BVD, IBR, salmonella or paratuberculosis have lower average calf and cow mortality rates, and that this is also the case for BVD and IBR in suckler herds. The effect does vary between the age groups. For example, a favourable bulk milk result in the national salmonella bulk milk monitoring is most strongly associated with mortality in calves aged 15 to 56 days.

Mortality on dairy farms

- Non-registered calves
- Registered calves ≤14 days
- Calves 15-56 days
- Calves 56 days-1 yr
- Cattle >1 yr

Mortality on suckler farms

- Non-registered calves
- Registered calves ≤14 days
- Cattle ≥ 1 yr

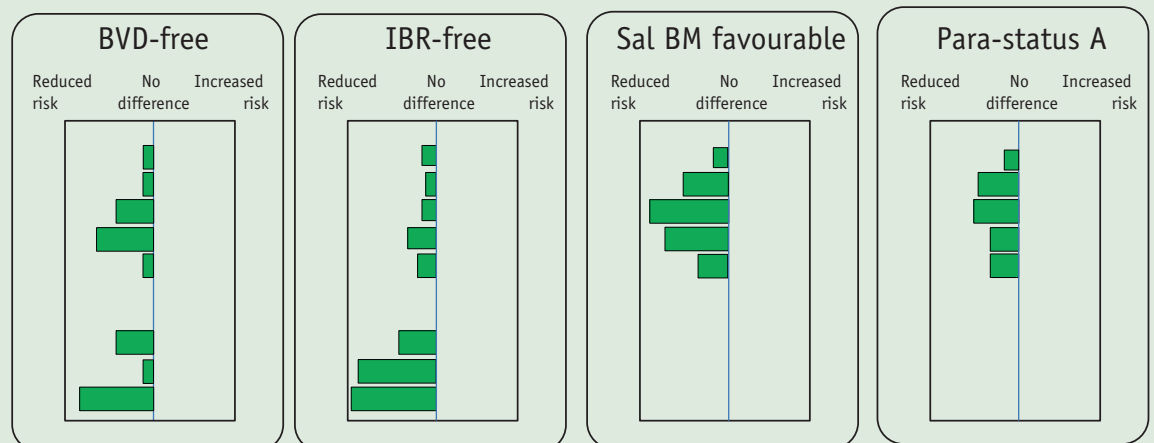


Figure 1. The relationship between health statuses and mortality in various age categories on dairy and suckler farms

Animal health of cattle in the Netherlands in the second quarter of 2019

DISEASES	DUTCH SITUATION	Surveillance – Highlights Second Quarter 2019
Article 15 GWWD (Health & Welfare Act) compulsory reportable and treatable diseases (diseases named in article 2 of the 'Rules for prevention, control and monitoring of infectious animal diseases and zoonoses and TSEs')		
Bluetongue (BT)	Viral infection. The Netherlands has been officially disease-free since 2012 (all serotypes). Annual screening.	The Netherlands BTV-free. Three notifications, no infection detected.
Brucellosis (zoonosis, infection via animal contact or inadequately prepared food)	Bacteria. The Netherlands has been officially disease-free since 1999. Monitoring via antibody testing of blood samples from aborting cows.	No infections detected.
Bovine Spongiform Encephalopathy (BSE)	Prion infection. The Netherlands has OIE status 'negligible risk'. No cases detected upon monitoring since 2010 (total 88 cases between 1997-2009).	No infections detected.
Leucosis (EBL)	Viral infection. The Netherlands has been officially disease-free since 1999. Monitoring via antibody testing of bulk milk and blood samples of slaughtered cattle.	No infections detected.
Lumpy Skin Disease (LSD)	Viral infection. The Netherlands is officially disease-free.	Infections have never been detected.
Anthrax (zoonosis, infection via animal contact)	Bacteria. Not detected in the Netherlands since 1994. Monitoring via blood smears from fallen stock.	No infections detected.
Foot and Mouth Disease (FMD)	Viral infection. The Netherlands has been officially disease-free since 2001.	No infections detected.
Rabies (zoonosis, infection via bite or scratch wounds)	Viral infection. The Netherlands has been officially disease-free since 2012 (illegally imported dog).	No infections detected.
Bovine Tuberculosis (TBC) (zoonosis, infection via animal contact or inadequately prepared food)	Bacteria. The Netherlands has been officially disease-free since 1999. Monitoring via slaughtered cattle.	No infections detected.
Article 100 GWWD (Health & Welfare Act) compulsory reportable diseases (diseases named in article 10 of the 'Rules for prevention, control and monitoring of infectious animal diseases and zoonoses and TSEs')		
<i>Campylobacter fetus ssp. venerealis</i> and <i>Trichomonas foetus</i>	Bacteria. The Netherlands has been disease-free since 2009. Monitoring of AI and embryo stations, and in animals for export.	No infections detected.
Leptospirosis (zoonosis, infection via animal contact or inadequately prepared food)	Bacteria. Control measures compulsory for dairy farms, voluntary for non-dairy farms.	97 percent of dairy farms had the <i>L. hardjo</i> -free status. One reintroduction (import).
Listeriosis (zoonosis, infection via inadequately prepared food)	Bacteria. Occasional infection detected in cattle.	Two infections detected at necropsy. No infection detected in milk samples.
Salmonellosis (zoonosis, infection via animal contact or inadequately prepared food)	Bacteria. Control measures compulsory for dairy farms, voluntary for non-dairy farms.	97 percent of dairy farms had unsuspected status in the first quarter of 2019.
Yersiniosis (zoonosis, infection via animal contact or inadequately prepared food)	Bacteria. Detected occasionally in cattle, mostly in aborted foetuses.	No infections detected.

Table continuation

DISEASES	DUTCH SITUATION	Surveillance – Highlights Second Quarter 2019
Other OIE-list diseases in the Netherlands subject to compulsory reporting		
Bovine Viral Diarrhoea (BVD)	Viral infection. Control measures compulsory for dairy farms, voluntary for non-dairy farms.	73 percent of dairy farms had BVD-free or BVD-unsuspected status. This is 15 percent among voluntarily participating non-dairy farms.
Infectious Bovine Rhinotracheitis (IBR)	Viral infection. Control measures compulsory for dairy farms, voluntary for non-dairy farms.	73 percent of dairy farms have IBR-free or IBR-unsuspected status. This is 20 percent among voluntarily participating non-dairy farms. Nasal swabs from fifty farms: field strain detected at three farms (vaccinated status)
Paratuberculosis	Bacteria. Control measures compulsory for Dutch dairy farms. 99 percent has PPN status.	78 percent of dairy farms have PPN (Paratuberculosis Programme Netherlands) status A (unsuspected).
Tick borne diseases	Parasite that can transfer infections. Ticks infected with <i>Babesia divergens</i> , <i>Anaplasma phagocytophilia</i> and <i>Mycoplasma wenyonii</i> are present in the Netherlands.	Four infections of <i>Babesia divergens</i> detected.
Other infectious diseases in cattle		
Malignant Catarrhal Fever (MCF)	Viral infection. Infections with Ovine herpes virus type 2 occur occasionally in the Netherlands.	Three infections detected at necropsy.
Liver fluke	Parasite. Liver fluke is present in the Netherlands, particularly in wetland areas.	Infections detected at twelve farms.
Neosporosis	Parasite. An infectious cause of abortion in the Netherlands.	Infection detected in three submitted aborted fetuses.
Q-fever (zoonosis, infection via dust or inadequately prepared food)	Bacteria. In the Netherlands, a different strain in cattle to that found on goat farms, with no established relationship to human illness.	Infection detected in two submitted aborted fetuses.



Animal health monitoring

Since 2002, GD has been responsible for animal health monitoring in the Netherlands, in close collaboration with the veterinary sectors, the business community, the Ministry of Agriculture, Nature and Food Quality, vets and farmers. The information used for the surveillance programme is gathered in various ways, whereby the initiative comes in part from vets and farmers, and partly from GD. This information is fully interpreted to achieve the objectives of the surveillance programme – rapid identification of health problems on the one hand and monitoring trends and developments on the other. Together, we team up for animal health, in the interests of animals, their owners and society at large.