

# Monitoring

## ANIMAL HEALTH

### Internal steatosis in dairy cattle older than 1 year

The percentage of internal steatosis in dairy cattle older than 1 year, submitted for pathology to GD, is still high and continues to increase (Figure 1). As of 2018, the pathologists have seen a considerable increase in internal steatosis in dairy cattle older than 1 year. This is an undesirable development, as internal steatosis impacts the health of cattle. A pilot study conducted in 2019 showed internal steatosis to be associated with fatty liver and abnormal uteri, and it would seem to be more prevalent in cows during the first stage of gestation. This quarter, the development of internal steatosis has been broken down into age groups. The increase is seen in all age groups, whereby it is striking that the prevalence of internal steatosis is also increasing in animals in the rearing period (aged 1-2 years) (Figure 2). GD is therefore once again requesting attention for this signal and has made a proposal for further research in order to gain insight into the background behind the development of internal steatosis.

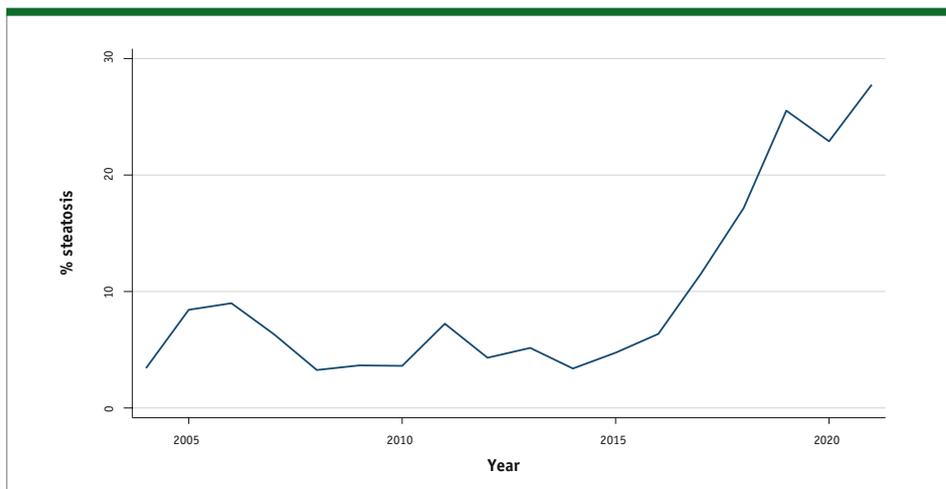


Figure 1. Annual percentage of submitted cattle older than 1 year where internal steatosis was found at necropsy, up to and including 2021

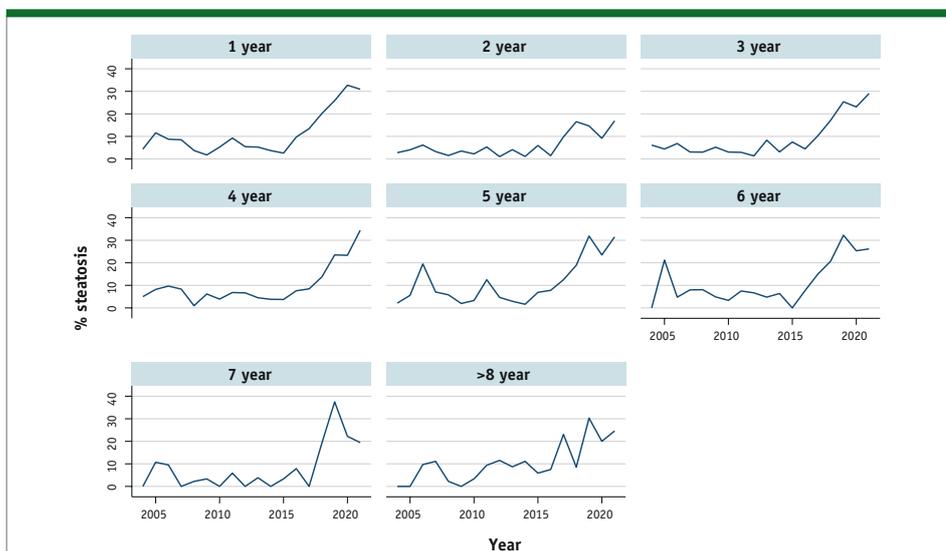


Figure 2. Annual percentage of cattle submitted per age group, older than 1 year (1= aged 1-2 years, 2= aged 2-3 years, etc., ≥8 (older than 8 years)) where internal steatosis was found at necropsy, up to and including 2021

## *Klebsiella pneumoniae* outbreak in calves at a suckler cow farm

A practitioner called the Veekijker regarding a suckler cow farm where, within a three-week period, five of the twelve newborn suckling calves could no longer stand within a few days, and died. Some of the older calves turned out to pasture at this farm had also died. Pathological investigation of a calf, six days old, with an oedematous navel showed polyarthritis (inflammation of multiple joints) and sepsis (blood poisoning) caused by the *Klebsiella pneumoniae* bacterium.

*Klebsiella* is an ambient bacterium which can result in an opportunistic infection

(infection due to reduced immunity), but the bacterium appears to spread at some farms and can result in an outbreak. The Veekijker veterinarian advised paying extra attention to barn hygiene, navel hygiene and feeding of colostrum.

*Klebsiella pneumoniae* infections are particularly known as a mastitis pathogen in dairy cattle. In order to gain insight into the prevalence of *Klebsiella pneumoniae* infections in other clinical conditions, GD investigated previous results of all 25 necropsies dating back from January 2020, whereby *Klebsiella pneumoniae* was cultivated. 5 of the 25 necropsies concerned

calves aged 5 days to 4 months. The other 20 concerned adult cattle. In 13 of these 20 adult cattle, *Klebsiella pneumoniae* had been cultivated from the udder. There was no evident involvement of the udder in the remaining seven adult cattle. *Klebsiella pneumoniae* is not exclusively a mastitis pathogen.

## Outbreak of blackleg among young breeding calves

At a dairy farm, four calves died in a group of breeding calves aged 5 to 9 months, within a short period of time. The fourth calf was submitted to GD for necropsy, and was diagnosed with blackleg (an infection with the *Clostridium chauveii* bacterium). The spores of this bacterium can persist in the

ground for decades. Contact between the Veekijker veterinarian and the practitioner showed that the farmer had recently dug new ditches and spread the excavated soil over his pastures. Soil containing spores of the bacterium had ended up in the roughage harvested from this pasture, which was then

eaten by the calves. The farmer fed the remaining animals other roughage for several weeks and the veterinarian vaccinated the animals. Outbreaks of blackleg occur very occasionally following excavation work, if the soil is spread over pastures or is used to cover roughage silage heaps.

## Outbreak of grazing coccidiosis (*Eimeria alabamensis*) in dairy cattle herd

In early June, the Veekijker received a call about a herd of dairy cattle with a major outbreak of watery (foul-smelling) diarrhoea and an extremely strong production drop, down to sometimes as little as ten litres per day. The diarrhoea, which affected around 75 percent of the dairy cattle, started three to four days after the dairy cattle had been turned out for the first time in seven years. There were no signs of fever and their appetite remained reasonable. Young cattle and dry cows remaining in the barn were not affected.

On studying faeces in his own lab, the practitioner discovered a large number of *Eimeria* eggs (oocysts). On the advice of the Veekijker veterinarian, this bulk sample taken

from three cows in the acute phase, was sent to GD for typification, confirming the presence of many *Eimeria* oocysts, of which 97 percent were *Eimeria alabamensis* (also known as 'grazing coccidiosis'). Other possible causes of the disease progression, such as abnormal feed rations or drinking water, a BVD or salmonella infection, were excluded. A Schmallenberg test was not conducted due to the lack of fever and there being no expectations that Schmallenberg could cause such a massive outbreak early in the grazing season. Grazing coccidiosis often occurs upon the initial introduction of naive animals (generally young cattle) to a pasture used for grazing the previous year. The period between infection and excretion of the oocysts can be as short as

four days in grazing coccidiosis.

The oocysts can survive for a long time and the disease generally occurs due to the ingestion of infectious oocysts which have survived the winter. Calves were occasionally treated at the farm, having shown mild symptoms of coccidiosis. The pasture in question had been grazed by young cattle for a number of weeks in the previous season, and had been fertilised using own manure this year. The cattle had not been turned out to graze until after the first mowing. Such a massive outbreak in dairy cattle is exceptional, as adult cattle are generally not susceptible to coccidiosis and the pasture had already been mowed before grazing.

GD advised bringing the cattle indoors and treating them symptomatically. As there is no registered drug available for dairy cattle, the most severe cases can be treated via the cascade scheme using coccidiostats, registered for young cattle. Virtually all cows eventually recovered without coccidiostats, and with or without symptomatic treatment.

After one month, two cows still had varying manure and poor production. Upon recovery, multiple cows then displayed a licking tendency, probably as a result of a serious deficit of salts/electrolytes. This has since been resolved using licking blocks. No further oocysts were found in a second bulk faeces sample, taken around ten days after

the first one. It was advised to no longer spread the manure of these dairy cattle on grassland during the next grazing season (instead only on arable land). The cows that were infected will have developed immunity, but the dry cows and young cattle will not.

## Bullock suddenly covered in hard lumps

A veterinarian called the Veekijker about a 15-month-old bullock suddenly covered in multiple hard lumps all over its body. The animal maintained a healthy appetite, normal faeces, normal mucosa and a normal temperature. Some lumps exuded a small amount of bloody fluid, probably because of the animal licking them. Treatment using anti-parasite agents and corticosteroids did not improve the symptoms. After sharing photos with the Veekijker, a number of differential diagnoses remained under consultation, which could be neither determined nor excluded by the veterinarian without further diagnostics (juvenile leucosis, tumours, allergic reaction/intoxication, insect bites, parafilariosis, dermatophytosis, Besnoitiosis,

dermatological versions of either MCF or TBC, Lumpy Skin Disease (LSD) or BHV2 (pseudo-LSD)).

The animal was housed at a Dutch dairy farm. As the veterinarian could not exclude the possibility of a compulsory treatment disease, such as LSD, he reported the case to the Netherlands Food and Consumer Product Safety Authority (NVWA). The NVWA visited the farm together with the duty veterinarian of GD. At the request of the NVWA, biopsies were taken and histologically examined by GD. The results showed a malignant lymphoma. While this is not a compulsory treatment disease, it does carry a poor prognosis for the animal. The owner of the animal was therefore advised to euthanise it.



Photo 1. Bullock with lumps all over its body

## Animal health of cattle in the Netherlands in the second quarter of 2022

VETERINARY DISEASES	SITUATION IN THE NETHERLANDS	Category (AHR)	Surveillance Highlights Second Quarter 2022
<b>Execution decree (EU) 2018/1882 of Animal Health Regulation (AHR) 2016/429 (Category A disease)</b>			
<b>Lumpy Skin Disease (LSD)</b>	Viral infection. The Netherlands is officially disease-free.	A, D, E	Infections have never been detected.
<b>Foot and Mouth Disease (FMD)</b>	Viral infection. The Netherlands has been officially disease-free since 2001.	A, D, E	No infections detected.
<b>Execution decree (EU) 2018/1882 of Animal Health Regulation (AHR) 2016/429 (Categories B through E)</b>			
<b>Bluetongue (BT)</b>	Viral infection. The Netherlands has been officially disease-free since 2012 (all serotypes). Annual screening.	C, D, E	The Netherlands BTV-free.
<b>Bovine genital campylobacteriosis</b>	Bacterial infection. The Netherlands has been disease-free since 2009. Monitoring of AI and embryo stations, and in animals for export.	D, E	Campylobacter fetus spp. venalis not detected.

VETERINARY DISEASES	SITUATION IN THE NETHERLANDS	Category (AHR)	Surveillance Highlights Second Quarter 2022
<b>Bovine Viral Diarrhoea (BVD)</b>	Viral infection. Control programme compulsory for dairy farms, voluntary for beef cattle farms.	C, D, E	85 percent of dairy farms have BVD-free or BVD-unsuspected status.* This is 18 percent among voluntarily participating non-dairy farms. <i>*BVD status determined on the basis of the GD programme.</i>
<b>Brucellosis</b> (zoonosis, infection via animal contact or inadequately prepared food)	Bacterial infection. The Netherlands has been officially disease-free since 1999. Monitoring via antibody testing of blood samples from aborting cows.	B, D, E	No infections detected.
<b>Enzootic Bovine Leucosis (EBL)</b>	Viral infection. The Netherlands has been officially disease-free since 1999. Monitoring via antibody testing of bulk milk and blood samples of slaughtered cattle.	C, D, E	No infections detected.
<b>Infectious Bovine Rhinotracheitis (IBR)</b>	Viral infection. Control programme compulsory for dairy farms, voluntary for beef cattle farms.	C, D, E	78 percent of dairy farms have IBR-free or IBR-unsuspected status. This is 20 percent among voluntarily participating non-dairy farms. <i>*IBR status determined on the basis of the GD programme.</i>
<b>Anthrax</b> (zoonosis, infection via animal contact)	Bacterial infection. Not detected in the Netherlands since 1994. Monitoring via blood smears from fallen stock.	D, E	No infections detected.
<b>Paratuberculosis</b>	Bacterial infection. Control programme compulsory for Dutch dairy farms. 98 percent of dairy farms participate.	E	80 percent of dairy farms have Paratuberculosis Programme Netherlands (PPN) status A (unsuspected). More incoming animals with a lower status.
<b>Rabies</b> (zoonosis, infection via bites or scratch wounds)	Viral infection. The Netherlands has been officially disease-free since 2012 (illegally imported dog).	B, D, E	No infections detected.
<b>Bovine Tuberculosis (TBC)</b> (zoonosis, infection via animal contact or inadequately prepared food)	Bacterial infection. The Netherlands has been officially disease-free since 1999. Monitoring via slaughtered cattle.	B, D, E	No infections detected.
<b>Trichomonas</b>	Bacterial infection. The Netherlands has been disease-free since 2009. Monitoring of AI and embryo stations, and in animals for export.	C, D, E	Tritichomonas foetus not detected.
<b>Q fever</b> (zoonosis, infection via dust or inadequately prepared food)	Bacterial infection. In the Netherlands, a different strain in cattle to that found on goat farms, with no established relationship to human illness.	E	No infection detected in submitted aborted foetuses.
<b>Article 3a.1 Reporting of zoonoses and clinical signs 'Rules for Animal Husbandry' of the Dutch Animal Act</b>			
<b>Leptospirosis</b> (zoonosis, infection via animal contact or inadequately prepared food)	Bacterial infection. Control programme compulsory for dairy farms, voluntary for beef cattle farms.	-	Three farms with antibodies in bulk milk. Again, more incoming animals with a status lower than leptospirosis-free. 97 percent of dairy farms have leptospirosis-free status. Percentage of farms with leptospirosis-free status in the non-dairy sector continues to decline.
<b>Listeriosis</b> (zoonosis, infection via inadequately prepared food)	Bacterial infection. Occasional infection detected in cattle.	-	Infections detected in five cattle submitted for necropsy and detected once in aborted foetuses.

VETERINARY DISEASES	SITUATION IN THE NETHERLANDS	Category (AHR)	Surveillance Highlights Second Quarter 2022
<b>Salmonellosis</b> (zoonosis, infection via animal contact or inadequately prepared food)	Bacterial infection. Control programme compulsory for dairy farms, voluntary for beef cattle farms.	-	98.1 percent of dairy farms had favourable bulk milk results (national programme).
<b>Yersiniosis</b> (zoonosis, infection via animal contact or inadequately prepared food)	Bacterial infection. Detected occasionally in cattle, mostly in aborted fetuses.	-	Two infections detected. Cultivated twice at necropsy.
<b>Regulation (EC) No 999/2001</b>			
<b>Bovine Spongiform Encephalopathy (BSE)</b>	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.
<b>Other infectious diseases in cattle</b>			
<b>Malignant Catarrhal Fever (MCF)</b>	Viral infection. Infections with Ovine herpes virus type 2 occur occasionally in the Netherlands.	-	No infections detected at necropsy.
<b>Liver fluke</b>	Parasite. Liver fluke is present in the Netherlands, particularly in wetland areas.	-	Infections detected at fifteen farms and none in cattle submitted for necropsy.
<b>Neosporosis</b>	Parasite. An important infectious cause of abortion in the Netherlands.	-	Infections detected in three submitted aborted fetuses.
<b>Tick borne diseases</b>	Vector borne diseases. Ticks infected with <i>Babesia divergens</i> , <i>Anaplasma phagocytophilia</i> and <i>Mycoplasma wenyonii</i> are present in the Netherlands.	-	One infection detected.
<b>From monitoring</b>			
<b>Data analysis</b>	Outbreak of grazing coccidiosis in adult cattle at a dairy farm. Percentage of dairy farms with a closed operational management system continues to decline.		
<b>Resistance to antibiotics at dairy farms</b>	No abnormalities.		
<b>Resistance to antibiotics at non-dairy farms</b>	No abnormalities.		

## Animal health monitoring

Since 2002, Royal 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 Royal GD. This information is fully interpreted to achieve the objectives of the surveillance programme – the rapid identification of health problems on the one hand and the following of more general trends and developments on the other. Together, we team up for animal health, in the interests of animals, their owners and society at large.