

## MastitisMonitor: an estimation of clinical mastitis in the dairy sector

The MastitisMonitor uses routinely collected data to give an indication of the number of clinical mastitis cases per hundred cows at dairy farms, each year. A recent estimate has been made of the number of cases of clinical mastitis in the period from 2016 through 2020.

The MastitisMonitor estimated a slightly declining trend in clinical mastitis incidence (CMI) up until 2019. From 2019 on, the estimated CMI gradually increased. In 2020

The MastitisMonitor was developed in 2014. Indicators used in this model-based tool include the individual and bulk milk cell counts, the use of antibiotics in adult cows, management characteristics such as the purchasing policy, as well as the farm size and the season.

for example, the CMI was 28.6 cases per hundred cows versus 26.9 cases per hundred cows in 2019. Over the complete period from 2016 through 2020, the annual rolling average for CMI was estimated to be 27.0 cases of clinical mastitis per hundred cows per year. The model estimates the CMI to peak in the third quarter of each year.

The changing trend in CMI over the recent period corresponds with an unfavourable development of a number of parameters, such as a slightly increasing trend in bulk milk cell count, a higher percentage of animals displaying a high or recently increased cell count (subclinical mastitis) and an increase in the use of antibiotics. The *Animal health monitor Cattle* shows that the average age has increased and that the percentage of older cattle is on the rise. This increase would seem to be associated with higher



individual cell counts, more use of antibiotics and a higher bulk milk cell count. If cows are to live even longer, optimum udder health is important, as udder health issues are one of the main reasons for forced disposal. Supervision on udder health at dairy farms remains necessary from an animal welfare perspective and to limit forced disposal, and thereby to maintain the financial profitability of dairy farms.

## More metastatic lung disorders in cattle older than 1 year

In the pathology data analysis of the third and fourth quarters of 2020, the total number of dairy cattle older than 1 year submitted with infectious lung disorders increased versus the percentage of cattle submitted with metastatic pneumonia (Figure 1). Metastatic respiratory disorders are often a secondary problem, as a result of bacterial embolisms caused by an inflammation process, entering the bloodstream and spreading into the lungs via the capillaries of the Arterial Pulmonalis. Metastatic pneumonia is a well-known complication of udder cleft dermatitis and severe peri-arthritis, for example.

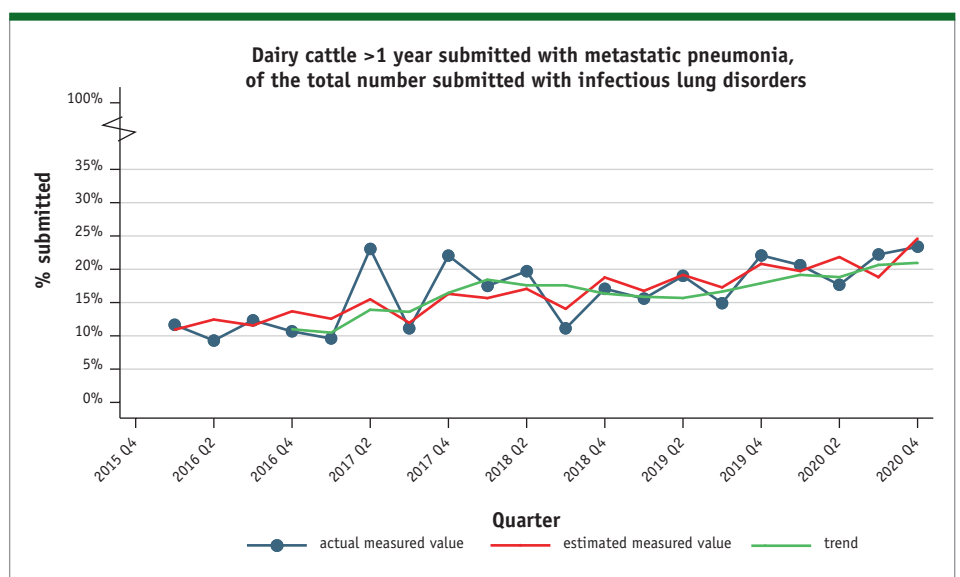


Figure 1. Percentage of dairy cattle older than 1 year submitted with metastatic pneumonia in the period from 1 January 2016 through 31 December 2020 (Source: GD pathology data analysis)

## Lungworm infection in a calf during winter

In early February, a bull calf aged 7 months was submitted to GD for pathological examination. Based on the poor physical condition of the animal and the available anamnesis, which noted that the animal had been stalled due to lungworm problems at the end of August 2020, the decision was taken to examine the intestinal contents for lungworm larvae. While this is not standard procedure at that time of year, the intestinal contents tested positive. The presence of lungworm larvae in the intestines means that adult lungworm must also have been present in the lungs. This is exceptional in February, as cattle generally gets rid of the adult lung worms within two to three months after infection.

When the calf was stalled with lungworm symptoms at just under 3 months, a homeopathic remedy for lungworm was administered. On consultation with the farmer, it became apparent that several animals at the farm were in poor physical condition. The calf submitted for necropsy was believed to be immuno-compromised to such an extent due to its poor physical condition that it did not have the necessary energy to develop resistance to the lungworm. This probably allowed adult worms to remain in the animal throughout the winter. The general condition of the young cattle and the feed management appeared to be the primary problem, and steps were taken with the Veekijker veterinarian to improve the situation.

## More abomasum disorders in breeding calves

In the third and fourth quarters of 2020, the percentage of calves submitted from dairy farms with abomasum disorders, including gastroenteritis, abomasitis and ruminal tympany (bloat) caused by sarcina bacteria (but excluding ruminal ulcers), increased by 10.7 and 16.8 percent (eight and seventeen calves submitted, respectively). In the same period in 2019, these percentages were only 5.8 and 3.4 percent (five and three calves submitted, respectively). There has been a rising trend over the past five years (Figure 2). GD is unaware of the exact reason for such an increase, though an important cause of the problems encountered lies in issues regarding feed management of calves. GD is initiating further research in order to gain more insight into the causes of abomasum disorders and the increases seen.

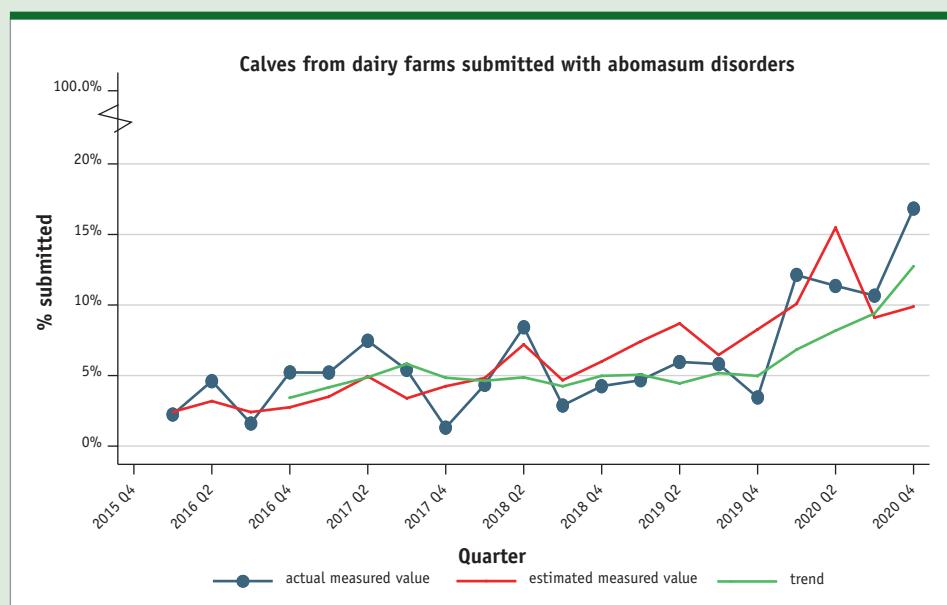


Figure 2. Percentage of calves submitted with abomasum disorders, including gastroenteritis, abomasitis and ruminal tympany caused by sarcina bacteria (but excluding ruminal ulcers), in calves younger than 1 year from dairy farms, per quarter in the period from 1 January 2016 through 31 December 2020 (Source: Data analysis based on GD pathology data)

## Human infection with *Campylobacter spp.*

Over the past three months, Promed has reported human infection with *Campylobacter spp.* after drinking unpasteurised milk (in Norway and the United States). The Norwegian case concerned a group of children who fell ill after visiting a dairy farm at which unpasteurised milk was served at lunch. Sixteen of the twenty children fell ill, aged 3 to 5 years. Most of the children became ill following infection with *Campylobacter spp.*, while one or two children were also infected with *Cryptosporidium spp.* following contact with the animals. The same advice applies in Norway as in the Netherlands, that unpasteurised milk should not be consumed by children, the elderly, pregnant women and anyone with immunodeficiency issues. *Campylobacter* has also been detected at dairy farms in the Netherlands, and is a compulsory reportable disease.

## The use of non-regular feed at dairy farms

The Veekijker recently received a call regarding serious health problems which arose after feeding dairy cows plantain soaked in soda grain. This resulted in 80 percent of the herd suffering serious rumen acidosis and colic, resulting from gas bloating, while production dropped to almost zero. The Veekijker regularly receives questions on health problems in cattle fed non-regular feed. With a view to circular agricultural efforts, it is very feasible that non-regular feed will be fed more often in the future. It is however important that non-regular feed is only fed following consultation with the feed advisor and veterinarian, and after obtaining sufficient information on its source, as well as monitoring animal health at the farm in question.

# Animal health barometer for cattle, first quarter 2021

VETERINARY DISEASES	SITUATION IN THE NETHERLANDS	SURVEILLANCE – HIGHLIGHTS FIRST QUARTER 2021
<b>Article 15 GWWD (Health &amp; 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')</b>		
<b>Bluetongue (BT)</b>	Viral infection. The Netherlands has been officially disease-free since 2012 (all serotypes). Annual screening.	The Netherlands BTV-free, no infections detected.
<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.	No infections detected.
<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>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.	No infections detected.
<b>Lumpy Skin Disease (LSD)</b>	Viral infection. The Netherlands is officially disease-free.	Infections have never been detected.
<b>Anthrax</b> (zoonosis, infection via animal contact)	Bacterial infection. Not detected in the Netherlands since 1994. Monitoring via blood smears from fallen stock.	No infections detected.
<b>Foot and Mouth Disease (FMD)</b>	Viral infection. The Netherlands has been officially disease-free since 2001.	No infections detected.
<b>Rabies</b> (zoonosis, infection via bite or scratch wounds)	Viral infection. The Netherlands has been officially disease-free since 2012 (illegally imported dog).	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.	No infections detected.
<b>Article 100 GWWD (Health &amp; 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')</b>		
<b><i>Campylobacter fetus</i> ssp. <i>venerealis</i> and <i>Tritrichomonas foetus</i></b>	Bacterial infection. The Netherlands has been disease-free since 2009. Monitoring of AI and embryo stations, and in animals for export.	No infections detected.
<b>Leptospirosis</b> (zoonosis, infection via animal contact or inadequately prepared food)	Bacterial infection. Control programme compulsory for dairy farms, voluntary for non-dairy farms.	One farm with antibodies in bulk milk.
<b>Listeriosis</b> (zoonosis, infection via inadequately prepared food)	Bacterial infection. Occasional infection detected in cattle.	Infections detected in one aborted foetus and in three cattle submitted for necropsy.
<b>Salmonellosis</b> (zoonosis, infection via animal contact or inadequately prepared food)	Bacterial infection. Control programme compulsory for dairy farms, voluntary for non-dairy farms.	98 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 foetuses.	No infections detected in cattle submitted for necropsy. No <i>Yersinia</i> species cultivated in milk samples.

Table continuation

VETERINARY DISEASES	SITUATION IN THE NETHERLANDS	SURVEILLANCE – HIGHLIGHTS FIRST QUARTER 2021
<b>Other OIE-list diseases in the Netherlands subject to compulsory reporting</b>		
<b>Bovine Viral Diarrhoea (BVD)</b>	Viral infection. Control programme compulsory for dairy farms, voluntary for non-dairy farms.	84 percent of dairy farms have BVD-free or BVD-unsuspected status. This was 22 percent among voluntarily participating non-dairy farms.
<b>Infectious Bovine Rhinotracheitis (IBR)</b>	Viral infection. Control programme compulsory for dairy farms, voluntary for non-dairy farms.	77 percent of dairy farms have IBR-free or IBR-unsuspected status. This was 25 percent among voluntarily participating non-dairy farms.
<b>Paratuberculosis</b>	Bacterial infection. Control programme compulsory for Dutch dairy farms. 99 percent of dairy farms participate.	78 percent of dairy farms have Paratuberculosis Programme Netherlands (PPN) status A (unsuspected).
<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.	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.	One infection detected at necropsy.
<b>Liver fluke</b>	Parasite. Liver fluke is present in the Netherlands, particularly in wetland areas.	Infections detected at fourteen farms.
<b>Neosporosis</b>	Parasite. An infectious cause of abortion in the Netherlands.	Infection detected in three submitted aborted fetuses.
<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.	One infection detected in submitted aborted fetuses.
<b>From monitoring</b>	<b>No abnormalities</b>	
<b>Data analysis</b>	Cattle mortality stabilises at higher level, calf mortality declining or stable. In-depth pathology data analysis: breeding calves have fewer infectious intestinal disorders, but do have abomasum disorders. In-depth pathology data analysis: Increase in metastatic pneumonia continues in dairy cattle >1 year.	
<b>Resistance to antibiotics at 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 – rapid identification of health issues 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.