

# Monitoring

## ANIMAL HEALTH



## Botulism outbreaks at cattle farms

In the third quarter of 2022, the Veekijker received questions regarding suspected outbreaks of botulism at nine different farms. At five dairy farms and one veal calf farm, pathological examination conducted by WBVR identified *Clostridium botulinum* type C/D by means of a PCR of the liver and rumen content. Losses of cattle caused by botulism at these farms varied. At two of the dairy farms, as many as a quarter of the dairy cattle were lost. The Veekijker advised an immediate change of feed ration at the affected farms, along with a switch from well water to mains water where applicable. Further advice was to avoid contact with poultry manure and/or bedding, and to check grassland for dead birds and any game corpses. The vaccine to combat botulism unfortunately cannot currently be administered due to changes in European legislation. Consultation with the Ministry of Agriculture, Nature and Food Quality must lead to renewed availability of the vaccine.



## Copper intoxication due to extremely high milk volume fed to young breeding calves

A practitioner called the Veekijker regarding calves at a rearing farm with interdigital infection and cheek diphtheria. As these two disorders are uncommon in this age group, they were assumed to reflect a reduced immunity. Blood tests in five calves indicated strongly increased liver enzymes, which would suggest liver cell damage. The Veekijker veterinarian visited the farm and conducted a liver biopsy on four calves. One calf was found to have an increased copper level (712 milligrams per kg of dry matter), while the other three calves had extremely high, toxically relevant copper levels (1136 to 1444 milligrams per kg of dry matter). Two of the calves examined had recently been weaned and introduced from the dairy farm.

Management at the dairy farm was focused on maximum young growth and development of calves. The calves were fed unlimited milk formula via the drinking machine, and drank up to 20 litres or more per day, which translates into more than three kilos of milk powder per day. Voluntary consumption of such a high volume of milk per day without digestive problems and with very low mortality rates was possible due to excellent management and care. Copper accumulation proved to form a risk for these calves, which drank two to three times as much milk as the majority of breeding calves in the Netherlands. The Veekijker veterinarian advised maximising the daily milk consumption at a lower level or adjusting the concentration of trace elements (including copper).

Little is known about the exact maximum norm for copper levels in unweaned calves. The Centraal Veevoederbureau (CVB), a foundation which determines scientifically founded requirement norms in animal feeds, has however stated that the absorption of copper from the intestines is relatively high in unweaned calves. The copper intake via milk formula was adjusted at the farm in question, and liver damage is monitored via blood tests for liver enzymes. The above case shows that feeding unlimited milk formula can result in the risk of copper excesses when extreme volumes of milk are drunk, depending on the copper content of the milk formula.

## Reasons for disposal of dairy cattle

The objective of sustainable dairy farming is the optimum lifetime production per dairy cow, by retaining cows as long as possible. Replacement management at a dairy farm is an important management aspect. The decision to dispose of cattle depends among other things on the economic value as a dairy cow, the availability of a replacement heifer (disposal due to replacement), or no longer being able to retain the cow for health, behavioural or welfare reasons. In order to gain additional insight into the disposal of dairy cattle, GD has conducted a study together with UU and WUR. The study explored the reasons for disposal of dairy cattle for slaughter (in the Netherlands or abroad via export) using both data and a questionnaire among farmers.

Analyses of I&R data showed that the number of exported cattle has declined since the introduction of the phosphates reduction plan. The age and lactation stage of cattle disposed of for slaughter is increasing. A high somatic cell count and decreasing parity with increasing age (an indication of fertility

problems) were the strongest associations with disposal to the abattoir. Other health issues probably also play a role, such as hoof health for example.

The fact that health plays an important role in the decision to dispose of cattle for slaughter, is supported by the results of an online questionnaire among dairy farmers, concerning their reasons for disposing of dairy cattle. The questionnaire showed fertility problems to be the primary reason for disposal, followed by (sub)clinical mastitis. Dairy farmers named lameness as reason number three. The reasons for disposal varied depending on the parity of the cow. Cattle farmers are more likely to dispose of heifers due to undesirable behaviour or trauma, than older breeding cows. Production cows live longest if they are disposed of to another dairy farm rather than to a non-dairy farm. Cows that have been moved to another farm at least once in their life also have a longer lifespan since the introduction of the phosphates reduction plan.



## Bleeding calves

There were six reports of clinically increased susceptibility to bleeding (haemorrhagic diathesis) in young calves this quarter. These generally concerned a single calf at a dairy farm. The number of reports was striking, considering the single call received in the previous quarter and only ten calls over the entire year of 2021.

The differential diagnosis for bovine neonatal pancytopenia (BNP) comprises a blood

platelets deficiency (thrombocytopenia) caused by infection with BVD type 1 or 2, disseminated intravascular coagulation (DIC) caused by sepsis, and platelet production disorders caused by an immunological reaction or intoxication with for example rat poison. The Veekijker advised practitioners to determine whether any of the above might play a role at the farms. Over the course of this quarter, pathological examination has resulted in the diagnosis three times in calves

aged 0 to 14 days (previous quarter: 0 cases, 2021 as a whole: 8 cases). One of the calves was shown to have sepsis caused by infection with *Escherichia coli*. The other two cases were caused by BNP. This abnormality commonly occurred in the period from 2008 through 2012, due to the intake of allo-reactive antibodies from the colostrum of a maternal animal vaccinated with the Pregsure BVD vaccine. This vaccine was taken off the market in 2011.

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

VETERINARY DISEASES	SITUATION IN THE NETHERLANDS	Category (AHR)	Surveillance Highlights Third 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.

VETERINARY DISEASES	SITUATION IN THE NETHERLANDS	Category (AHR)	Surveillance Highlights Third Quarter 2022
<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	<i>Campylobacter fetus</i> spp. <i>veneralis</i> not detected.
<b>Bovine Viral Diarrhoea (BVD)</b>	Viral infection. Control programme compulsory for dairy farms, voluntary for beef cattle farms.	C, D, E	86 percent of dairy farms have BVD-free or BVD-unsuspected status. This is 18 percent among non-dairy farms (voluntarily participating: 22 percent).
<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	79 percent of dairy farms have IBR-free or IBR-unsuspected status. This is 20 percent among non-dairy farms (voluntarily participating: 25 percent).
<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).
<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	<i>Tritichomonas foetus</i> 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	Not detected. As of 2022, Q fever testing is no longer a standard part of the aborter protocol.
<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.	-	One dairy farm with a leptospirosis infection. Decline in number of incoming animals from farms with a status lower than leptospirosis-free. Percentage of leptospirosis-free dairy farms is 97.5 percent Percentage of farms with leptospirosis-free status in the non-dairy sector continues to decline.

Table continuation

VETERINARY DISEASES	SITUATION IN THE NETHERLANDS	Category (AHR)	Surveillance Highlights Third Quarter 2022
<b>Article 3a.1 Reporting of zoonoses and clinical signs 'Rules for Animal Husbandry' of the Dutch Animal Act (continued)</b>			
<b>Listeriosis</b> (zoonosis, infection via inadequately prepared food)	Bacterial infection. Occasional infection detected in cattle.	-	Infections detected in three cattle submitted for necropsy and detected once in aborted fetuses.
<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.	-	97.7 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.	-	One infection detected at necropsy.
<b>Liver fluke</b>	Parasite. Liver fluke is present in the Netherlands, particularly in wetland areas.	-	Infections detected at nine farms and none in cattle submitted for necropsy.
<b>Neosporosis</b>	Parasite. An important infectious cause of abortion in the Netherlands.	-	Infections detected in one submitted aborted fetus.
<b>Tick borne diseases</b>	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.	-	Five infections detected at three farms.
<b>From monitoring</b>	Copper intoxication due to extremely high milk volume fed to young breeding calves. Botulism outbreaks were detected at six cattle farms.		
<b>Data analysis</b>	Cattle mortality developing favourably in the Netherlands. Increased rota infections in young breeding calves submitted for pathological examination.		
<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.