



Increase of *Mannheimia haemolytica*-infections in necropsy material

For some time, there seemed to be an increase in the number of infections with *Mannheimia haemolytica* (*M. haemolytica*) in cattle submitted for post mortem. In order to determine time-based trends per type of farm, pathology data was analysed for all cattle over the past 15 years (2004–2018). Special attention was paid to the number of necropsies whereby an *M. haemolytica* infection was diagnosed, versus the total number of necropsies. The number of cases of polyserositis and infectious pneumonia caused by *M. haemolytica* infections

was also determined. All analyses took account of factors that may influence the findings, such as the season and region.

This analysis confirmed the increase in the mortality rate of cattle caused by *M. haemolytica* in veal calves and dairy cattle older than 12 months, in the necropsy material submitted to GD (see Figures 1 and 2).

In nearly all cases, there was a significant difference in the detection of a *M. haemolytica* infection between the seasons (fewer cases in the summer months) and regions (fewer cases



in the western part of the Netherlands). Further research should determine which farm-based and animal-based factors may play a role in the increase in both forms of *M. haemolytica*-associated pathologies: polyserositis (inflammation of serous membranes in veal calves) and pleuro pneumonia in dairy cattle older than 12 months), within these types of farms.

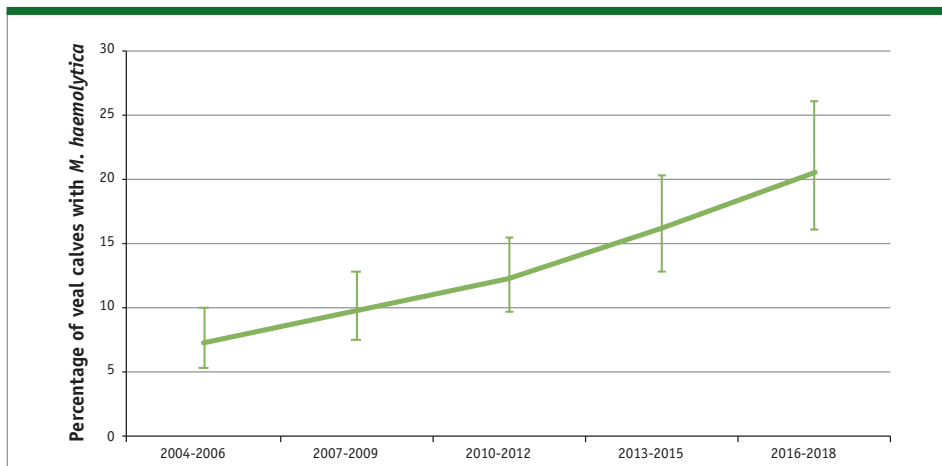


Figure 1. Percentage of *M. haemolytica* infections in veal calves versus the total number of veal calves submitted in the 2004-2018 period (source: GD LIMS).

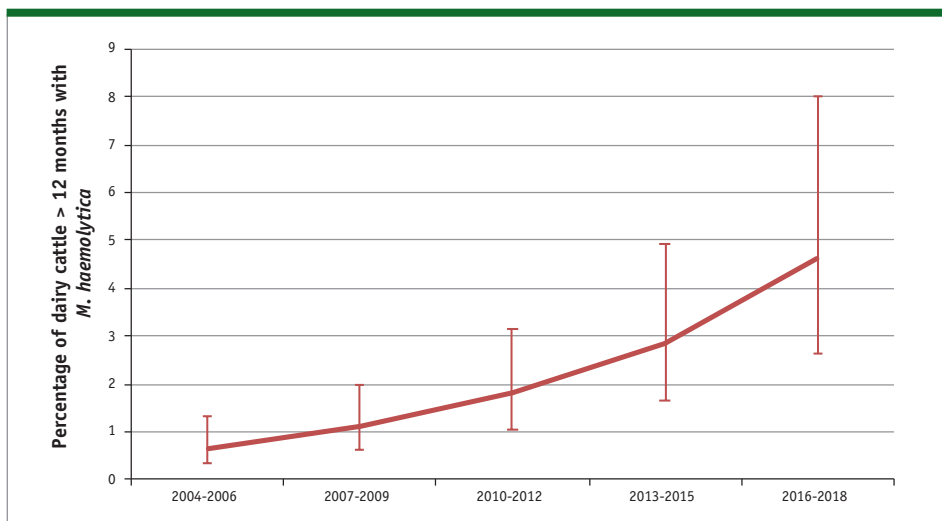


Figure 2. Percentage of *M. haemolytica* infections in dairy cattle > 12 months versus the total number of dairy cattle submitted in the 2004-2018 period (source: GD LIMS).

Internal steatosis in dairy cattle

Pathological examination would seem to suggest an increase in internal steatosis in cattle. Internal steatosis occurs in cattle in the abdominal cavity around the kidneys, including the mesentery (peritoneal fold) and in the chest cavity around the pericardium. There was generally no externally visible, subcutaneous steatosis in these cattle. In a pilot study, we are analysing the trend in the number of cases of internal steatosis in necropsy material submitted from 2003 until the present day. Under unfavourable

circumstances, if the cow were to (temporarily) eat less following partus due to metritis, such internal steatosis may result in the so-called metabolic syndrome. In turn, this can result in severe steatosis of the liver and imbalanced liver function, with risk of mortality. The epidemiological analysis looks at the relationship with other pathological findings and results from other available information such as farm size and region. It is expected that the results of the study will be available in autumn 2019.



Figure 3. Internal steatosis in the abdominal cavity of an adult cow (on the left) versus the abdominal cavity without internal steatosis (on the right)

Mastitis caused by *Streptococcus equi* spp *zooepidemicus*

The *Streptococcus equi* spp *zooepidemicus* (SEZ) bacteria is found in healthy horses and can cause mastitis in both horses and other animals (cattle, sheep and goats). GD occasionally detects the bacteria in milk samples from cows with an increased somatic cell count and/or mastitis. Early in 2019, the Veekijker received two calls about two different dairy farms where one or more cows were suffering from mastitis caused by SEZ. Both farms used (fresh) horse manure as stall bedding. Although no direct proof could be found for the relationship between the use of horse manure in the stalls and the mastitis cases at these farms, the literature does suggest that this is a risk factor. The Veekijker vet advised to stop using fresh horse manure as bedding in addition to other measures regarding the mastitis.

A 'very special' part of the Veekijker

The Cattle Veekijker comprises a dedicated group of vets available to give advice over the phone each and every day. The members of this team each have their own focus area, such as parasites, infectious diseases, udder health (led by the UGA team) or claw diseases. These veterinary experts are supported by our veterinary toxicologist Deon van der Merwe. In collaboration with the vets, he often answers questions about cases that may involve intoxication. So we can always provide you with suitable advice.



Data analysis, one of the instruments within Animal Health Monitoring of Cattle

Within Animal Health Monitoring of Cattle, every three months, our Epidemiology department analyses animal health data from various sources for a period of five years. The purpose of these analyses is to gain insight into the development of and trends in animal health at the various types of cattle farms. GD reports this information to the Animal Health Monitoring clients. The results cannot be linked to individual farms. Animal health is presented using a number of indicators such as cattle and calf mortality, udder health and lifespan. These indicators

can be influenced by various factors such as milk production level, farm size, region or milk/meat prices. The results of the data analysis give a statistical and representative account of the health of Dutch cattle. More in-depth studies are also conducted annually, such as recently into the developments of the contact structure between Dutch cattle farms since 2013. This study looked at the possible impact of abolition of the milk quota and amendments to the manure legislation on the amount of animal contact between cattle farms. The in-depth analysis of animal

movements between farms was conducted because animal contact poses a risk of spreading infections. The results of the analyses of the animal health data are used to provide insight into the animal health situation of the cattle sector and for the timely detection of any trends.



Gerdien van Schaik
Head of Epidemiology, GD

Cattle health in the Netherlands

VETERINARY DISEASES	SITUATION IN THE NETHERLANDS	Surveillance – Highlights First 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 is BTV-free, two suspicions, no infections detected.
Brucellosis (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.
Bovine Spongiform Encephalopathy (BSE)	Prion infection. The Netherlands has OIE status 'negligible risk'. No cases detected upon monitoring since 2010 (total 88 cases from 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)	Bacterial infection. 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)	Bacterial infection. The Netherlands has been officially disease-free since 1999. Monitoring via slaughtered cattle.	No infections detected.

VETERINARY DISEASES	SITUATION IN THE NETHERLANDS	Surveillance – Highlights First Quarter 2019
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>Tritrichomonas foetus</i>	Bacterial infection. The Netherlands has been disease-free since 2009. Monitoring at AI stations and in animals for export	No infections detected.
Leptospirosis (<i>L. hardjo</i>) (zoonosis, infection via animal contact or inadequately prepared food)	Bacterial infection. Control measures compulsory at dairy farms, voluntary at beef cattle farms.	97 percent of dairy farms have the <i>L. hardjo</i> -free status. No infections detected during bulk milk monitoring.
Listeriosis (zoonosis, infection via inadequately prepared food)	Bacterial infection. Occasional infection detected in cattle.	One infection found in aborted fetus and 2 infections in encephalitis in animals > 6 months. One infection detected in a milk sample.
Salmonellosis (zoonosis, infection via animal contact or inadequately prepared food)	Bacterial infection. Control measures compulsory at dairy farms, voluntary at beef cattle farms.	97 percent of dairy farms had unsuspected status in the first quarter of 2019 (national programme).
Yersiniosis (zoonosis, infection via animal contact or inadequately prepared food)	Bacterial infection. Detected occasionally in cattle, mostly in aborted fetuses.	No infections detected.
Other OIE-list diseases in the Netherlands subject to compulsory reporting		
Bovine Viral Diarrhoea (BVD)	Viral infection. Control measures compulsory for dairy farms, voluntary at beef cattle farms.	73 percent of dairy farms have BVD-free or BVD-unsuspected status. This is 16 percent of voluntarily participating non-dairy farms.
Infectious Bovine Rhinotracheitis (IBR)	Viral infection. Control measures compulsory at dairy farms, voluntary at beef cattle farms.	73 percent of dairy farms have IBR-free or IBR-unsuspected status. This is 20 percent of voluntarily participating non-dairy farms. Nasal swabs from 50 clinically suspected farms: field strain detected at 6 farms.
Paratuberculosis	Bacterial infection. Control measures compulsory at Dutch dairy farms. 99 percent has PPN status.	77 percent of dairy farms have PPN (Paratuberculosis Programme Netherlands) status A (unsuspected).
Tick borne diseases	Parasite that can transfer infections. Ticks (<i>Ixodes ricinus</i>) infected with <i>Babesia divergens</i> , <i>Anaplasma phagocytophila</i> , <i>Mycoplasma wenyonii</i> and <i>Borrelia burgdorferi</i> are present in the Netherlands.	No infections detected.

Table continuation

VETERINARY DISEASES	SITUATION IN THE NETHERLANDS	Surveillance – Highlights First Quarter 2019
Other infectious diseases in cattle		
Malignant Catarrhal Fever (MCF)	Viral infection. Infections with Ovine herpes virus type 2 occur occasionally in the Netherlands.	One infection detected at necropsy.
Liver fluke (zoonosis infection via consumption of grass on water vegetables)	Parasite. Liver fluke is present in the Netherlands, particularly in wetland areas.	Infections detected at 31 farms.
Neosporosis	Parasite. An important infectious cause of abortion in the Netherlands.	Infections detected in 4 percent of submitted aborted fetuses.
Q-fever (zoonosis, infection via inhalation of dust or inadequately prepared feed)	Bacterial infection. 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 aborted fetuses.



Animal health monitoring

Since 2002, GD has been responsible for animal health monitoring in the Netherlands, in close collaboration with the various livestock 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.