

## 010 Prevalence and incidence of (sub)clinical mastitis in heifers in a random sample of dairy herds in the Netherlands.

Bart H.P. van den Borne<sup>1\*</sup>, Gerdien van Schaik<sup>2</sup>, Mirjam Nielen<sup>1</sup>, Theo J.G.M. Lam<sup>2,3</sup>

<sup>1</sup>Faculty of Veterinary Medicine, Utrecht University, Utrecht, the Netherlands

<sup>2</sup>Animal Health Service Ltd, Deventer, the Netherlands

<sup>3</sup>Dutch Udder Health Centre, Deventer, the Netherlands

\*Corresponding author: b.h.p.vandenborne@vet.uu.nl

**Introduction:** Mastitis is of great importance for the future of the production life of a heifer. It causes, amongst others, a reduced production<sup>3</sup> and an early culling of the infected animals<sup>2</sup>. Mastitis in heifers occurs less frequently compared to multiparous cows, although a higher incidence is observed in the first part of lactation<sup>1,2</sup>. Despite the knowledge about the effects of heifer mastitis, no recent estimates of occurrence of (sub)clinical mastitis are known in the Netherlands. Therefore, a survey was conducted to estimate the prevalence and incidence rate of (sub)clinical mastitis in heifers.

**Materials and Methods:** A survey on 396 dairy farms, randomly distributed in the Netherlands, was conducted from July 2004 until June 2005. Farms had to have > 50 cows and they had to participate in the regular test day recording, with test day intervals of 3 - 6 weeks. Composite somatic cell counts (CSCC) of all 16,572 heifers on these 396 herds were gathered from the regular test day recording to estimate prevalence and incidence of subclinical mastitis (SCM). SCM prevalence was calculated as the proportion of heifers with a CSCC > 200,000 cells/ml. SCM incidence was calculated as the number of new infections (an increase in CSCC > 200,000 cells/ml after being two consecutive test days ≤ 200,000 cells/ml) divided by the number of heifer days at risk. Clinical mastitis (CM) in heifers was additionally recorded by the farmer in a subset of 9,850 heifers on 205 farms. CM incidence rates were calculated as the number of quarter cases divided by the number of heifer days at risk. Negative binomial models were used to estimate the prevalence and incidences of (sub)clinical heifer mastitis.

**Results:** SCM prevalence in heifers (CSCC > 200,000 cells/ml), was on average 13.2% [12.6-13.9] from July 1<sup>st</sup>, 2004 until June 30<sup>th</sup>, 2005 and being the highest in August 2004 and the lowest in January 2005 (Figure 1). The percentage of heifers with 1 or more SCM infections was on average 27.2% per farm, resulting in an incidence rate of 0.806 cases per 365 heifer days at risk. CM was recorded in 8.1% of the heifers with an average of 0.191 cases per 365 heifer days at risk (Table 2). This was higher compared to the study of Barkema et al. (1998) in which CM incidence rate was 0.160 cases per 365 heifer days at risk, although this is probably not a significant difference.

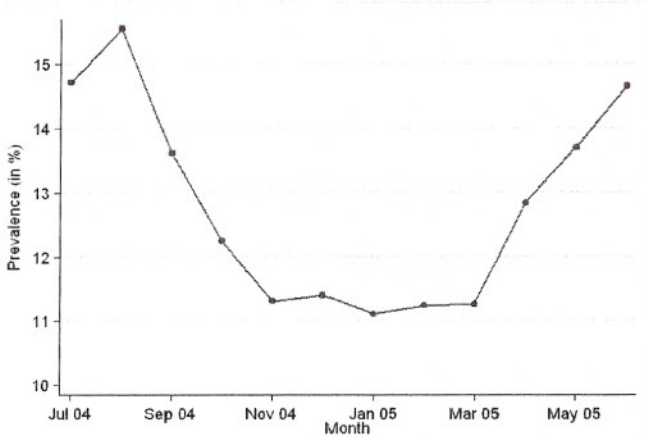
**Conclusion:** This study gives insight in the prevalence and incidence of (sub)clinical mastitis in Dutch heifers and it shows that mastitis in heifers is an important issue in dairy practice in the Netherlands.

### References:

- Barkema et al. (1998). Incidence of clinical mastitis in dairy herds grouped in three categories by bulk milk somatic cell counts. *J. Dairy Sci.* 81: 411-419.
- De Vlieger et al. (2005). Association between somatic cell count in early lactation and culling of dairy heifers using Cox frailty models. *J. Dairy Sci.* 88: 560-568.
- Hortet et al. (1999). Reduction in milk yield associated with somatic cell counts up to 600,000 cells/ml in French Holstein cows without clinical mastitis. *Prev. Vet. Med.* 61: 33-42.

6. Miltenburg et al. (1996). Incidence of clinical mastitis in a random sample of dairy herd in the southern Netherlands. *Vet. Rec.* 139: 204-207.

**Figure 1:** Prevalence of subclinical mastitis in Dutch heifers based on composite somatic cell counts of 396 dairy herds from July 1<sup>st</sup>, 2004 until June 30<sup>th</sup>, 2005. Subclinical mastitis was defined when composite somatic cell counts were > 200,000 cells/ml.



**Table 1:** Number of herds and heifers in the study, the percentage of heifers with  $\geq 1$  infections and the incidence rate for both subclinical and clinical mastitis from July 1<sup>st</sup>, 2004 until June 30<sup>th</sup>, 2005. The 2.5- and 97.5-percentiles are between brackets.

	Subclinical mastitis	Clinical mastitis
Number of herds	396	205
Number of heifers in study	16,572	9,850
Number of infections	5,092	958
Percentage of heifers with $\geq 1$ infections (%)	27.2 [26.1-28.3]	8.1 [7.6-8.6]
Incidence rate (/365 days at risk)	0.806 [0.765-8.849]	0.191 [0.171-0.212]