

# CLINICAL MASTITIS INCIDENCE IN WISCONSIN DAIRY HERDS

Nigel Cook and Rebecca Mentink  
University of Wisconsin  
School of Veterinary Medicine  
Madison, Wisconsin.

## Introduction

Reports of the rate of clinical mastitis occurring on dairy farms are infrequent. Miltenburg et al. (1996) reported an average annual incidence of 13 quarter cases per 100 cows per year in 171 randomly selected dairy herds in southern Netherlands, while Kossaibati et al. (1998) measured a mean incidence of 43 quarter cases per 100 cows in 144 UK dairy herds. Similar surveys have not been reported in North America.

## Materials and Methods

Data from farms requesting milk quality investigations, visited by the Food Animal Production Medicine group at the University of Wisconsin, School of Veterinary Medicine during the last 5 years, were used to determine the rate of clinical mastitis. Only herds with complete records of clinical mastitis, including cow id, quarters affected, and dates of treatment for one complete year were included.

The data for one complete year were entered into a spreadsheet program called WisMast3.1 available at [http://www.vetmed.wisc.edu/dms/fapm/fapmtools/milk\\_quality.htm](http://www.vetmed.wisc.edu/dms/fapm/fapmtools/milk_quality.htm) which uses macros to calculate the proportion of the herd affected (% cows in herd suffering at least one case of mastitis), quarter case rate (number of quarter cases with at least 7 days between cases / number of cows in herd), cow case rate (number of cow cases with one or more quarters affected with at least 7 days between cases / number of cows in herd), and the treatment failure rate (proportion of quarters re-treated after a 7 day interval). Rolling annual average herd size and annual average bulk tank somatic cell count (BTSCC) were also recorded.

**Table 1.** Herd annual clinical mastitis incidence rates from 32 Wisconsin dairy herds.

	<b>Herd Size</b>	<b>Mean annual BTSCC</b>	<b>% Herd affected</b>	<b>Quarter cases per 100 cows</b>	<b>Cow cases per 100 cows</b>	<b>Treatment failure rate</b>
Mean	653	296	32.2	64.4	48.7	16.3
Minimum	35	115	9.7	15.8	11.5	1.4
Maximum	2078	664	70.2	278.1	167.4	40.9
Upper Quartile Cut-point	275	226	22.0	40.4	32.1	9.5

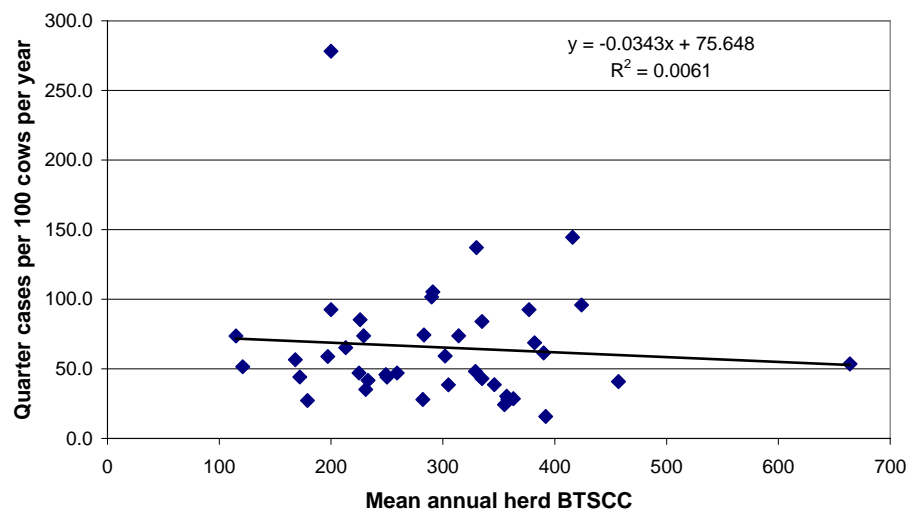
## Results and Conclusions

Data from 32 herds were available for analysis. Multiple years of data were also available from 8 herds, yielding a total of 44 complete herd-years. Mean herd size was 653, with a range from 35 to 2078. Three herds were housed in tie stall barns and the remainder were free stall housed.

On average, 32.2% of the cows in each herd suffered at least one clinical case of mastitis with a mean of 64.4 quarter cases per 100 cows per year. The cow case rate was 48.7 and the treatment failure rate was 16.3%. The cut-points for the upper quartile of herds were 22.0, 40.4, 32.1 and 9.5 for proportion of herd, quarter case rate, cow case rate and treatment failure rate respectively.

This is a biased selection of herds because each called the author to investigate a milk quality problem (predominantly elevated SCC). However, the mean annual bulk tank SCC was 296,000/ml, typical of the average herd in Wisconsin, and there was no relationship between herd BTSCC and clinical case rate. In addition, there was no significant relationship between clinical case rate and herd size.

**Figure 1. Relationship between Mean Annual Herd BTSCC and Clinical Case Rate**



The mean rate of clinical mastitis in this selection of dairy herds was higher than reported in other data sets. BTSCC was a poor predictor of clinical mastitis rate and herd milk quality programs should be evaluated independently for these two outcomes. Clearly the definition of clinical mastitis varies markedly between dairy herds, and there is a great need for a larger scale survey of clinical mastitis in US dairy herds, using a precise case definition.

## References

Kossaibati MA, Hovi M, Esslemont RJ. Incidence of clinical mastitis in dairy herds in England. *Vet Rec* 143: 649-653, 1998.

Miltenburg JD, deLange D, Crauwels APP, Bongers JH, Tielen MJM, Schukken YH, Elbers ARW. Incidence of clinical mastitis in a random sample of dairy herds in the southern Netherlands. *Vet Rec* 139: 204-207, 1996.