SOMATIC CELL COUNTS MASTITIS AND MILK PRODUCTION IN THE PALMERSTON NORTH TOWN MILK SUPPLY HERDS

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ABSTRACT

The study involved work carried out over a period of 12 months from April 1975 to March 1976 with the Town Milk Supply herds of the Manawatu Co-operative Milk Producers, Palmerston North. It could be divided into two parts.

1. Bulk milk samples from all 72 herds of the Town Milk Supply.
2. 19 of the above 72 herds were selected for individual farm visits in May 1975, August 1975, November 1975 and February 1976.

Information on somatic cell counts was obtained from bulk milk samples of the 72 herds; also from the individual cows and farm bulk milk from the 19 herds. Mean cell numbers for the 72 herds was 430,000 cells per ml and the percentages of herds below 250,000; between 250,000 and 500,000 and over 500,000 cells per ml averaged 21, 45.5 and 33.5 and showed wide variation during months. The survey showed that there were marked differences from month to month and the lowest average cell counts were in July 1975 and highest in November and December 1975. On a between herd basis a relationship was demonstrated between milk yield; milk fat yield and total milk protein yield and herd bulk milk cell count ($P < 0.01$). The analysis indicating a loss of .6 litres in milk yield; 0.03 kg in fat yield and 0.02 kg in protein yield per cow per day for each increase of 250,000 cells per ml. Information from the 19 herds showed that the percentage of cows with clinical mastitis were lowest in May (1.9%) and highest in November (2.6%) and this difference was not significant between and within herds.

The relationship between the herd bulk milk cell counts

and the percentage of cows in the herd with less than 250,000 cells per ml, 250,000 to 500,000 cells per ml and above 500,000 cells was described and discussed from the 19 herds and the correlations obtained were -0.91; 0.57 and 0.95 respectively. A relationship between the herd bulk milk cell count and the incidence of clinical mastitis was reported ($P < 0.01$).

Linear regression analysis between the production index and cell counts of individual cows revealed a significant relation ($P < 0.01$) which indicated that a decrease of 0.14 litres of milk per cow per day for each 100,000 cells per ml increase.

Chi square analysis indicated that there was a relationship between age of cows and level of cell counts; an increase in age was associated with an increase in mean somatic cell count of cows.

Daily measurement of bulk milk cell counts for 19 herds for a month in May 1975 and February 1976 showed an average coefficient of variation of 21% and 20% respectively.

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