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The effect of dairy herd management
and milking practices on milk quality

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A mi padre, por su silencio.

A mi madre, por su insistencia, persistencia y tenacidad.

A mis hermanos, por su apoyo.

A mercha, por su cariño.

A mechas, por su fé.

A Susana, por su vida.

Abstract

A mail survey of 200 dairy farmers supplying Tasman Milk Products Ltd (TML) in northern South Island, New Zealand in July 1996 received 46 % response (92 suppliers). This study was undertaken to gauge the effect of mastitis control practices of the mastitis control (SAMM) plan on milk yield and quality in seasonal supply dairy herds. This survey was written to acquire data on the relationship between important dairy husbandry practices and the status of the milk quality of the herd. These practices included dairy hygiene and teat disinfection; diagnosis and treatment of clinical mastitis; culling; dry cow therapy; and characteristics, maintenance and repair of the milking machine. The data were analysed by the Statistic Analytical Systems (SAS[®]) and significant results were taken to be at $p < 0.05$.

The study showed that the production of milk solids per hectare was significantly ($p=0.002$) and negatively correlated with BSCC. 60 % of TML suppliers practiced selective teat washing before milking, and 80 % of suppliers practiced teat spraying in all cows after milking for the entire lactation. Herd testing of individual cows was practiced by 87 % of the TML respondents. Most (77 %) farmers, herd tested 2-monthly. An average 8 % of cows in respondent's herds were diagnosed as having clinical mastitis; all such cases were treated with intramammary antibiotics. 80 % of the cows treated recovered satisfactorily and the remaining 20 % needed re-treatment. An average, 3 % of the cows in each herd were culled for clinical mastitis or high somatic cell counts. The mean Bulk (milk) somatic cell count during the 1995/96 lactation for suppliers surveyed was 217,000 cells/mL. 35 % of farmers achieved a season average BSCC less than 150,000 cells/mL and only 3 % of farms had a seasonal average of more than 400,000 cells/mL. 90 % of TML respondents practiced dry cow therapy selectively. 64 % of TML respondents used selective DCT in heifers with SCC at or below 80,000 cells/mL and in cows at or below 120,000 cells/mL which is below the levels for heifers and mature cows recommended by the SAMM plan. At 35 % of farmers achieved a seasonal average SCC of less than 150,000 cells/mL, clearly demonstrates the effort being made by local suppliers to produce high quality milk on their farms. The study revealed that these "low SCC" suppliers used similar practices of dairy husbandry and milking procedures to the remaining 75% of suppliers with BSCC above 150,000 cells/mL. A majority (45 %) ($p < 0.05$) of suppliers who had a BSCC below 250,000 cells/mL, used the SAMM plan during the season. It was suggested that hygiene, detection and treatment of sites of infection with antibiotics (lactating or dry cow therapy), drying-off or culling will continue to be the main herd husbandry options for keeping SCC at an optimum level. It was evident that TML suppliers are willing to produce not only as much milk as possible, but also milk of a premium quality. It was concluded that the absence of significant detectable effects of the SAMM plan on milk yield among TML suppliers responding to this study begs the question as to whether or not the mastitis control programme affects the BSCC, hence milk yield. The current study, however, identified the progress achieved by the dairy company and its suppliers in this matter by using individual components of the mastitis control plan.

Key words: Milk quality, SAMM plan, somatic cells, Bulk somatic cell counts.

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