



SCC DIAGNOSTICS TOOL BOX



R-MR-6: Interaction of Somatic Cell Count and Quarter Milk Flow Patterns

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J. Dairy Sci., Vol. 90, Issue 5, Pages 2223-2228, May 2007

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Abstract

Milk flow parameters at udder and quarter levels were studied in relation to somatic cell count (SCC) and other risk factors for mastitis (bimodality, duration of decline, and duration of overmilking phase). Thirty-eight Holstein cows in their first to sixth lactations were investigated during 10 mo of lactation. Monthly milk samples were collected for SCC during morning milking. Quarter and udder milk flows were recorded daily. A cow was included if one quarter was found to have an SCC higher than 200×10^3 cells/mL. A total of 3,262 quarter milk flow curves and 804 udder milk flow curves from 22 cows (6 primiparous and 16 multiparous) were selected and evaluated. Selected data for milk flow profiles in relation to SCC represented 5 consecutive morning milkings around the time of milk sampling (sampling on d 3). A total of 661 milk samples were analyzed. At both the udder and quarter levels milk yield was reduced in groups with increased SCC. Quarters with high SCC ($>500 \times 10^3$ cells/mL) had lower peak flow rate and longer overmilking phases compared with quarters with low SCC ($<200 \times 10^3$ cells/mL). There was a tendency for a longer duration of the decline phase in quarters with high SCC but no effect was observed at the udder level. There were longer declines in bimodal milk flows at the quarter, but not at the udder, level. Also, quarters with bimodality had longer overmilking phases. The duration of the decline phases at the quarter level influenced all measured parameters except the duration of the increase phase. The quarters with a longer duration of the decline phase (≥ 80 s) had greater SCC and peak flow rate but had lower milk yield compared with quarters with a shorter duration of the decline phase (< 27 s). Duration of the overmilking phase influenced all measured parameters except SCC. We conclude that for good udder health, the duration of the decline phase at the quarter level should be considered for milking parameters and udder preparation before milking.

Key words: milk flow, quarter, somatic cell

