Reducing Milk Leakage at Dry-Off

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Milk leakage during the early dry period increases a cow's susceptibility to intramammary infections. The most common approach to dry-off at the end of lactation is to pair a change in diet with an abrupt cessation of milking. The aim of this research was to assess the effect of a gradual reduction in milking before dry-off, in terms of reducing the cows' anticipation to be milked and milk leakage after dry-off. Twenty-four Holstein dairy cows (mean±SD: parity = 2.3±1.2; milk production = 24±5 kg/d) were randomly assigned to one of two experimental groups: abrupt cessation of milking (i.e., dry-off with no skipped milkings) or gradual cessation of milking (i.e., skipped milkings for 5 days before dry-off). Intramammary antibiotic and teat sealer, as well as external teat sealant, were applied at dry-off. Cows were monitored from 3 days before, until 8 days after, dry-off. After complete cessation of milking, milk leakage was monitored every 20 min during the 2 hour period following normal milking times of 5:00 and 15:00. Scans of video (every 5 minutes) were used to measure how much time the cows spent anticipating being milked (i.e., waiting at the pen's exit gate). Compared to late lactation, the odds of waiting at the gate increased for the abruptly dried-off cows (OR = 5.0; 95% CI: 2.1–12.4) during the 8-day period that cows were monitored after dry-off. No increase in time spent waiting at the gate was noted in the gradual cessation of milking experimental group. The teat sealer and sealant appeared to only have a short-term benefit, in that milk leakage was noted in approximately half of the cows starting 24 hours after dry-off. Frequency of leakage was greater in abruptly dried-off cows compared to the cows on the gradual cessation of milking schedule (75 vs. 27%). Of the cows that leaked after dry-off, abruptly dried-off cows leaked for a higher percentage of the total observations made (mean, SD: 36±16%; range: 8–62%) compared to cows on the gradual cessation of milking schedule (mean, SD: 10±8%; range: 3–18%).

Implications: This work demonstrates that gradually reducing milking frequency before dry-off results in reduced time spent anticipating milking and reduced milk leakage after dry-off. Preventing milk leakage may reduce the risk of intramammary infections in the dry-period and clinical mastitis in the subsequent lactation.