

Survey of Dairy Management Practices on One Hundred Thirteen North Central and Northeastern United States Dairies

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ABSTRACT

The objective was to conduct a broad survey of dairy management practices that have an effect on animal well-being. Dairies were visited during the fall and winter of 2005 and 2006 in Wisconsin, Minnesota, Indiana, Iowa, and New York. Data were collected on 113 dairies on colostrum feeding, dehorning, tail-docking, euthanasia methods, producer statements about welfare, use of specialized calf-raising farms (custom), level of satisfaction with calf-raising by producers, and cow behavior. Calves were raised by the owner on 50.4% of dairies; 30.1% were raised on custom farms during the milk-feeding period, 18.6% were custom raised after weaning, and 1% sold calves with the option to buy them back as first-lactation heifers. A total of 51.8% of producers were very satisfied with their current calf-raising methods. Three feedings of colostrum were fed to the calves on 23.9% of dairies, 2 feedings on 39.8% of farms, 1 feeding on 31.0% of farms, and colostrum replacement products were fed on 5.3% of farms. Many farms (61.9%) provided 3.8 L at first feeding. Calves were dehorned at different ages by various methods. By 8 wk, 34.5% of calves were dehorned. By 12 wk, 78.8% of calves were dehorned. The majority of calves were dehorned by hot iron (67.3%). The remainder were dehorned by gouging (8.8%), paste (9.7%), saw (3.5%), or unknown by calf owner (10.6%). Anesthetic use was reported by 12.4% of dairy owners and analgesia use by 1.8%. Tail-docking was observed on 82.3% of dairies. The most common reported docking time was pre- or postcalving (35.2%). The second most commonly reported time was d 1 (15.4%). Rubber band was the most common method (92.5%), followed by amputation (7.5%). Three dairies amputated precalving, 1 at 2 mo and 3 at d 1 or 2. Cow hygiene was the most common reason given to dock (73.5%), followed by parlor worker

comfort (17.4%) and udder health (1.0%). Producers reported 2.0% of cows obviously lame. Gun was the preferred euthanasia method (85.7%), followed by i.v. euthanasia (8.0%), live pick-up (1.8%), and nondisclosure (3.5%). Most producers (77.9%) stated that cows were in an improved environment as compared with 20 yr ago, whereas 8.0% stated conditions were worse, and 14.2% were undecided. Dairies with higher percentages of cows that either approached or touched the observer had lower somatic cell counts. The survey results showed management practices that were important for animal welfare.

Key words: behavior, dairy management, tail dock, calf rearing

INTRODUCTION

There is increasing societal concern about the moral and ethical treatment of animals (Rollin, 2004). To enable the dairy industry to effectively respond to these concerns, there is a need for more in-depth data on management practices that are actually being used. The data in the scientific literature are limited. Previous surveys of dairy management practices were predominantly conducted by mail (Bewley et al., 2001; Kellogg et al., 2001; Caraviello et al., 2006). One disadvantage of mail surveys is that a low percentage of producers respond. In these 3 surveys, the response rate was 48.0, 67.3, and 51.5%, respectively. Often in a mail survey the perception by the dairy producer of a problem may differ from what actually exists. For example, Webster (2005) found that producers greatly underestimated the percentage of lame cows. There is a need for a survey in which an investigator actually visits a large number of dairies. This would help to provide more accurate data on the use of common husbandry and management methods. Previous field research in which an investigator visited dairies is limited. Espejo and Endres (2007) visited 50 dairies in Minnesota. Cook et al. (2004) and Schreiner and Ruegg (2002) conducted field studies on 12 and 8 dairies, re-

Received August 22, 2007.

Accepted December 20, 2007.

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spectively, in Wisconsin. One objective of our study was to survey a larger number of dairies in 5 states. Another objective was to determine if cow behavior measures were related to cow productivity. Data were collected to assess other husbandry procedures that may affect cow behavior.

MATERIALS AND METHODS

This study was approved by the Institutional Animal Care and Use Committee and the Institutional Review Board. A total of 113 dairies in 5 states (WI, MN, NY, IA, IN) with a total of 90,162 cows were visited by the first author during a 4-mo period beginning October 14, 2005. There were 107 free-stall dairy farms that ranged from 80 to 4,286 cows, with a mean of 803 cows. Six compost pack dairies, which ranged in size from 66 to 195 cows, were also visited. These are the same dairies surveyed in Fulwider et al. (2007) study on stall base types.

The North American manufacturer of cow waterbeds, Advanced Comfort Technology Inc. (Reedsburg, WI) provided lists of dairies. There were 55 dairies with waterbeds, 26 with rubber-filled mattress, and 16 with sand beds. Producers were contacted, and an appointment was requested within a week. During the travels of the first author, 53 additional dairies were located by either stopping in while driving by or requesting names from the local equipment dealer, feed mill, university extension office, veterinary office, or participating producers. A total of 131 dairies were contacted, and 86.3% agreed to participate.

Interview

Information requested during the producer interview included the amount and frequency of colostrum feeding, calf age at dehorning and method, use of analgesia or anesthetic, age at tail-docking and method, reason for docking, and preferred method of euthanasia. During the interview, data were obtained on the use of bulls, estrous synchronization, lameness, and the use of recombinant bST (**rbST**). Each producer was asked if he or she raised his or her own calves or had them raised at a custom calf-raising facility. If calves were reared at a custom facility, producers were asked at what age calves left and returned to the dairy. Satisfaction with the calf-raising system was scored on a 1 to 5 scale that ranged from very satisfied to very unsatisfied. Producers were asked the following question, "Are cows better off today with regard to animal welfare than they were 20 yr ago? Please give reasons." Milk production and SCC were obtained from producer records.

Behavioral Measurements and Observations

Behavioral observations were done on 41 free-stall dairies where the cows could be easily observed when they exited the milking parlor. A pen of multiparous cows in early lactation was observed. If more than 1 pen of cows conformed to these criteria, the pen with the most multiparous cows was measured. The behavior of each cow in the pen was scored as it exited the milking parlor. To collect the behavior data, the observer stood at the parlor exit where the cows had to pass within 3 m of her.

Dairy cattle behavior was assessed by recording the number of cows that either approached within 1 m or made physical contact with the observer. The percentage of cows that touched or approached on these 41 farms was calculated and analyzed. On 72 dairies, it was too difficult to individually score cows at the parlor exit due to inadequate lighting during nighttime visits, too cramped a facility for safe observation, or the observer presence at the exit could have caused cows to balk and refuse to leave the parlor. These herds were subjectively categorized as either low or non-low flight zone. A herd was categorized as low flight zone if the cows readily approached within 1 m or touched the observer when she walked the length of the free stall or compost pack barn. Cows in nonlow flight zone dairies either ignored the observer or moved away. Dairies with individually scored cows or subjectively scored cows were analyzed separately and in combination.

Statistics

All statistics were calculated using the SAS program (SAS 9.1, SAS Institute Inc., Cary, NC). Frequencies for all categories were calculated individually using the FREQ procedure. Statistical evidence for significance for select categorical variables compared with other categorical variables was done using the Mantel-Haenszel χ^2 procedure. Categorical variables with only 2 categories were compared with continuous variables using the *t*-test, and groups of continuous variables used the CORR procedure to compute correlations. The GLM procedure was used to calculate LSM when there were multiple categorical variables in the same models. Dairy was the experimental unit for all analyses.

RESULTS AND DISCUSSION

Calf-Raising Method

Half of the dairies raised their own heifer calves from birth to entry into the milking herd (50.4%). Calves were raised by a custom heifer raiser for 30.1% of dairies during the milk feeding period. Calves on 22.1% of dair-

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