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Research In Brief

Exploration of Dairy Calf Management Practices and Educational Needs in Vermont

Abstract

Proper calf care is important on dairy farms as management practices affect animal well-being and productivity as well as farm profitability. This article highlights areas of calf management needing improvement according to the results of a mixed-mode survey intended to provide a snapshot of calf management practices in Vermont. Areas for which improvement is needed aligned with farmers' identification of topics of interest and included calving management, nutrition (particularly neonatal feeding practices), and biosecurity (including vaccination). Extension professionals can draw on information about practices needing improvement and topics of interest to farmers to better position themselves to provide outreach tailored to the real and perceived needs of their clients.

Keywords: calf management, survey, dairy farms, Extension education, calf well-being

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Introduction

To maximize the return on raising dairy replacement heifers, dairy producers want quality heifers entering the milking herd. A quality heifer is free of characteristics that could hinder milk production in a particular farm system (Karszes, 2014). Limitations in quality often trace back to management factors. Management of calves early in life can have a strong influence on later production (Van Amburgh & Soberon, 2016). By understanding areas of management in need of improvement and promoting best practices, Extension professionals can play a role in enhancing the quality of dairy replacements and profitability of the dairy business. To focus educational efforts and provide a baseline for evaluating their effectiveness, we conducted a survey regarding calf management practices in Vermont.

Methods

We developed an 89-question survey instrument (shown in the appendix) that was approved by the University of Vermont Institutional Review Board (CHRBSS 15-018) and subjected to pilot testing prior to implementation. We conducted the survey in multiple modes: Respondents could complete the survey on paper (mail-in), online, through a telephone interview, or through an in-person interview. We coded responses to ensure confidentiality of participants. We entered all questionnaire data into a single survey

collector (Qualtrics, LLC, Version 12,018, 2009) and then exported to SPSS Statistics (IBM Corp., Version 21, 2012) for analysis.

The sample frame comprised all (886) Vermont operating cow dairy farms. We sent each farmer a presurvey notice and reply card to determine the farmer's preferred mode of participation. Paper surveys were requested by 115 farmers, online surveys by 51, telephone interviews by 10, and face-to-face interviews by three. The survey was conducted from September 2014 through January 2015.

We report results based on total number of responses to each question. Nonnormal data are summarized by medians rather than means. We calculated incidence as a percentage of the total number of cows or calves on each farm and compared proportions by performing chi-square analysis.

Results

General Population Data

Ninety questionnaires/interviews were completed, for a response rate of 10.2%, calculated according to recommendations put forth by Wiseman (2003). Responses by survey mode were as follows: 64% paper (n = 58), 28% online (n = 25), 5% phone interview (n = 5), 2% in-person interview (n = 2). With regard to power analysis, reported results have a 95%±10% confidence interval.

The median herd size on farms in the sample was 65 cows, and herd size ranged from two to 1,500 mature cows. A median of 60 calves had been born over the preceding 12 months. Most farms (83%) were not certified organic, and most (71%) had Holstein cows. The percentage of organic farms in the sample (17%) was not different (p = .48) from that in the sample frame (20%).

Owners took responsibility for developing calf management protocols on 85% of farms. On 53% of farms, a veterinarian was consulted during the process.

Calving Characteristics

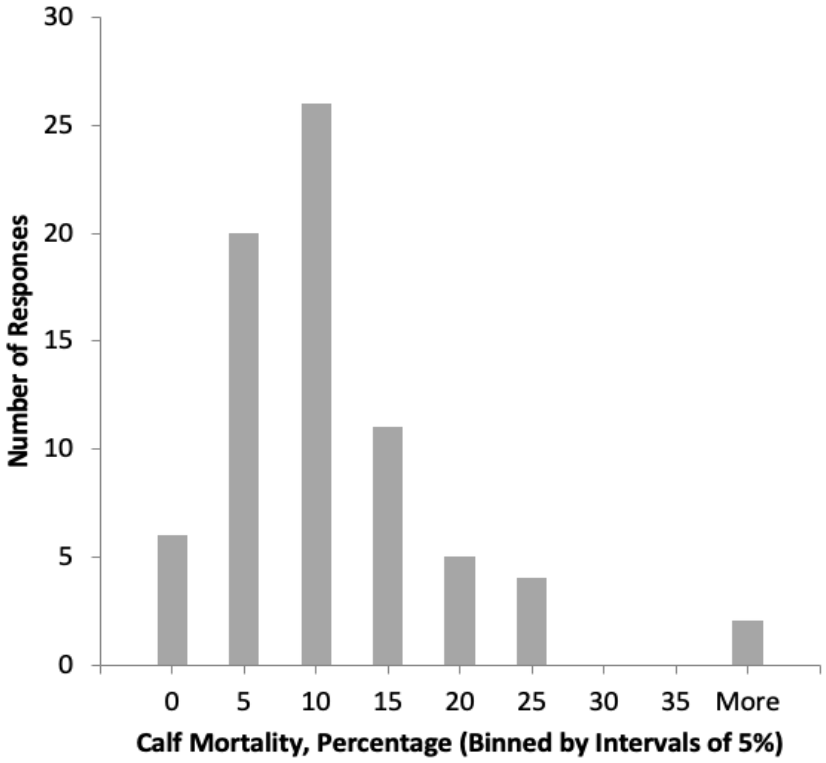
During the summer, calvings occurred on pasture on 45% of farms. However, out of the farms having single-cow (25%) or multiple-cow calving areas (30%), the majority of farmers (68%) ensured that the pen was used only for calving rather than also for sick or special needs cows. A median of 90% of calves were born in the desired calving area. About half of the farmers (f = 47) cleaned out calving areas (other than pasture) between calvings, and about half (f = 46) had sanitized or disinfected the calving area within the preceding year.

The median percentage of first-calf heifers and cows that had required assistance calving over the preceding 12 months was 5%. Following a difficult birth, the majority of farmers stimulated the calf's nostrils (83%) and physically helped dry and stimulate the calf (80%). Most did not pick up and hang the calf (51%), provide supplemental oxygen (99%), or put on calf coats on the basis of the weather (52%).

Out of total calves born in the preceding year, a median of 4% were stillborn (i.e., dead at or within 24 hr of birth). The median percentage that died at over a day old was 3%. Thus, the median reported total calf mortality (combination of stillbirth and deaths over 24 hr) was 7%. See Figure 1.

Figure 1.

Histogram of Total Calf Mortality



Neonatal and Preweaned Calf Nutrition

Many farmers (38%) allowed nursing only if a calf was born overnight, and 44% separated a calf from the dam between 0.5 and 4 hr after birth. Only 39% of farmers collected colostrum within 2 hr of calving, and 27% collected colostrum past the 6-hr mark. The median goal noted for colostrum collection was within 4 hr after calving. Although only 37% of farmers aimed to feed calves colostrum within 1 hr—a best practice identified by the Bovine Alliance on Management and Nutrition (2001)—half of the farmers aimed to feed calves within 2 hr, and only 11% fed calves past the 6-hr mark. On most farms (53%), calves were bottle-fed their first feeding, often sourced from the calf's dam (77%), unpasteurized (97%), and not assessed for quality (49%). Many farmers (45%) stored colostrum in a bucket or bottle at room temperature prior to feeding. For the first feeding, many farmers fed calves 2 qt or less (46%), but almost as many fed 2–4 qt (41%). Passive transfer usually was not monitored (91%). The colostrum feeding protocol did not differ for heifer and bull calves on most farms (79%).

Most feedings immediately after colostrum consisted of nonsaleable transition or treated cow milk (about 50% for heifer and bull calves), which is unpasteurized and not acidified. On most farms, calves were limit-fed through use of buckets for heifers (67%) and bottles for bulls (87%). Water was offered at a median of 10 days of age and starter feed at a median of 7 days of age. Only 86% of farmers provided water by 4 weeks of age. Most farmers (81%) reported cleaning milk delivery equipment between feedings. Farmers used the age of the calf (83%) followed by body weight (39%) and then amount of starter consumed (38%) as criteria for weaning calves.

Calf Housing, Health, and Other Management Practices

The most common housing for preweaned heifers was individual pens or hutches during both warm and cold seasons (46% of farms). Weaned heifers were housed in group/loose housing during warm and cold seasons on 43% and 41% of farms, respectively. Animals entered group housing at a median age of 58 days.

Most farmers (55%) did not house calves in areas originally designed for calves. The flooring was usually concrete (85%), bedded with wood products (shavings or sawdust) (80%) and/or straw/hay (42%). For ventilation, most farmers used some combination of fans (72%), doors (61%), and windows (56%). Pest controls included barn cats (67%), fly tape (39%), spray (37%), other rodent control (37%), and chemical insect control (29%).

Calves were dehorned on 99% of farms, primarily by the farm owner (46%), at a median age of 35 days. Most dehorning was by hot iron (85%) and with lidocaine (56%). Tail docking was performed on 29% of farms, primarily by the farm owner (52%), at a median age of 91 days. All docking was by rubber ring (100%) and neither lidocaine nor flunixin meglumine (Banamine) was used (95%).

Most farmers (33 out of 79) did not have written guidelines about reducing the transmission of infectious disease. The majority of farmers (95%) did not send heifers to be raised off site, but those who did had no protocol in place for reentry. Other specific practices are itemized in Table 1.

Table 1.

Biosecurity Practices on Vermont Dairy Farms

Biosecurity practice	Percentage of farms
Provide footbath	7%
Isolate cattle brought onto farm	8%
Restrict vehicle access	12%
Control birds	21%
Limit contact with wildlife	24%
Provide booties	25%
Maintain closed herd	70%
Limit contact with other cattle	71%

All survey participants were asked whether they wanted to know more about specified topics related to calf management. The most frequently selected topics were calving management, nutrition, and vaccination.

Discussion

Nationally representative data on dairy calf management practices are collected every few years by the U.S. Department of Agriculture (USDA) National Animal Health Monitoring System (USDA, 2010, 2016). Because national survey data are not necessarily reflective of individual state or regional situations, we conducted a

state-specific survey. We found that room for improvement regarding farmers' practices aligned with their interests in obtaining more information about calving, nutrition, and vaccination, a circumstance highly relevant to Extension educators. In this section, we discuss Vermont dairy farmers' practices regarding neonatal calf management, feeding, and animal health and welfare in relation to the national picture and recommended best management practices. Extension educators can draw on points made herein to explore the educational needs and interests of relevant clientele and to develop and deliver associated educational materials and programming.

Our survey design and the timeframe for the survey were developed with attention to controlling survey response error (Smith, 2014). We applied the tailored design method and encouraged response by allowing participants a choice in survey mode, specifically targeting participants who would be interested in the area of concern, minimizing the cost of participation, and using an advanced prenotice letter (Dillman, Smyth, & Christian, 2009). Nevertheless, given the overall response rate of 10%, nonresponse bias is the most likely type of error. However, the proportion of organic farms represented in the survey is comparable to that in the total population and coverage by town is proportional, enhancing our confidence that the results are representative of all dairy farms in Vermont.

Calving and Neonatal Calf Management

In Vermont and nationally, after a difficult birth, it is common practice to stimulate a calf's nostrils and to physically dry the calf; both are best practices. Farmers rarely provide supplemental oxygen, although doing so may increase the calf's chance of survival. Hanging the calf head down is not beneficial because it further dehydrates the animal and increases the pressure on the chest cavity, causing breathing to be more difficult (USDA, 2010).

The median stillbirth and early mortality rates on farms in our study were each below 5%. How records were kept was not specifically investigated. It is possible, with inadequate record keeping, to underestimate calf morbidity and mortality (Goodger & Theodore, 1986). Records of treatment and outcomes can facilitate trouble-shooting of colostrum and neonatal calf management practices (McGuirk, 2008).

Colostrum and Feeding Practices

In Vermont as well as nationally, practices surrounding the harvest, storage, and feeding of colostrum can be improved. Both the recommended volume (4 qt) and timing (within 1 hr and no more than 6 hr after birth) are important for assuring that calves absorb maximal amounts of immunoglobulin G (Bovine Alliance on Management and Nutrition, 2001) and other important growth and immune-stimulating factors (Sacerdote et al., 2013). Calves that fail to achieve adequate passive transfer are more susceptible to disease and mortality than those that do (Rajala & Castren, 1995).

To support well-being and enhance starter intake, provision of clean water from day 1 is the best practice. In many cases, starter feed is offered before water despite the fact that previous research has demonstrated that water is essential for rumen development and increases the consumption of starter feed (Kertz, Reutzel, & Mahoney, 1984).

Preventative Health and Welfare Concerns

Most farmers in Vermont do not have written protocols related to reducing the risk of infectious disease transmission. However, the biosecurity practices of having a closed herd and limiting contact with other cattle are commonly used. For farms where such practices are not followed, improvement is needed related to isolating cattle brought back onto the farm.

At the time of our survey, calves were dehorned on over 95% of farms, with the practice frequently performed by the farm owner using a hot iron. Disbudding calves at a young age and considering pain management is recommended by the American Veterinary Medical Association (AVMA) (n.d.-a). Although AVMA policy opposes tail docking (AVMA, n.d.-b), tails of calves were docked on over one quarter of farms in our study. Banding without sedation or pain management is common practice. Support of tail docking stems mainly from concerns about cleanliness and producer safety (Weary, Schuppli, & von Keyserlingk, 2014), although research has demonstrated no correlation between docking and cleanliness (Lombard, Tucker, von Keyserlingk, Kopral, & Weary, 2010). Producers belonging to member cooperatives of the National Milk Producers Federation were to stop tail docking by January 1, 2017 (National Milk Producers Federation, 2015).

Conclusions

National and statewide surveys show opportunities for improvement in several areas of calf management, especially related to colostrum feeding, biosecurity, and other realms of animal well-being. Future educational efforts in Vermont should be focused on these areas and should include attention to calving management, nutrition, and vaccination, all of which farmers in our study identified as topics of interest. Whether one's farm is certified organic or not, by routinely implementing best management practices to support animal health and well-being, farmers may be able to lower their calf mortality rates, as well as treatment and feed costs, while producing quality heifers. Assessments such as the survey reported here document the gap between actual and best practices and thus can guide local programming. Extension professionals aware of specific areas in which improvement is needed as well as topics of interest are better positioned to provide outreach tailored to the real and perceived needs of their clients.

Author Note

Mia Cosentino received a distinguished undergraduate research award at the University of Vermont for completing the project reported here. She received her VMD from the School of Veterinary Medicine, University of Pennsylvania, Philadelphia, Pennsylvania, and now practices small animal medicine.

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References

American Veterinary Medical Association. (n.d.-a) Castration and dehorning of cattle. Retrieved from https://www.avma.org/KB/Policies/Pages/Castration-and-Dehorning-of-Cattle.aspx

American Veterinary Medical Association. (n.d.-b) Tail docking of cattle. Retrieved from

https://www.avma.org/KB/Policies/Pages/Tail-Docking-of-Cattle.aspx

Bovine Alliance on Management and Nutrition. (2001). *A guide to colostrum and colostrum management for dairy calves*. Retrieved from https://www.aphis.usda.gov/animal_health/nahms/dairy/downloads/bamn/BAMN01_Colostrum.pdf

Dillman, D. A., Smyth, J. D., & Christian, L. M. (2009). *Internet, mail, and mixed-mode surveys: The tailored design method* (3rd ed.). Hoboken, NJ: Wiley & Sons.

Goodger, W. J., & Theodore, E. M. (1986). Calf management practices and health management decisions on large dairies. *Journal of Dairy Science*, *69*, 580–590.

Karszes, J. (2014). *Who should be raising your heifers?* Retrieved from https://ecommons.cornell.edu/bitstream/handle/1813/36912/whoheifers.pdf;sequence=1

Kertz, A. F., Reutzel, L. F., & Mahoney, J. H. (1984). Ad libitum water intake by neonatal calves and its relationship to calf starter intake, weight gain, feces score, and season. *Journal of Dairy Science*, *67*, 2964–2969. doi:10.3168/jds.S0022-0302(84)81660-4

Lombard, J. E., Tucker, C. B., von Keyserlingk, M. A., Kopral, C. A., & Weary, D. M. (2010). Associations between cow hygiene, hock injuries, and free stall usage on US dairy farms. *Journal of Dairy Science*, *93*, 4668–4676. doi:10.3168/jds.2010-3225

McGuirk, S. M. (2008). Disease management of dairy calves and heifers. *Veterinary Clinics of North America: Food Animal Practice*, *24*, 139–153.

National Milk Producers Federation. (2015). NMPF board advances phase-out of tail docking [Press release]. Retrieved from http://www.nmpf.org/files/Tail%20Docking%20Release%20TB%20102615.pdf

Rajala, P., & Castren, H. (1995). Serum immunoglobulin concentrations and health of dairy calves in two management systems from birth to 12 weeks of age. *Journal of Dairy Science*, *78*, 2737–2744. doi:10.3168/jds.S0022-0302(95)76904-1

Sacerdote, P., Mussano, F., Franchi, S., Panerai, A. E., Bussolati, G., Carossa, S., . . . Bussolati, B. (2013). Biological components in a standardized derivative of bovine colostrum. *Journal of Dairy Science*, *96*, 1745–1754. doi:10.3168/jds.2012-5928

Smith, J. M. (2014). Controlling survey response error in a mail survey of dairy farmers: A case report. *Journal of Extension*, *52*(5), Article 5TOT6. Available at: https://www.joe.org/joe/2014october/tt6.php

U.S. Department of Agriculture. (2010). *Dairy 2007, heifer calf health and management practices on U.S. dairy operations, 2007* (#550.0110). Retrieved from https://www.aphis.usda.gov/animal_health/nahms/dairy/downloads/dairy07/Dairy07_ir_CalfHealth.pdf

U.S. Department of Agriculture. (2016). *Dairy 2014, dairy cattle management practices in the United States, 2014* (#692.0216). Retrieved from https://www.aphis.usda.gov/animal_health/nahms/dairy/downloads/dairy14/Dairy14_dr_PartI.pdf

Van Amburgh, M. E., & Soberon, F. (2016). *Developing a quality heifer: Management, economic and*

biological factors to consider. Paper presented at the Dairy Calf & Heifer Association Annual Conference: Moving Forward, Madison, WI.

Weary, D. M., Schuppli, C. A., & von Keyserlingk, M. A. G. (2014). Tail docking dairy cattle: Responses from an online engagement. *Journal of Animal Science*, *89*, 3831–3837.

Wiseman, F. (2003). On the reporting of response rates in Extension research. *Journal of Extension*, *41*(3), Article 3COM1. Available at: https://www.joe.org/joe/2003june/comm1.php

Appendix
Survey Instrument

Calf Management Survey

Thank you for participating in this survey being conducted by an undergraduate Animal Science major at UVM. The information you provide helps give a complete picture of calf management practices in Vermont. This survey is expected to take about 20 minutes to complete. Please answer the following questions honestly and to the best of your ability.

Calf Care and Training

(select as many options as apply)

Who does calf chores?

□ Owner

□ Family

□ Hired labor

□ Unpaid, non-family labor

Who is responsible for developing protocols, training and monitoring programs?

□ Farm owner

□ Calf manager

□ Other _____

Was a veterinarian consulted when developing calf management guidelines?

□ Yes

□ No

How are those who care for the calves trained?

□ Demonstrate responsibilities

□ Assume prior knowledge

□ Provide written Instructions

□ Trial and error

□ Other _____

How is performance of calf chores monitored?

□ Observation

□ Problems that arise are brought to attention

□ Routine testing

□ Other _____

Calving Process

Where on your farm do most calvings occur during the summer?

□ Single cow area/pen

□ Multiple cow area/pen

□ Pasture

If a calving pen is used, is the calving area/pen…

□ dedicated for calving only

□ used for calving and/or sick or special needs cows

What percentage of calves are born in the desired calving area?

_____

How often is the calving area cleaned out? (select as many as apply)

□ Dependent on health status of cow

□ Cleaned between each calving

□ Cleaned after two or more calvings

□ Other _____

In the past year, have you sanitized or disinfected the calving area?

□ Yes

□ No

How many heifers calving for the first time required assistance calving in the last 12 months?

_____ Heifers

How many cows calving (that have calved previously) required assistance in the last 12 months?

_____ Cows

Which of the following procedures are performed for calves following a difficult birth? (indicate by circling yes or no for each option)

Yes	No	Pick up/hang by back legs
Yes	No	Stimulate nostrils
Yes	No	Provide supplemental oxygen
Yes	No	Put on calf coats (based on weather)
Yes	No	Physically help dry/stimulate the calf
Yes	No	Other _____

Colostrum Feeding

Under what conditions are calves allowed to nurse from the dam?

□ Never

□ If born overnight

□ If born between checks

□ Always until moved

□ Other _____

After calving, how long until the calf and dam are separated? (80% of calvings)

□ Immediately (within 30 minutes)

□ 1/2-4 hours

□ 4-12 hours

□ 12-24 hours

□ >24 hours

What is the target range of hours after calving that colostrum is collected from the cow?

_____ Hours

What is the target range of hours that the first feeding of colostrum occurs after birth?

_____ Hours

Does colostrum feeding protocol differ for heifer and bull calves?

□ Yes

□ No

How are calves fed their first feeding of colostrum?

□ Suckle dam

□ Bottle-fed

□ Esophageal/stomach tube fed

□ Combination

What is the total volume of colostrum fed during the first feeding?

□ 2 quarts or less

□ More than 2 quarts but less than 4

□ 4 or more quarts

What is the source of colostrum? (Please check all sources used on your farm)

□ Colostrum replacer

□ Dam of calf

□ Individual cow, not necessarily dam

□ Pooled from multiple cows

□ Other _____

If colostrum replacer is selected, what proportion of calves are fed CR?

_____

Do you pasteurize colostrum?

□ Yes

□ No

If so, please explain how.

_____

How is colostrum quality assessed on your farm? (circle all that apply)

□ Color

□ Consistency

□ Colostrometer

□ Volume

□ Refractometer

□ Other _____

□ No assessment

How is colostrum stored until feeding?

□ Bucket or bottle at room temperature

□ Bucket or bottle in the refrigerator

□ Frozen

□ Other _____

Is the success of passive transfer (absorption of maternally derived antibodies) ever evaluated?

□ Yes

□ No

If yes, how is passive transfer success monitored periodically?

□ RID assay of serum IgG levels

□ Refractometer

□ Other method of assessing total protein

If yes, how often is passive transfer success monitored?

_____

Calf Nutrition

Do you raise any bull calves or steers beyond a week of age?

□ Yes

□ No

What do you feed your preweaned calves? Please indicate for both heifer and bull calves.

Heifer Calves	Bull Calves
□ Medicated milk replacer ◦ Oxy/neo ◦ Lasalocid □ Non-medicated milk replacer □ Non-saleable milk (transition milk or treated cow milk) □ Other _____	□ Medicated milk replacer ◦ Oxy/neo ◦ Lasalocid □ Non-medicated milk replacer □ Non-saleable milk (transition milk or treated cow milk) □ Other _____
If milk is fed, is the milk pasteurized? □ Yes	If milk is fed, is the milk pasteurized? □ Yes

□ No If so, how is it pasteurized? □ Batch □ HTST □ Other system_____	□ No If so, how is it pasteurized? □ Batch □ HTST □ Other system_____
Is milk or milk replacer acidified? □ Yes □ No If yes, how? _____ _____	Is milk or milk replacer acidified? □ Yes □ No If yes, how? _____ _____
How is the milk or milk replacer fed? □ Buckets □ Autofeeder nipple □ Gang nipple (pail or bucket) □ Nipple bar □ Bottle	How is the milk or milk replacer fed? □ Buckets □ Autofeeder nipple □ Gang nipple (pail or bucket) □ Nipple bar □ Bottle
How is the milk or milk replacer volume provided? □ Unlimited access and volume □ Quasi/Almost ad lib (as much as they will consume in a fixed number of times per day	How is the milk or milk replacer volume provided? □ Unlimited access and volume □ Quasi/Almost ad lib (as much as they will consume in a fixed number of times per day

□ Limit fed (fixed amount offered at specific times)	□ Limit fed (fixed amount offered at specific times)

Do you raise any bull calves or steers beyond a week of age?

□ Yes

□ No

How often is the milk/milk replacer delivery equipment cleaned?

□ Between each feeding

□ Between different calves

□ Once a day

□ Once a week

□ Other _____

At what age are calves offered water? (Please circle if your response is measured in days or weeks)

_____ day(s) week(s)

At what age are calves offered starter feed? (Please circle if your response is measured in days or weeks)

_____ day(s) week(s)

Which of the following criteria are used to determine when to wean calves? (select as many as apply)

□ Weight of calf

□ Age of calf

□ Time relative to giving immunizations

□ Amount of starter the calf consumes per day

Calf Management

Is this dairy farm organically certified?

□ Yes

□ No

Do you use ear tags as a method of identification for calves?

□ Yes

□ No

Does the tag display…

□ Date of Birth

□ Calf Number

□ Calf name

□ Sire/dam information

□ Other _____

At what age are they tagged? (Please circle if your response is measured in days or weeks)

_____ day(s) week(s)

What is the PRIMARY seasonal housing facility used for each group of animals [please choose only one for each category below and circle your answer]:

During warmer seasons:

	Freestall	Individual Pen or Hutch	Group/Loose Housing	Tie Stall or Stanchion	None
a. Preweaned dairy heifers?	1	2	3	4	5
b. Weaned dairy heifers?	1	2	3	4	5

During colder seasons:

	Freestall	Individual Pen or Hutch	Group/Loose Housing	Tie Stall or Stanchion	None
a. Preweaned dairy heifers?	1	2	3	4	5
b. Weaned dairy heifers?	1	2	3	4	5

The following questions refer only to calves:

If housed in multiple animal areas, at what age do they enter the group? (Please circle if your response is measured in days or weeks)

_____ day(s) week(s)

If housed in multiple animal areas, what is the target range of dairy heifer calves in a group? (Please circle if your response is measured in days or weeks)

_____ day(s) week(s)

Was the housing facility originally designed specifically for calves?

□ Yes

□ No

If not a hutch, what is the overall housing like?

□ Low barn (e.g. former tie stall barn)

□ Pole barn

□ Freestall with foundation

□ Coverall

□ Other

What is the flooring under the calf pens?

□ Dirt

□ Concrete

□ Gravel drainage

What is used for calf bedding?

□ Straw/hay

□ Sand

□ Wood products (shavings or sawdust)

□ Composted manure

□ Rubber mats

□ Shredded newspaper

□ Mattresses

□ Other _____

Which of the following are features of your calf barn ventilation system? (select as many as apply)

□ Fans

□ Windows

□ Doors

□ Soffit vents

□ Ridge vents

□ Sidewall curtains

□ Chimneys

□ Ventilation tubes

□ Custom wall perforations

□ Floor perforations

□ Other _____

Which of the following methods of pest control are used in the calf barn?

□ Barn cats

□ Other rodent control

□ Chemical insect control

□ Feed-through product

□ Ear-tag

□ Spray

□ Fly tapes

□ Parasitic wasp

□ Other _____

□ None of the above

What supplements (not including specific vaccines) are provided to calves **shortly after birth or during the first week of life**? (Circle how administered)
(e.g. probiotics, vitamins, immune enhancers, First Defense)

_____ feed or injection

_____ feed or injection

_____ feed or injection

What supplements (not including specific vaccines) are provided to calves **between a week of age and weaning**? (Circle how administered)
(e.g. probiotics, vitamins, immune enhancers)

_____ feed or injection

_____ feed or injection

_____ feed or injection

Check which vaccinations are given to replacement heifers and indicate at what age.

□ Scours (rota/corona/E coli K99) Age _____

□ Clostridial (blackleg etc.) Age _____

□ Respiratory viruses (IBR, PI-3, BRSV) Age _____

□ Respiratory bacteria (Pasteurella) Age _____

□ Enteric bacteria (Salmonella) Age _____

□ Lepto (+5) Age _____

□ Brucellosis (calfhood vaccination) Age _____

□ Pinkeye Age _____

□ Rabies Age _____

Calf Surgical Procedures

Please answer the following questions regarding dehorning and tail docking procedures. If neither procedure is routinely done, skip and proceed to the next section (calf health).

Dehorning	Tail Docking
Is this procedure routinely done? □ Yes □ No	Is this procedure routinely done? □ Yes □ No
At what age does this usually occur?	At what age does this usually occur?
What is the main tool used? □ Gentically (ie. Polled genes) □ Hot iron □ Caustic paste □ Tube, spoon, gouge □ Saw, wire or Barnes □ Other _____	What is the main tool used? □ Rubber ring □ Docking iron □ Surgical excision □ Other _____
Is Lidocaine used for this procedure? □ Yes □ No □ Not sure	Is Lidocaine used for this procedure? □ Yes □ No □ Not sure
Is Banamine or another anti-inflammatory	Is Banamine or another anti-inflammatory

medication given after the procedure? □ Yes □ No □ Not sure	medication given after the procedure? □ Yes □ No □ Not sure
Who performs this procedure? □ Vet □ Farm owner □ Farm employee	Who performs this procedure? □ Vet □ Farm owner □ Farm employee

Calf Health

Are sick calves isolated when thought to be contagious?

□ Yes

□ No

□ Sometimes (please explain)

_____

Have your calves had any of the following diseases within the last year?
(Check all that apply pre and post weaning. Also indicating the specific age range affected by that disease, specify if you are measuring in days or weeks)

Preweaning

□ Bloat
Age Range: _____

□ Bovine virus Diarrhea (BVD)
Age Range: _____

□ Calf Scours
Age Range: _____

□ Coccidiosis
Age Range: _____

□ Internal Parasites
Age Range: _____

□ Respiratory Diseases
Age Range: _____

Postweaning

□ Bloat
Age Range: _____

□ Bovine virus Diarrhea (BVD)
Age Range: _____

□ Calf Scours
Age Range: _____

□ Coccidiosis
Age Range: _____

□ Internal Parasites
Age Range: _____

□ Respiratory Diseases
Age Range: _____

Which of the following drugs have been used on your farm in the past 12 months?
(Check yes or no for all and then indicate what condition was treated with that particular antibiotic)
***format note: made into table with yes and no checkboxes

□ **Amikacin (Amikin)** condition treated: _____

□ **Ampicillin (Polyflex)** condition treated: _____

□ **Banamine (Flunixin)** condition treated: _____

□ **Ceftiofur hydrochloride (Excenel, Naxcel)** condition treated: _____

□ **Dihydrostreptimycin (alone or in combination with Penicillin e.g. Quatermaster)** condition treated: _____

□ **Enrofloxacin (Baytril)** condition treated: _____

☐ **Florfenicol (Nuflor, Resflor)** condition treated: _____

☐ **Gentamicin** condition treated: _____

☐ **Neomycin sulfate** condition treated: _____

☐ **Oxytetracycline(Liquamycin/Terramycin)** condition treated: _____

☐ **Penicillin (Procaine PPG)** condition treated: _____

☐ **Phenylbutazone (Butazolidin)** condition treated: _____

☐ **Sulfadimethoxine(Albon)** condition treated: _____

☐ **Sulfamethazine (Sulfamax)** condition treated: _____

☐ **Tetracycline (Biomycin)** condition treated: _____

☐ **Tilmicosin (Micotil)** condition treated: _____

☐ **Tulathromycin (Draxxin)** condition treated: _____

☐ **Tylosin (Tylan)** condition treated: _____

Are antibiotic residues in bull calves a concern on your farm?

☐ Yes

☐ No

Why?

_____

_____

Do you have a valid veterinarian-client-patient-relationship?

☐ Yes

☐ No

☐ Not sure

Cow Census Data

Please refer to your records for the following questions.

What is the maximum number of calves raised per month?

_____ Calves

What is the average number of calves raised per month?

_____ Calves

How many replacement heifers do you have from birth to first calving?

_____

Estimate the average total number of mature (milking and dry) cows over the last 12 months.

_____ Cows

Estimate how many mature cows are each of the following breeds. Please make sure it adds up to 100.

□ Holstein _____

□ Jersey _____

□ Brown Swiss _____

□ Ayrshire _____

□ Guernsey _____

□ Milking Shorthorn _____

□ Crossbred _____

How many total calves were born in the last 12 months?

_____ Calves

How many of these calves were stillborn (died within first 24 hours)?

_____

How many calves over a day old have died in the past 12 months (not counting stillbirths)?

_____ Calves

What were the reasons for the non-stillbirth deaths?

_____

_____

_____

Biosecurity

Which of the following preventative measures are used to reduce the transmission of infectious diseases on your farm?

□ Guidelines to determine which visitors are allowed in animal areas

□ Guidelines regarding foreign travel by employees/visitors

□ Written standard operating procedures (SOPs)

□ Employee training

□ None

□ Other _____

Does this operation send heifer calves to be raised off site?

□ Yes

□ No

If yes, describe the protocol for re-entry.

_____

_____

_____

Which of the following are standard biosecurity practices on this farm? (Check all that apply over the last 12 months)

□ Footbaths for visitors entering animal areas

□ Disposable or clean boots for visitors entering animal areas

□ Bird control

□ Limited or no contact with other cattle (i.e. beef, neighbor's heifers)

□ Limited or no cattle contact with wildlife (i.e. deer, elk)

□ Closed herd (all replacements are from this operation, no contact with cattle from other operations)

□ Isolate all cattle bought onto or back to own facility

□ Restrictions on vehicles entering animal areas

That concludes the survey, thank you for your time and patience…

Would you like additional information or training on any of the following topics? (select as many as apply)

□ Calving management

□ Calf nutrition

□ Vaccinations

□ Avoiding drug residues/prudent drug use

□ Ventilation of calf housing

□ Calf surgical procedures

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