

A Survey of Iowa Beef x Dairy Calf Raisers and Feedlot Operators to Further Describe Challenges Related to Finishing Beef x Dairy Crossbreds

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Summary and Implications

The beef on dairy industry has made progress in changing the type and quality of the Beef x Dairy (BXD) crossbred animal, but there is still room for improvement. Information about the conformation and performance of BXD cattle must be shared with the dairy producer concerning the selection of beef sires based on carcass merit and performance. Additional research is needed to help dairy producers select beef bulls based on growth, performance, and carcass merit without compromising calving ease. Dairies and calf ranches realize the importance of colostrum management for bull calves and are willing to invest in colostrum monitoring and testing for passive immunity. Calf raisers are interested in knowing more about milk replacer quality, starter rations, and nutrition for optimum calf growth. Health protocols are becoming even more important for the young calf as well as the recently weaned calf. Communication between the dairy operation and the feedlot is an important key to success.

Feedlot operators realize the advantages of BXD calves including a consistent supply, lower-cost feeder calves, and improved performance compared with straightbred dairy calves. They also recognize the high-quality grades of BXD carcasses and the opportunity for more of these crossbreds to capture high-quality premiums. These finishing operations continue to seek new research on nutritional programs to optimize growth while preserving rumen health and reducing liver abscesses. They also are looking for an ideal implant strategy for the BXD animal as it is unique from fed beef and dairy animals. Health continues to be a major issue with the BXD calf.

Introduction

Traditionally, dairy cows and fed dairy steers and heifers have comprised about 20% of the beef supply. Dairy steers have been known for high marbling scores/quality grades and leaner carcasses, yet have narrower ribeyes, higher death loss and slower, less efficient gains than their beef counterparts. The dairy steer industry changed in 2017 when some major packers stopped purchasing fed dairy steers, which reduced the value of day-old dairy steers. At

the same time, the use of sexed semen began to gain more favor in allowing dairy producers to better control replacement heifer flow and as a consequence many dairies realized the need to use crossbreeding with beef bulls to increase the value of the bull calves.

Initially, dairy producers were primarily concerned with making the calves black-hided to sell into the beef market. A 2018 Wisconsin survey of dairy producers showed their top priorities for semen selection of beef bulls were conception rate, calving ease, and cost per unit of semen. When asked which beef breeds they were using, 85% selected Angus, followed by 20% SimmentalXAngus, 20% Limousin and 18% Simmental. Very little focus on performance traits resulted in BXD calves that were predominantly black-hided but with conformation more closely matching straightbred dairy calves. This prompted the industry to focus on improving BXD cattle quality and performance that better fit packer expectations.

While the dairy producer can make genetic changes through semen selection, a disconnect between the feedlot and the dairy farm exists. The calf raiser or calf ranch serves as a link between both ends of the BXD industry. However, it is difficult to identify and collect data from this sector. The data is valuable for characterizing and streamlining the communication between those making genetic decisions and those finishing the animals to supply to the packer.

The objectives of this survey were: 1) to learn about management practices employed by dairy producers and calf ranches raising BXD crossbred calves, and 2) to learn about challenges feedlot operators incur when finishing BXD cattle.

Materials and Methods

In the spring of 2023, more than thirty contacts were made by phone, mail, or email to calf raisers in or near Iowa. Eleven producers, who raise more than 21,000 dairy or BXD calves annually, responded (three by phone, eight by mail) about their experiences raising BXD crossbred baby calves and what future research is needed. In surveys of both the calf raisers and feedlots, some responses represented several operations, rather than an individual

farm. Among the 11 producers, five were dairy producers, two fed BXD steers only, and nine fed both BXD steers and heifers. Although many dairies use sexed semen to produce replacement heifers, the producers in this survey used conventional beef semen. Hence, management of both bull/steer and heifer calves in the same group was reported as a concern for feedlot producers.

Approximately thirty producers who finish BXD calves were contacted initially. Twenty-one producers responded to the survey (eight by phone, 13 by mail) regarding their experiences in finishing BXD crossbred calves. The survey was designed to compare their experiences between BXD, beef, and dairy calves in terms of performance, protocol, and marketing.

Results and Discussion

BxD Calf Raisers

Because calf health is a major concern with BXD calves, the first question asked the calf raisers how calves are sourced. Five raise calves from their dairy operation, six purchase calves privately directly from dairies, one purchases calves from auction, and one uses a broker to source and group calves.

When asked about colostrum intake and colostrum quality, 10 calf raisers either tested calves for adequate colostrum intake on arrival at their farm or confirmed the dairy operation did so prior to shipping. The calf raiser who did not confirm colostrum status purchased calves from the auction market. Five calf raisers have a protocol to provide colostrum to calves on day one, four calf raisers communicate with the dairy to ensure intake or trust that the dairy provided adequate colostrum, and five tested for passive immunity some of the time.

Average pre-weaning death loss reported was 4.4% with a range of zero to 15.6%. Nine operations weaned at 6-8 weeks, one at 9.5 weeks, and one at 12 weeks. Average post-weaning death loss was 2.85%, ranging from zero to 10%. The biggest health concerns were respiratory/pneumonia (7), scours (5), and bloat (1). Only eight producers responded calves needed treatment, with 22% of the calves requiring treatment prior to weaning.

When asked about the composition of their milk replacer, six fed a 22% Crude Protein (CP) replacer, one a 24% CP replacer and one a 25% CP replacer. Fat levels of the replacer were 20% (7), one at 18%, and one 15% fat.

Nutrient analysis of the starter feed ranged from 15-22% CP. One respondent starts at 22% and then drops to 18%; another calf raiser started at 20% and drops to 15%. Seven reported using a 16-18% CP starter. Also, one respondent included 5% fat and four 2.7-3.05% fat. Twenty-eight percent of the calf raiser fed a pelleted starter, while 71% fed a texturized starter.

Of the calf raisers who sold calves, one sold through private treaty, while three (27%) sold thru sale barns.

When asked about overall concerns, calf raisers identified mycoplasma, pneumonia, salmonella, scours, low

resale value, disposition, too fleshy, colostrum, navels, and genetics (all one response each).

When asked why they raise BXD calves, all of the following were reported: increase income to the dairy (4); cheaper to purchase than beef (2); better health, growth and market value compared to straight dairy; demand; traceability; and sustainability.

Respondents stated additional research is needed on how to reduce liver abscess (2), sire genetics and selection (2), starting calves to prevent sickness, weather impact on starting calves, nutrition (starter rations, step-up protocol, forage needs, particle length), improving carcass cutout, impact of stress events, and prevention and treatment of mycoplasma.

BxD Finishers

Results of the BxD finisher survey are listed in Table 1. Among the twenty-one BXD finishers, 13 reported also finishing beef cattle and 10 also finished dairy cattle.

Finishers were asked to compare the timing and cause of morbidity and mortality. Most of the morbidity for beef calves occurred in the first 90 days, with the most common response being the first 30 days. The majority of mortality occurred in the first 120 days, with the most common response being the first 30 days. Dairy feeders reported most of the morbidity and mortality occurred in the first 30 days or following a stress event. Although one reported mortality throughout the feeding period. Beef X Dairy feeders' responded morbidity and mortality varied widely from the early feeding period to throughout the entire feeding period, but more indicated the early feeding period.

The major cause of death for both straightbred beef and straightbred dairy calves was respiratory/pneumonia/BRD. Seventy-three percent of the BXD feeders reported the major cause of death was respiratory/BRD. They also noted that deaths in the later feeding period included freak accidents (5), injury or peritonitis (4), and lameness (2).

This survey asked BXD producers about implants used, timing, and how that compared to straight dairy or beef cattle they also feed. Six of the 13 beef cattle feeders shared they use the same implant strategy for the BXD calves. Half use a different strategy. Six of the ten dairy feeders reported using implants, and 83% used the same strategy for their BXD calves. Eighty-six percent of the BXD feeders reported using implants, but not all indicated their implant program.

The wide variation in implant strategies for BXD cattle (Figure 1) indicates a need for research on the most cost-effective implant strategies for long-fed steers and the effect of implant strategy in BXD cattle on carcass merit. In theory, a different implant protocol may be needed for BXD compared to beef cattle because of differences in days on feed, the genetics to marble and muscle size and shape.

A major benefit of breeding beef bulls to dairy cows is producing a finished animal that can capture premiums for both carcass quality (marbling) and leanness. Of the 22

producers who fed BXD cattle, 12 sold to major packers who purchase both beef and dairy type cattle. Five finishers market some or most of their fed cattle through the local auction barn, although some mentioned that was used for cattle with white markings. Fifteen reported selling BxD crossbreds to packers who typically do not purchase dairy cattle and tend to focus on sourcing only high quality, mostly black-hided cattle. Fifteen (68%) of the respondents indicated they are receiving the same price for the BXD steers as for beef steers. However, three (14%) indicated they were receiving a \$2-6/cwt discount.

There is discussion related to liver abscesses in BXD cattle since Foraker's BXD studies suggesting that BXD crossbreds exhibit a liver abscess rate of 40 to 60%. Therefore, this survey specifically asked about discounts received for abscessed or condemned livers. No finishers reported liver abscess discounts. However, one indicated "no discounts as long as fewer than 40% with abscesses." The current survey did not ask about use of mitigating practices.

If the producers sold on a grid basis or received carcass data, they were asked to report the percentage of cattle with various quality grade and yield grade (Table 2) Nine producers responded. When compared to the 2022 National Beef Quality Audit, BxD calves marbled well while staying leaner than industry averages.

Some of the biggest concerns and questions expressed by BxD feeders included the following:

- Educating everyone from the packer to the consumer on the quality and availability of BXD cattle to ensure a market for them when the cattle cycle swings to higher numbers on feed. Also, educating the dairy farms to use the correct bull semen to achieve the high-quality finished carcass with feedlot performance.
- The first 50 days on feed experience the most problems.

- What are the animal requirements for forage/fiber to optimize both performance and rumen health?
 - What are the best implant strategies for BXD crossbreds?
 - What risk management tools can be used on BXD? Forward contracting, LRP, etc.?
 - Genetic selection for optimum crossing with Holsteins, uniformity of cattle, consistent performance, and product.
 - Health, in particular calf scours, liver abscesses, and hairy heel wart.
 - Chronic fall-outs and late period efficiency.
 - Cattle adjusting to a TMR with fermented feed after coming off self-feeders or corn pellet diets.
 - Heifers sucking on others.
 - Dairy influence on animal behavior (eating wood, strangulation, etc.), broken legs and hips.
 - Managing mixed groups of steers and heifers.
- BXD finishers also identified the following areas as needing more research:
- Genetic selection, including more breed options with an emphasis on muscling, gain, efficiency, and conformation.
 - Implant strategies and effect on carcass quality.
 - Optimum nutrition programs - grow them on 47 mcal, then finish or feed high energy all through? High energy ration effect on carcass quality and liver abscesses.
 - Liver abscess.
 - Transition from nursery to feedlot.
 - Rumen health.

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Table 1. Responses from BXD Finishers.

	BXD	Beef	Dairy
Number of Responses	21	13	10
Average Head Finished	1672	2500	569
Range of Head Finished	10-10,000	10-16,000	10-2000
Class of Cattle Fed	20 both steers and heifers, 17 started calves, and 2 fed both calves and yearlings.	5 fed beef steers, 6 fed both beef steers and heifers, 4 started calves, one fed yearlings and 2 fed both calves and yearlings	7 fed dairy steers, 2 fed both dairy steers and heifers, 1 fed dairy heifers. 4 started calves and 2 fed both calves and yearlings
Average In-Weight, lbs. (range)	372 (85-850)	613 (450-706)	337 (85-1050)
Average Out-Weight, lbs. (range)	1422 (1286-1500)	1426 (1266-1550)	1500 (1350-1650)
Average ADG, lbs./day (range)	3.0 (2.6-4)	3.3 (2.8-4)	2.6 (2.2-2.8)
Average F/G, lbs. feed/lb. gain (range)	7.3 (6.5-9)	6.6 (6-7.7)	8.7 (7-12)
% Morbidity (range)	15% (0-50)	11% (5-20)	16% (0-50)
% Mortality (range)	4% (0-14)	2% (0-5)	6% (0-20)
% Rate of riding/bullers (range)	2% (0-5)	1% (0-5)	3% (0-10)
% Rate of sucking (range)	2% (0-5)	< 1% (0-0.5)	1% (0-5)
Source of calves	4 direct from dairy, 7 used brokers, 4 home-raised, 4 calf ranch, 1 sale barn, 10 single source, 10 mixed source	5 westerns, 1 home-raised, 2 SE, 1 sale barn, one single source, 6 mixed sources	1 direct from dairy, 3 home-raised, 3 single source, 2 mixed sources
Marketing method	8 selling beef cattle on a grid, 10 sold live, and 9 sold Grade & Yield. Eight used more than one method of marketing	7 selling beef cattle on a grid, 1 sold live, and 1 sold Grade & Yield.	3 selling beef cattle on a grid, 2 sold live, and 4 sold Grade & Yield.

Table 2. Quality and yield grade results

Quality Grade	Average of Responses	Range of Responses
Prime	13%	5-35%
Ave/High Choice	66%	26-90%
Certified Angus Beef	35%	10-85%
Low Choice	19%	5-76%
Select or lower	13%	3-21%
Yield Grade	Average of Responses	Range of Responses
YG1	22%	5-20%
YG2	34%	20-60%
YG3	45%	25-70%
YG4	6%	2-10%
YG5	4%	0.5-10%

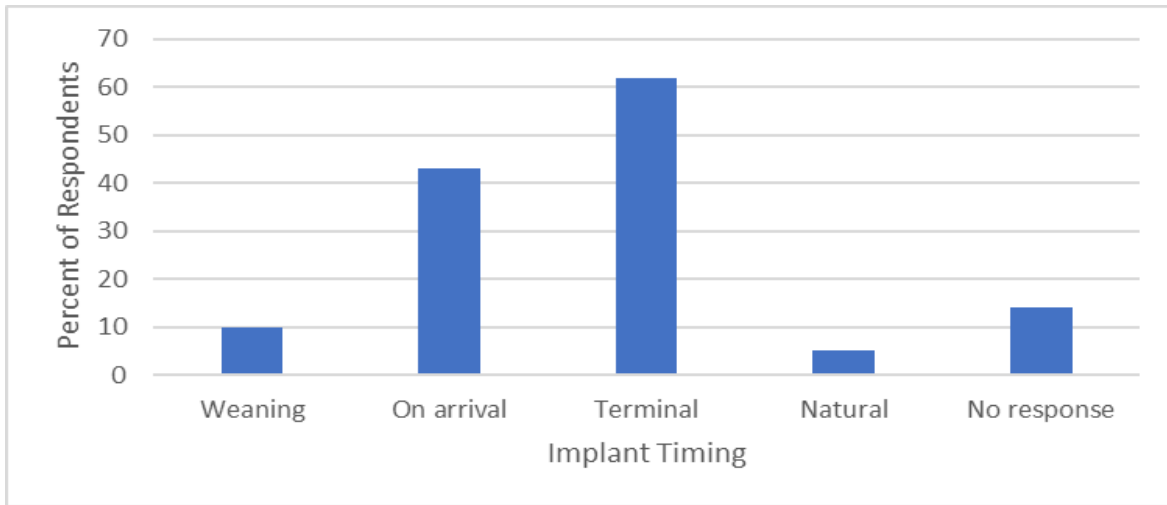


Fig. 1. BXD implant strategies recorded.