



**WHEN BREEDING DAIRY CATTLE TO BEEF**, choose sires that will create a crossbred calf with traits desired by potential buyers.

# Breed for better beef

When using beef semen to create crossbred calves, keep quality beef characteristics in mind.

by Amanda Cauffman and Ryan Sterry

**C**ROSSBREEDING dairy with beef has the potential to enhance market value of bull calves compared to straight bred dairy bull calves. However, as the supply of these calves grows, it's reasonable to assume buyers will become more discerning. Dairy producers can stack the odds in their favor with thoughtful beef sire selection.

Contrary to some old assumptions, modern, well-managed Holstein steers are a high quality and very consistent carcass product. It is far from the truth to say they are only good for hamburger.

By choosing beef sires that improve upon the weaknesses of dairy steers listed in the table, using beef on dairy can improve feed efficiency and rate of gain and reduce days on feed. Wisely incorporating beef genetics can also improve carcass characteristics by enhancing ribeye size and shape, adding muscling, and moderating frame size while maintaining the marbling ability of dairy animals.

To gain a better understanding of the use of beef on dairy genetics, a multi-state extension field survey was conducted in 2018. The field survey asked producers about their beef sire selection criteria. Semen costs, conception rate, and calving ease were the top ranked answers. The most popular beef breeds used were Black Angus, Limousin, and Lim-flex (Limousin crossed with Angus). According to the survey, a majority of these dairy-beef crossbred calves were being marketed at a week old or younger.

## Beef on dairy sire selection

Since the majority of these calves are entering the market at a young age, there is a disconnect between the dairy and the feedlot buyer on the genetics and health history of the animals. Research is needed to establish beef sire selection criteria for use on dairy breeds.

Observations have found some dairy-beef crosses lack sufficient improvement in frame size and muscling to meet the feedlot's needs and are ultimately priced as Holsteins at harvest. Breed selection, and within breed sire selection, is important to

address the weaknesses in dairy breed feedlot performance and carcasses.

When it comes to selecting sires, these are considerations important to the dairy:

1. Semen cost
2. Sire conception rate
3. Calving ease
4. Hair coat color

Meanwhile, these are the traits that are important to the feedlot:

1. Carcass value, carcass weight, and feed efficiency traits, selected for by using a terminal index depending on the breed
2. Greater ribeye area (REA) selected from high terminal index sires
3. Improved muscling, by using REA as the indicator trait
4. Moderate frame score (Holstein matings)
5. Higher carcass weight (Jersey matings)
6. Homozygous polled bulls

Emphasis on calving ease may vary depending on the use for heifers versus cows and the dairy breed. Dairy farmers marketing week-old calves may feel pressure to select for heavier birth weights, but do so without risking cow or calf health. Hair coat color is a factor in many markets, with discounts for nonblack hair coat or black with white markings. However, hair coat color alone is not indicative of beef sire breed or genetic potential for economically important carcass traits.

The challenge is selecting sires that simultaneously protect factors important to the dairy while improving traits economically important to the feedlot and traits that enable carcasses to be acceptable as beef carcasses (such as ribeye area and frame score). Muscle shape of the ribeye and round is extremely important for many grid-based marketing programs, and it is a trait that dairy genetics typically lack.

Beef and dairy crosses lacking sufficient improvement in frame and muscling can be discounted in price for being dairy type when sent to harvest. Since there is no expected progeny difference (EPD) for muscle shape, ribeye EPD is used instead as an indicator trait. When dairy steers are fed and managed properly, they often grade well (80 percent are Choice or better) with comparable quality grades to their beef breed counterparts and

less external fat at the 12th to 13th rib. Thus, beef sire selection for ribeye size, carcass weight, and frame size may need to be prioritized higher than marbling.

All major beef breeds have sires with traits that can moderate the frame size and improve the muscle-to-bone ratio of dairy steers, without adversely affecting their marbling traits. Conversely, there are sires that provide little improvement or even have a negative effect on frame score and muscle shape.

A 2015 research study from the USDA Meat Animal Research Center found less than a 34-pound difference in hanging carcass weights between Angus, Limousin, and Simmentals in their study. Angus, Limousin, and Simmental all have homozygous black and polled bulls that can provide the needed muscle shape and moderate frame size to add value to crossbred calves. The bottom line is that within breed selection is highly important regardless of the breed you choose.

## Add value to calves

Lack of group uniformity has been identified as a drawback to dairy-beef crosses. Random use of multiple sires, no sire selection criteria for carcass traits, and poor calfhod management are all potential sources of variability. Forward-thinking dairy producers can add value to their crossbred calves by providing sire identity and health management protocols to their marketing partners and potential buyers.

The current premiums paid for solid black coat colored beef on dairy cross calves may not incentivize dairies to change their beef sire selection practices. However, if too many beef cross calves fail to achieve the muscling and moderate frame score needed to be accepted as beef carcasses, buyers may lose their motivation to pay a premium over Holstein calves.

Some feedlot operations are offering contracts or purchase programs for beef on dairy cross calves, if you use the genetics they select or provide and follow specific health protocols. They typically require use of a limited number of bulls or closely related bulls. These bulls are genotypically selected with traits to improve feedlot performance and carcass traits of their offspring while maintaining the traits important to the dairy, such as calving ease. This is their way of minimizing variability, improving beef traits, and ensuring predictable calf group health.

The emerging beef on dairy calf market has potential to add value to dairy farm calf sales. However, beef sire selection should include criteria that also improves feedlot profitability. This means thinking beyond semen cost, conception rates, and hair coat color. 🐄

Today's Holstein steer	
Strengths	Weaknesses
Comparable quality grades with less external fat than common beef breeds	Lower dressing percentage than common beef breeds
Similar taste and tenderness compared to common beef breeds	Smaller ribeye size and elongated ribeye shape compared to common beef breeds
Similar taste panel evaluations (Holstein versus Angus)	Risk of exceeding packer height or weight restrictions if not properly managed
Consistency in performance as a breed	Limited number of harvest facilities procuring Holsteins, resulting in fewer competing bidders

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