Feeding and Managing Dairy Beef Crosses

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Abstract

Since 2017, the United States dairy cattle industry has experienced an increased adoption of beef-on-dairy crossbreeding to produce a beef x dairy calf for increased calf profitability. Early life management (e.g., colostrum feeding) is extremely important to the future success of the calf. Future research needs to fill the gaps for early-life experiments and their subsequent impact on health and performance later in life through the finishing feeding phase. The production system (e.g., beef vs. dairy) in which calves are raised greatly impacts the preweaning growth of calves however, within the same system beef x dairy calves are competitive with beef calves; showing greater growth compared with dairy calves. Calves (e.g., dairy and beef x dairy) from dairy production systems require longer days on feed to reach a desirable carcass endpoint, and thus, can experience a greater time consuming diet of highly processed grains with too little physically effective fiber resulting in the development of liver abscesses. Additionally, beef x dairy steers have demonstrated greater dressing percentage, ribeye area, and backfat thickness compared with dairy steers. The feeding performance and carcass value of beef x dairy steers has demonstrated a greater calf value compared with straightbred dairy steers.

Introduction

Steers and heifers from the dairy herd contributes approximately 16% to the United States fed-cattle beef supply according to previous estimates (Boetel, 2016). A plethora of factors, such as low milk prices, reduced dairy bull calf value, and the increased use of female-sexed semen for heifer production, led to the increased adoption of beef-on-dairy crossbreeding (Basiel and Felix, 2022; Jaborek et al., 2023). The adoption of beef-on-dairy crossbreeding in U.S. dairy herds has been rapid since 2017 (NAAB, 2025). The replacement of Holstein steers with beef x dairy steers and heifers in the feeder calf market has resulted in some cattle feeders trying their hand at feeding cattle produced from a dairy production system. Many questions have arisen regarding feeding and management of beef x dairy cattle due to failed expectations or possible issues with lactating beef x dairy feedlot heifers and liver abscesses. However, published data on feeding and managing beef x dairy calves for beef production is still limited at this time, although initial studies that have been published will be discussed. Maybe it's not surprising, but the feeding strategies used for dairy steers and heifers raised for beef still largely apply to beef x dairy steers and heifers since they both are produced from a dairy production system. Feeding and management of dairy steers for beef production has been reviewed previously by others (Cartwright, 1983; Chester-Jones et al., 1998; Managing and Marketing Quality Holstein

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Steers Proceedings, 2005; Duff and McMurphy, 2007; Peters, 2014; Schaefer, 2017; Schaefer et al., 2017; Jaborek et al., 2023). Gaps remain in the published literature regarding early-life experiments and their effects on the subsequent health and performance of cattle raised for beef from a dairy production system. The current available data on beef x dairy steers and heifer growth, performance, carcass characteristics, and economic value are reviewed herein.

Increasing Adoption of Beef-on-Dairy

Since 2017, United States domestic beef semen sales have increased 283%, largely due to the increased adoption of beef-on-dairy crossbreeding for the production of a beef x dairy calf (NAAB, 2025). The proportion of the dairy herd being selected for breeding to a beef sire is largely based on the herd's culling or replacement rate. Which dairy females are being selected for breeding with beef sires is largely based on conceiving difficulty (e.g., number of times artificially inseminated), net merit, genomic data, milk production, and number of lactations, with older, less productive, and fertile females being breed to beef sires as opposed to conventional or sexed female dairy semen for the production of replacement heifers (Hoffman and Sterry, 2019; Sterry et al., 2023; Felix et al., 2023). Survey data has indicated beef sire selection decisions on dairies are often made by the semen sales representative and are commonly influenced by semen cost, conception rate, sire's influence on calving ease, and producing a black-hided calf (Hoffman and Sterry, 2019; Sterry et al., 2023; Felix et al., 2023). However, some dairy producers are becoming increasingly intentional about selecting beef sires based on selection criteria desired by the beef x dairy calf buyer, selecting beef sires with expected progeny differences **(EPD)** ranking favorably for growth (e.g., weaning weight, yearling weight), ribeye area, and marbling, regardless of beef sire breed (Sterry et al., 2023). The most recent 2022 National Beef Quality Audit in-plant survey reported 11.3% of the fed steer and heifer carcasses were identified as dairy-type (Mayer et al., 2024), a 4.6 percentage unit reduction from 15.9% reported in the previous 2016 National Beef Quality Audit (Boykin et al., 2017). Similarly, the 2022 National Beef Quality Audit transportation, mobility, and harvest-floor assessment survey reported an 8.1 percentage unit reduction in dairy-type cattle based on hide color from 20.4 to 12.3%. These National Beef Quality Audit results indicate a greater percentage (30 to 40%) of fed-cattle produced from the dairy herd (e.g., beef x dairy) were visually passing as native beef-type cattle (Eastwood et al., 2017; Schwartz et al., 2023).

Early Life Feeding and Management

Colostrum feeding

As a product of the dairy herd, beef x dairy calves experience similar management compared to dairy male calves, as opposed to conventionally raised beef calves. Much like the dairy male calf, consumption of the proper quantity and quality of colostrum is critical for subsequent calf performance later in life. Transfer of passive immunity **(TPI)** characterized by serum total protein or immunoglobulin G concentration as poor (< 10 g/L IgG), fair (10 to 17.9 g/L IgG), good (18.0 to 24.9 g/L IgG), or excellent (>25 g/L IgG) had an effect on the risk of morbidity (e.g., pneumonia or diarrhea), mortality, and subsequent average daily gain **(ADG)** of beef x dairy calves in the first 60 days of life prior to weaning (Pereira et al. 2024). Beef x dairy calves with either fair, good, or excellent TPI experienced less morbidity compared with calves classified with poor TPI, while calves with good or excellent TPI experienced less mortality compared with calves having poor TPI (Pereira et al., 2024). The

ADG of beef x dairy calves was 21.7% greater for those with excellent and good TPI and 12.6% greater for calves with fair TPI compared with calves classified as having poor TPI (Pereira et al., 2024). Future research is needed to confirm the effects TPI status on long-term calf health, growth, feeding performance, and carcass quality.

Preweaning feeding and growth

The environment and production system in which calves are raised has a drastic influence on preweaning ADG. Angus-sired beef bull and heifer calves raised in a beef production system, on pasture with their crossbred beef dams, had a greater 60-day body weight, and top and hip width compared with Angus embryo bull and heifer calves from Holstein or Jersey dams raised in a dairy production system (237 versus 164 lb, 141 lb, respectively; Fuerniss et al., 2023b). When genetics are compared across both beef and dairy production systems, differences in preweaning growth are commonly attributed to differences in milk composition and total milk consumption by the calf. Carter et al. (2025) investigated this theory with a high protein, high fat (30% CP, 30% CF) milk replacer, compositionally more similar to beef cow milk, compared with a control (20% CP, 20% CF) milk replacer on preweaning growth and muscle development of Angus x Holstein bull and heifer calves. SimAngus x Holstein bull and heifer calves fed similar amounts of the high protein, high fat milk replacer compared with the control milk replacer had a greater body weight (156 vs. 151 lb) and ADG up to weaning at 8 weeks of age (Carter et al., 2025). Little to no difference for ribeye area, muscle fiber size, and mRNA expression of myogenic genes was observed due to the different milk replacers tested during the first 8 weeks of life (Carter et al., 2025). Similarly, Angus x Holstein steer and heifer calves fed two different milk replacers (control: crude protein intake = 136 g/day, metabolizable energy intake = 2.93 Mcal/day; modified: crude protein intake = 234 g/day, metabolizable energy intake = 3.87 Mcal/day) until weaning resulted in greater preweaning ADG when fed the modified milk replacer, but had a lesser ADG during the finishing period and throughout their lifetime compared with the control milk replacer group (Seitz, 2004). When milk composition was consistent across treatments, Arens et al. (2023) reported that Limousin x dairy heifers consumed less milk replacer relative to other dairy heifer calves, while producing the same ADG, resulting in a cheaper cost of gain during the milk feeding period.

When comparing breeds, Angus x Holstein and Angus x Jersey crossbred bulls and heifers did not have a different ADG compared with Angus embryo transfer calves from Holstein or Jersey dams, respectively (Fuerniss et al., 2023b). When compared with Holstein steers (166 lb), weaning weight at 6 weeks of age was greater for SimAngus x Holstein steers (184 lb) but similar when compared with SimAngus x Holstein heifers (168 lb; Jaborek, unpublished). Prior to weaning, the introduction of solid feedstuffs, such as starter concentrate and hay, will promote rumen development to aid in a smooth weaning transition where the calf must rely solely on the nutrients received from those solid feedstuffs for body weight gain. Future research must be built upon previous Holstein calf research to determine how to optimize the cost of production while maintaining digestive health and maximizing the growth advantage of beef x dairy calves to prepare them for future success in the feedlot with the use of different nutritive strategies (e.g., milk replacer and starter feeds).

Postweaning/Pre-feedlot feeding and growth

For calves from dairy production systems, they must spend additional time at the calf-raising facility or calf ranch until they reach a size feedlot facilities can accommodate (i.e., greater than 350 lb). Whereas most calf-fed beef calves are weaned, preconditioned (e.g., vaccinated, introduced to feedstuffs) for 1 to 2 months prior to feedlot entry, or they enter the feedlot immediately after weaning. Beef, dairy, and beef x dairy calves may also enter backgrounding or grazing production systems to add cheap body weight gains and shorten the time required on a high-concentrate diet to achieve a desirable carcass endpoint (e.g., carcass weight, quality grade, fat thickness). Calves raised from a dairy production system are commonly fed a concentrate-based starter feed to promote early rumen development and transition to cheaper feedstuffs in comparison with milk replacer. Weaning age in beef production systems typically occurs around 7 months of age, while weaning for calves raised in a dairy production system typically occurs between 6 to 8 weeks of age, approximately 150 day difference.

As a direct result of an earlier weaning age, calves raised from a dairy production system are fed concentrate-based diets, exposing the rumen epithelium to lower ruminal pH and common bouts of ruminal acidosis due to greater volatile fatty acid production from ruminal fermentation, for a greater portion of their life compared with calves raised in a beef production system. A major knowledge gap in raising calves (e.g., dairy, beef x dairy) from dairy production systems for beef production is the lack of research determining the effects of early-life interventions on subsequent health, performance, and carcass quality at slaughter. Most dairy calf studies apply experimental treatments and measure the short-term effects until weaning or shortly thereafter. Therefore, the long-term effects of these experimental treatments applied during the early life of calves raised from dairy production systems may not be observed, possibly causing erroneous conclusions to be made and implemented in practice.

Across different forage sources, Hill et al. (2010) reported ADG and dry matter intak**e (DMI)** were maximized for Holstein steer calves when the diet included between 0 and 2% neutral detergent fiber **(NDF)** from forage. Voluntary straw intake of pre-weaned calves was 4 to 5% of DMI, while voluntary straw intake was reduced to approximately 1% of DMI for weaned calves (Suarez-Mena et al., 2016). These results indicate early-life performance is maximized from less forage inclusion in the diet for calves raised from a dairy production system. However, what are the long-term implications of feeding very low amounts of forage and fiber to these calves from the dairy production system for an extended period of time? We must be careful not to extrapolate these results to mean very low amounts of forage inclusion are optimal for performance and digestive health in the long-term because it was not investigated.

With the increasing concern of liver abscess development in feedlot cattle, some research has begun to investigate feeding different starter diets to calves raised from dairy production systems to help mitigate the detrimental effects of acidosis on gut health and measure the subsequent effects on feedlot performance, liver health, and carcass quality. It is not uncommon for some starter and grower diets to contain more than 30% starch, similar to some finishing diets. Klipp (2024) reported a similar ADG when fed a pelleted starter diet with either 26 or 16% starch until Angus x Holstein steers were completely weaned at 9 weeks of age. Subsequently, Angus x Holstein steers were switched to either a high starch pellet diet or total mixed ration diet for 60 days, then switched to a common grower diet for 90 days before making the switch to a common finishing diet for the remaining 345 days on feed. No differences were observed for feedlot performance measures; however, steers consuming the 16% starch starter diet and total mixed ration prior to feedlot entry had fewer liver abscesses compared with steers consuming the 26% starch starter diet prior to feedlot entry or 16% starch and pelleted diet (G. Dahlke et al., personal communication).

Across production systems, Angus-sired beef calves raised in a beef production system, on pasture with their crossbred beef dams, had a greater 150 day body weight and top and hip width compared with Angus embryo calves from Holstein or Jersey dams raised in a dairy production system (446 vs. 336 lb, 275 lb, respectively; Fuerniss et al., 2023b). When comparing beef x dairy with beef genetics within the dairy production system, Angus x Holstein (353 lb) and Angus x Jersey (266 lb) calves did not have a different 150 day body weight compared with Angus embryo transfer calves from Holstein (336 lb) or Jersey (275 lb) dams, respectively (Fuerniss et al., 2023b). These growth differences remained at feedlot entry (660 lb); however, Angus x Jersey calves had a lesser ADG compared with Angus embryo transfer calves from Jersey dams (Fuerniss, et al., 2023a). In comparison with Holstein steers (422 lb), body weight at feedlot entry (~5 months of age) was greater for SimAngus x Holstein steers (522 lb) and heifers (489 lb) due to a 16.5 and 4.1% greater ADG from weaning, respectively (Jaborek, unpublished).

Feeding Strategies

There is more than one way to feed cattle successfully, as cattle feeding is as much an art as it is a science. Typically, growing and backgrounding diets (i.e., NEg < 0.60 Mcal/lb) are comprised of more roughage from forages and by-product feedstuffs to help maintain proper digestive tract health before and during the transition to the finishing diet. Although, some starter and growing diets for dairy steers may be more similar to a finishing diet. Finishing diets (i.e., NEg > 0.60 Mcal/lb) are largely comprised of grains (e.g., corn, barley) to increase the energy density of the diet for more rapid and efficient body weight gain and fat deposition. Feedstuffs used in cattle diets vary regionally, largely due to the locality of which they are grown and the climate, resulting in differences in corn processing, available by-product feeds, and forage sources.

Feedlot Performance

Industry feedlot data collected between 2015 and 2018 demonstrated similar feedlot performance (e.g., ADG, DMI, feed efficiency; gain:feed **(G:F)**) between beef x dairy steers and heifers and beef steers and heifers (Foraker et al., 2022a). Furniss et al. (2023a) reported similar final body weight, ADG, DMI, and G:F after a 195 day finishing period between Angus-sired beef cattle, Angus embryo cattle from Holstein and Jersey dams, and Angus x Holstein cattle, while Angus x Jersey cattle had the lightest final body weight, ADG, DMI, and G:F. Basiel et al. (2024) investigated the feedlot performance of 10-month old beef x dairy crossbred steers from different beef sire breeds: Angus, Red Angus, Charolais, Hereford, Wagyu, Limousin, and Simmental/SimAngus. With a common final body weight endpoint, Angus-, Charolais- and Simmental/SimAngus, and Hereford-sired steers had the greatest ADG and DMI, while Wagyu- and Limousin-sired steers had the lowest ADG and DMI and G:F did not differ across beef sire breed (Basiel et al., 2024). Over a 328-day feeding period, Carvalho et al. (2024) reported similar final body weight (1355 lb) and ADG

(3.25 lb/day), but lesser DMI (17.1 vs. 17.7 lb) and greater G:F (0.192 vs. 0.182 lb ADG/lb DMI) for Angus x Holstein steers compared with Holstein steers. In contrast, Pimentel-Concepción et al. (2024) reported a greater ADG (3.75 vs. 3.56 lb/day) and G:F (1.72 vs. 0.166 lb ADG/lb DMI), but similar DMI (23.4 lb) for beef x Holstein steers when compared with Holstein steers raised to 28% empty body fat. While comparing different corn silage inclusion rates in the finishing diet and feeding cattle to 30% empty body fat, beef x Holstein steers had a greater final body weight (1685 vs. 1586 lb), ADG (3.70 vs. 2.99 lb/day), DMI (27.3 vs. 25.1 lb), and G:F (0.135 vs. 0.119 lb ADG/lb DMI) compared with Holstein steers (Pimentel-Concepción et al., 2025). In comparison with Jersey steers, beef x Jersey steers from Angus, SimAngus, and Red Wagyu beef sires had a greater ADG and fewer days on feed while still reaching a greater final body weight (Jaborek et al., 2019). Jersey and Wagyu x Jersey steers had a lesser DMI compared with Angus x Jersey steers (Jaborek et al., 2019). In further support of Jersey-influenced cattle having a lesser DMI, Lehmkuhler and Ramos (2008) reported that Jersey steers had a lesser DMI than Holstein steers.

Growth promoting technologies

The use of growth promoting technologies is still highly encouraged for cattle with dairy genetics (Jaborek et al., 2023), and while the principles still apply to beef x dairy cattle, published scientific data investigating its application with beef x dairy cattle is limited. There were early reports of implanted beef x dairy heifers developing udders and beginning to lactate, although, little to no information has been published on this topic. A large pen study comparing 3 different implant strategies: 1) Revalor-IS/Revalor-IS/Revalor-XS, 2) Ralgro/Revalor-IS/Revalor-XS, and 3) Encore/-/Revalor-XS and delivered at day 0, 80, and 160 during a 329 day feeding period reported no differences in feedlot performance and carcass characteristics of beef x dairy steers (Wesley et al., 2023). In a small, improperly analyzed, non-replicated study (i.e., proper identification of the experimental unit), beef steers, beef x Holstein steers, and Holstein steers implanted with Revalor-XS or non-implanted steers were compared, revealing that implanted steers had a greater ADG and final body weight when each breed-type was fed to 1450 lb (Wesley et al., 2025). Implanted steers had a greater hot carcass weight, dressing percentage, ribeye area, and less kidney, pelvic, and heart fat percentage (Wesley et al., 2025). Very few breed x implant interactions were observed, indicating similar responses to implant administration for beef x dairy cattle.

Frame score

An initial concern with beef x dairy crossbreeding was the frame size of beef x dairy cattle at slaughter. Angus x Holstein cattle had a greater frame score compared with Angus-sired beef cattle, Angus embryo cattle from Holstein and Jersey dams, and Angus x Jersey cattle (Furniss et al., 2023a). No difference in hip height was reported by Basiel et al. (2024) across beef sire breed for beef x Holstein steers. Reported hip heights and frame scores were greater for Holstein steers compared with Beef x Holstein steers (Pimentel-Concepción et al., 2024; Pimentel-Concepción et al., 2025). The beef genetics contributing to the beef x dairy cross appear to reduce the frame size of beef x dairy steers relative to straightbred Holstein steers.

Liver Abscesses

Liver abscesses in cattle raised for beef production is not a new issue and has been an ongoing occurrence over the past 35 years. The exact etiology of liver abscesses remains in question; however, it is commonly believed that damage to the gut tissue, caused by acidosis or foreign objects, allows bacteria (i.e., *Fusobacterium necrophorum*, *Trueperella pyogenes*, and *Salmonella enterica*) to enter the bloodstream and colonize in the liver (Amachawadi and Nagaraja, 2016; Herrick et al., 2022). Cattle raised for beef from dairy production systems are reported to perform more manipulative oral behaviors than cattle from beef production systems, such as grooming and wood chewing, which may be another source of liver abscesses (Amachawadi and Nagaraja, 2016; Herrick et al., 2022; Jaborek et al., 2023). The severity of the liver abscess problem is regional (Herrick et al., 2022), in a large part due to the different types of fed-cattle (i.e., beef, beef x dairy, dairy) and numerous ways to feed cattle in the United States. This regionality likely helps to explain the discrepancy in liver abscess incidence rates by breed-type. As previously mentioned, liver abscesses have become a growing concern with the increased adoption of beef x dairy crossbreeding and production of beef x dairy cattle into the beef supply chain. The first report of beef x dairy liver abscess incidence rate was of unpublished data where beef x dairy crossbreds had a 40 to 60% incidence rate (Foraker et al., 2022b) and were intermediate when compared with the liver abscess incidence rates of 15 to 30% for beef and 50 to 80% for straightbred dairy reported by Amachawadi and Nagaraja (2016). In the most recent liver abscess survey report, Herrick et al. (2022) reported a 25.0% liver abscess incidence rate for fed Holstein steers and heifers and 18.2 and 19.1% incidence rates for fed beef steers and heifers, respectively. The previous 10-year average reported by the Elanco Liver Check Service was 13.9, 16.0, and 28.3% liver abscess incidence rate for beef heifers, beef steers, and Holstein steers and heifers raised for beef, respectively (Amachawadi and Nagaraja, 2016).

Early reports from beef x dairy studies have shown mixed results on liver abscess incidences, which shouldn't be surprising due to the differences in regionality and diets fed across these studies. Furniss et al. (2023a) reported no difference in liver abscess incidence (17%) between Angus-sired beef cattle, Angus embryo cattle from Holstein and Jersey dams, Angus x Holstein, and Angus x Jersey cattle fed a steam-flaked, sweet bran finishing diet including Tylosin. Similarly, Carvalho et al. (2024) didn't observe any difference in liver abscess incidence (3.7%) between Angus x Holstein and Holstein steers fed a steam-flaked corn diet with 8% forage and no Tylosin. For beef x Holstein steers fed a rolled high-moisture corn, corn silage diet without Tylosin, they had a 39% liver abscess incidence (Pimentel-Concepción et al., 2024). Interestingly, Sietz (2024) reported a 4% liver abscess incidence for Angus x Holstein steers and heifers that were fed a whole corn (78% DM), corn silage diet without Tylosin. The liver abscess incidence between the Pimentel-Concepción et al. (2024) and Sietz (2024) studies is quite surprising when you consider the similarities between the finishing diet composition. However, the biggest difference in diet composition may be the corn processing, where rolled high-moisture corn (65% DM) was fed by Pimentel-Concepción et al. (2024) and very dry, unprocessed, high-moisture corn (22%) was fed by Sietz (2024). Reinhardt and Hubbert (2015) reviewed the topic of liver abscesses in feedlot cattle and reported the influence of grain processing on liver abscess incidence rate was not clear, but instead concluded that the inclusion of physically effective fiber was more reliable in controlling the development of liver abscesses in feedlot cattle. In support, Miller et al. (2024) reported no effect of corn processing (i.e., dry rolled vs. steam flaked), but an effect of increasing corn silage inclusion rate on the incidence of liver abscesses for beef steers fed a finishing diet including Tylosin.

Mertens (2002) reported 22% physically effective NDF was optimum in the diet to reduce liver abscesses. Recent research conducted by Pimentel-Concepción et al. (2025) found 22 and 49% liver abscesses for Beef x Holstein and Holstein steers, respectively, and 52 and 19% liver abscesses for these steers fed either 20 or 40% corn silage (on a DM basis) in the finishing diet without Tylosin, respectively. The physically effective fiber percentage of the 20 or 40% corn silage diets was 16 and 24%, respectively (Pimentel-Concepción et al., 2025). Increasing corn silage inclusion rate from 15 to 45% in the finishing diet of beef steers yielded similar results at reducing liver abscess incidence (Wilson et al., 2023). Wilson et al. (2023) concluded that feeding a greater inclusion of corn silage (45%) was as effective at reducing liver abscesses (12%) in beef steers, whether Tylosin was fed or not. Therefore, additional fiber from forage is needed in the diet of long-fed cattle to help mitigate the occurrence of liver abscesses.

Carcass Characteristics

Furniss et al. (2023a) reported a greater hot carcass weight and dressing percentage for Angus-sired beef cattle, Angus embryo cattle from Holstein and Jersey dams, Angus x Holstein, and Angus x Holstein cattle compared with Angus x Jersey cattle. Angus-sired beef cattle and Angus embryo cattle from Holstein dams had a greater backfat thickness, marbling score, and percent empty body fat compared with Angus x Jersey cattle after a 195 day feeding period (Furniss et al., 2023). Basiel et al. (2024) reported no differences due to beef sire breed for hot carcass weight, backfat thickness, and ribeye area for beef x Holstein steers; however, marbling score and tenderness differences were observed. Red Angus x Holstein steers had greater marbling scores compared with Limousin- and Simmental/SimAngus-sired steers, while ribeye steaks from Angus x Holstein steers were more tender than steaks from Charolais- and Simmental/SimAngus-sired steers (Basiel et al., 2024). Carvalho et al. (2024) reported a greater hot carcass weight, dressing percentage, ribeye area, backfat thickness, and marbling score for Angus x Holstein steers compared with Holstein steers fed for 328 days. When slaughtered at 28% empty body fat, beef x Holstein steers had a greater ribeye area and backfat thickness compared with Holstein steers (Pimentel-Concepción et al., 2024). When slaughtered at 30% empty body fat, beef x Holstein steers had a greater hot carcass weight, dressing percentage, ribeye area, and backfat thickness compared with Holstein steers (Pimentel-Concepción et al., 2025). Data collected in various beef processing facilities found beef x dairy steers were intermediate between beef and dairy steers for backfat thickness and ribeye area, and beef x dairy and dairy steers had greater marbling scores compared with beef steers at a similar hot carcass weight (865 lb; Foraker et al., 2022b). Foraker et al. (2024) reported that carcasses from Holstein steers had a lesser red meat to bone ratio when compared with carcasses from beef x dairy and beef steers. For Jersey-influenced steers compared at a similar hot carcass weight, beef x Jersey steers had a greater dressing percentage, backfat thickness, marbling score, and less kidney, pelvic, and heart fat compared with Jersey steers (Jaborek et al., 2019). Red meat yield was greater for SimAngus x Jersey and Red Wagyu x Jersey compared with Jersey steers (Jaborek et al., 2019). Ribeye steaks from Red Wagyu x Jersey and SimAngus x Jersey steers were more tender than steaks from Angus x Jersey and Jersey steers (Jaborek et al., 2019).

Value of Beef x Dairy Cattle

The production of beef x dairy calves has provided dairy operations with a supplemental profit source to the milking operation. Since June 2019, deacon beef x dairy bull calves have sold for approximately $130 per head more on average compared with deacon Holstein bull calves at an auction in Smiths Grove, Kentucky (LMIC, 2025). Comparatively, deacon beef x dairy bull calves sold for approximately $25 per head more on average compared with deacon beef x dairy heifer calves at the same auction over the same 6-year period (LMIC, 2025). Weighing 613 lb, McCabe et al. (2022) reported a $35.58/cwt premium, equating to an additional $218 per head for weaned beef x dairy steers compared with weaned Holstein steers. Reported cost of gain was less for beef x Holstein steers when compared with Holstein steers ($1.22 vs. $1.29/lb; Pimentel-Concepción et al., 2024; $1.35 vs. $1.49/lb; Pimentel-Concepción et al., 2025). With a cheaper cost of gain and greater carcass value, break-even feeder calf value was greater for beef x Holstein steers when compared with Holstein steers ($1.76 vs. $1.29/lb; Pimentel-Concepción et al., 2024; $2.13 vs. $1.60/lb; Pimentel-Concepción et al., 2025). This corresponds to 33 to 36% greater break-even feeder calf value for beef x Holstein steers compared with Holstein steers.

Conclusions

Beef x dairy cattle have replaced a large portion of straightbred dairy cattle contributing to the U.S. beef supply. At this time, feeding strategies for beef x dairy steers and heifers are similar to those implemented for Holstein steers. The contribution of intentionally selected beef genetics in beef x dairy cattle has resulted in greater growth and performance compared with straightbred dairy steers. Beef x dairy carcasses show a vast improvement in muscling, indicating greater red meat yield than dairy carcasses, with intermediate backfat deposition between beef and straightbred dairy carcasses. Beef x dairy steers have demonstrated greater value compared with straightbred dairy steers.

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