

### WHAT'S IN YOUR Genetic tool box?

Selecting the tools that best match your genetic targets is key. We know that a craftsman is only as good as his tools. Add the right genetic tools in your toolbox so you can achieve your herd goals.

In recent months, Select Sires has introduced two new tools, Mastitis ResistantPRO<sup>™</sup> and Herd Health Profit Dollars<sup>™</sup> (HHP\$<sup>™</sup>). Both tools are science-based and Mastitis ResistantPRO incorporates health and wellness traits from the Council on Dairy Cattle Breeding (CDCB) and Zoetis.

Health traits continue to prove their worth in our industry. Not only can we see this in the recent validation study with Dairy Wellness Profit Dollars® (DWP\$®) but herd managers see the influence of these traits and indexes with less problem cows, vacant sick pens and lower antibiotic use.

#### MASTITISRESISTANTPRO<sup>®</sup>

The Mastitis ResistantPRO designation is the industry's firstof-its-kind, complete genetic tool to combat mastitis. Select Sires professionals have analyzed the economic impact of mastitis resistance traits in dairy herds. Genetic audits of CDCB Mastitis Resistance and CDCB Somatic Cell Score (SCS) reveal significant savings for higher genetic merit animals, translating to more profit for farmers. The new designation identifies sires that excel in multiple indicators of mastitis resistance, including CDCB MAST, SCS and Zoetis Mastitis Resistance.

Mastitis is reported as the third most popular reason for culling in commercial dairy herds and a case of clinical mastitis in the first 30 days of lactation results in an economic loss of \$444<sup>1</sup>. This cost includes treatment expenses and the subsequent effects of milk loss, premature culling, replacement loss and future reproductive challenges. Industry reports show the incidence rate for mastitis is 24.8<sup>2</sup> percent and most cows with a mastitis event are treated with antibiotics. Improving genetic merit for mastitis resistance will reduce the use of antimicrobials, which translates to both on-farm savings and consumer approval. Holstein sires that carry the Mastitis ResistantPRO designation will reduce mastitis cases by 2.3 percent. In a 1,000-cow herd, the savings are greater than \$10,000 per year.



While Mastitis ResistantPRO hones in on the specific challenges of mastitis, HHP\$ offers farmers a broader, yet robust index to build healthy herds. As dairies strategically use beef semen in growing numbers, they are raising fewer replacement heifers and experiencing lower herd turnover rates. With more older cows in the herd, treatment costs are an initial concern and the need for healthy cows pays off. HHP\$ is engineered to create healthy, trouble-free, efficient and fertile cows that return more dollars for your rearing investment.

#### What Sets HHP\$ Apart from other Health-Focused Indexes?

There are several features that differentiate this index from others, including a balance of improvement in both fat and protein yields as well as emphasis on mastitis resistance, udder conformation traits and CDCB's new evaluation for feed efficiency.

HHP\$ can be used to rank heifers in herds that perform genomic testing with CDCB backing like Igenity® from Neogen®. HHP\$ can also be used for A.I. sire selection and provides a health-focused index that can be used across the industry to rank bulls on the future profitability of their daughters.

<sup>1</sup>Preventative Veterinary Medicine, Vol. 122, Issue 3, 12/2015, Pages 257-264. <sup>2</sup>National Animal Health Monitoring System, 2014.





## **BEEF OUT OF DAIRY, A NEW OPPORTUNITY**

A large segment of the U.S. dairy industry is breeding a portion of their dairy herd to beef sires, producing a beef x dairy calf that will eventually enter the beef supply chain. Less and less dairy producers are choosing to sell purebred dairy bull calves into the beef supply chain. A recent study from Kansas State confirms this shift and the potential value.

Kansas State compiled a summary of beef x dairy cross calves selling through Superior Livestock Auction compared to purebred Holstein steer calves and straight Angus-type calves selling at the same time. The data showed that the beef x dairy calves at 550 to 600 pounds sold for \$15 per hundredweight (cwt) under straight Angus-type calves. However, purebred Holstein steer calves were \$40 per cwt under the beef price. Bottom line: beef x dairy calves brought about \$80-\$90 more per head than Holstein steers. While there was no data in the study regarding Jersey bull calves, we can speculate they would fetch even less at market.

Crossbred beef x dairy calves are one thing, but what if a dairy farmer could use their current dairy herd resources to gestate a beef embryo and send a straightbred beef calf to market? If you'll remember from the Kansas State study, pure Angus-type cattle garnered the highest price at Superior Livestock Auction. To take it a step further, imagine a dairy could supply a year-round source of calves out of high-performing terminal beef genetics, backed by committed management standards with confirmed traceability! This is the discussion sparked by Chris Sigurdson, general manager of Minnesota Select Sires Co-op, Inc., and Andrew Swanson, beef business manager, at a staff meeting in 2019 and then shared with others throughout the Select Sires federation.

#### THE JOURNEY TO BEEF OUT OF DAIRY

Before we dig deeper, let's back up and look at how the industry arrived at this point from Select Sires' perspective.

Select Sires has been working alongside farmers for generations to maximize the profit potential of dairy operations. Throughout the years, we have introduced value-added programs including Select Mating Service<sup>®</sup> (SMS<sup>®</sup>) and Select Reproductive Solutions<sup>®</sup> (SRS<sup>®</sup>).

Fast forward to the introduction of sexed semen and its subsequent improvements in fertility. Dairies embraced the technology that allowed them to generate an abundant supply of heifers. Profit-minded producers were quick to realize that the abundance of replacements was widespread, which meant they were left with extra stock that was not in high demand. Select Sires stepped in with ProfitMAX<sup>®</sup>.

ProfitMAX service professionals work with farm management to achieve long-term profitability from every genetic decision. An audit of each participating dairy's reproductive records, cow and heifer inventories, as well as evaluation of each animal's genetic value are considered using proprietary inventory calculators and genomic test results, if the dairy has them, to determine the best possible pairing to generate profit. "It's all about healthy uterus management," says Lyle Kruse, vice president of market development for Select Sires. "Some cows or heifers may carry a high-value gender SELECTED<sup>™</sup> calf or embryo to enter the milking



### **TO BOOST PROFITS**

string as a replacement and advance the herd's genetic merit. Less genetically valuable heifers or cows may carry a beef calf to be sold immediately or retained to market weight to enter the beef supply chain. These decisions will maximize profits with every mating."

"Three years ago, many dairy producers simply sought 'cheap' semen that would produce a black calf. Sadly, this created the cattle we have been seeing in feedlots and packing rails the past year or so," says Dr. Larry Corah, professor emeritus, Kansas State and Select Sires' beef supply chain development consultant. "As a result, the feeding/packing sector has started to push back by pricing these cattle at the same value as a Holstein steer."

Select Sires introduced the ProfitSOURCE<sup>™</sup> beef x dairy program in 2019. ProfitSOURCE sires are hand selected for crossbreeding on Holsteins and Jerseys. These sires excel for calving ease, growth performance, carcass merit and offer elite fertility to maximize reproductive performance. ProfitSOURCE is a complete beef x dairy program producing offspring to meet the desires of growers and packers throughout the supply chain, including committed management standards for offspring as well as specific tagging for easy traceability.

Select Sires launched a multi-year initiative seeking to create value from dairy producers to beef consumers. Numerous meetings with calf ranches, feeders and packers provided a great deal of direction. It was clear that each desired a steady supply of predictable outcomes.

"By leveraging performance-based terminal genetics, committed management standards and a sound tagging system for traceability, it became clear that our farmerowners could deliver what the supply chain wanted," says Swanson. Calf ranches, feedlots and packers interested in source-verified, high-quality ProfitSOURCE calves have established partnerships with Select Sires as demand is growing.

Still, there was the thought that the highest premium opportunity might come from straightbred beef calves made in a dairy production system. "We had a vision that we could maximize genetic potential and consistency and take advantage of dairy system attributes of healthy, year-round scaled production and traceability," says Swanson. "That's where the idea for HerdFlex<sup>™</sup> was really founded to use embryo transfer," says Sigurdson. "This is a beef production strategy designed to maximize calf value. Dairies contribute their extra pregnancies, calf-raising expertise and the year-round production system."

After discussions with Simplot®, Select Sires

JUNE 2019 - FEBRUARY 2020 BEEF EMBRYO TRIAL		
Beef Embryos	Beef Semen	
146 Pregnancies	971 Pregnancies	
398 Total Embryos Transferred	2,608 Total Units Used	
36.68% Conception	37.23% Conception	

JUNE 2019 - SEPTEMBER 2019		
Beef Embryos	Beef Semen	
91 Pregnancies	438 Pregnancies	
228 Total Embryos Transferred	1,288 Total Units Used	
39.91% Conception	34.01% Conception	

became the exclusive supplier of SimVitro® HerdFlex beef embryos in the U.S. "Early in the partnership with Simplot, we trained some of our best technicians and put together an embryo trial to test our vision," says Swanson.

"The dairyman must see an economic advantage," says Swanson regarding the addition of a beef embryo program. Minnesota Select Sires quickly set a trial in motion with the assistance of four dairies in central and southeast Minnesota. From June 2019 through February 2020, genetically elite beef embryos were transferred. All cows with embryos transferred were previously assigned mating to beef and randomly chosen for embryos. The only culling from the group was if a cow was unlikely to still be in the herd at calving or if, upon palpation, a cow was thought to be cystic. If there was no evidence of a corpus luteum, embryos were transferred on the side with the largest ovary. To provide comparison, a group of cows were also bred with beef semen.

"Through the study, we learned that in times of heat stress while semen performance often lags, embryo performance in the trial during June through September was 6 percent better than that of high-fertility beef semen," says Swanson. "With conception on a dairy being of the utmost importance, we knew going into this venture that keeping pregnancy rates as high as possible would be a must, so this data was reassuring."

Starting in March of 2020, calves began to arrive and initially either stayed on the farm or went to the farm's calf raiser and they were handled and fed just like their dairy calves: fed colostrum, navels dipped, appropriately tagged, placed in a calf hutch, fed waste 800.795.1233 | mnselect@mnss.coop



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> milk or milk replacer, calf starter was made available along with water. All calves received appropriate vaccinations and males were castrated. Calves were weaned in July and August at about 250-300 pounds and were then transferred to a grower in southwest Minnesota.

In January of 2021, study calves arrived at Sam Hands' Triangle H Feedlot in Garden City, Kansas in two groups, based on age and size. To allow for the comparison of growth performance data one group of calves was placed on a feedlot and a second group was turned out to wheat pasture to assess whether these straight beef cattle that had been raised in a dairy system would be able to graze and convert forage into pounds of product at harvest.

#### END RESULTS AND WHAT WE'VE LEARNED

"When they arrived, the HerdFlex calves looked like stout, traditional Angus cattle in the feed yard, as expected they were very uniform, peas in a pod," says Hands. The first calves were shipped for harvest in late July through late August.

"Over the same period of time, the beef x dairy calves required more feed to reach market weight. The HerdFlex cattle had better overall feed conversion," says Hands. The added value of HerdFlex calves is seen when they are harvested and sold on a grid.

TRIANGLE H CONSUMPTION REPORT		
Larger Feedlot HerdFlex Calves	4.09 ADG	
Smaller/ Wheat Pasture Grazed HerdFlex Calves	3.13 ADG	
Feedlot Beef x Dairy Calves	3.63 ADG	

The Triangle H HerdFlex calves were sold on the U.S. Premium Beef grid and graded 74 percent Prime and Premium Choice (Certified Angus Beef), netting a premium of over \$150 per carcass.

Swanson suggests that HerdFlex embryos be used in conjunction with a beef x dairy program as a way to decrease the level of risk. He reminds producers interested in embryos that the cost to produce a HerdFlex calf, compared to a beef x dairy calf can be as much as an additional \$150. "I can't emphasize enough the importance of well-trained embryo technicians to the success of the venture," says Swanson. "That's the biggest lesson we have learned to date. To garner the most success with SimVitro's embryo technology, the ideal recipient is first or second service, first lactation females. Later lactation cows are probably better candidates for beef semen. Taking these measures will keep pregnancy rates in line. We will never lose sight of the fact that our dairy farmer-owner's primary income is from the sale of high-quality milk!"