

SELECTIONS

SPRING 2025

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YOUR SUCCESS *Our Passion®.*

"YOU WIN WITH PEOPLE."



David C. Thorbahn,
President and C.E.O., Select Sires Inc.

Each edition of *Selections* is carefully curated for customers — our teams work together to share useful resources and source management tips from the industry's experts. We want to connect dairy producers with the tools and resources necessary to drive profitability and highlight the next-level knowledge and skills offered by their local team of consultants. Select Sires is known for our vast network of boots-on-the-ground

trusted advisors, sales representatives and professional technicians, but there's a workforce that truly works behind the bull. Select Sires Inc. employs more than 175 team members in the production, processing and distribution departments and these folks bring to life our organizations core values: respect, dedication, integrity and innovation.

Between Plain City, Ohio and Westby, Wisconsin, livestock technicians care for more than 1,600 genetic giants. Maintaining the health, comfort and production capabilities of these sires is not a simple task. For nearly 10 years, Select Sires has opened the barn doors to Validus, a third-party animal welfare auditor, to assess the animals and facilities. Year-after-year, both the Wisconsin and Ohio facilities pass with flying colors and this is a true testament to the dedicated staff that work with and respect these animals.

While it begins with the bull, the processing team at Select Sires is second to none. In 2024, they processed more than 20 million units of semen. In-house semen processing and sire fertility continue to be a cornerstone of research,

development and production activities. Select Sires has a tradition of putting fertility first. Our lab technicians analyze all data and they aren't afraid to put marginal performing semen where it belongs — in the trash!

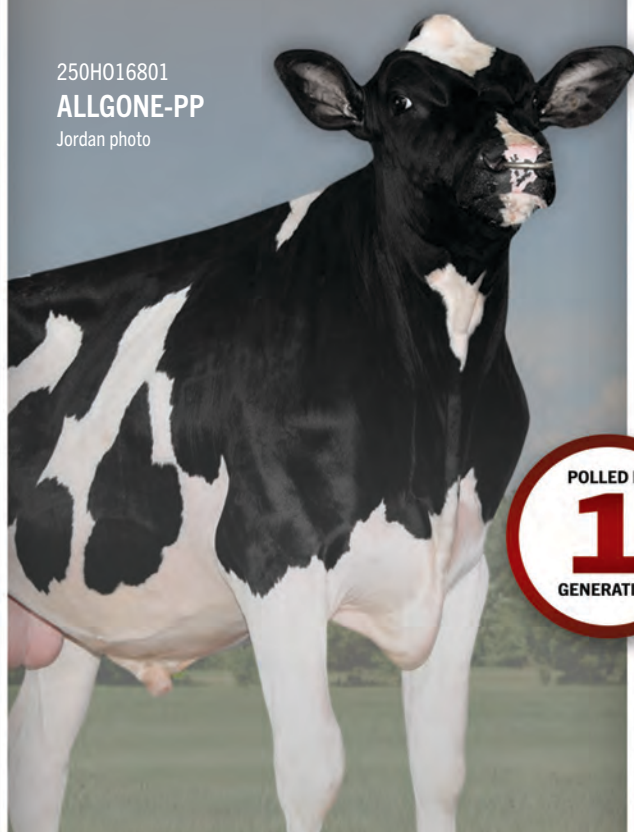
After collection and processing, the distribution department ensures our product is properly packaged and shipped securely to meet the needs of farmers around the world. The 34-member department sorts and ships an average of 84,000 units of semen each business day. They manage 300 large storage tanks containing 21 million straws and ship 10,000 tanks of semen to 100 countries every year. This is yet another team that holds respect, integrity and dedication to the highest degrees.

Select Sires has a board-appointed semen quality audit committee called the Production Review Committee comprised of farmers, many of whom are veterinarians or have advanced degrees in reproductive physiology. This committee reviews research, methods, and processes. They also hire an independent third-party specialist to review Select Sires' semen quality program annually. Select Sires is the only semen-producing company that does this — staying true to our farmer owners and putting them first!

As a result, Select Sires offers the industry's greatest and largest selection of Holstein sires with +1.0 and greater Sire Conception Rate (SCR) combined with +3200 and greater TPI®. Our innovative teams are committed to making sure the genetics delivered to your farm are of the highest quality and fertility so you can feel confident with your genetic investment.

The people of Select Sires are the cornerstone of our success. Just as our boots-on-the-ground help you achieve your herd goals, our team members working in production, processing and distribution roles possess the same passion for agriculture. As the great Woody Hayes once said, "You win with people." I'm confident and proud to say that I work alongside the best people in the bull business! ♦

250H016801
ALLGONE-PP
Jordan photo



POLLED IN
1
GENERATION

POLLED Progress

Achieve Polled offspring in one generation by leveraging these Homozygous Polled sires! Scan the QR code below to view the complete list of homozygous and heterozygous Polled sires.



HOMOZYGOUS POLLED SIRES

HHP\$®

7H017370 SNOWHARE-PP

CHEW-P x ENTICE-P x Billy

+630

250H016801 ALLGONE-PP

PLAYOFF-P x PERFECT x DRASTIC-P

+613

14H017016 PAGE-PP

CHEW-P x BEDROCK-PP x Timberlake

+579

250H017152 CRUZ-PP

GENERAL TSO-P x PERFECT x LUSTER-P

+549

250H017146 POWERPOLLED-PP-RED

Empower-P *RC x BOEING-P-RED x Hawai *RC

+524

BREEDING FOR THE FUTURE

Are You Using the Right Index?

With genetic progress in any population, it is important to regularly confirm that the genetics you are using are aligned with the long-term goals of your herd. Regularly assess herd performance data to determine if your breeding decisions are leading to measurable improvements in key areas.



What traits will your animals need to achieve **maximum lifetime production and profitability in 5-10 years?**

Consider Things Like:

- The facilities the cows will be in
- The market where you sell your milk
- Industry demand for surplus heifers
- Involuntary culling rate
- Possible regulatory changes

What Are Your Goals?

	HHP\$ [*]	DWP\$ [*]	NM\$	CM\$	FM\$	GM\$	TPI [†]
Boost Total Solids	✓		✓	✓		✓	✓
Increase Daughter Fertility	✓	✓				✓	✓
Strengthen Mastitis Resistance	✓	✓					
Enhance Fitness and Longevity	✓	✓					
Advance Calf Wellness		✓					
Improve Udders and Strength	✓						✓
Maintain Productive Body Size	✓						

When choosing an index, consider how the traits and relative weights of each index interact in order to predict actual performance in your herd. Individual traits are correlated with one another and it's possible to make strong improvement in one trait without including it in the index. On the other hand, there are certain traits that work against each other and in these cases, the actual genetic improvement may not reflect the relative weights within the index.

	HHP\$ [*]	DWP\$ [*]	NM\$	CM\$	FM\$	GM\$	TPI [†]
Milk	0%	1%	3%	-3%	18%	3%	0%
Components	49%	34%	45%	47%	32%	43%	44%
Fitness & Longevity*	34%	47%	28%	27%	26%	27%	27%
Calving Ability	0%	1%	3%	3%	3%	3%	2%
Calf Wellness	0%	5%	1%	1%	1%	1%	0%
Conformation	12%	0%	2%	2%	2%	2%	25%
Size/RFI	-5%	-11%	-18%	-17%	-18%	-21%	-2%

Fitness & Longevity	HHP\$ []	DWP\$ [*]	NM\$	CM\$	FM\$	GM\$	TPI [†]
Fertility	12%	12%	5%	5%	5%	12%	13%
Mastitis, SCS	13%	13%	3%	3%	1%	2%	5%
Other Cow Health	9%	22%	20%	19%	20%	13%	9%

THE AGE PROFILE OF OUR DAIRY HERD IS CHANGING



Chuck Sattler, Vice President of Genetic Programs, Select Sires Inc.

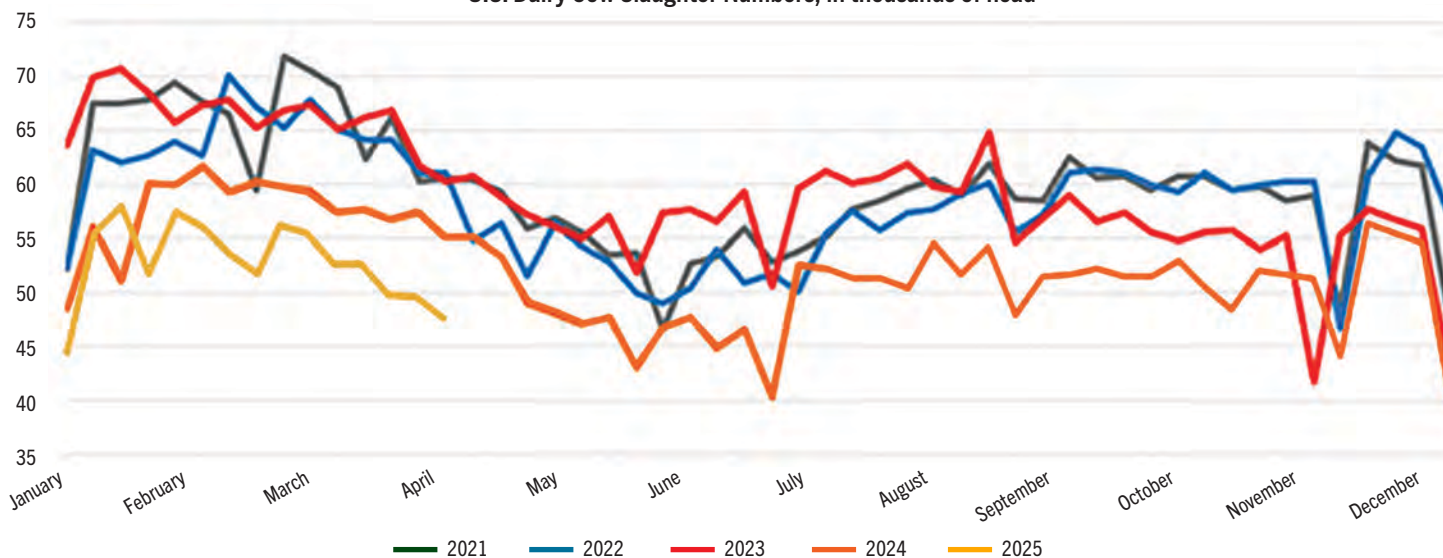
Dairy farmers and industry folks alike are well-aware of the reduced supply of dairy replacement heifers. Dairy heifer inventories have been declining for more than five years and the trend has been widely reported. As of January 1, 2025, the number of dairy heifers expected to calve in the next 12 months reached a record low of just below 2.5 million.

The reduced heifer supply leaves herd owners with two options:

1. maintain current culling rates and reduce herd size
2. maintain and grow herd size through reduced culling rate

With demand for milk remaining strong, option two is the preferred choice for most dairies, and this is exactly what industry trends are showing. In 2024, we started to see reduced culling activity. The United States Department of Agriculture reports that there were 385,000 fewer dairy cows sent to slaughter in 2024 as compared to 2023. This trend continues in 2025 and early year totals indicate we could see a similar level of culling reduction in 2025.

U.S. Dairy Cow Slaughter Numbers, in thousands of head



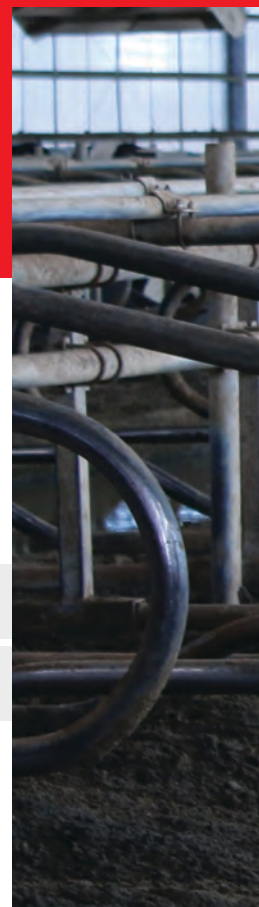
What do these numbers mean at the individual herd level?

With the national herd at 9.4 million cows and an inventory of heifers due to calve in the next 12 months of 2.5 million, this means we have enough heifers to replace about 27% of the herd in 2025. This is substantially lower than typical culling rates in recent history. As each herd continues to adjust to reduced heifer supplies, we will likely see the national average culling rate go below 30% and move closer to 25%.

A key performance indicator often used to assess the age of the cow herd is the percentage of 3+ lactation cows. A standard benchmark has been to strive for 40% or more 3+ lactation cows. As herds move to

culling rates below 30%, the herd makeup will need to move to 50-55% 3+ lactation cows.

So far, so good. In this early stage of adjusting to the reduced heifer supply, culling rates have been reduced, and herd size has been maintained without any serious downside. **However, managing through 4-5 years of reduced culling is a significantly steeper challenge than just 1-2 years of reduced culling. After a year of reduced culling, the herd moves to a higher percentage of second and third lactation cows. With reduced culling over a longer stretch, the herd will need to maintain a higher percentage of fourth, fifth and sixth lactation cows.**





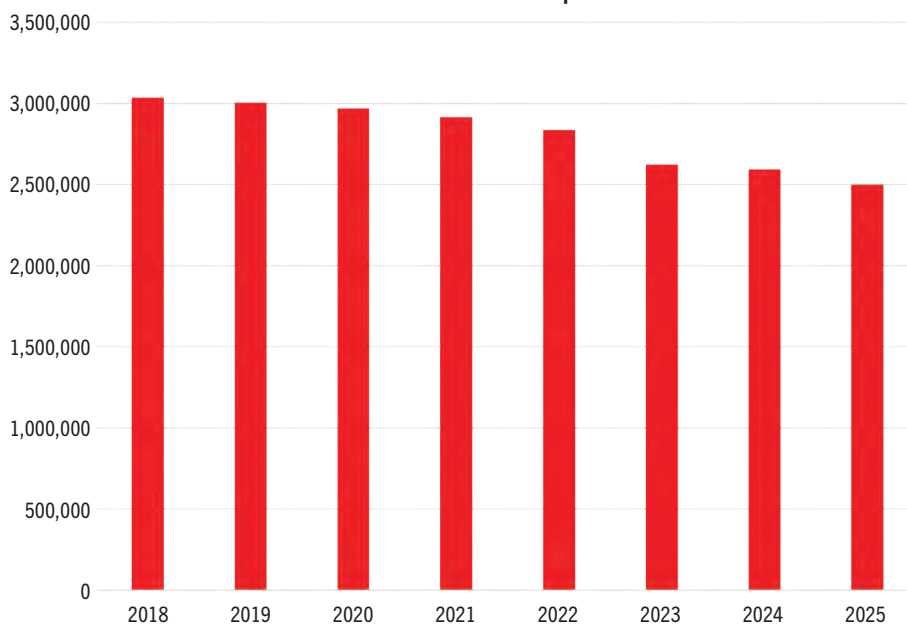
Managing older cows presents different challenges than managing cows in their first and second lactation. As cows get older there is an increased incidence of mastitis, lameness and other health events. This leads to challenges in maintaining pregnancy rates and minimizing death loss.

For many of these same reasons, with a 27% cull rate, there will be limited opportunity for voluntary culling. A reduced culling environment means nearly every functional and pregnant first lactation cow is needed to fill out the second lactation group. The same situation exists for second lactation cows. **Focusing on management and genetic improvements that will help reduce or minimize cows leaving the herd involuntarily is a key to effectively managing low culling rates.**

Additional emphasis on traits like Somatic Cell Score, Mastitis Resistance, Lameness Resistance, Daughter Pregnancy Rate, Cow Conception Rate and Livability are things that should be considered when making today's sire selection decisions. Striving for improvement in the traits cows will need to be good third and fourth lactation performers may be more critical than creating the best first lactation cows.

It appears this era of low dairy replacement heifer inventories will persist for some time — it may be the way we operate for the foreseeable future. Management and genetic improvement strategies need to adjust to these new circumstances. ♦

Heifers for Milk Cow Replacement



- Inventory as of January 1
- Heifers expected to calve in the next year
- Supports a 26.7% cull rate or 3.7 lactations per cow
- Source: USDA, NASS Cattle Inventory

HEAT STRESS:

DEHYDRATION, ELECTROLYTE IMBALANCE AND RUMEN ACIDOSIS RISKS IN HOT WEATHER



Dayane Da Silva, PhD, Ruminant Nutritionist, Form-A-Feed Inc.

Heat stress has serious effects on a cow's body and performance, especially on her ability to produce milk and reproduce effectively. Cows naturally generate a lot of heat from fermentation and metabolic activity—similar to the heat generated from 16, 100-watt light bulbs. In hot weather, their bodies struggle to release this heat, causing their body temperature to rise. Typically, **milk yield declines by 10-25% due to reduced energy and physiological stress. Fertility also drops as heat impacts follicular development, ovulation and early embryonic survival.** The financial losses of heat stress aren't solely a concern during hot months, but there are often negative effects on offspring generated from these animals.

How do cows immediately adjust to heat stress and what are the consequences and risks?

- Cows breathe faster (panting) during heat stress. This rapid breathing lowers carbon dioxide levels in their blood, which reduces a key buffer (bicarbonate) and leads to an imbalance called **respiratory alkalosis**. To compensate, the body loses more bicarbonate through urine, increasing the risk of **rumen acidosis**.
- Cows drool and sweat excessively during heat stress, losing important minerals like potassium (K) and sodium (Na). This can further disrupt their body's balance and lead to **metabolic acidosis**.
- Cows change their eating pattern during heat stress. They eat less during the day when it's hot, and they tend to eat more at night when it cools down. This "binge eating" can overwhelm their rumen, again, further increasing the risk of **rumen acidosis**.

Strategies to reduce heat stress impact on production and reproduction

BOVINE ACCELLYTE II: Replacing lost electrolytes and restoring the acid/base balance is critical for a normal functioning body. Bovine Accellyte II has all the characteristics of a high-quality electrolyte. It is formulated to enhance water absorption and retention, restore electrolyte levels and reduce the risk of acidosis. It has balanced levels of essential electrolytes Na⁺, K⁺, Chlorine (Cl⁻), and neutral dietary cation-anion difference (DCAD) allied with osmolite technology for water retention. It can be fed to animals of all ages. Bovine Accellyte II helps to maintain animal physiological acid-based homeostasis for optimal performance during heat stress. For more than two decades, it has been shown to combat heat stress symptoms and establish electrolyte balance and cell hydration.

TRI-MIC 1:50: Ensuring regular bunk visits and maintaining rumen health during hot weather can be challenging. Tri-Mic 1:50 provides a direct source of live cell yeast, lactic acid bacteria, and fungal extracts which help support rumen health. Tri-Mic 1:50 has proven to promote bunk visits, sustain feeding patterns, and reduce the risk of rumen acidosis leading to improved rumen health and dietary efficiencies. This maximizes production and reproduction performance.



In a trial conducted in central Texas, Bovine Accellyte II reduced services per conception by two services during the summer months of 2023 as compared to 2022.

Summer 2022				
Month	No. Bred	No. Pregnant	Conception %	SPC
June 2022	39	7	18%	5.6
July 2022	44	6	14%	7.3
August 2022	44	6	14%	7.3
September 2022	33	5	15%	6.6
Total	160	24	15%	6.7
Lactation: >=1				
Date Range: 2022-06-07 to 2022-09-23				

Summer 2023 (fed 1 oz/cow/day BAI)				
Month	No. Bred	No. Pregnant	Conception %	SPC
June 2023	29	7	24%	4.1
July 2023	47	14	30%	3.4
August 2023	27	5	19%	5.4
September 2023	19	0		
Total	122	26	21%	4.7
Lactation: >=1				
Date Range: 2023-06-07 to 2023-09-23				

Tri-Mic 1:50 On-Farm Florida Trial Data: Cows fed Tri-Mic 1:50 60 days post-calving had 4.6 lbs/day greater milk production, less days open, and better service conception and pregnancy rates.

Items	Control	Tri-Mic 1:50
Trial Milk Yield, lb/d	89.7	94.3
Days to First Breeding, days	104	96
First Service Conception Rate, %	37.8	45.4
Pregnancy Rate 60-145 DIM, %	44.3	55.8

Environmental Management Tips

- **Shade:** Provide ample shaded areas in barns and pastures.
- **Ventilation:** Ensure fans are working well. Maximize airflow throughout the barn to remove hot and humid air.
- **Cooling systems:** Incorporate sprinklers, misters or evaporative cooling pads in areas where cows congregate (e.g., feed alleys and holding pens).
- **Water tanks in the holding pen:** Bovine Accellyte II can be added to the water to stimulate drinking, especially if cows are standing for too long and are additionally stressed. ♦

INBREEDING: IS THE SKY REALLY FALLING?



Mehdi Sargolzaei, PhD, Director of Genetic Research, Select Sires Inc.

Inbreeding is a complex, yet extremely important topic. It seems to stand the test of time – generation after generation, industry experts and academia dig into the intricacies of inbreeding and new research unfolds new discoveries and insights. Article headlines exploit the doom and gloom that is associated with inbreeding. We said it once and we'll say it again, inbreeding is exceptionally complex and while it is paramount that the industry keeps a finger on the pulse, the sky is certainly not falling. In this three-part series, Select Sires will dive into the persistent topic of inbreeding. For this first installment, we define some key concepts and answer some common questions. In the next edition, we will talk about the innovative and intuitive tools that can help you manage herd inbreeding levels. The final article in the series will address the relationship between selection, inbreeding and genetic diversity.

Q What is inbreeding?

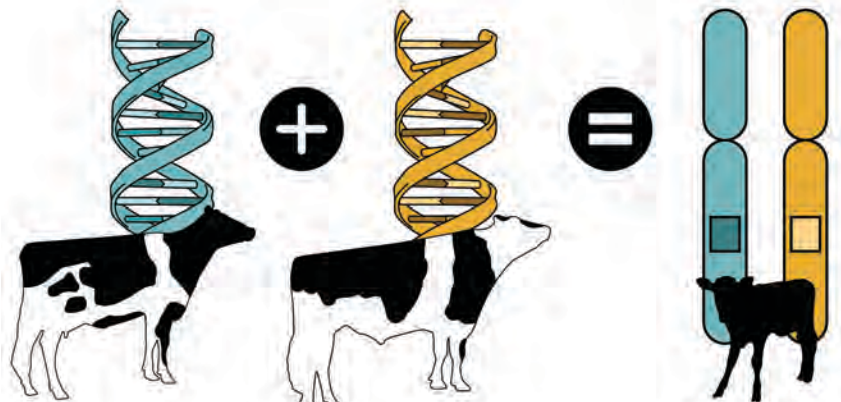
A Each animal receives two gametes, one from the sire and the other from the dam. Therefore, an animal has a maternal and a paternal copy of each gene. If the two copies of the gene are the same, the animal is homozygous for that specific location and if the homozygosity can be traced to a common ancestor(s) the animal is inbred for that location. This is known as identity by descent or IBD. The average of IBD across the whole genome is quantified in a value called the inbreeding coefficient. The inbreeding coefficient represents the overall inbreeding of the animal and is the likelihood that the maternal and paternal copy of each allele are identical by descent. Let's define some terms to have a better understanding of inbreeding.

ALLELE → Each gene may have different variants with different function. These variants are called alleles.

HOMOZYGOSITY → A locus is homozygous when the two alleles of a gene are identical. A homozygote locus can be identity by state (IBS) or identity by descent (IBD).

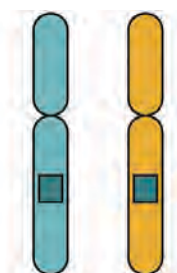
IDENTITY BY STATE → When the two alleles are identical by chance.

IDENTITY BY DESCENT → When the two alleles are identical because they are copies of the same ancestral allele.



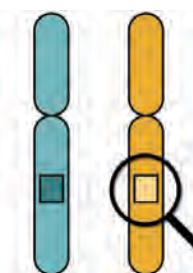
In inbreeding context, the IBD is what we measure which is the result of mating between related animals.

An individual inherits two alleles for each gene; one from the sire and one from the dam. Alleles are located at the same position within homologous chromosomes.



HOMOZYGOUS

If both alleles are identical, the individual is homozygous for this gene.



HETEROZYGOUS

If both alleles are different, the individual is heterozygous for this gene.

Q How is inbreeding measured?

A Inbreeding can be calculated from the pedigree or the genotypes of animals.

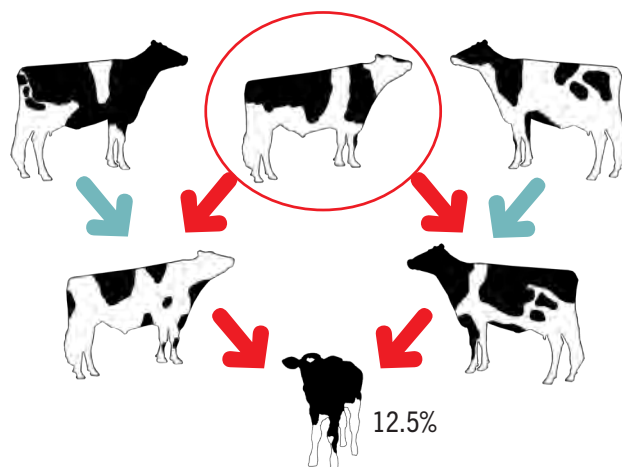
PEDIGREE-BASED INBREEDING → In this method, probability of IBD is calculated from the known ancestry. The inbreeding is a function of how many common ancestors are in the pedigree of the animals and how many generations there are between the common ancestors.

✓ PROS

The method is simple; no genotype is needed.

✗ CONS

Pedigree completeness and errors affect the accuracy. The variation in gene segregation during reproduction is not fully considered, for example full siblings will have the same inbreeding with this method.



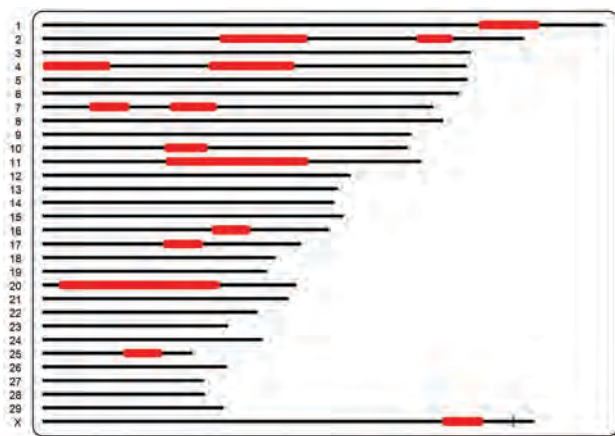
GENOMIC-BASED INBREEDING → In this method, observed genotypes (covering the whole genome uniformly) are used to calculate IBD. There are different approaches to calculate inbreeding from genotypes. A common method uses runs of homozygosity (ROH) which are long segments of homozygous loci in the genome. ROH is more accurate than pedigree-based inbreeding because it accounts for variations in gene segregation.

✓ PROS

Pedigree information is not required and therefore pedigree errors have no impact on ROH. Gene segregation differences are considered, for example full siblings may have different inbreeding with this method. Inbreeding coefficients can be calculated for each chromosomal region which allows separating out high- and low-risk inbreeding.

✗ CONS

This method is more complex, and genotypes are needed. Genotyping errors may influence the calculation but, in general, the genotyping error rate is very low.



Q What is the impact of inbreeding?

A An elevated level of inbreeding in the individual/population can lead to reduced fitness and consequently lower performance known as inbreeding depression.

Q What is the acceptable level of inbreeding?

A There is no magical threshold for inbreeding as the improved environment can mask the negative impact of inbreeding to some degree. That means an inbred animal with no genetic disorder may not show significant inbreeding depression in a herd with good environmental management.

Q How can we control inbreeding?

A As a rule of thumb, use a diverse group of sires in the herd. Never let a few sires dominate the herd's genetics. Use mating software to optimize mating based on your production goals while minimizing the genomic/pedigree relationships between the sires and dams. Please note that relationships between service sires should also be monitored.

TAKE HOME MESSAGE → ROH-based inbreeding is more accurate than pedigree-based inbreeding. With ROH, higher risk inbreeding (originating from recent common ancestors) can be identified. Sire diversification and mating software are effective ways to control the rate of inbreeding. ♦



RISING TEMPERATURES PUT PRESSURE ON FERTILITY

It's not breaking news that the prices producers are receiving for beef on dairy calves are at unprecedented highs. It's also no secret that getting cows pregnant is a top priority for dairy producers. In the sunshine state of Florida, where heat and humidity can have significant impacts on fertility, Melanie Herman, Premier Select Sires area sales manager, helps her customers weather the balmy storm by capitalizing on high-fertility ProfitSOURCE® genetics while putting extra profits in their pockets. Lauren Kimble, manager of ProfitSOURCE supply chains, sat down with Melanie to learn more about her approach and why enrolling in ProfitSOURCE was an easy decision for her customers.

L Can you describe the typical dairy demographic in your area? How big are the herds and what breeds are they primarily milking? Are they familiar with beef on dairy breeding strategies?

M Dairies in Florida are large. Almost all my producers are milking more than 1,000 cows, but several are over 3,000. All are primarily Holstein. Most of the herds have been utilizing beef on dairy genetics for years, mostly on their lower merit and less-fertile cows. About five years ago, we started seeing competition in the area. By working with local calf buyers to build confidence in the consistency and quality of the TD Beef program, it gave our customers a clear marketing outlet for elite ProfitSOURCE TD Beef day-old calves through an established supply chain.

L Your customers are operating in an environment with extreme heat. How do you leverage ProfitSOURCE when it comes to fertility?

M Fertility is an area where we can provide assurance by using ProfitSOURCE sires. Every month I look at fertility evaluations of ProfitSOURCE sires, based on real on-farm performance, to ensure the sires will perform for my customers. While calving ease is always important, in our Florida environment, fertility is everything. I also monitor the sire conception rates on each farm and consider how individual sires settle differently on separate farms.

L Are there specific strategies that herds can adopt to achieve greater pregnancy rates?

M Definitely! We often see a high-fertility sire and we want to use him and only him in our herds, but that can be a recipe for disappointment. Sire fertility isn't the only factor in a pregnancy, there's a lot at play, including: cow nutrition, compliance, herd health, season and much more. I recommend using a variety of individual sires and heterospermic packs. Research using heterospermic mixtures of semen from several different sires shows that it can be an effective safeguard against the variation in conception that sometimes occurs when using individual sires. Select Sires' ProfitSOURCE pack is a mixture of three or more beef sires selected for outstanding semen quality and fertility potential. I work with customers to find the right combination of individual sires and mixed packs that aligns with their goals.

L How do you leverage Select Sires' inventory calculators to optimize beef usage while ensuring producers are raising the right number of replacements to achieve their herd size goals?

M To ensure we're staying on track with replacement numbers, I run the Optimal Genetic Pathways (OGP) calculator at least twice a year for most of my herds. Since most of my customers' replacements are raised outside of Florida, it only makes financial sense to not raise more heifers than they need. I also like that I can easily use the inventory calculator to show producers the additional profits they can garner using beef on dairy over the profits lost on Holstein bull calves. ♦

CYBERCRIME IS ON THE RISE



DO YOU HAVE MEASURES IN PLACE TO PROTECT YOUR DAIRY BUSINESS?

Andrew Gregory, Security Analyst, Select Sires Inc.

As our world becomes increasingly intertwined with technology, dairy operations become more and more vulnerable to cyber threats. Without proper security measures, cybercriminals have plenty of avenues to attack your operation. From disrupting critical systems responsible for managing our equipment or holding sensitive data hostage until a hefty ransom is paid, these underhanded tactics can bring farm processes and production to a sharp halt, often causing severe financial distress. Here are five key measures to help protect your business from cybercriminals.

1. USE STRONG, UNIQUE PASSWORDS.



Simply put, creating and updating passwords is annoying. But strong and unique passwords are one of the most significant ways to protect your business from a cyber-attack. Cybercriminals use a tactic known as brute force, where they can simply run a script that tries to guess the correct username/password combination. Nowadays, these bad actors can crack simple passwords in a matter of seconds. If you don't want to contend with the growing complexity of passwords, try passphrases instead. Passphrases have proven more difficult to crack than a standard password!

Examples of passphrases include: Bull-alfalfa-gate2-tango! I lOve ice-cream! 2 Be or Not to Be, That is The ?

2. ENABLE MULTI-FACTOR AUTHENTICATION.



If a cybercriminal does nab your username and password, they have access to your account, unless you have multi-factor authentication (MFA). MFA requires an additional credential provided by something that is tied to you personally, such as a code generated by an app on your mobile device or email. This ensures that even if a cybercriminal has your login information, they'll be unable to access your account.

3. UPDATE YOUR DEVICES.



Keep your devices and their associated software up-to-date. Many updates include critical patches to fix vulnerabilities and upgrades which protect against the latest cyber-attacks. Correlated to this, if you aren't using a program anymore, uninstall it! Software that goes unused is likely to fall behind on key updates. Without updates, cracks develop in the software's defenses against cybercriminals, allowing them to squeeze through and commit all sorts of nefarious deeds.

4. DON'T TRUST UNEXPECTED LINKS OR EMAIL ATTACHMENTS.



Be careful when it comes to suspicious or unexpected links or email attachments. Even the simple action of clicking a link or downloading an attachment is enough for cybercriminals to deploy malware. Verify the sender's identity through different means of communication, by phone or in-person, before you click or open any links or attachments.

5. FAMILIARIZE YOURSELF WITH PHISHING SO YOU CAN SPOT AN ATTEMPT



One particularly prevalent type of cyber-attack is phishing. This is when cybercriminals pretend to be someone you trust to extract something valuable from you, such as cash or personal information. Typically, cybercriminals will reach out under the guise of someone you'd be inclined to trust, examples include a family member, your boss, a bank account provider or even a well-known retailer. Be wary of any emails or calls that are unexpected or from sources you don't recognize, especially if they're encouraging you to act fast. When dealing with unexpected links or attachments, verify the sender's identity separately before responding to these messages to confirm if they're legitimate.

The best defense against a cyber-attack is you! Educate yourself and always be cautious.
Protect your data, management programs, equipment software, employees and your herd from cyber criminals. ♦



COULD A TOOL TO MEASURE PROGRESS CREATE FINANCIAL OPPORTUNITIES FOR FARMERS?



Joanne Knapp, Ph.D. PAS, Chief Sustainability Officer, Low Carbon Technologies

Sustainability is no longer just a buzzword - it's a driving force in today's marketplace. Consumers are increasingly prioritizing environmentally responsible food choices and are willing to pay more for products that align with their values. For dairy producers, the key to unlocking incremental value lies in measurement. By tracking and documenting progress, producers can turn their stewardship into market advantage. Low Carbon Technologies' (LCT) life cycle assessment measures greenhouse gas emissions from beef and dairy production, validating sustainability efforts and creating new opportunities for supply chain revenue.

LCT is the sustainability division of Select Sires Inc. Cattle with a carbon footprint at least 10% lower than the U.S. industry average qualify for LCT's USDA Process Verified Program. This reduction threshold, defined in the USDA PVP, serves as a credible benchmark for identifying practices that significantly reduce greenhouse gas emissions (GHG) in cattle production. Beef products meeting this standard can be marketed under LCT's consumer-facing brand Certified Sustainable, which provides differentiation in the marketplace and adds value throughout the supply chain. LCT has recently advanced a comparable framework for the dairy sector.

Keeping pace with where commercialization is emerging in agriculture, LCT is also exploring partnerships to help beef and dairy operations generate and sell carbon credits by measuring and verifying their reduced carbon footprints. These credits can then be purchased by companies in

sectors like manufacturing and energy, which are actively seeking ways to offset their emissions and meet sustainability targets. This presents a significant and unique opportunity for producers to gain financial value from their environmental efforts.

Understanding the sustainability sector

Over the past 80 years, the carbon footprint of U.S. dairy has decreased by 63%.¹ Before Holstein steers and beef on dairy cross calves became a significant portion of beef production, the carbon footprint in U.S. beef decreased 16% over a 30-year period.² From a national and consumer perspective, the carbon footprints of beef and dairy production are now intertwined. As LCT works to create tools and opportunities that connect consumer demand with farmer incentives, understanding this landscape and the common terms is helpful.

WHAT IS A CARBON FOOTPRINT?



It is a measure that combines the emissions of major greenhouse gases. In agriculture there are three major greenhouse gases: carbon dioxide (CO₂) from fossil fuel use, methane (CH₄) and nitrous oxide (NO₂).

Livestock agriculture contributes approximately 5% to the U.S. national inventory of anthropogenic GHG emissions. All of the gases are measured on a common basis of CO₂e (carbon dioxide equivalents) that weights CH₄ and NO₂ more heavily because of their greater potential for warming as greenhouse gases compared to CO₂.

As LCT develops tools that measure carbon reduction, dairy and beef producers will want to investigate ways to lower their GHG emissions. Fortunately, there are many options for reducing carbon footprint and many farmers are already leveraging these practices and tools.

PLACE A CHECK MARK NEXT TO THE EFFORTS YOU'VE ALREADY ADOPTED

- ☐ Reduce/no till practices in feed crop production
- ☐ Shift from producing annual crops to perennial forages
- ☐ Reduce synthetic Nitrogen fertilizer use and incorporating manure into soil upon application
- ☐ Use ionophores to reduce coccidiosis
- ☐ Use feed additives to reduce enteric CH₄
- ☐ Add fat to feedlot and dairy rations
- ☐ Use renewable fuels in farm vehicles
- ☐ Use electricity from renewable sources
- ☐ Compost manure
- ☐ Capture CH₄ from manure and either flaring it, using it to generate electricity, or scrubbing it and sending it to the natural gas pipeline delivery system
- ☐ Increase lifetime or herd feed efficiency

CO₂

CO₂ that cattle breathe out is not included, as it arises from CO₂ that was fixed by plants in feed production and is part of the biogenic carbon cycle with a net zero balance. Only CO₂ from fossil fuels is considered in a carbon footprint

CH₄

CH₄ arises from microbial fermentation in the digestive process (enteric CH₄) and manure.

NO₂

NO₂ arises from manure and use of synthetic nitrogen fertilizer.

How can dairy and beef producers increase lifetime value or herd feed efficiency?

- ♦ By reducing disease and mortality
- ♦ Improving digestibility
- ♦ Increasing gain:feed and milk yield:feed
- ♦ Reducing age-at-first calving for dairy replacement heifers and age-at-harvest for beef cattle
- ♦ Reducing the number of replacement heifers in the herd

These efforts can be achieved with precise genetic selection and leveraging an index is the most effective way to achieve your long-term, multi-pronged goals. The Herd Health Profit Dollars® (HHP\$®) index is designed to boost mastitis resistance, lower incident of other health challenges and breed long-lasting, healthy cows that improve cashflow. Talk with your Select Sires representative today about how HHP\$ can help you meet your sustainability goals.

Sources: Complete references available on the back cover of this publication.

¹Capper and Cady 2020

²Capper, 2007



ProfitSOURCE[®]

DELIVERING THE DIFFERENCE



Levi Kilian, Beef Data Analyst, Select Sires Inc.

ProfitSOURCE beef on dairy genetics create better feeder cattle and better beef – but what's in it for you if you are selling day-olds? The makeup of the ProfitSOURCE sire lineup isn't just science; it's a model for partnership that yields added returns and drives success for all involved.

The ProfitSOURCE lineup is vast in options but consistent in product. TD Beef, the first and largest ProfitSOURCE-aligned partner, put trust in the system and immediately started paying dairies \$35 per day-old calf over non-ProfitSOURCE calves. This trust wasn't blind, though! The sire lineup's genetic merit indicated the calves would be more profitable with exceptional growth, size and marbling. Now their trust is backed by data, providing a new level of consistency and precision. With advancements in genetic insights and data-driven decision making, dairy producers are reshaping the future of dairy farming, with measurable results and lasting success.

An ongoing effort of nearly three years, Select Sires' robust performance database – made possible by commercial traceability with partners – is up and running, and records have been pouring in. With this data we aren't just tracking progress, we're driving it. With more than 65,000 records included in this specific analysis, ProfitSOURCE TD-tagged calves saw advantages both in the calf ranch and at harvest. They were 16% less likely to die in the growyard than non-ProfitSOURCE calves. That equates to a 2.24% reduced death rate. In an already high-risk market of raising calves from such a young age, ProfitSOURCE helps lessen the risk and justifies the premium associated with buying these calves, even when day-old prices are nearing or surpassing \$1,000.

Feedlot photo provided by TD Beef.

N=1,000	ProfitSOURCE TD BEEF	Benchmark
Number of head that made it to harvest	922	900
Total \$ Revenue	\$2,458,052	\$2,335,500
The TD Difference	\$122,552	



Usually with lower risk comes lesser rewards, however, with ProfitSOURCE that is not the case. Not only are more of these calves making it to harvest, but they are also making more at harvest. Figure 1 shows that TD Beef-sired calves are expected to average \$71 more than non-ProfitSOURCE calves on a grid pricing scheme on which the majority of TD Beef calves are harvested.

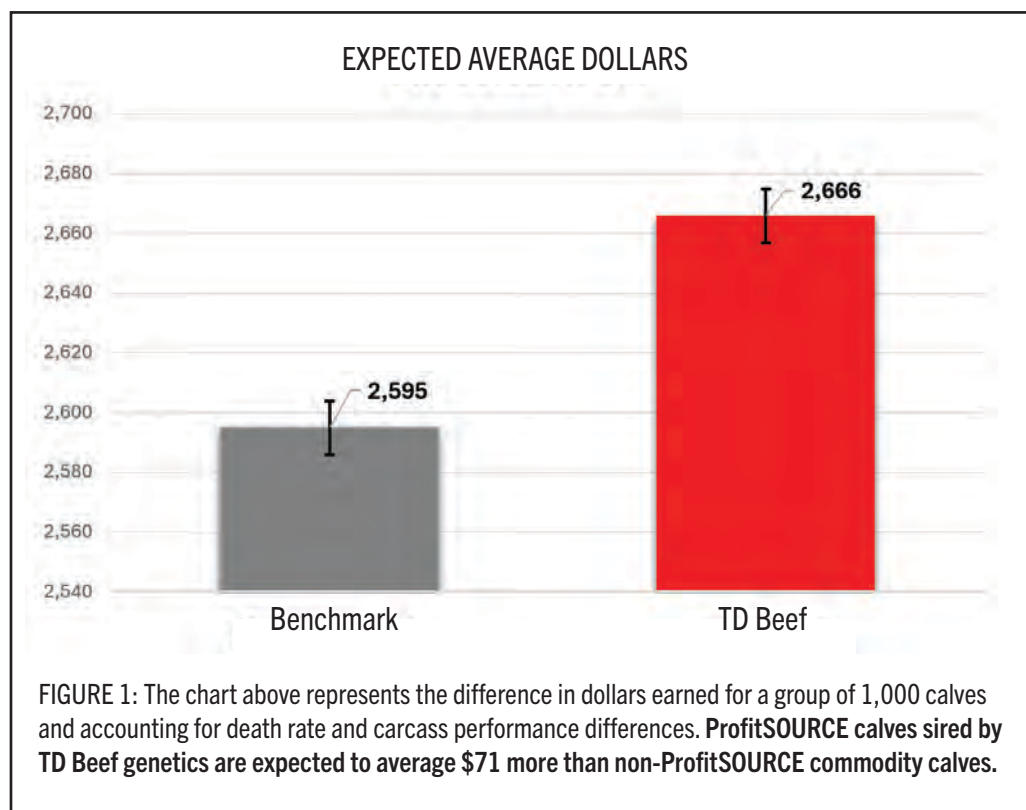
To give these numbers more perspective, let's assume a dairy has decided to elevate their profit potential by retaining their beef on dairy calves. Let's say they create and raise 1,000 day-old calves over a one-year period. Let's also assume that non-ProfitSOURCE calves have a death rate of 10%.

Using the reduction in death rate of 2.24% and the expected grid pricing on account of stellar carcass performance from the previous figure (\$2,666 for ProfitSOURCE and \$2,595 for non-ProfitSOURCE), the resulting difference is a \$122,552 increase in revenue per 1,000 resulting ProfitSOURCE calves. There is always risk involved with raising calves to finish, especially when they are day-olds, but when done properly with the right genetics, the reward is plentiful.

With data driving confidence, more calf growers and feeders in other regions are partnering with ProfitSOURCE to procure reliable-performing calves that bring value to their operation – which means they can deliver more value back to the dairy, too. These partners are willing to take the risk that goes with sourcing value-added calves because they can depend on the quality to better their bottom line in the long run.

From the Pacific Northwest to the central plains to Texas and beyond, ProfitSOURCE partners are now commonly offering \$35 more per ProfitSOURCE-enrolled and tagged calf than for a non-ProfitSOURCE calf. If you're marketing 120 day-olds within a month, that's \$4,200 more in your pocket at pickup than if you weren't leveraging ProfitSOURCE. For the year? That's more than \$50,000 in added revenue. One regional ProfitSOURCE alignment also provides cost-covered Select Sires and Agrarian calf health products to the dairy in order to boost calf health prior to pick up, all while juggling a competitive calf market and ensuring your success at time of sale.

Whether you are a dairy selling day-olds, raising calves to higher weights, or retaining all the way to finish, ProfitSOURCE's elite genetics, market access, and dependable service on-farm are there to deliver the difference. ♦





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OUR MISSION

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7 = Select Sires, 14 = Accelerated Genetics, 250 = Generations

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