SELECTIONS

FALL 2025

ADAPTING COMMUNICATION FOR A MULTIGENERATIONAL WORKFORCE

David C. Thorbahn,
President and CEO, Select Sires Inc.

Coming off the heels of an impactful 2025 Global Conference, I am more convinced than ever of the value and importance of Select Sires' greatest commodity — our people. While the physical products and services provided by our company offer significant value to today's dairy producers, people are the cornerstone of our company. I expect that many of Select Sires' farmer-owners believe similarly about their people as well. Your cows, facilities and management practices are all important, but it's the team of individuals you choose to surround yourself with that truly helps your operation thrive.

How we communicate with our teams, both industry consultants and on-farm employees, is critical. Are we talking at, or having a conversation with our audience? Are we listening to understand, or hearing simply to respond? Are we aware of the communication style of the generation we're working with, and do we know how to converse with them most effectively?

At this year's Global Conference, Kristin Pronschinske, CEO of LookUp, LLC gave an engaging and relatable presentation titled "Generational Values – Leaving a Lasting Legacy." The generational spread among both dairy producers and those who call on them now stretches across four generations: Baby Boomers, Gen X, Millennials and Gen Z.

Kristin emphasized that each generation has their own preferred style of communication, and how we interact with those individuals can set us up for success or failure.

Baby Boomers prefer thorough, face-to-face communication while Gen X utilizes email and phone calls for their direct communication. Millennials want their information in quick bursts and prefer to text while Gen Z utilizes messaging apps for quick, friendly and authentic communication. It is so tempting to plant our feet and use the communications tools that are most familiar to us, but Kristin shared real data and insights to prove that ignoring these communication styles could result in lowered efficiencies, poor morale, disjointed working relationships and ultimately, failure.

Developing the Select Sires and World Wide Sires teams ensures delivery of our outstanding products and services to you, the producers we serve. Your board of directors has made "best-in-class" talent a priority and part of our organization's strategic direction. This strategic direction is not only focused on developing internal teams, but providing professional development and leadership opportunities for you, our farmer-owner customers. Select Sires is launching a leadership program, tailored specifically for dairy and beef producers. This innovative program is designed to meet the unique challenges of agricultural business environments, equipping farm owners, managers, and next-generation leaders with the tools to foster effective cross-generational and cross-cultural communication. Learn more on the back cover of this publication. Apply today and put yourself, your on-farm teams and your operation on a path to greater success. ◆

CALF TRANSPORT DONE RIGHT

INVESTING IN WELFARE, HYDRATION AND GUT HEALTH WHILE MINIMIZING LOSSES

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

Transporting young calves poses a high risk of dehydration and increased morbidity, particularly from digestive and respiratory diseases. It has been reported that 37% of calves in the western U.S. were dehydrated before transport, increasing to 56% when they reached their destination.[1] Calves less than 24 hours old were 5.29 times more likely to be dehydrated than day-olds.

Preweaned calf mortality in the U.S. is 5%, with morbidity at 33.8%.[2] Scours (32%) and respiratory (14.1%) issues are the leading causes of death and account for 50.9% and 28.1% of illness cases, respectively. To manage these outcomes, 73.8% of preweaned calves with diarrhea or respiratory disease are treated with antibiotics. While antibiotics help reduce mortality and morbidity, early-life health challenges still have long-term negative impacts on growth, feed efficiency and future milk production.

The affect of neglect incurs immediate health costs, complications, operational losses and mortality. Dehydrated calves are at higher risk of developing illnesses such as diarrhea, pneumonia or heat stress. Veterinary treatments and medications are costly. Sick or deceased calves result in financial loss; the investment in breeding, feeding and raising these calves can range from $400–$1,000 per calf. Morbidity drains energy and reduces performance. For example, for every day a 300 pound steer is sick, the immune system uses 2.2 pounds of glucose (4,000 Kcal) which is enough energy to synthesize 0.9 pounds of protein or three pounds of lean tissue.[3]

Three step guide for calf transport done right

STEP 1

Pre-transport preparation and loading care

- Health assessment - conduct a thorough health check to ensure calves are fit for travel
- Hydration - administer electrolytes to calves before transport to reduce dehydration opportunity
- Gut health - administer direct-fed microbials (DFMs) to prevent gut upsets and ensure continued feed intake
- Loading - calves should be handled with care to reduce unnecessary animal stress

STEP 2

Vehicle and on-the-road transport care

- Space allocation - provide adequate space for the calves to lie down comfortably and avoid overcrowding; 100-150 pound calves should be stocked at a density of 2.2-2.6 animals per linear foot (assumption is a 7.7-foot wide trailer)
- Comfortable bedding - use soft and absorbent bedding materials in the transport vehicle to prevent injuries
- Climate control - ensure the vehicle is equipped with proper ventilation and temperature control to avoid heat stress or chilling Adjust it based on weather conditions. The thermoneutral zone for young calves is between 59° and 79°F.
- Hydration stops - plan stops for water and feeding about every four hours
- Monitoring - assign trained staff to monitor calves during transit and check for signs of distress (e.g., excessive panting, lethargy)

STEP 3

Post-transport care

- Health check - immediately assess the calves upon arrival for any signs of stress or dehydration
- Rehydration protocol - administer additional electrolytes and provide fresh water
- Recovery environment - ensure the calves have a quiet, stress-free environment to recover from the journey

Investment in proper care when transporting calves

Preventive measures such as spending time on regular health checks and proactive treatments can be an additional expense. Ensuring calves arrive healthy and productive can represent a huge return on investment (ROI) compared to antibiotic treatments and performance losses.

Solution	Preventive Care and Results	Total Investment per Dose
Calf Accellyte 3 oz. mixed in 2 qt. of water	Prevents dehydration Proven same-day hydration recovery	$2
Tri-Start Jr+ 1 dose (10 cc)	Prevents pathogen overload	$3
AccelAIRate 5 grams mixed in water or milk	Reduced pneumonia treatment Faster DIM recovery	$1
Tri-Purify 1 bolus at onset of scours symptoms	Reduced days of antibiotic treatment	$2

Neglecting proper care of calves during transport poses both ethical concerns and financial risks. While risk management and proactive planning may involve some upfront costs, these are minimal compared to the long-term consequences of neglect. ◆

References
[1] Cramer et al. (2024 JDS 101: 2454-2464)
[2] USDA, 2021
[3] Sara Kvidera, 2023

IS YOUR CULL RATE A BLACK EYE?

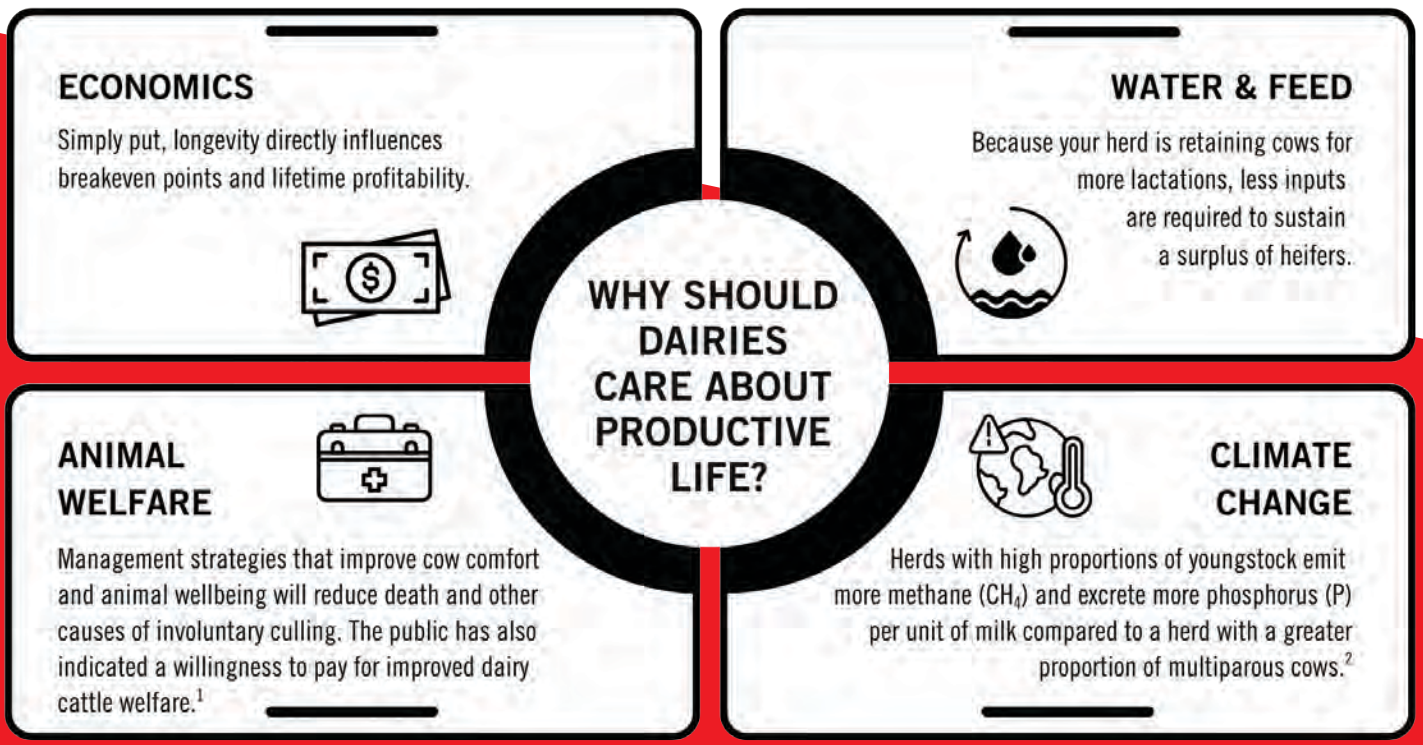
Cull rate is a critical driver of dairy profitability. It can either sustain long-term success or quietly erode margins. While countless variables affect herd turnover, it ultimately boils down to two core forces: genetics and management. This metric doesn't just reflect past decisions; it actively shapes future ones, influencing everything from breeding strategies to replacement planning. In the broader context of herd longevity, cull rate plays a pivotal role. The average productive lifespan of a U.S. dairy cow is just 2.7 lactations. According to research by Gavin Staley, DVM, Diamond V, herd records show that the cost of raising a heifer typically breaks even by her second lactation, while peak milk production is most often reached in the third. That means every cow culled before her third lactation represents a missed opportunity for both performance and profit.

Where's the value?

Follow the money and you'll find third lactation cows. This record mimics other herd reports that Staley uses to illustrate the production differences comparing first lactation and third lactation cow groups. In this example, there's a 5,302 pound difference in the 305 day milk records between the first and third lactation groups, with the third lactation group leading the herd.

By LCTGP	Pct	Count	AvP305M	Av MILK
1	40	1267	24301	83
2	26	836	28499	96
3	34	1068	29603	104
Total	100	3171	27193	93

Staley calls out four key reasons for a dairy to prioritize cow longevity in their genetic and management decisions.



Sources: [1](Wolf and Tonsor, 2017); [2](Hristov et al., 2013)

5 HARD TRUTHS ABOUT CULL RATE THAT EVERY DAIRY SHOULD FACE

1. No records, no reliability.

If your data isn't accurate, your cull rate isn't either. Voluntary and involuntary culls are fundamentally different, and lumping them together clouds your decision-making. Every removal deserves a deeper look: was she culled for low production, or was mastitis the real culprit? Was she a problem breeder or did she struggle through the transition period and experience metabolic events?

Take Action: Meet with your on-farm team to talk about health events and develop a systematic approach to analyze culls and record events based on root causes and not last straws.

2. Heifer inventory should follow — not lead — your cull rate.

Don't let a barn full of heifers dictate your culling decisions. Your cull rate should drive your replacement strategy, not the other way around. That's why separating voluntary from involuntary culls is essential. If involuntary losses are dictating your choices, you're not executing a strategy — you're reacting to a problem. And when you're reacting, you're already behind.

Take Action: Reach out to your local Select Sires representative to request a thorough genetic audit. Then, use Select Sires' proprietary inventory calculators to determine a strategy that is customized to your herd and your goals.

3. Non-completion rate quietly erodes your culling power.

Non-completion rate is defined as heifers born alive but never entered the milking herd. Your non-completion rate chips away at your ability to make strategic culling choices. Every lost heifer narrows the window for voluntary decisions and weakens herd turnover control.

Take Action: Scours and pneumonia are the leading causes of death in young calves and research shows that respiratory distress in calfhood influences performance in lactating cows. Prioritize calf health at conception. Choose sires that excel for Zoetis' calf health traits, including Calf Respiratory Disease, Calf Scours and Calf Wellness Index™ (CW$™). Once that calf hits the ground, incorporate health solutions from Select Sires' Build a Better Calf® program into your management protocols. This program focuses on colostrum management, immune system development, critical health stages and strategic liquid feeding to ensure your calves become healthy, productive replacements in the herd.

4. One quarter of culls happen in the first 60 days in milk.

That stat should raise eyebrows. Early lactation losses often point to preventable issues like metritis, retained placenta, mastitis and lameness. Are you being proactive with genetics and herd health tools — or just reacting to problems after they surface?

Take Action: This hard truth is distantly related to the first hard truth in the list. To take action regarding culls in the first 60 days, the data must be reliable. There's genetic and management components to this challenge. Herd audits comparing genetic value with health events prove the strong power of mastitis and lameness resistance traits. Work with your Select Sires advisor to identify an index and complementary health traits that will drive genetic progress and reduce involuntary culls in that critical early lactation period.

5. "Golden Girls" are worth the extra care.

Cows in their third lactation and beyond are your profit powerhouses, but only if they stay healthy, breed back efficiently, and avoid costly treatments. Staley calls them "Golden Girls" for a reason: their lifetime production potential is unmatched.

Take Action: Tools like Select Sires' Herd Health Profit Dollars Index® can help you breed cows that resist mastitis, stay productive longer and boost cash flow. The HHP$® index is the result of significant research, planning and direction from Select Sires' farmer-owner sire committees. By emphasizing health and wellness genetics in the next generation of replacements, herds can secure better profit margins, regardless of the milk market. ◆

GENETICS DRIVE THE FUTURE AT COUNTRY AIRE FARMS

With state-of-the-art facilities, a rapidly growing herd, and a new generation stepping into leadership, Country Aire Farms in Greenleaf, Wisconsin is building a future rooted in genetic advancement. The Gerrits family has made genetics a strategic priority, recognizing its power to drive long-term herd health, operational efficiency and, ultimately profitability.

In recent years, the family has invested heavily in infrastructure to support their vision. They've constructed an 80-stall rotary parlor, added two freestall barns, and renovated existing facilities to accommodate their expanding herd, now nearly 5,000 lactating cows. Owned by brothers Mike and Tom Gerrits and their sons Craig, Matt, Nick, and Jon, the farm's next chapter began when the younger generation committed to returning to the farm, sparking bold investments in technology, facilities and genetic strategy.

Defining genetic goals

"Genetics are so important because when you breed for healthier, fertile, longer-lasting cows, that's going to give you a better ROI for the dairy in the future," says Craig Gerrits, partner at Country Aire Farms. Their ideal cow is moderate in size, with correct teat placement and a strong udder cleft—traits that support efficiency in the rotary parlor. Health and fertility are top priorities, and the Gerrits family selects sires that excel for fitness, fertility and disease resistance traits to reduce treatment costs and extend productive life.

As of October 2025, 34% of the herd consisted of cows in their third lactation or greater with 7% in their fifth lactation. "Even with a growing herd, their percentage of third lactation or greater cows is very high. It's a testament to their focus on genetics and outstanding management," says Laura Styczynski, CentralStar Cooperative records analysis consultant. These mature cows are the operation's profit drivers, producing significantly more milk than first-lactation animals. The goal: breed cows that stay healthy, breed back efficiently and thrive well into their third lactation and beyond.

Strategic partnerships for genetic progress

To achieve these goals, Country Aire partners with Zoetis and CentralStar Cooperative, including Brandon Kruswick and Laura Styczynski. Professional A.I. Technician Brandon Kruswick plays a key role in executing their genetic strategy in regard to inventory management. "Knowing that we have healthy cows with good genetics gives us wiggle room to improve the herd," Kruswick explains.

The farm genomic tests its entire herd, using that data to assign matings for sexed semen, including NxGEN® and beef sires. Lactating cows are split equally between the top and bottom half, based on genomic data and herd records. The top half is bred to sexed dairy semen with the bottom half bred to beef semen. In the heifers, 85% are bred to sexed semen while 15% are bred to beef. This strategic approach ensures that every mating decision supports long-term herd improvement. It also gives recognition to older cows that are thriving in the environment at Country Aire and an opportunity to create pregnancies from successful, profit-boosting, multiparous cows.

Data-driven health gains

Genetic information is central to decision-making at Country Aire, especially as the herd incorporates more health traits into its selection criteria. Validating the expression of these traits, and the cost savings they deliver, has proven invaluable.

CentralStar Professional A.I. Technician Brandon Kruswick stays up to date on Country Aire's genetic goals and ensures that sire selection drives genetic progress and farm profitability.

VALIDATING HEALTH TRAIT EXPRESSION AND INFLUENCE ON PROFITABILITY

Calf health at conception - comparison of lowest vs. highest quartile of service sires using Country Aire's health events

Zoetis Scours
- Event Reduction: **61%**
- STA average of highest quartile: **106**

Zoetis Respiratory Disease
- Event reduction: **42%**
- STA average of highest quartile: **106**

Hoof health and mobility

Using Zoetis' Lameness Resistance STA values, the farm experienced a **58% reduction in lameness prevalence** between the highest and lowest genetic groups in first-lactation cows. The **STA average for the best quartile was 106.**

Strong emphasis on mastitis resistance

Kruswick explains that when the herd decided to switch to fiber solids bedding, the CentralStar team prioritized mastitis resistance in sire selection. The result: a **70% reduction in mastitis** among first-lactation cows when comparing health events and service sires in the highest and lowest quartile. The STA average of service sires in the **highest quartile was 106.**

Components pay the bills

In addition to health and fertility, Country Aire leverages genetics to improve components, specifically protein. Milk solids have experienced extreme genetic progress across the nation, and feedback from milk processors in northeast Wisconsin indicates a need to increase emphasis on protein. Styczynski says "It's easy to feed for fat, but very expensive to feed for improved protein percents. Fortunately, Protein is highly heritable."

The sick pen doesn't lie

There's one pen every dairy manager hopes to keep empty — the sick pen. At Country Aire Farms, its vacancy speaks volumes. Craig Gerrits credits Select Sires' Herd Health Profit Dollars® index for helping drive this success. He values the index's emphasis on mastitis resistance and udder conformation, traits that directly impact cow health and milking efficiency. A quartile analysis of second-lactation cows revealed that animals in the highest HHP$® group had significantly lower mastitis incidence, fewer abortions, higher pregnancy rates and superior energy-corrected milk production. The farm's commitment to health-focused genetic selection is reflected not just in records, but in real-world results: fewer treatments, healthier cows and better profit margins. ◆

Learn more about Country Aire's genetic strategy and how they approach longevity in this feature video.

HHP$ 2nd Lactation Cows

Quartile	HHP$ Avg	Avg Milk	ECM	SCC	Preg. Rate	Days Open	Total Fresh	Abort	DNB	Sold	Died	Turnover %	Lame	Mastitis
Lowest	112	94	105	98	32	110	211	11	0	0	0	0	21	24
Highest	414	98	109	92	37	94	231	7	2	0	0	0	6	12

GENETIC TOOLS TO BOOST FEED EFFICIENCY

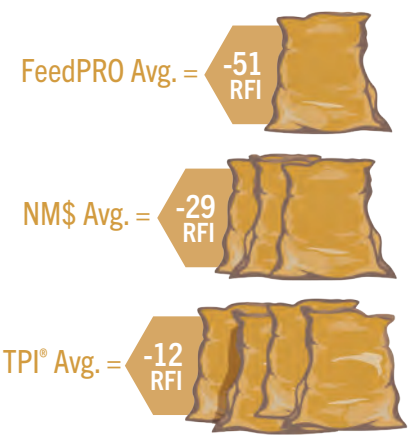
Chuck Sattler, Vice President of Genetic Programs, Select Sires Inc.

Managing income over feed costs (IOFC) is at the heart of all dairy operations. Industry and university efforts are organized through CDCB to provide genetic evaluation results for several key feed efficiency traits. This information is routinely available for producers to use in their sire selection and herd management decisions.

Traits like body size and residual feed intake (RFI) are key traits to managing IOFC. These are in addition to production, cow fertility and cow health traits, which also influence feed efficiency and historically have played a big role in selection indexes.

TOOL NO.1

Select Sires provides the FeedPRO® designation as a quick reference tool for producers to identify sires whose daughters excel at delivering improved IOFC. This sire selection tool, in place since 2008 and routinely updated to reflect industry advancements, uses the best available information to identify top feed efficiency transmitters. From the beginning it included a balance of production, body size and cow fertility. More recently, RFI has been added to the FeedPRO criteria. Below are the average RFI of progeny proven FeedPRO sires compared to NM$ and TPI® leaders. FeedPRO is the best identifier of genetics that effectively convert feed into high component milk.



TOOL NO.2

PTA Residual Feed Intake (RFI) is the difference between an animal's actual feed intake and its expected feed intake estimated from production level, body size and growth. PTA values are pounds of feed per lactation. Lower RFI values indicate animals that more effectively convert feed into meat and milk.

TOOL NO.3

Body Weight Composite (BWC) is an index of type traits combined in a way to indicate mature body size. Every point of BWC correlates to a difference of 35 pounds of body weight.
BWC = (.23 x Stature) + (.72 x Strength) + (.08 x Body Depth) + (.17 X Rump Width) - (.47 x Dairy Form)

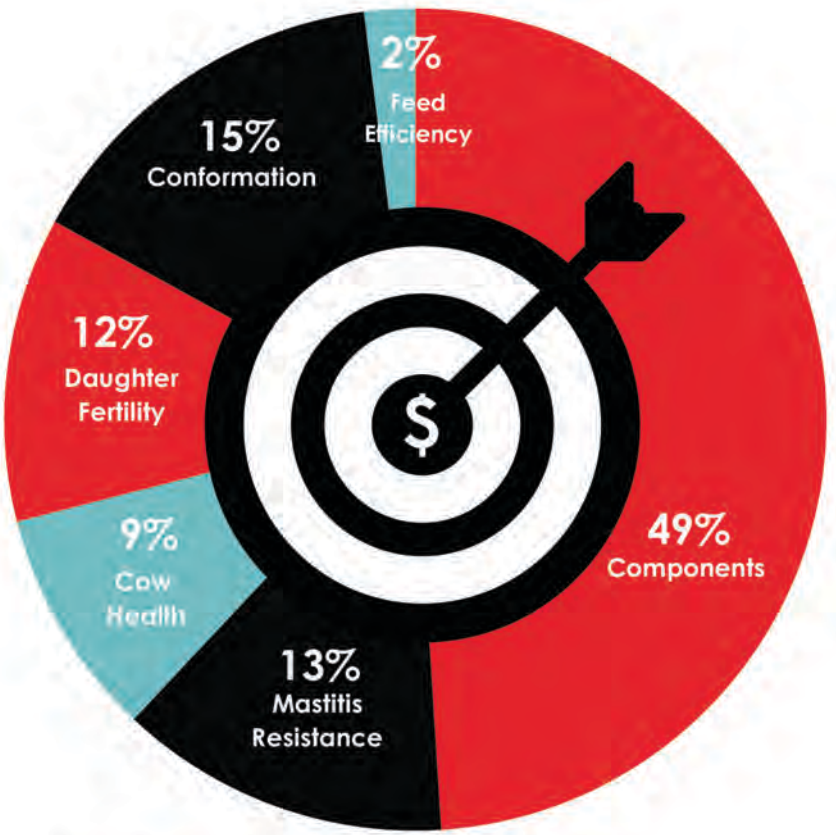
The NM$ index puts extreme emphasis on negative BWC. In contrast, Select Sires' Herd Health Profit Dollars® (HHP$®) index promotes a more balanced approach—prioritizing moderate body size while rewarding cows with the strength, durability, and capacity to produce high milk volumes and thrive through multiple lactations.

TOOL NO.4

PTA Feed Saved combines BWC and PTA RFI to indicate the reduction in feed consumed each lactation. PTA values are pounds of feed per lactation. Higher values are preferred and indicate animals that need less feed to support production and body maintenance.

The FeedPRO designation is a sire selection tool that optimizes selection for increased production and moderate body size while maintaining body condition score, mastitis resistance and daughter fertility. FeedPRO uses HHP$, PTA RFI, STA for stature and PTAs for daughter fertility to identify the best sires for improving IOFC. ◆

WHAT MAKES HHP$® DIFFERENT THAN OTHER POPULAR INDEXES?



"HHP$ promotes a smarter kind of efficiency through cows that are moderate in size and strong in dairy form. The index places a slight negative weight on stature to avoid extremes in size, while still electing for width and strength through the front end. That means it builds cows with the capacity to eat and the durability to stick around. HHP$ takes a more practical approach to improving feed efficiency. Rather than heavily emphasizing Residual Feed Intake (RFI) like NM$, HHP$ rewards the balance that works in herds - cows that convert forage well without growing too big or too frail to do the job."

– Wes Vomastic, Director of A.I. Services, CentralStar Cooperative

PROTEIN

Keeping protein part of CFP.

Current economics say the more fat the better, but history tells us this can quickly reverse course.

UDDER HEALTH

Staying focused on udder health.

Mastitis resistance is HHP$'s calling card.

LONGEVITY

New attention to Livability.

We've shifted emphasis away from Productive Life and towards Livability.

DAUGHTER FERTILITY

Can't afford a fertility backslide.

As we strive for increased production and components, we can't sacrifice fertility. Other industry indexes are leading to drops in fertility.

WHERE MODERN STRATEGY

Jersey herds demand more than production alone – they need consistency, efficiency and fertility. Select Sires' Jersey genetics are proven to create daughters that are built to perform in today's most progressive herds. Your Select Sires representative knows that the strategy developed and deployed to achieve these goals in a Jersey dairy is significantly different than the strategy used in a Holstein herd. One critical difference is the accuracy of genomic predictions for Jersey young sires.

Whether you are committed to milking purebred Jerseys or a crossbred herd that is making decisions regarding your F1 offspring, Select Sires' Jersey sire lineup delivers reliable, consistent and athletic cows that enhance efficiency and drive profitability.

Maximize genetic gains consistently

Research shows that genomic predictions for Jersey sires are not as accurate as Holstein sires. While genomic Predicted Transmitting Abilities (gPTAs) for Jersey traits are more reliable than using Parent Averages, the accuracy of gPTAs is not high enough to justify heavy use of an individual young sire. One example provided by the American Jersey Cattle Association compares performance data from 239 Jersey bulls that were born from 2010 to 2017 that now have more than 500 milking daughters in their genetic evaluations. For each sire, the genomic PTAs were more accurate than the PAs, but the young sires in this data set were over evaluated by 35 JPI™ points.

Jersey breed experts including Herby Lutz and Brad Barham continue to believe that young sires have an important role in genetic strategies! However, the ratio of young to proven sires used in a progressive Jersey herd will look much different than a genetic plan created for Holstein breeders. Work closely with your Select Sires representative to outline your goals and generate a genetic plan that prioritizes the use of high reliability proven sires while still leveraging elite genomic young sires.

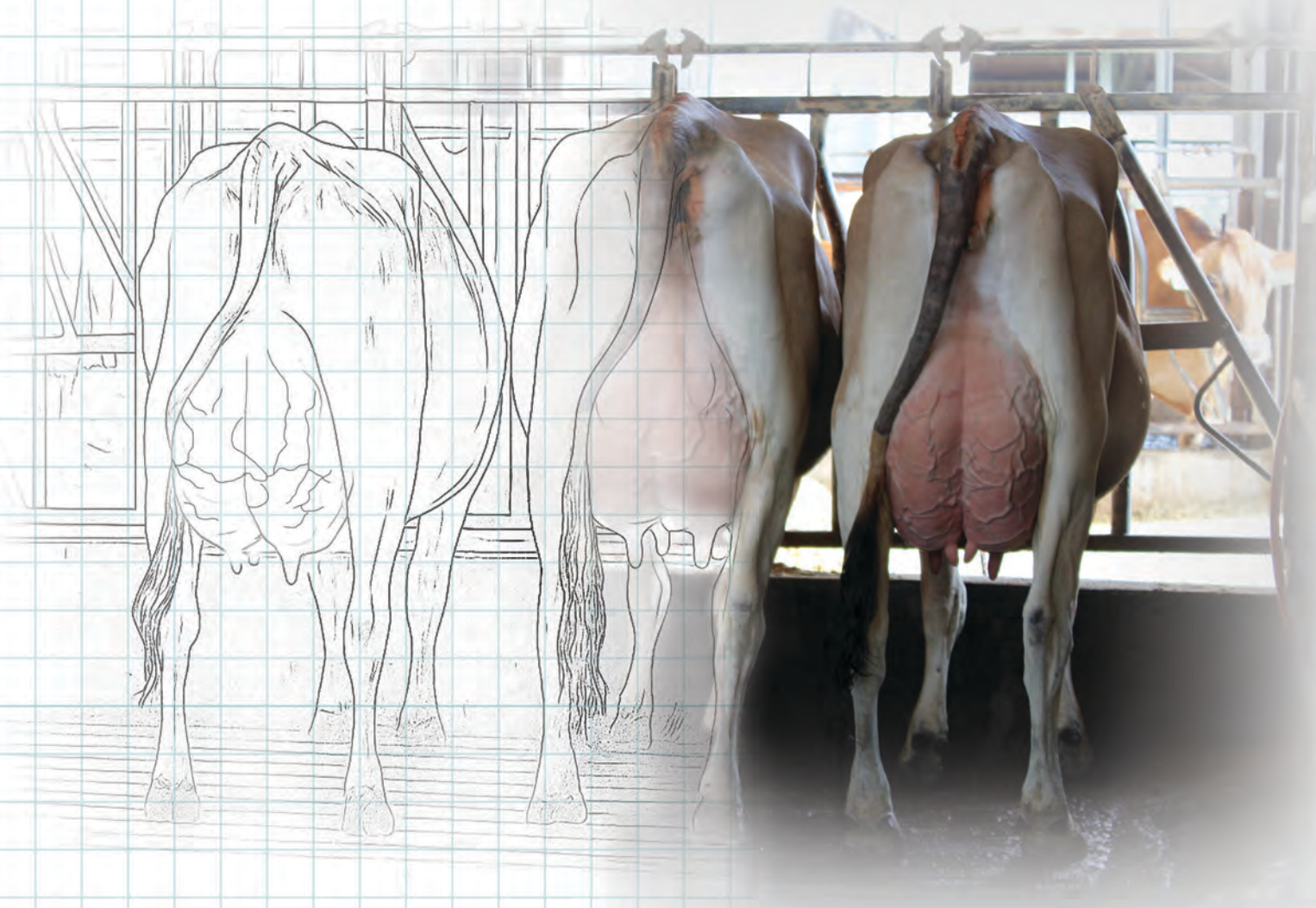
Made by progressive producers, for progressive producers

Pedigree-proven is the hallmark of our Jersey program and it is made possible through strategic partnerships. By working with progressive Jersey herds throughout the U.S., including Jerseyland Sires, elite genetics are developed from high-performing maternal lines. These partnerships also create opportunities to verify young sire fertility, sexed semen fertility and generate daughter-proven performance feedback to improve genetic predictions and reliability.

"The modern Jersey has immense potential. She's efficient, high-producing, fertile and trouble-free. We know that the most effective genetic strategy prioritizes the usage of high reliability proven sires while sampling genomic young sires. Select Sires' lineup is equipped with elite and diverse proven sires to help drive profitability in your herd."

Herby Lutz, Jersey Development Manager

MEETS JERSEY TRADITION



BUILT TO PERFORM. CRAFTED TO LAST.

DRIVE GENETIC PROGRESS WITH ECONOMICALLY IMPORTANT TRAITS:

DELIVERING JPI™ LEADERS

9 SIRES

AT OR ABOVE +147 JPI

Our proven lineup is sired by 8 unique sires, and 11 unique maternal grandsires!

BOOSTING TOTAL SOLIDS

9 SIRES

ABOVE +50 CFP

PROVEN LINEUP AVERAGES:

+135	+414	+502	+47	+0.7	2.91	-0.4	101	+0.5	+16.0	96%
JPI	HHP$®	MILK	CFP	DPR	SCS	MAST	Z MAST	TYPE	JUI™	Y REL.

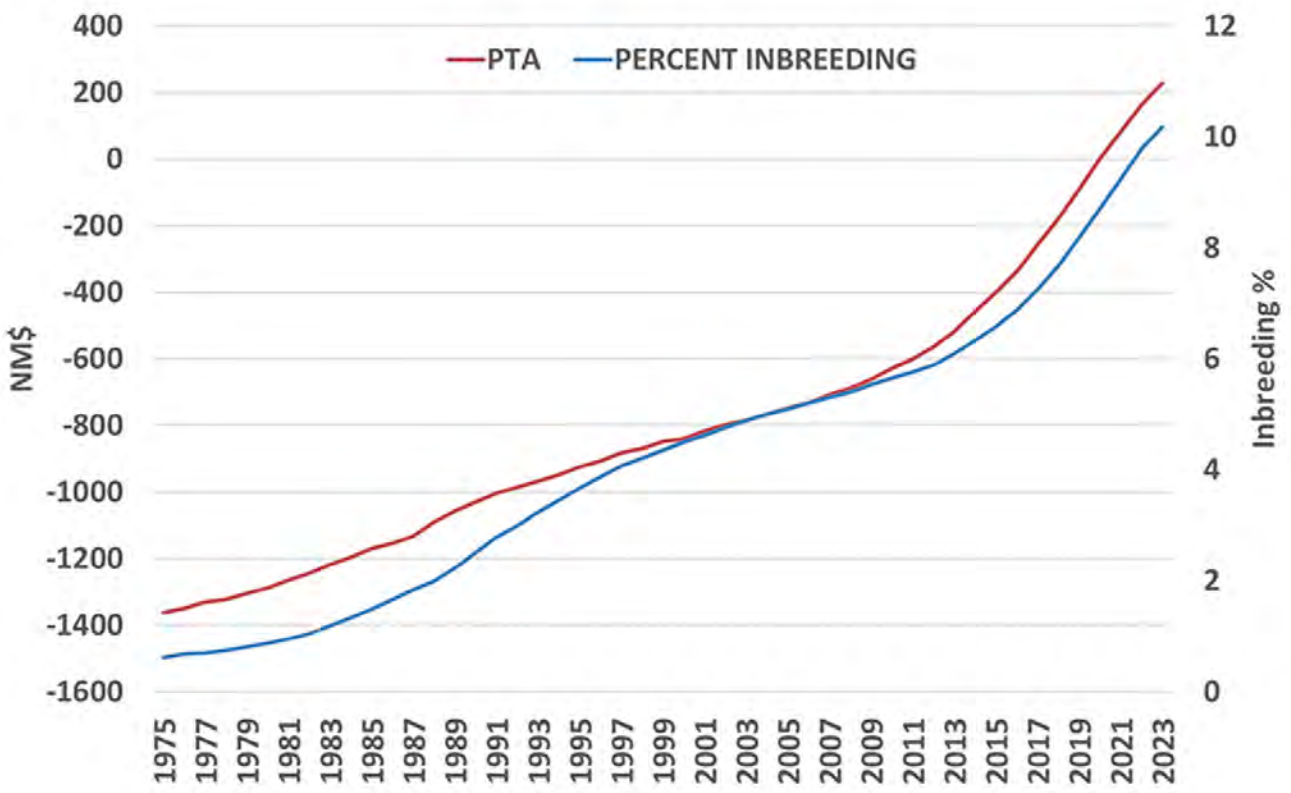
INBREEDING'S TRAJECTORY:

CAN IT CONTINUE WITHOUT CONSEQUENCE?

Mehdi Sargolzaei, Ph.D., Director of Genetic Research, Select Sires Inc.

In the two previous articles we discussed how inbreeding is created, and how to separate low-risk from high-risk animal relationships that can be useful for mating purposes. In this article we look at the implications of inbreeding and its impact on genetic improvement.

For most traits in dairy cattle, we use an additive genetic model to predict and select genetically superior animals. In this model, an animal's genetic potential is the summation of allelic effects across all loci. Consequently, elite animals are more likely to carry two copies of the superior allele (homozygous) at more sites associated with economically important traits compared to average animals. Therefore, selection under additive models leads to the accumulation of inbreeding. It is worth noting that selection using the additive genetic model over the last half-century has resulted in tremendous genetic progress and profitability in dairy cattle despite the concurrent increase in inbreeding. Graph 1 shows trends in NM$ and inbreeding levels in North American Holsteins over the last 50 years.



Graph 1 – NM$ and inbreeding trends in the North American Holstein cow population (CDCB, Aug 2025).

Can such a trend continue for the foreseeable future?

To answer this question, we look at two aspects of inbreeding: increased probability of expressing recessive deleterious or lethal alleles, and the loss of genetic diversity.

1. Increased probability of expressing recessive deleterious or lethal alleles:

Inbreeding, which results from the mating of close relatives, increases the probability of expressing recessive deleterious alleles. This has a direct impact on animal fitness. However, because the population is under intense selection, progeny with such weaknesses are likely culled. This means there is partial selection against alleles with detrimental effects as soon as they are expressed.

Despite this known impact on fitness, in most dairy herds, we have not yet observed reduction in production or significant reduction in fitness due to inbreeding. This is likely due to simultaneous improvements in management capabilities. Management practices are an often-overlooked factor in discussions about the impact of inbreeding on animal fitness. As inbreeding levels accumulate due to genetic improvement, we expect more susceptibility to environmental stressors, such as heat. Improved management practices, over the past decades, may help shield animals from stressful environments and therefore, we do not observe the expected reduction in fitness due to increased inbreeding.

2. Loss of genetic diversity:

Perhaps the most important negative effect of inbreeding is the loss of genetic diversity. This is critical for three reasons. First, the amount of genetic diversity directly determines the potential for future genetic progress. Second, populations with reduced diversity are less adaptable. They are more vulnerable to changing environmental factors and new pathogens. Finally, any loss of diversity requires a long time to naturally recover that genetic diversity.

Reduced diversity due to increased homozygosity also manifests itself in reduced fitness. It is interesting to note that reduction in fitness is happening at a much slower rate compared to the rate of genetic progress mostly because of continued improvement in environmental management. This could tell us that the level of genetic diversity is not yet too low.

TAKE HOME MESSAGE ➜ The dynamics of genetic diversity and inbreeding are complex. While we know increased inbreeding levels and the consequent decline in genetic diversity are detrimental to population fitness, we have not yet observed any reduction in production or any significant reduction in cow health/wellbeing. On the other hand, improved herd management practices may be masking inbreeding depression. According to Graph 1, there is no slowdown in the rate of genetic progress. This suggests there is enough genetic diversity in the population, and the genetic trend is not yet close to plateauing. Even though current losses due to inbreeding do not appear to be severe, active inbreeding management through the use of diverse sire lines and mating programs is essential for sustainable genetic progress, maintaining animal fitness and safeguarding against accumulation of deleterious alleles. Rest assured, Select Sires is doing everything possible to create genetic diversity in our sire development programs for your benefit over generations yet to come.◆

DID YOU MISS THE OTHER TWO PARTS OF DR. SARGOLZAEI'S INBREEDING SERIES?

PART 1: IS THE SKY REALLY FALLING?

PART 2: HIGH-RISK VS. LOW-RISK INBREEDING

COULD BEEF GESTATION LENGTH INFLUENCE DAIRY OPERATION EFFICIENCY?

King Smith, Senior Vice President, Global Dairy Solutions, Select Sires Inc.

Genetic and inventory strategies are common practice in most dairies today. They amplify future genetic progress, add revenue in selling beef on dairy calves, and increase management efficiency. These strategies base their projections on breeding eligible animals moving through the dairy in a consistent manner. Variability in management can not only impact planning, but performance as well.

Inventory management is revenue management

A key part to any herd inventory projection is expected calvings. Easy enough when we were only creating replacements, but when we throw beef into the mix, the service breed used may affect the uniformity of the flow of fresh animals. Dairy systems are traditionally set up for an average gestation length of about 280 days (Holstein 279 days and Jersey 283 days) while beef breeds tend to be more extended. External data shows Angus has the most similar gestation length to Holsteins and Jerseys at 283 days, while Simmental and Charolais are 289 and 290 days, respectively. Accurately managing expected calving dates will aid in planning for future replacements and movement of cattle.

Impacts of gestation length variation

Varying gestation lengths can also increase the likelihood of metabolic diseases following transition because of potential overstocking in the close-up pen. Knowing and managing the differing gestation lengths is integral in supporting proper stocking densities in the far-off and close-up pens. Optimum stocking density of far-off pens should not exceed 100% and close-up pens should not exceed 80%. In a recent study[1], each percentage point increase in stocking density during the period of 8-2 days prior to calving resulted in an increase in disease risk. Multiparous cows were particularly affected. It was found that for each 1% increase in stocking during this period resulted in a 12% increase in disease risk and a milk reduction of 0.44 pounds per day at 28 DIM. Days open and risk of culling were also increased in all cows.

How do we become more precise in our management of these potential challenges?

For management reasons just like this, Select Sires' ProfitSOURCE beef on dairy program is driven by data. On-farm ProfitSOURCE-specific data from across the country allows us to get a closer look at how the Select Sires lineup performs, fueling the ability to fine tune practices. Internal data shows a more favorable gestation length outcome, with each breed's average much closer to the Holstein average (Table 1) with a max average difference of +6 days to the larger population's potential +11-day difference.

Of the breeds, the ProfitSOURCE Angus lineup's gestation length (GL) distribution remains the closest to the Holstein breed as expected, clocking in at a respectable 278 as visualized in Figure 1. This makes sense, as birth weight and gestation length are correlated, so the two traits tend to move together in the same direction. Since GL itself is not an exact predictor or guarantee of calving ease or birth weight, we continue to ensure the ProfitSOURCE lineup is selected for calving ease with an avoidance of excessively high birth weight.

What's next on the horizon for ProfitSOURCE?

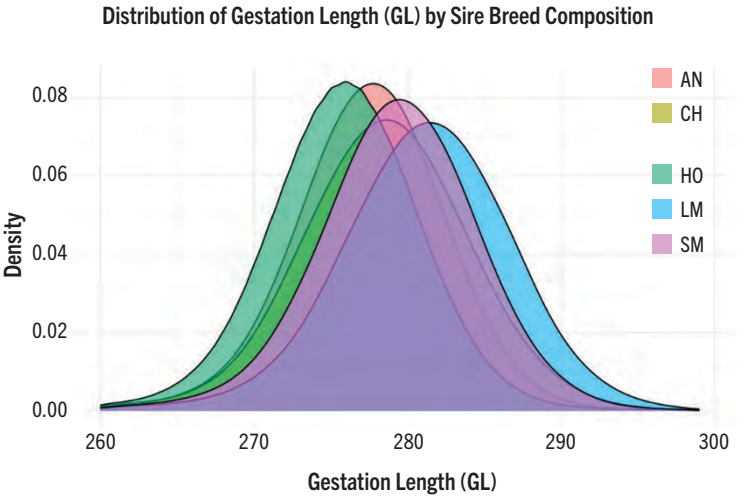
Select Sires will continue to improve the lineup knowing that individual sires can see a few days' difference from one another on expected gestation length. Tailoring the right sire profile to sensitive management systems, like grazing or seasonal operations with a need for tight calving windows, will further drive profit.

Table 1. ProfitSOURCE average gestation length by breed, internal database

Breed	HO*	AN	CH	LM	SM
Average GL (Days)	276.9	277.8	279.7	281.6	280.0

*For comparison, the CDCB reported Holstein GL average is 279.0 for cows. Beef breeds are not reported by CDCB.

Figure 1. ProfitSOURCE gestation length distributions by breed, compared to Holstein



Bottom Line: Most dairies create pen sizes for the average. Using genetic strategy and inventory management calculators enhances plans for a consistent number of replacements moving throughout the dairy system, while allowing producers to take advantage of high beef calf prices and optimize their ProfitSOURCE usage – without disrupting transition periods. Accurately managing dry cows and their movement into far-off and close-up groups will reduce transition disease and maximize a cow's lactation, and the data-driven insights that come with ProfitSOURCE will only bring more refinement to these profit-crucial strategies.

References:
[1]Cook, J. G., Pepler, P. T., Viora, L., & Hill, D. L. (2024). Assessing transition cow management in dairy cows for improved health, milk production, pregnancy, and culling outcomes. Journal of Dairy Science, 107(12), 11381–11397. https://doi.org/10.3168/jds.2024-25047

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