

Where's the Beef?

Turn your byproduct into a go-to product

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Set a Realistic Farm-Life
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Columnists: Derek Nolan
Content Manager, Producer Media: Katie Humphreys
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Director, Business Development: Dustin Johansen

SALES

Annie McCullough, FJMLivestock@farmjournal.com
Leah Mindemann, FJMLivestock@farmjournal.com
Peter Rupert, FJMLivestock@farmjournal.com
Nicole Starr, FJMLivestock@farmjournal.com

Advertising Production

Vice President, Production: Mike Morgan
Production Manager: Jennifer Irvine
Digital Ad Coordinator: Jennifer Kearney
Advertising Manager: Dena Lawhead
Operations Manager, Livestock: Ramona Rei

HOW TO REACH US

Reader Comments: Email editors@farmjournal.com or write to 8725 Rosehill Road, Suite 200, Lenexa, KS 66215.

Subscription Changes:

(800) 331-9310, customerservice@farmjournal.com
Farm Journal, Attn: Customer Service
820 James Street, Webster City, IA 50595

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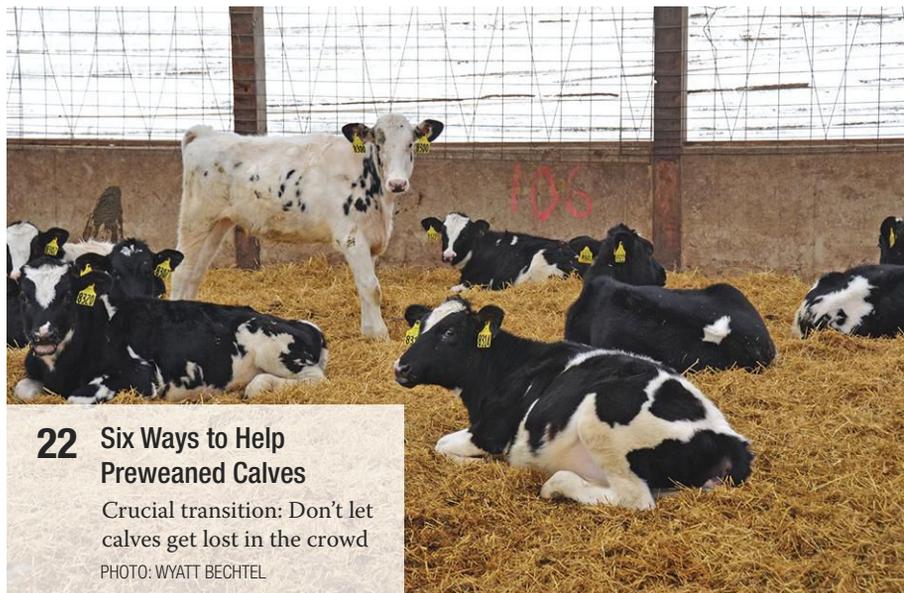


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PHOTO: WYATT BECHTEL

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Making Lemonade

“It’s not what happens to you, but how you handle it. If life gives you lemons, make lemonade.” This saying has stuck with me over the years, and my guess is you have heard it too. Louise Hay, a motivational author, expanded on the saying with, “If the lemons are rotten, take out the seeds and plant them in order to grow new lemons.”

Dairy farmers have been faced with many hurdles and it never ceases to amaze me that when life hands you lemons, you all make lemonade.

ADDING VALUE TO BYPRODUCTS

A couple of years ago our bull calf buyer informed us he could no longer take the calves. For a long time, we had it good, receiving \$50 for every Jersey bull calf. We were still thankful when

“If the lemons are rotten, take out the seeds and plant them in order to grow new lemons.” —Louise Hay



the bull buyer’s neighbor was willing to buy our calves for half the amount. The dairy bull calf market forced us to evaluate how many heifers we need to come into the pipeline in a month and made us strategically look at our breeding program. Like many of you, we increased our beef semen usage and now those Jersey/beef cross calves are worth a lot more than \$50.

The Beef on Dairy panel at the 2021 Milk Business Conference was one of our best-attended sessions, with lots of questions and comments from producers and industry professionals. Three perspectives — from the dairy farm to the calf ranch to the packer — addressed the demand for

beef and how dairy’s traceability story wins. One of the panelist’s words resonated with me: “If you want value out of your byproducts, you have to stop treating them like a byproduct.”

On page 6, our cover story, “Where’s the Beef?” shares these keen perspectives and showcases how Ryan Junio, a California dairy producer, is getting value out of what once was considered a byproduct on his farm. Junio shares his beef on dairy journey and talks about his reasons for putting beef embryos in 90% of his mature milking herd.

SECURE SUCCESS

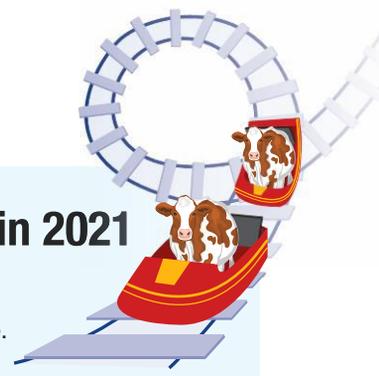
Different variables can make it hard to predict the future, and this holds especially true for dairy farmers. We cannot predict the future, but we can secure success for our future in the dairy industry by using risk management tools on our farms.

On page 12, agriculture business financial consultant Gary Sipiorski says only 10% of producers purchase milk futures and the top 30% of producers in the U.S. earn \$1.25 per cwt more compared with the average producer. He underscores the importance of drilling down expenses.

“Sometimes we get lax about costs when milk prices are strong,” Sipiorski says.

I strongly urge producers to use the uptick in milk prices this year to make lemonade out of the truckload of lemons that have been dumped the past several years. 🐄

Karen Bohnert
Dairy Editorial Director



Cow Numbers Witnessed a Roller Coaster Ride in 2021

Dairy cow numbers started 2021 at an all-time high in January, with 9.445 million animals in the U.S. milking herd. Those numbers would steadily increase before hitting a new record high in May, totaling out at 9.51 million, a jump of 62,000 animals. For the rest of the year, however, these numbers would begin to fall.

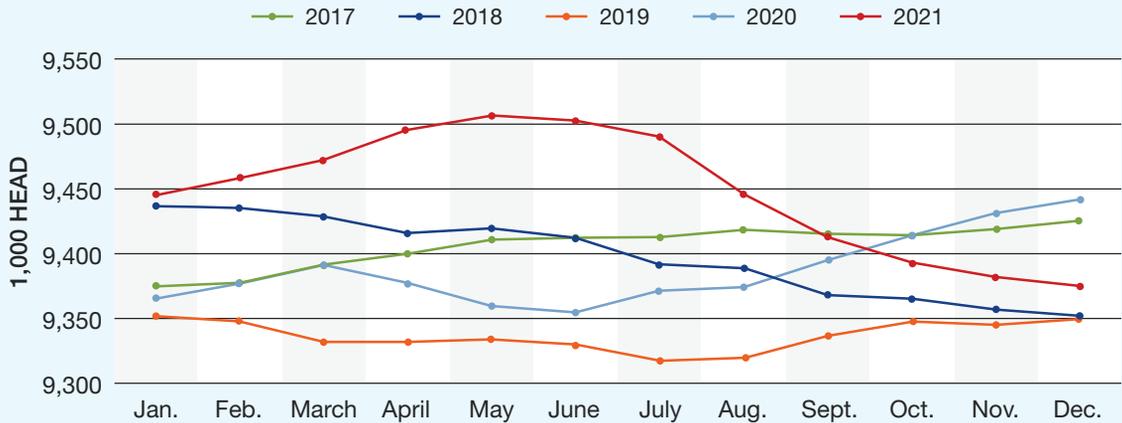
At the beginning of June 2021, the U.S. milking herd consisted of 9.5 million dairy cows. For

seven consecutive months, these numbers would decline.

At the conclusion of 2021, the U.S. herd finished at 9.375 million, a drop of 132,000 cattle since May, down nearly 1.5%. This resulted in a loss of 67,000 head year over year.

According to the USDA, U.S. annual dairy cow slaughter reached 3.1 million head in 2021, 42,700 more than the year prior.

Estimated U.S. Total Milk Cows

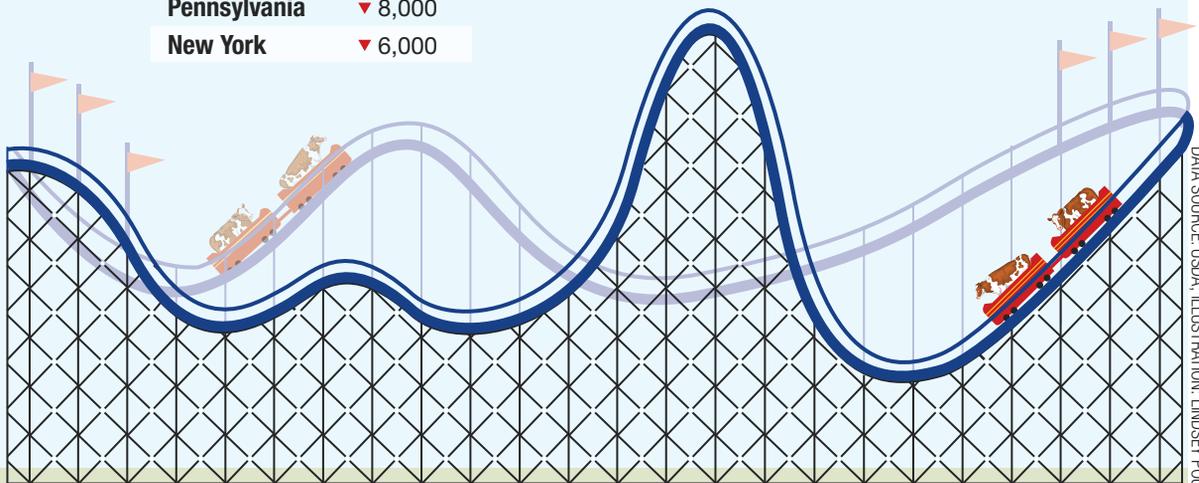


Largest Decrease in Cows

- New Mexico** ▼ 45,000
- Washington** ▼ 18,000
- Ohio** ▼ 10,000
- Pennsylvania** ▼ 8,000
- New York** ▼ 6,000

Largest Increase in Cows

- South Dakota** ▲ 29,000
- Wisconsin** ▲ 16,000
- Texas** ▲ 12,000



DATA SOURCE: USDA - ILLUSTRATION: LINDSEY POUND

Where's the Beef?

Turn your beef-on-dairy byproduct into a go-to product

Consumers are asking more than “Where’s the beef,” the original slogan for the fast-food chain, Wendy’s, that debuted in the early 1980s. Today, consumers want to know where a piece of beef came from and the story behind it.

With the demand for beef up, more dairy producers are cross-breeding poor genetic or less productive cows with beef semen. This isn’t something new, as producers have increased beef genetics usage for various reasons. But over the past few years, dairy semen sales

have idled, while domestic beef sales have exploded. A 2020 survey shared by Justin Waggoner, a Kansas State University beef cattle specialist, documents that mating beef bulls to dairy cows has essentially doubled from 2015 to 2019.

Three panelists — Ryan Junio,



dairy producer; Amanda Arata, calf ranch manager, and Kim Herinckx, a packer representative, spoke at the 2021 Milk Business Conference in Las Vegas regarding beef on dairy.

ON THE FARM

Like many producers, sexed semen proved successful, creating a plethora of replacement heifers for Ryan Junio of Four J Jerseys in Pixley, Calif. Seven or eight years ago, he introduced beef into his breeding program to essentially maintain the size of his Jersey herd.

Initially, Junio notes his beef program was swayed by the market; he used Wagyu, Charolais and Angus breeds. A couple years ago, though, he saw the writing on the wall from his local buyer.

“If we wanted to stick around the beef game, we needed to start making a purebred beef calf,” Junio explains.

Currently, 250 Angus calves hit the ground monthly at Four J Jerseys. They use 90% of their 4,000-head milking herd as recipients for purebred Angus embryos that Junio then sells as day-old calves. Making the switch from AI to beef embryos has allowed Four J to maintain herd size while using sexed semen on youngstock and reserving the top 10% of the milking herd based on elite genetics for AI or Jersey embryo transfers (ET).

“Now we use the bottom 90% of our own milking herd to make purebred Angus calves,” Junio notes.

Even during the hot California summers, Junio says the success rate in terms of conception is comparable between ET and AI, both hovering around 50% to 58%.

“The downfall is the abortion rates,” he adds. “The abortion rates are a little bit higher on the ET program versus AI”

Because birth weights are higher



At the 2021 Milk Business Conference in Las Vegas, Nev., Kim Herinckx, One World Beef; Amanda Arata, Kansas Dairy Development and Ryan Junio, Four J Jerseys, participated in a Beef on Dairy panel.

on the beef/Jersey cross calves, Junio changed course and began only using Charolais beef semen on older cows, as it wreaked havoc on their virgin heifers.

Another drawback of the ET program is the varying calf sizes.

“Originally we could see calving and birth weight numbers on the sires, but we didn’t have anything on the donor dam,” he shares.

Junio now works with a partnership that can provide genetic information on both the sire and donor dam, which he says has made a world of difference.

“Calving ease is no longer an issue,” he remarks.

THE CALF RANCH

As general manager of Kansas Dairy Development (KDD) located in southwest Kansas, Amanda Arata oversees more than 65,000 heifers in a custom facility. KDD also takes terminal crosses if the calf has a place to go after six months of age. Later this year, KDD

will bring its first beef embryo calves through its system.

“Up to this point, we have worked with evolving crosses, but we are expecting several hundred to start showing up here this spring,” Arata says.

From dairy to beef to ET calf, KDD focuses on the best care for high-performing calves. Arata says survivability of transfer from the dairy to the calf ranch is good and most calves enter their system around one day of age.

Data is collected before the calf arrives at the ranch for a baseline. From there, Arata says they compile an immense amount of data while the animals are in their care, which is then relayed back to the dairies.

“The dairies use this information on how calves were fed out to make breeding decisions,” she says.

Arata says dairies always go the extra mile. “Each dairy has invested in their genetics for a long period, and they know what is of important value,” she adds.



Scan this QR code to read a full copy of Dairy Herd Management’s Beef on Dairy e-book.



PACKER AND FEEDLOTS

Kim Herinckx is the vice president of food safety and quality for One World Beef, the largest scale slaughter processing facility in southern California. They prominently handle dairy or dairy influenced cattle and specialize in grain-fed Holsteins, Wagyu and beef/dairy cross cattle. They are the second-largest exporter to Japan, Chile and China.

Many feedlots that funnel into One World Beef are located within 80 miles, although some cattle come from Colorado, Kansas and Texas. Regardless of where the cattle originate, Herinckx says the communication between the packer and feedlot is constant, with daily communication and frequent site visits to ensure quality and data points. She says their favorite crop coming through the pipeline right now is the Jersey/Charolais cross.

“This cross upgrades the Jersey exponentially,” she explains. “Muscle marbling to durability to performance in the Southwest heat is impressive.”

Genetics can improve a lot with

crossbreeding, but feeding an animal correctly is also very important, Herinckx says.

“The problem we’re running into is that some traditional feedlots get black cross animals in, and they are feeding them like a traditional black animal, and it simply doesn’t work,” she says.

During meetings with the rendering division, Herinckx says one comment that has stuck with her, and she believes is a takeaway for every producer to remember is,

“If you want value out of your byproducts, you have to stop treating them like a byproduct.”

Creating a syncretistic relationship with the dairy producer can help develop a brand program, Herinckx notes, and help it go from a byproduct to a go-to product. She notes this is a fundamental shift.

Dairy has always been the winner when it comes to addressing consumers’ demands. Beef on dairy extends that winning streak by helping meet the world demand for beef and providing the necessary traceability from the dairy farm to the calf ranch to the feedlot to the packing house, which answers “Where’s the beef?” and more. 🐮

By Karen Bohnert

First 24 Hours Makes the Difference

Dairies have high expectations for calf ranches such as KDD, and Amanda Arata says constant communication is vital. No two dairies operate the same, so individual calf care is critical the first 24 hours after birth before it arrives at the calf ranch, she adds.

Arata says the following is vital for the calf to have a good start before it is transported to the calf ranch:

- > Clean calving area.
- > Receive quality colostrum.
- > Solid vaccination program for the dam.
- > Ensure the calf is warm and dry.
- > Have had several feedings in it before it is transported.

Once the calf arrives to the ranch, KDD shares all those data points. Arata says the data collected on that individual calf, the day it entered in the KDD system and continued data points are tracked and traced, like rate of gain and health data.



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DEREK NOLAN



Matings are Key for Beef x Dairy Crosses

The use of beef semen has become increasingly popular over the past five years. In 2017,

2.4 million units of beef semen were sold to dairy producers in the U.S. That number is over 5 million units today. Breeding dairy cattle using beef semen started as a way to increase the profit for dairy steers by producing a black-hided calf. However, over the past few years, we have learned mating decisions for beef

x dairy crosses might be just as important as conventional mating decisions. Below are considerations for sire and dam selections when adopting a beef x dairy crossbreeding program.

SIRE SELECTIONS

Bull selections should meet the following needs of the dairy operation and the feedlot operation in which the offspring will enter.

> **Conception rate.** A 1% decrease in conception rate can cost a dairy farm around \$25 per cow. Consider choosing bulls with acceptable conception rates that meet the other breeding goals.

> **Calving ease.** Selections for calving ease can be a little more forgiving than conventional selections. Producers can select from the top 25% of calving ease beef sires because dairy cows commonly give birth to larger farmed dairy calves.



PHOTO: LINDSEY POUND

> **Frame size.** The common issue feedlots have with dairy steers is their large frame size. A larger frame size takes more time to fill out. Selecting for a smaller frame (under 5) can lead to smaller animals that are more feed efficient.

> **Ribeye area.** Though well-finished dairy steers tend to have excellent marbling, they have a smaller, more elongated ribeye than their beef counterparts. Selecting

bulls with higher ribeye expected progeny differences will result in a more desired carcass.

DAM SELECTIONS

When making the transition to using beef genetics, we do not want to compromise the genetic progress of the dairy operation. Many farms have had success using genomic testing to rank animals eligible for beef semen. However, genomic testing might not be feasible for all operations. Other considerations include historic milk yield, number of breeding services and past health events. Breeding considerations should be specific to meet the individual goals of the farm.

NUMBER OF REPLACEMENTS

Another goal for the operation that needs to be considered is heifer inventory. Too liberal of selection criteria for using beef genetics can result in a decrease in dairy heifers. Keep constant heifer inventory to be sure the farm's replacement needs are being met. 🐄

Derek Nolan, Dairy Education and Extension Specialist, University of Illinois, Urbana-Champaign



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Experts Underscore the Value of Risk Management Tools on Your Farm

Protect high prices and lock in guaranteed income

Milk production has always been a risky business, even before COVID-19 hit. Bad weather can negatively impact forage and crops, cows can get sick and breakdowns generally come at the least opportune time. Factor in a volatile milk market and it makes it difficult for farmers to get by, let alone plan for the future.

Dairy leaders highly recommend the importance of utilizing risk management tools for your dairy farm, such as milk futures or Dairy Revenue Protection (DRP).

Ryan Yonkman, vice president with ever.ag, says with current market conditions profitable margins for dairy is forecast through all of 2022.

“In a year like this, where we are already testing extreme prices in milk and feed and other inputs, managing all ends is important in order to obtain a clean hedge or even secure a margin,” Yonkman states.

WHERE DO FARMS GO FROM HERE

According to Yonkman, in this market where the world is short of milk, it makes sense to keep as much upside as possible.

“The best avenue through which to achieve this is through the put option type strategies available both through insurance (DRP/LGM) and the CME,” he says. “Such strategies establish floor prices that may secure a lower margin than current future prices present but do so while maintaining upside openness and the ability to participate in even greater margins.”

Independent agriculture business financial consultant Gary Sipiorski says approximately only 10% of dairy producers purchase milk futures, but he believes that risk management discussions should be happening on every single farm.

“The top 30% of dairy producers in the U.S. earn \$1.25 per cwt more compared to the average producer. This is a good time to get your financials together and sit down and talk about risk management,” he states.

The first thing producers should be doing, according to Sipiorski, is taking a hard look at their cost of production, especially with

the rising expenses and inflation.

“Review cash flow productions based on the last three years of expenses and work to project what expenses in 2022 will be,” he says. “This requires time, and producers need to be talking to outside team members and their suppliers.”

Sipiorski underscores the importance of drilling down expenses and encourages farmers to look at where they can save money.

“Sometimes we get lax about costs when milk prices are strong,” he says.

Brian Vaassen, Midwest Regional business manager with Standard Dairy Consultants, concurs with Sipiorski and advises his dairy clients to know their cost of production when looking to control margins and notes that it's not a ‘one program fits all’ type of approach.

“Some producers want to know their costs and try to book some feed here and there. While others are more aggressive and will book commodities longer term



“Producers sign the bottom line, and it’s important they have gained enough information to make that decision.”

—Gary Sipiorski

because they also know the historical price they paid,” Vaassen shares. “Some producers book feed and do short-term puts on milk, and others go in and work with a broker and manage the margins they want to target. It all depends on the risk tolerance dairy producers and their bankers feel comfortable with.”

MILK CHECK IS KING

Sipiorski notes the milk check equates to 90% to 95% of the farm income. “What can you do with that,” he asks?

Increasing revenue from milk needs to be explored and Sipiorski encourages producers to work on increasing components, as a good way to add income even if the pounds of milk do not grow.

“This approach takes time; however, it is worth it, while working it into the overall plan,” he says.

He also states the conversation between an individual dairy farm and their broker is essential to determine what makes sense for them.

“Nobody can make that decision except the producer,” he shares. “Producers sign the bottom line, and it’s important they have gained enough information to make that decision.”

Yonkman says in his opinion, hedging a margin is great and by all means the goal; however, he cautions the volatility of milk.

“At certain times in history, extreme prices can become more easily achieved,” he says. “Under those conditions, I, personally, am very cognizant to make sure we are growing upside opportunities so as to counter periods like the last five years, which have been more of an equity burn. Most of us can’t afford to miss the boom year and perhaps this is that year.”

Sipiorski highlights the fact risk management programs are made to help create stability and lock in a return, and he encourages producers to take a hard look at both DRP and milk futures and begin those conversations with outside team members today.

Minimize your dairy’s risk and take advantage of the potential dairy boom in 2022 to help drive your dairy for success. Begin those much-needed risk management conversations today. 🐄

By Karen Bohnert

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- Tony Herman - Owner, Herman Dairy

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TYLER BRAMBLE

Technology Helps Transition Cows



The transition period is a critical phase for dairy cows and is associated with an increased risk for diseases and body condition loss. Technology can help get the transition right.

The transition period of dairy cows encompasses the three weeks before and the three weeks after calving (parturition). This is a time cows need to be monitored extra carefully and pampered to ensure they remain healthy throughout the dry period, have a successful calving, enough energy for a good onset of lactation and are in good condition for the next breeding. For large dairies, camera technology helps make the transition period smooth and successful.

Continuous monitoring is crucial to make sure cow comfort, feed management and stocking density are under control. Producers have access to this data, and this offers peace of mind to know transition cows do well.

The big three issues in transition cows are:

1. FEED: FEED INTAKE AND FEED SPACE

Managing feed intake is imperative for transition cows. During the transition period, the cow has a high demand for energy and nutrients to support fetal growth, colostrum and milk production after calving. At the same time, feed intake levels often drop. This can result in a negative energy balance and nutrient deficiencies coupled with immunosuppression. A drop in immunity and resilience can increase the risk for metabolic disorders, (such as milk fever), udder infections and reproductive disorders.

Early detection of these problems is key to preventing future milk production losses. Encouraging feed intake is therefore one of the most important goals of transition cow management. To maximize feed intake, the availability and quality of feed are the main factors to consider. Additionally important is bunk space, pen space and water availability's impact on feed intakes (source: University of Minnesota).

2. COW COMFORT: PAMPERING TO THE MAX

Provision of feed and water at all times is a crucial part of cow comfort during the transition period. Minimizing social stress or the need to establish social rank during transition, provision of deeply bedded stalls and provision of ample space to lie down are essential to making sure the welfare of transition cows is respected. Never overstock the most crucial groups: the dry and fresh cows. These groups should have enough places to rest and eat. You should pamper these animals and reduce stress as much as possible.

“Transition cows need more space per cow than other cows, both at the feed bunk and in the rest area. They

need to have the best facilities on the farm.

Unfortunately, dry cows are often put in the oldest facilities on the farm. In reality, they should be the

first group catered to,” says Jeffrey Bewley, dairy analytics and innovation scientist at Holstein Association USA.

Cow comfort is even more put to the test in hot regions. A heat-stressed pregnant cow will be impaired when trying to provide the nutrition her unborn calf needs, causing problems further down the road. Providing these animals with a comfortable resting area where they can escape the heat, feeding at cooler parts of the day, mainly evening and night, and the right diet formulation are essential.

3. COW BEHAVIOR: MINIMIZE REGROUPING

Putting all the transition cows together might result in behavioral changes. Every time an animal is introduced into a new group, she has to adjust to a new social hierarchy. This can have a negative impact on dry-matter intake, and associated milk loss, during this critical time. Schirmann et al. (2011) found that moved cows showed greater behavioral changes than cows that remained in the pen, and cows that were introduced decreased dry-matter intake (DMI). These cows were also replaced more often by other cows at the feeder. Try to limit group

“Transition cows need more space per cow than other cows, both at the feed bunk and in the rest area.”

changes when adopting more regular group changes, space/stocking rate becomes even more important.

LET TECHNOLOGY DO THE MONITORING

Early detection of health issues, in combination with controlling cow comfort, stress and feed is key for a successful transition period. The human eye cannot always detect the early signs, but technology can help detect changes in eating time, lying time, rumination time or temperature. This can help identify these cows sooner and improve our chances of successful intervention.

Bewley says technology can make a difference when it comes to feed management.

“Dry-matter intake is key to a successful transition, so any technology that can help monitor the feeding process or feeding behavior can benefit transition cows,” he says. “For example, a reduction in rumination time can help us identify when a cow is off feed. When we identify this animal, we can provide a drench to help this cow off and slow the challenges she is dealing with.” He adds, lying time is a useful parameter to identify sick and at-risk cows.

During the transition period, the dairy cow undergoes physiological, metabolic and immunological change. Transition cows need to have the best facilities on the farm and should be the first group catered to. In practice, this is not always the case, and when these cows are not properly managed, the transition period can be detrimental for health, welfare and production. Technology will continue to provide new insights into transition cow management allowing us to improve farm profitability and animal well-being. 🐄

Tyler Bramble,
Portfolio Growth Manager, Cainthus

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Storage: Do not store above 25°C (77°F). Do not freeze.

Action: In the non-lactating mammary gland, DRY-CLOX provides bactericidal levels of the active antibiotic, cloxacillin, for a prolonged period of time. This prolonged activity is due to the low solubility of the cloxacillin benzathine and to the slow-release oil-gel base. This prolonged contact between the antibiotic and the pathogenic organism enhances the probability of a bacteriological cure.

Cloxacillin is not destroyed by the enzyme, penicillinase, and therefore, is active against penicillin-resistant strains of *Staphylococcus aureus*. It is also active against non-penicillinase-producing *Staphylococcus aureus* as well as *Streptococcus agalactiae*.

The class disc, Methicillin 5 mcg, should be used to estimate the *in vitro* susceptibility of bacteria to cloxacillin.

Indications: For the treatment of mastitis in dairy cows during the dry period.

DRY-CLOX has been shown by extensive clinical studies to be efficacious in the treatment of mastitis in dry cows, when caused by *Streptococcus agalactiae* and *Staphylococcus aureus* including penicillin-resistant strains.

Treatment of the dry cow with DRY-CLOX is indicated in any cow known to harbor any of these organisms in the udder at drying off, or which has had repeated attacks of mastitis during the previous lactation, or is affected with mastitis at drying off, if caused by susceptible organisms.

Dosage for Dry Cows: Infuse the contents of one syringe (10 mL) into each quarter following the last milking. See Directions for Use.

Directions for Use: DRY-CLOX is for use in dry cows only. Administer immediately after the last milking. Use no later than 30 days prior to calving.

Completely milk out all four quarters. The udder and teats should be thoroughly washed with warm water containing a suitable dairy antiseptic and dried, preferably using individual paper towels.

Carefully scrub the teat end and orifice with 70% alcohol, using a separate swab for each teat. Allow to dry.

DRY-CLOX is packaged with the Opti-Sert® Protective Cap.

For partial insertion: Twist off upper portion of the Opti-Sert® Protective Cap to expose 3-4 mm of the syringe tip.

For full insertion: Remove protective cap to expose the full length of the syringe tip.

Insert syringe tip into the teat canal and expel the entire contents of syringe into the quarter. Withdraw the syringe and gently massage the quarter to distribute the medication.

Do not infuse contents of the mastitis syringe into the teat canal if the Opti-Sert® Protective Cap is broken or damaged.

Precautions: Because it is a derivative of 6-aminopenicillanic acid, DRY-CLOX has the potential for producing allergic reactions. Such reactions are rare; however, should they occur, the subject should be treated with antihistamines or pressor amines, such as epinephrine.

Residue Warnings:

1. For use in dry cows only.
2. Not to be used within 30 days of calving.
3. Any animal infused with this product must not be slaughtered for food until 30 days after the latest infusion.

How Supplied: DRY-CLOX (cloxacillin benzathine) is supplied as 10 mL syringes containing 500 mg of cloxacillin activity per syringe. One display carton contains 12 syringes. One pallet contains 144 syringes.

NDC 0010-4722-02 - 12 syringes; NDC 0010-4722-03 - 144 syringes

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Made in Italy

Marketed by:

Boehringer Ingelheim Animal Health USA Inc.
Duluth, GA 30096

51744632 472001-04

Approved by FDA under NADA # 055-054

PolyMast® (hetacillin potassium)

Intramammary Infusion
For lactating cows only

Caution: Federal law restricts this drug to use by or on the order of a licensed veterinarian.

Description: POLYMAST (hetacillin potassium) is a broad-spectrum agent which provides bactericidal activity against a wide range of common gram-positive and gram-negative bacteria. It is derived from 6-aminopenicillanic acid and is chemically related to ampicillin.

Each 10 mL disposable sterile syringe contains hetacillin potassium equivalent to 62.5 mg ampicillin activity in a stable peanut oil gel.

Action: Hetacillin provides bactericidal levels of the active antibiotic, ampicillin. *In vitro* studies have demonstrated susceptibility of the following organisms to ampicillin: *Streptococcus agalactiae*, *Streptococcus dysgalactiae*, *Staphylococcus aureus* and *Escherichia coli*.

Indications: For the treatment of acute, chronic or subclinical bovine mastitis. POLYMAST should be used at the first signs of inflammation or at the first indication of any alteration in the milk. Subclinical infections should be treated immediately upon determining, by C.M.T. or other tests, that the leukocyte count is elevated, or that a susceptible pathogen has been cultured from the milk.

POLYMAST has been shown to be efficacious in the treatment of mastitis in lactating cows caused by susceptible strains of *Streptococcus agalactiae*, *Streptococcus dysgalactiae*, *Staphylococcus aureus* and *Escherichia coli*.

Polycillin® (ampicillin) Susceptibility Test Discs, 10 mcg, should be used to estimate the *in vitro* susceptibility of bacteria to hetacillin.

Dosage and Administration: Infuse the entire contents of one syringe (10 mL) into each infected quarter. Repeat at 24-hour intervals until a maximum of three treatments has been given.

If definite improvement is not noted within 48 hours after treatment, the causal organism should be further investigated.

Wash the udder and teats thoroughly with warm water containing a suitable dairy antiseptic and dry, preferably using individual paper towels. Carefully scrub the teat end and orifice with 70% alcohol, using a separate swab for each teat. Allow to dry.

POLYMAST is packaged with the Opti-Sert® Protective Cap.

For partial insertion: Twist off upper portion of the Opti-Sert® Protective Cap to expose 3-4 mm of the syringe tip.

For full insertion: Remove protective cap to expose the full length of the syringe tip.

Insert syringe tip into the teat canal and expel the entire contents of one syringe into each infected quarter. Withdraw the syringe and gently massage the quarter to distribute the medication.

Do not infuse contents of the mastitis syringe into the teat canal if the Opti-Sert® Protective Cap is broken or damaged.

Residue Warnings: Milk that has been taken from animals during treatment and for 72 hours (6 milkings) after the latest treatment must not be used for food.

Treated animals must not be slaughtered for food until 10 days after the latest treatment.

Precautions: Because it is a derivative of 6-aminopenicillanic acid, POLYMAST has the potential for producing allergic reactions. Such reactions are rare; however, should they occur, treatment should be discontinued and the subject treated with antihistamines, pressor amines, such as epinephrine or corticosteroids.

The drug does not resist destruction by penicillinase and, hence, is not effective against strains of *Staphylococcus* resistant to penicillin G.

Storage: Do not store above 25°C (77°F). Do not freeze.

How Supplied: POLYMAST is supplied as 10 mL syringes containing 62.5 mg ampicillin activity per syringe. One display carton contains 12 syringes. One pallet contains 144 syringes.

NDC 0010-4722-01 - 10 mL syringe; NDC 0010-4722-02 - 12 syringes; NDC 0010-4722-03 - 144 syringes.

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PHOTO: ADOBE STOCK

Supply Chain Issues

Limited availability with animal medicine

Breakdowns in the global supply chain are hitting home for U.S. livestock producers with shortages of commonly used medications.

Dr. Pat Gorden, with Iowa State University veterinary medicine, says veterinarians have struggled to find bottles of injectable Pen-G. Other veterinary drugs reported in short supply include tetracyclines, flunixin, and meloxicam.

In many cases, veterinary pharmaceuticals draw the short straw when drugs such as penicillin are used in both people and animals.

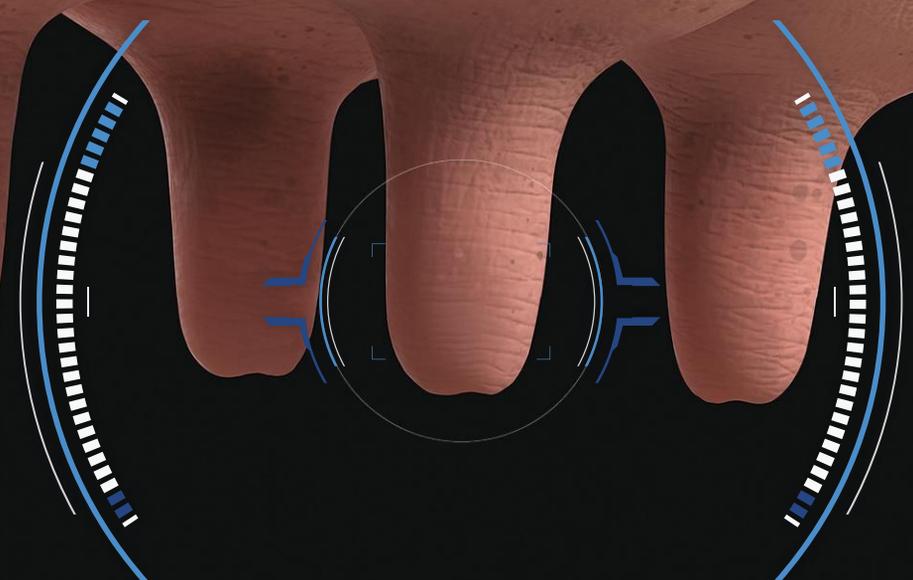
Demand for human amoxicillin, for example, has risen through the COVID-19 pandemic. Raw ingredients have been diverted from the manufacturing of veterinary penicillin products to ramp up production of amoxicillin to treat sore throats and ear infections in children.

Gorden says the drug shortage has caused veterinarians to take a hard look at treatment protocols and customary practices. 🐄

By Maureen Hanson

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DRY-CLOX RESIDUE WARNINGS: For use in dry cows only. Not to be used within 30 days of calving. Any animal infused with this product must not be slaughtered for food until 30 days after the latest infusion.

LOCKOUT WITHDRAWAL INFORMATION: LOCKOUT requires no milk or pre-slaughter withdrawal when used alone. If dry cow treatment is used in conjunction with LOCKOUT, follow recommended antibiotic withdrawal times per the label.

POLYMAST RESIDUE WARNING: Milk that has been taken from animals during treatment and for 72 hours (6 milkings) after the latest treatment must not be used for food. Treated animals must not be slaughtered for food until 10 days after the last treatment.

TO DAY RESIDUE WARNING: Milk that has been taken from animals during treatment and for 96 hours after the last treatment must not be used for food. Treated animals must not be slaughtered for food until four days after the last treatment. Administration of more than the prescribed dose may lead to residue of antibiotic in milk longer than 96 hours.

TO MORROW RESIDUE WARNINGS: For use in dry cows only. Not to be used within 30 days of calving. Milk from treated cows must not be used for food during the first 72 hours after calving. Any animal infused with this product must not be slaughtered for food until 42 days after the latest infusion.

New Ways to Fund Your Farm

How will you finance your dairy operation in the future?

Change is brewing in the agricultural lending system. Bank consolidation, a dramatic shift in farmer profitability, technological advances and more are driving how you will finance your operation in the future. Keep an open mind and talk to financial consultants who can give you guidance. 🐄

By Sara Schafer

FINANCIAL METRICS

The past few years of low commodity prices and financial stress make some lenders adjust the structures and requirements for their farm loans, says Ashley Arrington, Ag Resource Management real estate director.

“We saw financial ratios, such as debt to asset or the current ratio become lax, because no one could get approved,” she says. “With higher prices, bankers want to see improvement in the balance sheet. Bankers feel entitled to know how you will spend profits because they helped you through the bad times.”

DIGITAL BANKING

The digital world has finally hit ag lending, says Curt Covington, senior director of institution credit at AgAmerica Lending.

“Without a question, cloud-based scorecards and desktop appraisals will be the way of the future for ag credit,” he says. “The average farmer who qualifies for financing may not sit down with a lender. They will have access to capital on platforms where they put their loans out to bid and look for the best structure options.”

COLLATERAL OPTIONS

Expect alternative lenders to play a bigger role in financing, Covington says. These types of institutions provide financing options without the policies that often constrict the typical loan process. They don't have the regulatory pressures of traditional banks.

With the cost to own land dramatically increasing, alternative lenders can offer farmers who rent most of their land another option, Arrington says. For instance, some use crop insurance or other risk management strategies as loan collateral.

RELATIONSHIPS

The changes above all point to a major shift where you might not have the same kind of close relationship with your banker in the future.

“This shift will be over time, and it will be a difficult process for farmers and bankers,” Covington says. “I'm not saying relationships will go away, but there will be situations where the relationship won't be as tight. Having spent 40 years in this business, I'm not happy about that, but ultimately you have to accept reality.”

Many farmers use their bankers as a trusted financial adviser, he adds. These changes mean farmers will need to fill that role with a different person or service.



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Strike a Realistic Farm-Life Balance

PHOTO: LINDSEY POUND

Tips to establish an equilibrium in your personal life and on the farm

Farmers have a laundry list of things to do each day.

Care for the cows, call the feed mill, shuffle through the paperwork. The list goes on and on, and at the end of the day, there may only be a few hours left to eat dinner, talk with loved ones and take a hot shower before doing it all again the next day.

Creating a work life balance is not just for the nine-to-fivers. In fact, striking a balance between life on and off the farm might be even more crucial for today's farmers. Monica McConkey, Rural Mental Health Counselor at Eyes on the Horizon Consulting, shared her expertise on "Life Balance," an episode of PDPW's *The Dairy Signal*. "What I find with farmers is that there is no life balance," McConkey says. "The feeling is that 'If my life isn't all about the farm, the farm is not going to make it.'"

Having that all-or-nothing mentality can be a dangerous lifestyle to live by. Instead, McConkey recommends searching for a balance that not only incorporates the farm, but other healthy life choices as well.

ACHIEVE BALANCE

According to McConkey, one of the first steps in achieving a healthy life balance is identifying where you are feeling "off." Is it your social life? Your health? Perhaps spending time with your family? Indicating which areas feel out of balance is key.

"Seeking balance needs to happen in real life," McConkey says. "You don't have to quit farming to have balance in your life."

Being intentional with your time and prioritizing choices plays a large role in creating a balanced lifestyle.

"Life balance issues have to be very intentional, or it doesn't happen," McConkey adds. "We just let life consume us, and we get lost in the busyness and the stress of everyday demands. And that really starts to take a toll on farmers."

MANAGE FEELINGS OF GUILT

There might be times when you begin to prioritize more balance in your life; however, thoughts about the farm constantly pop into your mind, and you might experience feelings of guilt.

"Every feeling that we have is caused by a thought or a perception. So, when we notice ourselves starting to feel guilty, on edge, overwhelmed or stressed, it's important to dig a little deeper and find out what is the thought that's causing that feeling," McConkey says.

She recommends setting small, realistic goals. Some tips include:

- > Sitting down as a family and discussing your priorities together.
- > Check-in with each other often and provide accountability.
- > Make goals measurable and monitor progress.

"People feel stuck and often feel like the way their lives are going lies in factors outside of their control. And while that may be true, all of us have things outside of our control, however, there are many things within your control that can change your outlook. And the one to start with is the way you think. You can create change in your life even when it feels like you sometimes can't." 🐄

By Taylor Leach



"The Dairy Signal" airs every
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Noon – 1:00 p.m. CT

Viewers tuning in live can ask questions of the presenters. Sign up to view episodes in audio or video format, visit: PDPW.org



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A HEALTHY HERD EQUALS A HEALTHY BOTTOM LINE

How untreated pinkeye in cattle can cost an operation in multiple areas



Milk lost due to
antibiotic use can cost

\$352

per head.²

Infectious Bovine Keratoconjunctivitis (IBK), also known as pinkeye,

is a complicated and costly disease for beef and dairy producers. According to the article Infectious Bovine Keratoconjunctivitis (Pinkeye) in Cattle¹, “tremendous losses occur from poor weight gain and loss of appetite in affected animals suffering from visual impairment. The largest economic loss is incurred through decreased growth as affected calves are on average 35–40 pounds lighter at weaning compared to healthy calves. Lower performance in post-weaning cattle has also been documented with reduced average daily gain, 365-day weight and final weight.”

When it comes to understanding how bovine pinkeye progresses in a herd, Lowell Midla, VMD, MS, veterinary technical services manager with Merck Animal Health and beef cattle producer, also weighs in on the progression of the disease and how it can prevent an animal from thriving. “We are stewards of these animals, so it’s important to understand the pain of pinkeye. Then we can appreciate how that pain can cause a calf not to gain weight or even lose weight,” says Midla. “So, for those animals with lower weaning weights or production loss, their potential value can suffer. With purebred animals that producers are trying to market for their genetics, even just little leftover scars sometimes will affect their worth as breeding stock.”

A recent Farm Journal study conducted on behalf of Merck Animal Health² has found pinkeye losses can exceed \$100 per incidence in beef cattle. For seed stock or

dairy replacement heifers, the discounts for animals with lesions or damaged eyes can far exceed production losses by hundreds of dollars. That’s why a comprehensive vaccination program works as part of a three-pronged approach that includes fly control and environmental management. “And if you’re really serious about using a pinkeye vaccine, they need two doses,” says Gerald Stokka, DVM, MS, North Dakota State University Extension veterinarian and livestock stewardship specialist. “If we believe the single dose of a pinkeye vaccine given at 60 days of age is going to prevent most of the bacterial infections associated with that vaccine—well, that’s not a very good strategy. They need two doses before the fly season comes.”

Why take a preventive vaccination approach?
The drug cost for treatment, decreased market value due to corneal scarring, the loss of value of show and breeding stock, and reduced milk production from dairy animals make pinkeye a significant economic consideration.

It’s obvious bovine pinkeye is a multifaceted disease with layers of consequences if not anticipated and addressed before it has a chance to do significant damage. “We vaccinate every year on our own farm, I have recommended that to clients over the years,” said Midla. “I like to stick to things that are evidence-based.”

Preventing pinkeye in as many of your animals as possible will keep more money in your pocket and provide a better quality of life for your entire herd.



For more information, visit MAHcattle.com

¹ Infectious Bovine Keratoconjunctivitis (Pinkeye) in Cattle (uky.edu) Michelle Arnold, Veterinary Diagnostic Laboratory; Jeff Lehmkuhler, Animal and Food Sciences; University of Kentucky College of Agriculture, Lexington, KY.

² Merck Quantitative Pinkeye Survey, 2021, Farm Journal, Lenexa, KS.

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Six Ways to Help Preweaned Calves Succeed in Group Housing

Crucial transition: Don't let calves get lost in the crowd

Group housing for preweaned calves has gained traction on U.S. dairy farms in recent years.

Improvements in animal behavior and well-being, the potential for reduced labor costs and the opportunity to manage workloads more effectively are benefits often cited as reasons to adopt the practice.

According to Theresa Ollivett, DVM, University of Wisconsin School of Veterinary Medicine, dairy producers need to evaluate their management practices to minimize the potential for negative outcomes.

1.

• Colostrum management is a cornerstone for early calf health.

An area Sandra Godden, DVM of University of Minnesota College of Veterinary Medicine, says many dairy producers still need to address is improving calf health through the transfer of passive immunity (TPI). She says the average cost of failed TPI in a dairy calf is cited as \$70.

2.

• Older calves perform better in group housing than younger ones.

Calves should be introduced to group housing at 12 to 14 days of age or older. Research shows younger calves take longer to learn to drink unassisted and need more guidance. They also drink less milk in the first days of life.

3.

• Group size is also an important risk factor to consider.

Two calves — pair housing — could make the ideal group size. The smaller group numbers don't square with what many distributors recommend to producers.

“There's a potential to introduce competition and aggression as stressors and possibly limit intake,” Golden notes.

4.

• Give calves room to move around and bed down.

Both Godden and Ollivett emphasize adequate space is critical to success in group housing. Research indicates a stocking density that provides at least 45 sq. ft. to 50 sq. ft. bedded space per calf.

Keep age variations at a minimum, less than a week spread between animals if possible.

5.

• With nutrition management, feeding more milk is a positive.

Some producers might push back and say young calves will scour from having too much milk, but Godden says that is a myth.

“Feeding large volumes of milk does not cause milk scours,” she says.

6.

• Do not rely on a computer to detect sick calves.

There can be large variations in calf feeding behaviors, so use computers as an aid only. “We still need trained individuals on the farm to observe and identify sick calves.” 🐄



PHOTO: WYATT BECHTEL

By Maureen Hanson



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Calf Milk Consistency Deserves Attention

Whether you feed milk replacer or whole milk, uniformity is key

Preweaned calves do best with consistency in every aspect of their lives, especially the consistency of their liquid rations.

But the reality is the feeding temperature and nutritional consistency of calf milk can vary.

As an example, students in a dairy management class at Pennsylvania State University were assigned an experiment in mixing up a “standard” batch of milk replacer, with the results analyzed for final temperature and total solids content.

Among the results of the batches:

- > **Solids content ranged from 6.0% to 14.5%.**
- > **Temperature ranged from 80°F to 115°F.**
- > **Less than half (17) batches achieved a solids content between 10% and 15%.**
- > **Only two batches hit the solids content goal of 13%.**
- > **Only two batches achieved a final temperature between 110°F and 115°F.**

Penn State Dairy Extension advisors who summarized the findings suggested weighing powder with a scale, measuring temperature with a thermometer and evaluating solids with a Brix refractometer, which will contribute to routinely creating batches of milk replacer with far greater precision.

Whole milk, too, can be highly variable in its nutritional content. Dale Moore at Washington State University conducted a study that evaluated nonsalable milk from 12 dairies supplying both milk and calves to one calf ranch.

Bacterial counts were deemed high from nine of the 12 farms. While all of the milk was pasteurized at the calf ranch, pasteurization can only reduce bacterial load and does not completely sterilize milk.

Total solids also varied widely, from 5.1% to 13.5%. Half of the dairies shipped milk with total solids lower than 12.0%. When pooled at the calf ranch, total solids for the combined batch of milk were 11%, significantly lower than the expected 12.5% to 13% for whole milk.

Moore and her colleagues suggested balancing whole milk with powdered solids before feeding to achieve consistent batches that reached nutrient content goals.

SIGNIFICANT VARIATION

Feeding liquid rations with lower-than-desired solids, whether in the form of milk replacer or whole milk, can interfere with calf performance and health.

Researchers with aut feeder manufacturer

Holm & Laue say significant variation can occur between batches of milk replacer mixed to achieve a total volume, versus using that set volume of water and adding the powder to it.

For example, they said 1 liter of milk replacer solution containing 13.5% total solids would drop to 11.9% total solids if 1 liter of water was added to the equivalent amount of powder. The difference between the two: a surprising 12% lower energy and nutrient supply in the more dilute mixture.

That difference, and other inconsistencies in these two studies, underscore the importance of making liquid ration consistency a priority for calf raisers. Investing in the right equipment, protocol development and training can make all the difference in delivering a consistent product to every calf every day.

CONSISTENCY TECH

Holm & Laue has also prioritized consistency with a new feature on their CalfExpert automatic calf feeder. The Brix-TS Sensor is an electronic refractometer sensor that continuously measures dry matter of freshly mixed calf milk. The aut feeder compensates for solids deficiencies in milk replacer and whole milk and can adjust for reduced powder dosing if powder outlets become encrusted.

The Brix-TS Sensor won a Silver EuroTier Innovation Award for new animal farming technology in 2021 with the EuroTier animal agricultural trade show in Germany. 🐄

By Maureen Hanson



Cow Tip:

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Are Alley Scrapers Right for Your Operation?

Added benefits of cleanliness and comfort, plus a return on investment

Scraping manure probably isn't one of your favorite jobs on the farm. It's repetitive, it's dirty and it might be more time consuming than you realize. What if there was a way to automate this task?

FACTORS TO CONSIDER

According to Jeremy Sanford, global product manager for manure equipment at GEA, labor reduction is a key benefit when installing alley scrapers.

"I have a rule of thumb where I ask a farmer how much time they spend scraping each day," he says. "An example answer would be 'I spend about 30 minutes each morning and 30 minutes each night.' From there I usually ask how much they are paying employees [or themselves] an hour. Let's say it in the \$10 to \$12 range. When you factor in fuel consumption, a skid loader typically burns about 2 gal. to 3 gal. of fuel an hour plus wear

and tear on the machine, so I usually estimate that to cost a minimum of \$20 an hour. So, if you're paying an employee \$10 an hour plus \$20 a day for using the skid loader, that comes out to almost \$11,000 a year. Generally, for a farm that is only scraping one hour a day, you can put in an alley scraper [on a side of a barn] for around \$20,000. But at \$20,000, that pays for itself pretty easily in four years. And, not to mention, what could you do with that extra hour in your day?"

What are some of the other benefits besides labor? Cow cleanliness and comfort.

"Alley scrapers are constantly scraping manure out from under the cows," Sanford says. "This helps keep the cow cleaner and manure from splashing up onto their udder. Another thing to think about is how often cows are being moved around. With an alley scraper, there is no disturbance to the animal. They don't even know they're there."

While the benefits of investing in an alley scraper are clear, there are a few things to consider before deciding to install.

"Scrapers can be installed on pretty much any size of operation, as well as heifer facilities," Sanford says, "but the problem you might run into is if the facility has a nontraditional layout. It can still be done, but barns that have been retrofitted into a freestall type facility are typically more of a challenge."

Though alley scrapers are generally low maintenance, some upkeep is still required.

At the end of the day, using an automated alley scraper on your facility is not a necessity, but it could become a tool that could save time and money while keeping the cows clean and comfortable. And in a competitive dairy market, having these advantages could give you the extra edge to earn more. 🐄

By Taylor Leach



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Dairying in the Next Half-Century

What will the industry look like 50 years from now?

In the past 50 years, milk production per cow in the U.S. has increased from 9,751 lb. to 23,777 lb.; the number of farms with dairy cattle has dropped from 648,000 to 31,657; and the average U.S. herd size has increased from 19 head to 300 head. Can you imagine what the industry will look like in the next 50 years?

Jack Britt, consultant and professor emeritus at North Carolina State University, shared his projections for the dairy industry's future in, "Learning from the future: A vision for dairy cows and farms in 50 years." Britt

delivered the presentation at the 2021 Dairy Cattle Reproduction Council (DCRC) Annual Meeting in Kansas City, Mo.

He said U.S. dairy producers need to be aware they are players in a global industry — and very efficient players at that. Britt believes U.S. dairy products will help fulfill global demand because the U.S. is one of the highest-ranking countries in terms of cropland available to feed cows. Russia and Canada also are among the top three. China has the least available cropland relative to their number of cows.

Six Observations and Predictions



Genome editing for the polled gene shows promise in both improving the welfare of calves and consumer acceptance of genome editing as a "gateway" to other edits.

$<1/2$

Milk and beef production will continue merging. Calves produced in dairy-style rearing systems produce less than half the greenhouse gases emitted by traditionally raised beef calves.



There will be a lot more crossbred dairy cattle than purebreds, because crossbreds outperform Holsteins in fertility, health and environmental footprint.



Dairies will migrate away from the seven states that currently produce 35% of the milk in the U.S., mostly due to water and feed availability. The major relocation target will be the upper Midwest.



Cows are moving to larger herds worldwide, and when they enter those herds, they make more milk.

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“We need to ask ourselves, ‘What should we produce that the rest of the world may want/can afford?’” Britt said. “And what products can hold up and be stable to ship for two months?”

He shared some interesting statistics on the number of cows it takes to produce 100 L of milk per day. The U.S. is currently first at 3.5 cows. The UK and Germany are tied for second and third at 4.5 cows. In less-developed countries like Tanzania, it's 176 cows. “That's not sustainable,” he said.

Britt also shared United Nations/FAOSTAT data that ranked the U.S. 50th out of the top 100 countries in fertilizer use, and 70th out of 100 in pesticide use. “Contrary to popular believe, we use our resources very precisely, and that's a message that needs to be much more widely shared,” he said. 🐄

By Maureen Hanson

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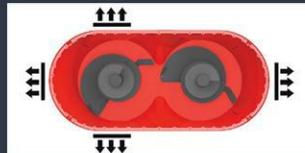
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Q How are high fertilizer prices affecting your operation?

A “We will be utilizing our manure more judiciously; fields won’t be getting a second coat just because it’s close and we need to spread. The cost of fertilizer justifies hauling the manure a little farther. We will probably do more soil sampling and tuning in on those results a little tighter. Anything we can do to cut and save.” – *Paul Chittenden*



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