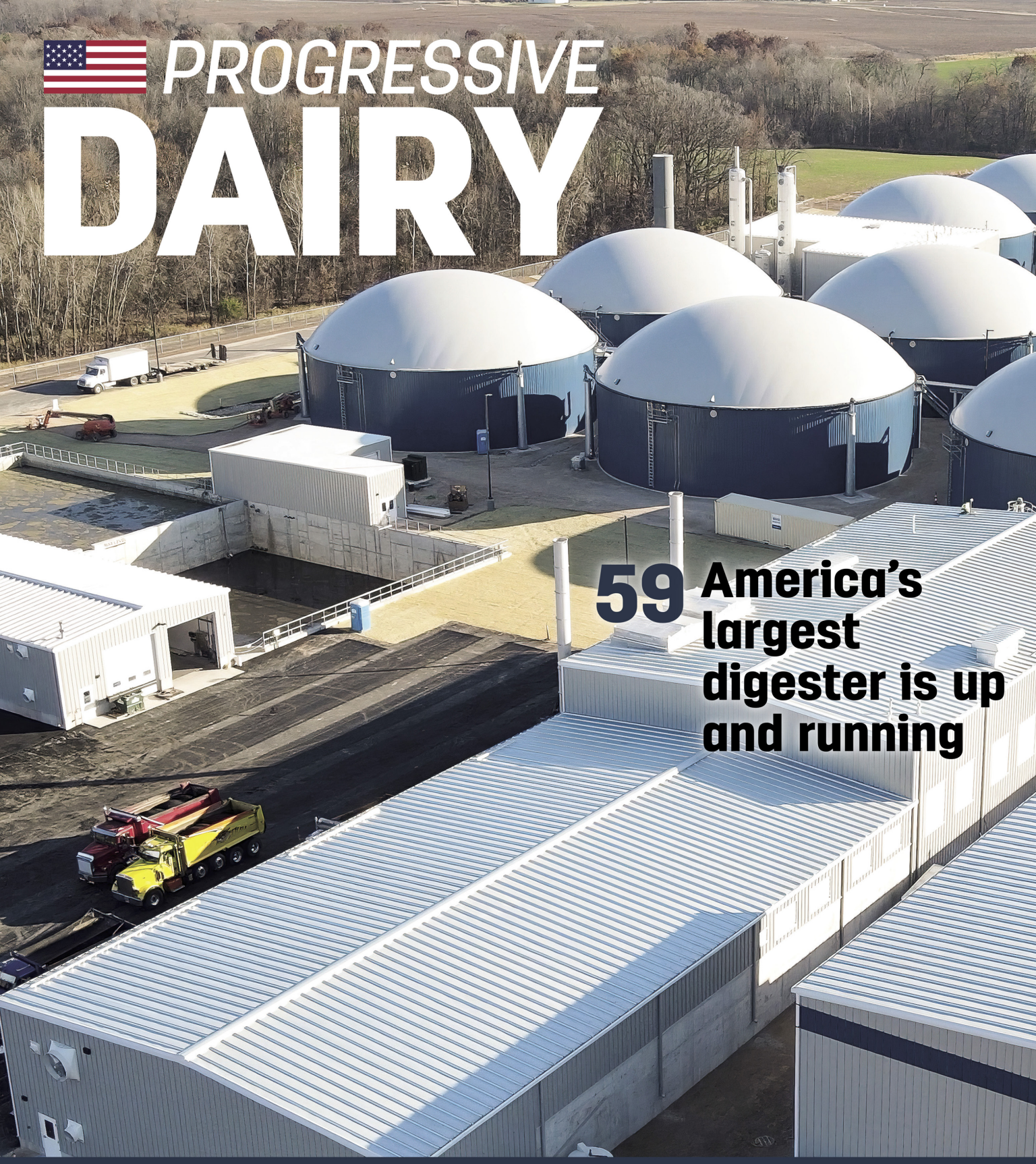
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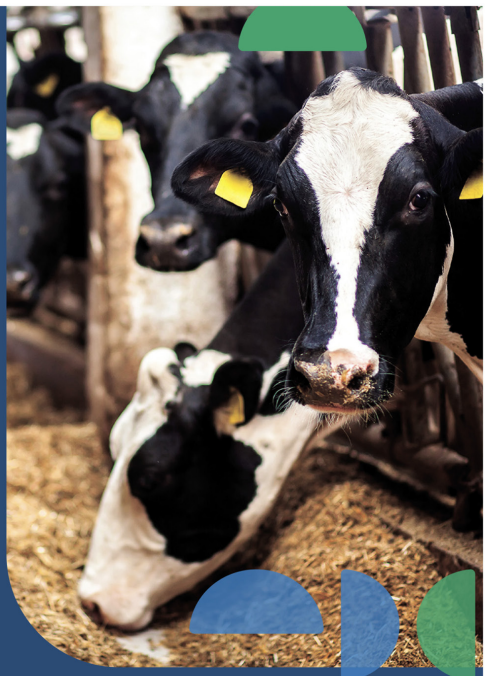
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Dave Natzke

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We will strive to share the ideas, tools and practices that help engage dairy producers and empower them to improve their businesses and lives.

Your influence will matter in 2023



Many factors carrying over from 2022 will undoubtedly influence your dairy in 2023. Whether it's a tight labor market and quality of life issues driving your willingness to explore and implement automation, crop production and feed sources affecting rations and costs, higher interest rates leveraging changes in short-term operations and long-term investment, or environmental regulations impacting everything from feed ingredients to manure management, the list is lengthy. Off the farm, a lot of talk during 2022 might actually yield federal policy action in the year ahead, with all signs pointing to paths that include both the 2023 Farm Bill and the Federal Milk Marketing Order (FMMO) system.

For *Progressive Dairy*, 2022 brought the addition of new staff, a new website and new strategy to distribute information and connect with you, our readers. Speaking for my co-workers, our individual and collective editorial goals for 2023 remain in line with that of company founder Leon Leavitt when he first launched *Progressive Dairyman* in March of 1987: We will strive to share the ideas, tools and practices that help engage dairy producers and empower them to improve their businesses and lives.

Dairy's influencers

Influence, of course, begins with people. Late last summer, after years of my own procrastination, I suggested we extend an invitation to readers to identify the people who have been the greatest "influencers" in and on dairy. My thought wasn't to create another awards program, with judging based on point totals using objective measures, but rather to provide an opportunity for readers to recognize those people who helped shape their lives, careers and dairy farms, as well as the dairy industry as a whole.

Over the course of a couple of months, we received about 45 nominations. Due to space, we've selected 25 whose descriptions vividly described their knowledge, action and passion that provided and/or continues to influence dairy people and issues (see pages 28-35).

Obviously, there are many other influencers not mentioned. It's our first year of trying something new, and something to build on.

Whether we repeat the project again next year is unknown. Regardless, I'd urge you to reach out to the people who have been most influential in your life. Whether via email, card, phone call or face-to-face communication, let them know how influential they have been to you. After a raucous 2022, we can all use a little kindness.

When assessing last year in a recent email, Paul Johnson, president of the U.S. Agricultural Coalition for Cuba, opened with a quote from American humorist Art Buchwald: "Whether it's the best of times or the worst of times, it's the only time we got."

While Johnson was summarizing the economic and political situation in Cuba and its impact on potential agricultural relationships with the U.S., Buchwald's statement returns us to the opening line of Charles Dickens' historical novel, *A Tale of Two Cities*, written in 1859: "It was the best of times, it was the worst of times, it was the age of wisdom, it was the age of foolishness …"

In times like this, we can all use some positive influence in 2023. More often than not, it begins with us.

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JANUARY 19, 2023

PROGRESSIVE DAIRY



Courtesy photo.

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Set up for success

Automatic calf feeders certainly have many pros, but they are still a tool that must be managed properly to be effective. Managing calves correctly, maintaining the machines and feeding them appropriately are key to success.

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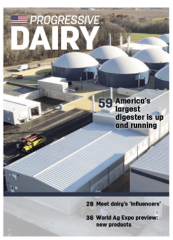
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Photo courtesy of Boadwine Farms.

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A new balcony enhances visitor experience and safety on a South Dakota dairy farm.





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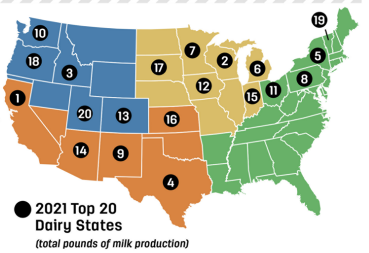


Midwest Edition

Total circulation

Progressive Dairy: **20,200+**

Progressive Dairy is targeted to all dairies in the western United States and all 100+ cow dairies in the Midwest and East.



Midwest Edition
8,500+

Southwest Edition
3,200+

Northwest Edition
2,500+

East Edition
6,500+

#1 concern

Interest rate volatility is the top concern facing agricultural lenders going into 2023. Although improved from the previous year's survey, the highest levels of concern regarding loan portfolio health are in dairy, fruits and nuts and beef cattle sectors.

— *Annual lender survey report produced jointly by the American Bankers Association and the Federal Agricultural Mortgage Corporation.*

Under 60° Fahrenheit

Temperature at which young dairy calves (under 21 days of age) must expend energy to stay warm, limiting energy available for immune function and growth.

— *Theresa Ollivett, assistant professor in Food Animal Production Medicine section at UW-Madison School of Veterinary Medicine*

$5.53 million

Fiscal year 2023 funding for the U.S. Dairy Export Council, through the USDA Foreign Agricultural Service (FAS) Market Access Program ($4.87 million) and Foreign Market Development Program ($659,239).

— *USDA Foreign Agriculture Service*

"Long-term structural changes to the economy and the dairy sector will persist in 2023. Manufacturers will continue struggling with labor shortages and higher energy costs. And, the continual expansion of cheese processing capacity will siphon milk away from butter churns, guaranteeing ample cheese supplies while keeping butter inventories tight. That scenario suggests that Class IV milk prices will likely maintain a premium to Class III milk in 2023."

— *Tanner Ehmke, dairy analyst, CoBank*

"Farmers are very independent, very driven and very stoic. When we asked farmers and those who are farmer-associated who they trust — who they would talk to in times of stress — 97% said a spouse."

— *Anna Scheyett, professor in the University of Georgia Department of Agricultural Leadership, Education, and Communication, discussing recent research on stressors among farmers.*

"I believe human survival and sustainability rely upon agricultural literacy."

— *Jessica Rettler, fourth-grade teacher at Tri-County Elementary School in Plainfield, Wisconsin, named the 2023 Wisconsin Agriculture in the Classroom Outstanding Educator.*



As a dairyman,

are you looking to improve the way your fresh cows ***transition, take off, peak and breed back?***

Are you looking to improve rumen health, rumen function, overall health, digestion, feed efficiency, reproduction and

YOUR BOTTOM LINE ???







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J. Randall Sensenig

J. Randall Sensenig
Quarryville, PA

"In March of 2021 a friend of mine told me that he was using and really liked the RECAL probiotic and that I should check into it. I wasn't having any issues but I was seeing a fair amount of corn passing through the cows. I asked my nutritionist about it and he said that products like that don't do any good and that it would be a waste of money. I decided to go ahead and call Jamie Troxel about the RECAL anyhow as I had been seeing his advertisements. We talked on the phone and Jamie said he was going to be in my area that next week, so I told him to stop in.

"Jamie came to my farm and looked at my diet, saying that he doesn't want to change anything, he just wants to see what type of diet I was feeding. He looked at the feed, the cows, and the manure, and asked some questions about the herd and where production was at. He then talked about the RECAL Probiotic and the three different products that he has to offer to feed on a daily basis. He then offered me a free 30-day trial and explained how that worked. I thought what the heck, I don't have anything to lose so I took him up on the offer.

"Jamie will tell you it is not all about milk production. It is the little things!!! If you don't get the little things right you aren't going to get higher production and be more profitable. He will also tell you that the RECAL isn't for just herds with issues; it can improve all herds but not all herds see the same results – every farm is different. Since I was seeing a fair amount of corn passing through the cows, he recommended I start with RECAL Plus SS. He showed me how to feed it and told me what to watch for. The cows don't lie but you need to know what to be looking for.

"When I started the RECAL Plus SS the manure was consistent but stiff and had a fair amount of corn and fiber showing. Milk production was hanging right about 81#, 4.00% BF, 3.10% Pro, 12 MUN, 100,000 SCC. Within three days I could see a difference in the manure. It was getting creamier and a few days after that I could see that there was less corn and fiber in the manure. I did gain about three pounds of milk about a week after starting the RECAL. I was seeing stronger heats too and I was extremely happy with what I was seeing in the cows. Since then, I have switched to feeding just the RECAL Plus.

"I milk about 80 cows near Quarryville, PA and I highly recommend every dairyman call Jamie and try the RECAL Probiotics even if your nutritionist tells you otherwise. With the 30-day trial he offers, what do you have to lose????"

— J. Randall Sensenig • (717) 940-0158

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WHAT HAPPENED? WHAT'S NEXT?

U.S.-Canada dairy trade relationship remains strained

Progressive Dairy Editor **Dave Natzke**

In this column, *Progressive Dairy* summarizes issues in the news and attempts to describe how they might affect dairy farmers. Look for more extensive background, details and updates online (www.progressivedairy.com).

Items in this column are compiled from *Progressive Dairy* staff news sources. Send news items to dave@progressivepublish.com.

WIC DAIRY CUTS

What happened?

As reported in the Jan. 1, 2023 issue of *Progressive Dairy*, the USDA's Food and Nutrition Service (FSN) has proposed cutting monthly allowances for milk under the Special Supplemental Nutrition Program for Women, Infants and Children (WIC). The International Dairy Foods Association (IDFA) estimates that the USDA's proposal would reduce the amount of dairy up to 6 quarts per month for pregnant participants and others. Those cuts could also reduce overall participation in the federal feeding program, according to a survey commissioned by IDFA.

What's ahead?

The USDA FSN is accepting feedback on the proposed changes until Feb. 21. To read the proposal and find information to submit comments, visit online (www.regulations.gov/document/FNS-2022-0007-0001).

Bottom line

Dairy (milk, cheese and yogurt) is the most commonly purchased food group by WIC beneficiaries (78%).

Conducted by Morning Consult, the IDFA-commissioned poll of 534 WIC participants showed that 20% of WIC participants would choose not to re-enroll in the program should the USDA follow through with the cuts to milk and dairy. Three-in-four WIC participants (76%) said they were concerned with the USDA proposal, with one-third (35%) saying they will need to use non-WIC funds to cover purchases of milk and dairy and one-quarter (26%) saying the reduction will make their shopping for milk and dairy products harder. Roughly one-third (34%) were unsure if they would re-enroll in the program following the proposed cuts.

Michael Dykes, president and CEO of IDFA, said the USDA's proposal flies in the face of the federal Dietary Guidelines for Americans, which says 90% of Americans are not consuming enough dairy to meet daily requirements. Reducing WIC benefits for milk and dairy will make life harder for millions of women, new mothers, infants and children at a time of high food costs and rising food insecurity, he said.

CLASS I PRICE, MOVER

What happened?

At $22.41 per cwt, January 2023's Federal Milk Marketing Order (FMMO) advanced Class I base price hit an 11-month low. However, the "average of" Class I mover formula had the smallest negative impact since July 2022.

What's ahead?

There's nothing official yet, but a formal petition seeking a hearing on potential FMMO reforms is expected early 2023. Multiple dairy organizations, including the National Milk Producers Federation and American Farm Bureau Federation, say they'll seek a return to the "higher of" Class I mover price formula.

Bottom line

Analyzing the Class I mover, the spread in the January 2023 advanced Class III skim milk pricing factor ($9.54 per cwt) and advanced Class IV skim milk pricing factor ($11.62 per cwt) was $2.08 per cwt, the narrowest since July 2022. The August-December 2022 spread averaged $3.97 per cwt.

Based on *Progressive Dairy* calculations, the Class I mover calculated under the "higher of" formula would have resulted in a January 2023 Class I base price of $22.70 per cwt, 29 cents more than the actual price determined using the





"average of plus 74 cents" formula. For the final five months of 2022, the Class I base price would have been about $1.20 per cwt higher under the "higher of" formula.

The economic impact on uniform milk prices within individual FMMOs depends on Class I milk utilization in each FMMO.

USMCA: U.S. AND CANADA

What happened?

The dairy trade relationship between the U.S. and Canadian governments is starting 2023 the same way it began a year earlier. In late December, U.S. Trade Representative (USTR) Katherine Tai requested new dispute settlement consultations with Canada over compliance of dairy obligations under the U.S.-Mexico-Canada Agreement (USMCA).

What's ahead?

The new request expands the U.S. challenge of Canada's tariff-rate quota (TRQ) allocation measures, contending those measures impose conditions that deny U.S. dairy producers and exporters Canadian market access agreed to under the USMCA. Canada's claim is that the TRQ allocation measures protect the country's supply management program.

Bottom line

Implemented on July 1, 2020, the USMCA (called the CUSMA in Canada) gave Canada the right to maintain 14 TRQs on a variety of dairy products. In notices to importers published in June and October 2020 and May 2021, Canada set aside and reserved a percentage of the quota for processors and for so-called "further processors," which U.S. dairy exporters said violated terms negotiated under the trade agreement. The USTR filed the first USMCA dispute settlement panel request in May 2021.

In December 2021, the dispute panel agreed with the U.S., giving Canada 45 days to comply with new TRQ allocation measures. Global Affairs Canada initiated public consultations regarding proposed changes in March 2022 and published changes in May. Those changes were quickly rejected by the National Milk Producers Federation (NMPF) and U.S. Dairy Export Council (USDEC), and the USTR requested a second dispute settlement consultation with Canada.

SOUTHEASTERN U.S. FMMOS

What happened?

Also discussed in the Jan. 1, 2023 issue, *Progressive Dairy* noted the USDA's Agricultural Marketing Service (AMS) had received a formal proposal (www.ams.usda.gov/rules-regulations/moa/dairy/petitions) to amend intermarket transportation credits in the Appalachian and Southeast Federal Milk Marketing Orders (FMMOs), and adopt new provisions to establish distributing plant delivery credits in the Appalachian, Southeast and Florida FMMOs. The proposal, submitted under the umbrella of the Dairy Cooperative Marketing Agency (DCMA), said the changes would incentivize more orderly movement of milk in the milk-deficit southeastern U.S.

The USDA posted two additional proposals received by the Dec. 19 deadline. One, from dairy co-op Prairie Farms, proposed an assembly performance credit fund and addresses transportation credits. Another proposal, from Tennessee dairy producer Michael Sumners, calls for distribution and reporting changes designed to increase FMMO policy transparency while encouraging locally sourced milk.

What's ahead?

The USDA is considering initiation of a rule-making proceeding, and a hearing could be held in late February. Additional analysis and specifics regarding a hearing schedule will be provided as they become available.

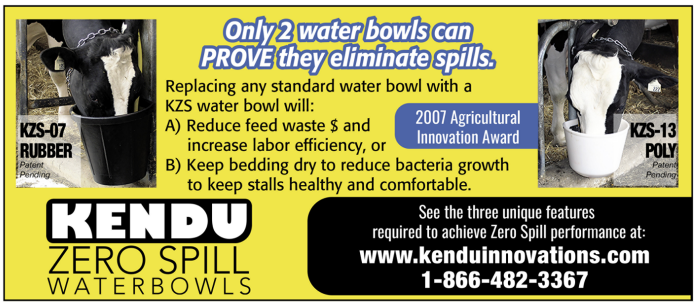
Bottom line

According to Calvin Covington, a retired dairy cooperative CEO who now does some farming, consulting, writing and public speaking, the proposal requests the maximum transportation credit assessment (assessment applies to Class I milk and paid by Class I buyers) be increased from 15 cents per cwt to 30 cents per cwt in the Appalachian order, and from 30 cents per cwt to 60 cents per cwt in the Southeast order. The transportation credit provides a partial reimbursement of transportation costs to handlers for supplemental milk purchased outside of the two marketing areas.

The proposal for implementation of a new distributing plant delivery credit fund in the Appalachian, Florida and Southeast orders would be modeled after the current transportation fund provision, Covington said. It would provide a partial reimbursement to handlers for hauling costs associated with moving milk from farms to distributing plants within each order, and from selected areas outside of the respective order considered a part of the order's year-round milkshed. It would be funded by an assessment on buyers of Class I milk. The maximum proposed assessments are: Appalachian – 60 cents per cwt, Florida – 85 cents per cwt, and Southeast – 50 cents per cwt.

The bottom line is: The assessments would add significant dollars to the three FMMO pools. These dollars could be used by handlers to offset hauling expenses year-round, currently paid by dairy farmers.







Cottonseed undervalued, soyhulls overvalued

Patrick French for *Progressive Dairy*

Feed expense is the largest outlay of cash for a dairy, making up 50% to 65% of total operating costs. Since feed is a significant cost contributor, we need methods to identify feedstuffs that will meet the nutrient requirement of the dairy cow more economically than the feedstuffs currently in the ration. Several technologies exist to rate or rank the economic value of feedstuffs in addition to the one this column uses.

Nutrient values are derived using the composition and weekly market prices for a basket of 26 feeds available in the region. Market prices are gathered from both published and unpublished sources. Values are determined for rumen-degradable protein (RDP), rumen-undegradable protein (RUP), effective neutral detergent fiber (eNDF), non-fiber carbohydrates (NFC) and fat. For RUP, NFC and fat, only the fraction digestible in the small intestine is valued. For brevity, eNDF is referred to as a nutrient though it is a ration descriptor.

When nutrient values are combined with the composition of a feed, we arrive at a relative economic value of the ingredient. This gives us a global perspective of the feed's value. However, many times we may need a specific nutrient, so we have derived nutrient-specific values for the categories of carbohydrates, proteins and fiber carbohydrates.

As we greet the new year, overall nutrient costs are up a modest 1% versus the previous month. Last year, we saw a 16% increase in nutrient costs with most of the increase occurring in the first half of the year. Although nutrient costs are mostly unchanged from the previous month, not all nutrients have changed similarly. For example, eNDF and fat are down, RDP and NFC are flat, while dRUP is up. The market cost for 1 pound of dry matter is 17.2 cents, which is equivalent to feed costs in the range of $8.65 to $9.25 per cow per day or $10.90 to $11.55 per hundredweight of milk. These costs are running above the short-term and long-term averages of 16.4 and 14.1 cents per pound of dry matter, respectively.

The table lists several feeds, their price and their value based on whether all nutrients (comprehensive) or specific sets of nutrients (carbohydrates, proteins or fiber) were used in their valuation. Blue shading and intensity of shading indicates undervalued feeds, and yellow shading indicates overvalued feeds. Feeds without shading indicate the market price and derived value are similar.

Overall, bakery, corn silage, cottonseed and several other ingredients are undervalued, whereas blood meal, molasses, tallow and several other ingredients are overvalued. Undervalued feedstuffs when observing specific nutrient sets are beet pulp (carbohydrates), corn gluten meal (protein) and corn silage (fiber).

Use of undervalued feedstuffs may reduce ration cost, but value is only one of several factors that should be considered when evaluating the inclusion of a new ingredient.



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COMMODITIES

Corn* *(in tons)* *(in bushels)*

Jan 3	Price	3-week change	Price	3-week change
MN	$227	$2 ▲	$6.35	.05¢ ▲
PA	$274	$17 ▲	$7.66	.46¢ ▲
WI	$221	$11 ▲	$6.19	.31¢ ▲

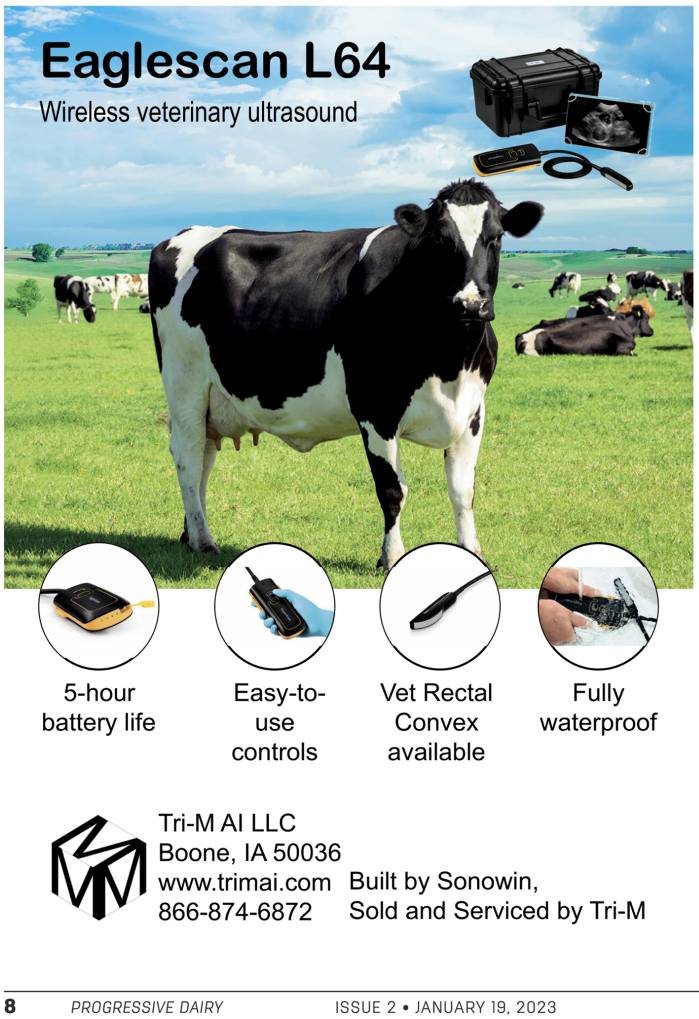
Soybean meal* *($/ton)*

Jan 3	Price	3-week change
MN	$455	$20 ▲
PA	$560	$13 ▲
WI	$500	$20 ▲

Cottonseed* *($/ton)*

Jan 3	Price	3-week change
MN	$475	$40 ▲
PA	$340	N/C
WI	$400	N/C

*Price quotes contributed by Western Milling, J.D. Heiskell and independent sources.







FEED PRICES

Regionally available feeds and their recent prices

Feed name	Market Price $/T As-Fed	Comprehensive Value, $/T As-Fed	Carbohydrate Value, $/T As-Fed	Protein Value $/T As-Fed	Fiber Value $/T As-Fed
Alfalfa, Good	330	284	318		237
Alfalfa, Premium	355	295	317		
Alfalfa, Supreme	370	315	319		
Bakery/Candy Byproduct	280	414	270		
Barley Grain, ground	284	259	283		
Brewers Grains, 30% DM	101	141		98	66
Canola Meal	443	458		370	
Citrus Pulp	379	225	469		
Corn Gluten Feed	267	321	259	192	252
Corn Gluten Meal	803	752		843	
Corn Grain, ground	276	299	290		
Corn Silage, 35% DM	67	105	119		122
Cottonseed	383	632		227	211
Cottonseed Hulls	393	251	241		274
Cottonseed Meal	434	500		414	
Distillers Dried Grains (DDG)	330	446		299	202
Hominy	352	353	276		
Molasses	283	228	272		
Porcine Blood Meal	980	835		1010	
Soybean Hulls	319	219	223		437
Soybean Meal, 48%	519	499		464	
Soybean Meal, expeller	527	645		599	
Straw	202	229	285		316
Tallow	1313	1179			
Urea	955	943		971	
Wheat Midds	313	338	180		168

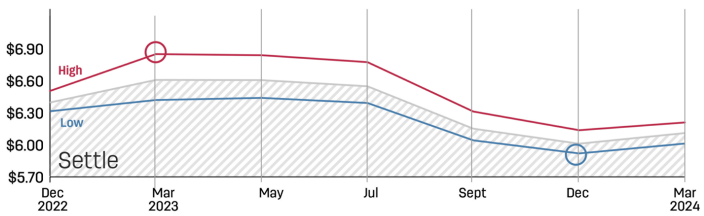
Extremely undervalued feed
Undervalued feed
Extremely overvalued feed
Overvalued feed

FUTURES

Corn *(dollars per bushel)*

High: $6.85 **Low:** $5.92

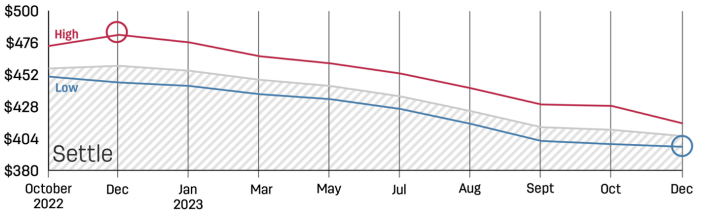
January 2	Avg. 3-week settle	High/Low
Dec '22 contracts	$6.40 -$0.08 ▼	$6.44/$6.35
Mar '23 contracts	$6.61 +$0.05 ▲	$6.83/$6.44



Soybeans *(dollars per ton)*

High: $481.80 **Low:** $397.70

January 2	Avg. 3-week settle	High/Low
Dec '22 contracts	$456.50 +$27.74 ▲	$471.70/$448.30
Jan '23 contracts	$458.53 +$31.02 ▲	$478.50/$449.10



Source: Chicago Mercantile Exchange data



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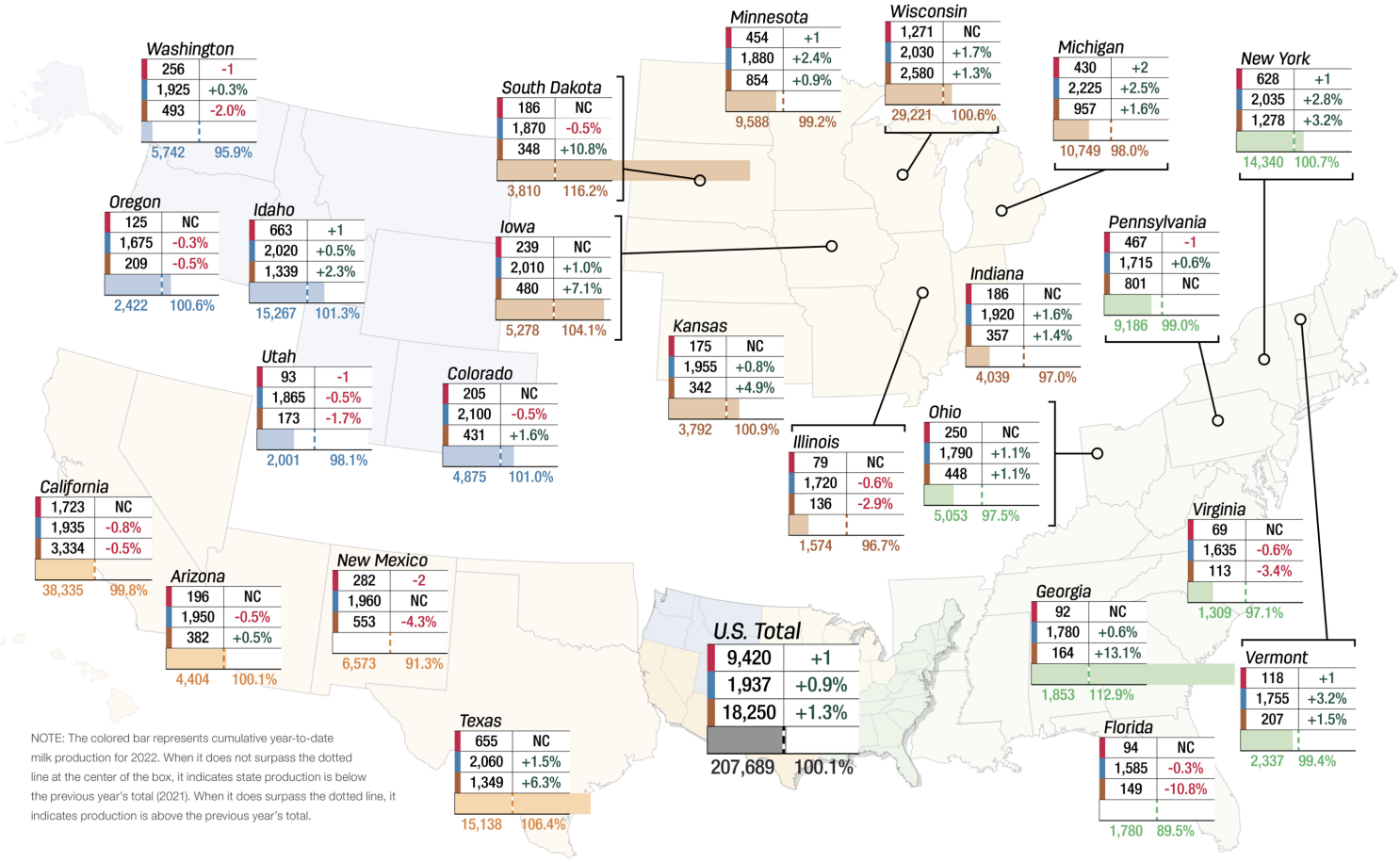
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NOTE: The colored bar represents cumulative year-to-date milk production for 2022. When it does not surpass the dotted line at the center of the box, it indicates state production is below the previous year's total (2021). When it does surpass the dotted line, it indicates production is above the previous year's total.

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PROGRESSIVE DAIRY

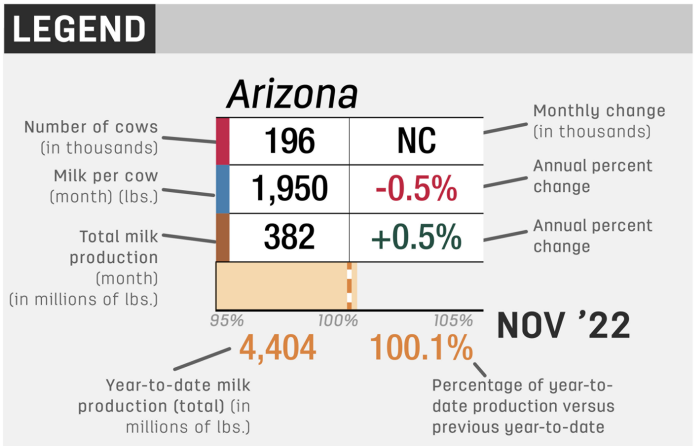
The month changed but the four-month trend didn't: November 2022 U.S. milk production was up about 1.3% from a year ago, with continued slow growth in cow numbers and a small increase in milk output per cow being contributing factors.

Cow numbers inch higher

Preliminary November 2022 U.S. cow numbers were estimated at 9.42 million head, up 38,000 from a year ago and 1,000 more than the October 2022 revised estimate. It's the highest number of cows in U.S. herds since August 2021.

Among the 24 major dairy states, November 2022 cow numbers were estimated at 8.936 million, up 48,000 from November 2021 and 1,000 more than October 2022. The USDA also revised the preliminary October 2022 cow count up by 1,000 head.

Texas led all states in year-over-year herd growth in November 2022, up 30,000 head from a year ago, followed by South Dakota, Iowa, Idaho and Georgia. Cow numbers in those five states were up a combined 85,000 head compared to a year ago. In contrast, cow number declines were again heaviest in New Mexico and Florida, down 13,000 and 11,000 head, respectively.



Milk per cow growth still modest



Dave Natzke
Editor
Progressive Dairy
dave@progressivepublish.com

The year-over-year increase in average milk production per cow was again modest, up just over one-half pound per day across the U.S. Year-over-year milk per cow increased in 14 states, led by Michigan, New York and Vermont, each up about 55 pounds per month. Cows in five states, led by California, had monthly production declines of 10-15 pounds compared to November 2021.

Milk production

November 2022 year-over-year milk production was up in 15 states. Texas led all states in terms of volume growth, up 80 million pounds, alone nearly offsetting an 83-million-pound decline in eight other states. Joining Texas, producers in New York, South Dakota, Iowa, Wisconsin and Idaho increased milk output by 248 million pounds, combined. The eight states posting volume declines were led by New Mexico, Florida and California.

Georgia (up 13.1%) and South Dakota (up 10.8%) again led all states in year-over-year percentage milk growth. In contrast, Florida milk production was down about 10.8%.

November 2021-22 recap at a glance

Reviewing the USDA preliminary estimates for November 2022 compared to November 2021:

- U.S. milk production: 18.25 billion pounds, up 1.3%
- U.S. cow numbers: 9.420 million, up 38,000 head
- U.S. average milk per cow: 1,937 pounds, up 17 pounds
- 24-state milk production: 18.48 billion pounds, up 1.4%
- 24-state cow numbers: 8.936 million, up 42,000 head
- 24-state average milk per cow: 1,956 pounds, up 17 pounds

Source: USDA Milk Production report, Dec. 19, 2022



AUCTION PRICES December 12, 2022	Top Springer	Top Average	Medium Holstein Springer	Short-breds	Open Heifers Light	Open Heifers Heavy	Heifer Calves	Bull Calves	Breeding Bulls
Empire Livestock – Burton Market Vernon, NY (800) 257-1819 *(sale 12/15/22)*	$1,300 $400 ▼	N/T	N/T	N/T	N/T	N/T	$50 NC	$180 $20 ▲	N/T
Mammoth Cave Dairy Auction, Inc. Smiths Grove, KY (800) 563-2131 *(sale 12/14/22)*	$675 $700 ▼	N/T	N/T	$1,175 $500 ▲	$450 $60 ▼	$875 $75 ▲	$180 $20 ▼	$250 $20 ▲	$950 $150 ▲
New Holland Sales Stables New Holland, PA (717) 354-4341 *(sale 12/28/22)*	$1,730 $45 ▼	$1,575 $275 ▲	$875 $275 ▼	$1,850 $300 ▲	$460 $90 ▼	$850 $12 ▲	$55	$172	$900 $300 ▼
Equity Co-op Livestock Reedsville, WI (920) 754-4361 *(sale 12/15/22)*	$1,800 NC	$900 NC	$850 NC	$1,300 NC	$50/cwt NC	$120/cwt NC	$40 NC	$150 $30 ▲	N/T
Lake Odessa Livestock / Ravenna Auction LLC Lake Odessa, MI (616) 374-8213 *(sale 12/12/22)*	$1,975 $25 ▼	$1,000 NC	N/T	N/T	$375	N/T	N/T	N/T	N/T
Rosebush Sale Barn, Inc Rosebush, MI (989) 433-5348 *(sale 1/4/23)*	$1,875 $75 ▲	$1,400 $100 ▼	$1,400 NC	$1,300 $150 ▲	$116/cwt $24/cwt ▼	$120/cwt $5/cwt ▲	$150 $20 ▲	N/T	N/T
Equity Co-op Livestock Lormia, WI (920) 269-4351 *(sale 1/3/23)*	$1,800 NC	$1,300 NC	$1,200 NC	$1,400 NC	$400 NC	$950 NC	$60 $10 ▼	$190 $30 ▲	N/T
Pipestone Livestock Auction Market Pipestone, MN (507) 825-3306 *(sale 12/16/22)*	$1,800 $100 ▼	$1,650 $160 ▼	$1,375 $285 ▼	$1,300	$109/cwt $9/cwt ▲	$130/cwt $15/cwt ▲	N/T	N/T	N/T
Oberholzer Dairy Cattle & Auction Loyal, WI (715) 773-2240 *(sale 12/8/22)*	$1,900 $250 ▲	$1,400 $150 ▲	N/T	N/T	$95/cwt $5/cwt ▲	$115/cwt NC	$60 NC	$160 $30 ▼	$1,400 $250 ▼
Springfield Livestock Marketing Center Springfield, MO (417) 869-9500 Doug Thomas (417) 840-9316 *(sale 11/8/22)*	$1,700 NC	$1,200 NC	N/T	N/T	$300 NC	$800 NC	$100 NC	$150 NC	N/T
Premier Livestock & Auctions Rocky Olsen Withee, WI (715) 721-0079 *(sale 12/28/22)*	$1,775 $125 ▼	$1,250 $50 ▼	$1,225 $50 ▼	$1,225 $25 ▼	$775 $100 ▲	$1,125 $25 ▼	$30 $45 ▼	$185 NC	N/T
Toppenish Dairy Replacement Sales Toppenish, WA (509) 865-2820 *(sale 12/2/22)*	$1,550 NC	$1,250 NC	$1,150 NC	$1,200 NC	$125/cwt $5/cwt ▲	$117/cwt $17/cwt ▲	$30 NC	$15 NC	N/T
Turlock Livestock Auction Yard Turlock, CA (209) 634-4326 *(sale 12/9/22)*	$2,000 $600 ▼	$1,500 $350 ▼	$1,400 $100 ▲	N/T	N/T	N/T	N/T	N/T	N/T
Escalon Livestock Market Escalon, CA (209) 838-7011 *(sale 12/28/22)*	$2,075 NC	$1,600 NC	$1,525 NC	N/T	$60/cwt NC	$90/cwt NC	N/T	N/T	$1,250 NC
Farmers Livestock Market Oakdale, CA (209) 847-1033 *(sale 12/8/22)*	$1,775 NC	$1,550 $50 ▲	$1,400 $100 ▼	N/T	$100/cwt NC	$100/cwt NC	N/T	$75 $25 ▲	$1,300 NC

N/T = No test NC = No change Decrease (since last sale) ▼ Increase (since last sale) ▲

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Safe milk: Drug residue incidence drops for sixth straight year

Progressive Dairy Editor **Dave Natzke**

AT A GLANCE

The number of milk samples testing positive for drug residues last year was the lowest in the 27 years data is available, back to 1994.

The FDA annual analysis shows dairy consumers continue to be safer than ever when it comes to milk, with the industry setting another new record low for samples testing positive for animal drug residues in the past year.

During fiscal year (FY) 2022 (Oct. 1, 2021 – Sept. 30, 2022), nearly 3.7 million milk samples were tested for animal drug residues. Of those, just 424 tested positive, according to the FDA's National Milk Drug Residue Database Fiscal Year 2022 report (www.nmdrd.com/fy-22.pdf).

The Grade "A" Pasteurized Milk Ordinance (PMO), which governs the state regulatory agencies in the implementation and enforcement of their Grade A milk safety program, requires that all bulk milk tankers be sampled and analyzed for animal drug residues before the milk is processed. Any bulk milk tanker found positive is rejected for human consumption.

The number of samples testing positive for drug residues in FY22 was down from the year before, and the lowest number of milk samples that tested positive for a drug residue in the 27 years data is available, back to 1994. By fiscal year, the number of milk samples testing positive for drug residues over the past decade was:

- 2022 – 424
- 2021 – 451
- 2020 – 536
- 2019 – 556
- 2018 – 584
- 2017 – 605
- 2016 – 618
- 2015 – 579
- 2014 – 703
- 2013 – 731
- 2012 – 828

State and local agencies conduct drug residue tests at four "locations":

- Bulk milk pickup tankers (bulk raw milk from a dairy farm): Samples are taken on receipt of every tanker load at a milk receiving facility. Of more than 3.33 million samples, 269 (0.008%, or 8 thousandths of 1%) tested positive, resulting in the disposal of 12.39 million pounds of milk.

- Producer (raw milk obtained from the bulk tank/silo from a dairy farm): Of 285,629 total samples, 151 (0.053%) tested positive, resulting in the disposal of 187,000 pounds of milk.

- Other (milk from milk plant tank/silos, milk transport tankers, etc.): Of 43,843 total samples, two tested positive, resulting in the disposal of 95,000 pounds of milk.





Just 424 out of nearly 3.7 million milk samples tested positive for animal drug residues in the FDA's annual analysis. Those samples testing positive were rejected for human consumption. That works out to be only 1 out of every 8,702 samples, the same number of dots used to create this illustration. Can you spot the one different-colored dot?

Illustration by Corey Lewis.

• Samples of pasteurized fluid milk and milk products: Finished dairy products in bulk or package form, after pasteurization, including milk, cream, condensed and dry milk and milk products, and condensed and dry whey and whey products were tested. Of 29,195 total samples, two tested positive for animal drug residues and resulted in the disposal of 38,000 pounds of milk.

Overall, about 12.71 million pounds of milk were found positive for a drug residue and disposed of in FY22, down from FY21's total of 13.24 million pounds.

Testing for specific drugs

In addition to testing for presence of any drug residues, specific tests seek to identify residues from four different groups or individual drugs using 19 different testing methods. Since some samples are tested for more than one drug residue, nearly 3.88 million total tests were conducted, with 436 testing positive.

Of samples testing positive, 427 samples were positive for beta lactams, seven were positive for sulfonamides, two were positive for tetracyclines, and none were positive for aminoglycosides.

Of the 427 samples positive for beta lactams, 264 were drawn from bulk milk pickup tankers (both Grade A and non-Grade A), 159 were in samples drawn from bulk tanks/silos from dairy farms, and two each were from samples from milk plant tank/silos and pasteurized products.

Mandatory drug residue reporting is required by state regulatory agencies under the National Conference on Interstate Milk Shipments (NCIMS). NCIMS is a voluntary organization directed and controlled by member states to promote the availability of a high-quality milk supply.

The FDA and NCIMS, through their collaborative efforts, have developed a cooperative, federal-state program (the Grade A Interstate Milk Shippers Program) to ensure the sanitary quality of Grade A milk and milk products shipped in interstate commerce.

The National Milk Drug Residue Data Base (NMDRD) is a voluntary industry reporting program, under contract to FDA. Data reported to the NMDRD are for educational and analytical purposes, and are not intended or suitable for regulatory action or follow-up. Fiscal year 2022 marked the first year in the history of the NMDRD (since fiscal year 1999) that usage of non-validated tests was not reported.

The system includes all milk, Grade A and non-Grade A, commonly known as manufacturing grade. Grade A milk represents approximately 99% of the milk supply in the U.S. and is regulated through the NCIMS by the state regulatory agencies.



PROGRESSIVE DAIRY PODCAST

Season 5, episode 1

In this episode, host Kimmi Devaney talks with Derrick Josi, who is an Oregon dairy farmer and author that has built an online presence of 800,000 followers on Facebook and recently moved cows into new facilities on the farm. Devaney and Josi discuss what he did differently with the new facilities, how and why he started advocating online, why he wrote a book, and much more.

Topics covered:

- Derrick's social media advice for dairy farmers
- What's next after writing a book in 2021
- The area of the dairy industry Derrick is most excited about in the future

"That's the beauty of social media – it's your page, run it the way you want to and how you feel comfortable doing it. We shouldn't all have one cookie cutter way of doing things because nobody wants everybody to be the same. There will be people that I'm not going to reach because they find me too 'in your face' for their liking and they will find a farmer that's doing it a little different, and that's okay. There's no wrong way to do social media."



Photo provided by Derrick Josi.

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Dairy activity systems and how they can benefit your herd



Julianne Holler for *Progressive Dairy*

Not only is technology making major advances in terms of communication devices and everyday life in general, but in the agriculture and farming world as well. Changes in technology in these precise areas can be somewhat challenging due to some farms having to revamp their whole protocol and sometimes even facilities to make them work with the latest technology. On the other hand, more often than not, it seems that changing the "old" way tasks were physically done and/or recorded to ways with technology not only saves the farmer a lot of time, but can end up leading to a financial benefit as well from an efficiency standpoint.

In crop farming, upgrades in technology have led to things such as auto steer and yield monitoring. In animal production, RFID eartags and recording software, such as PCDart, have been major changes that allow farmers to keep better track of their animal identification information, as well as their herd health records. I cannot speak for other livestock operations, but in dairy farming, going even one step further are technological advances like monitoring eartags and collars. Each brand and type of these varies as to what information they are able to collect, but all have features that not only will benefit the cow's health in terms of diagnosis but will also help the farmer in knowing what is actually going on with the cow that maybe cannot be seen with the eye, or is getting missed when not present in the barn.

As previously mentioned, the main types of dairy activity monitoring systems include neck collars, eartags and ankle bands. Each of these are made by various companies, and each have their own unique features. Some may record body temperature and activity, whereas other might check activity and rumination. The farm I am employed by had tossed around the idea of collars for a couple of years, but never really investigated enough to make the push to purchase a certain system type until the past six months. Overall, there was one main company we were introduced to, and did further research within their systems. Ultimately, for the specific setup we utilize and for the information we wanted to gather, we went with the eartag monitors.

We are about six months into the investment with the Semex ai24 system – and so far, are very pleased. The most significant changes we have noticed are that more cows are being bred, and cows not feeling well are noticed sooner. There will always be a couple of things you would like to change, but overall, so far, these tags have been a great choice. With that, a little overview on our experiences with the tags for anyone who may be considering putting in a dairy activity monitoring system.

Foremost, I think one of the key benefits of the system is: The three main employees at the farm have the app on their phone that has the vast majority of the information from the tags and the cows' records on it. A main computer may have a few more details, but overall, the app is extremely useful in getting notification for when cows are in heat, need to be inspected, in distress or even pre-calving. Like previously mentioned, we are breeding a lot more cows these days. The eartags are picking up signs of cows being in heat that we maybe weren't seeing visually, as well as activity from heats when we are not in the barn. In addition to more cows being bred, our pregnancy results have increased as well. I believe a major factor in this positive trend is from breeding during the best recommended time. Not only does the app notify you of a heat, but a chart is also given for ideal breeding times and, even more specifically, for sexed versus conventional semen.

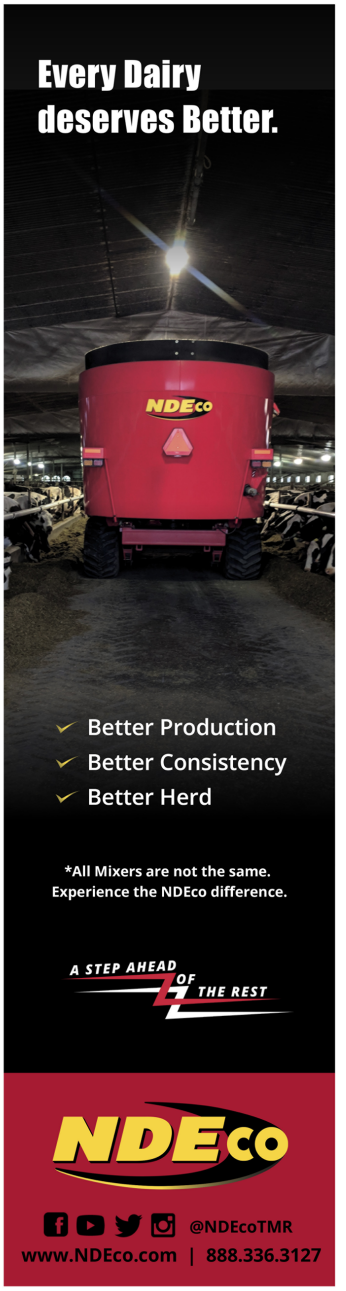
Subsequently, animal health alerts are another plus. An animal to inspect list is on the app, which includes recent fresh cows, cows that have had rumination changes or other changes. This is a very nice feature that leads you to cows to either monitor more carefully over the next few days or to dig deeper to find out what the issue is. A small but convenient feature is the light on the eartag that can be turned on in the app during specific times to either sort cows, or be on for cows on the to breed or inspect list.

Like I said before, everything has one or two things we'd all like to change. Overall, for the eartags we have not found much so far, but the biggest problem we've faced is tags falling out and then having to find them. On an occasion, we will get a notification for distress, or to inspect for health, and really cannot find a problem. But in a case like that, I would rather it be a false positive than getting no notification and there actually being an issue we missed.

At the end of the day, more cows are getting bred, on time, and any health issues are being noticed/treated in a timelier fashion. Right there, money is being saved by having cows open not as long and health issues costing milk production. Although we are still fairly new to these tags, so far the benefits have outweighed the downfalls, and I would highly recommend a fellow farmer to check into an activity system you think will work well for your herd.

Julianne Holler is a freelance writer in Sharpsville, Pennsylvania.





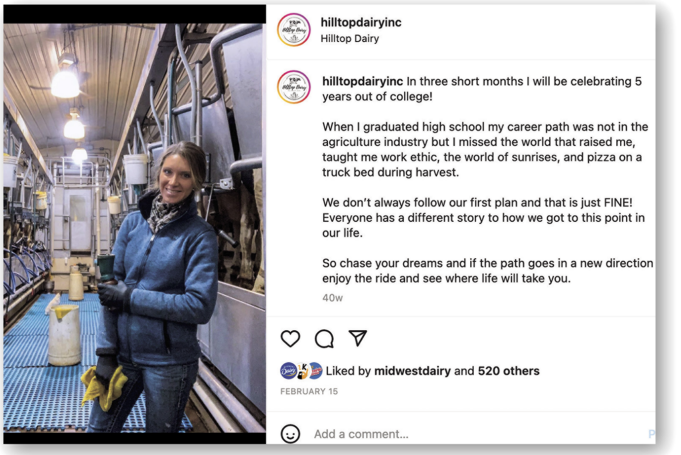


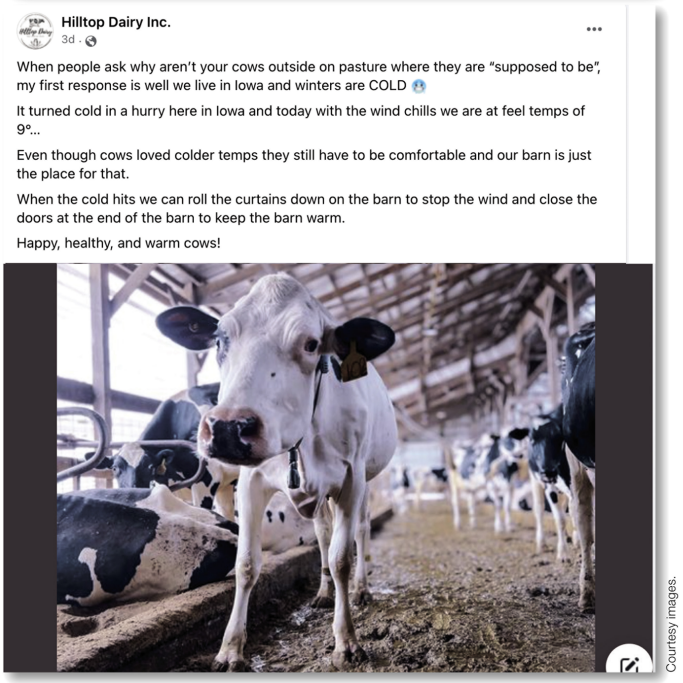
Hilltop Dairy Inc.

Madi Roth Skubal
Iowa

iowafarmwoman, 1,300 followers

@hilltopdairyinc, 17.5K followers





Courtesy images.

How did you get started sharing your farming journey on social media?

SKUBAL: After I graduated high school, Instagram was the new social media app, so while I was in college I would make some posts about the farm, but after I graduated college is when I really started to get involved with sharing our farm story on both Instagram and Facebook. I was getting lots of good feedback from people, even locals in my town who loved to hear about dairy farming and see a different side of agriculture.

How did you build such a strong following on your Facebook/Instagram page?

SKUBAL: For the longest time, my Instagram page was at about 8,000 followers – but grew overnight once I started making reels. I wouldn't say that it's my strongest talent, but it's a fun thing Instagram added that can draw people in and to make jokes but educate at the same time.

On which social media platform are you most active?

SKUBAL: I spent most of my time on Instagram, but whatever I do on Instagram automatically gets sent to Facebook for those followers.

What is the most popular post you've ever made?

SKUBAL: My most popular video that I have posted to Instagram got 427K views and over 16K likes. I used a voiceover from *The Office* and how I got a four-year degree but still really don't know what I'm doing running a farm. Although it was a joke, there is some truth to it since real-life experience and the school of hard knocks really is what teaches you.

Can you share an example of a rewarding experience you've had using social media to communicate about your life on the dairy farm?

SKUBAL: Over the years of sharing our story, I will say that the good comments *way* outweigh the negative comments I get. Many times people only see the bad, but I have been blessed to have so many people message me kind words of encouragement. Recently, I had a follower from Las Vegas message me asking some questions about how we run our dairy farm. After I looked at her page, I realized that she was not raised anywhere near agriculture and in the heart of Las Vegas. I always tell my followers to ask farmers and not Google. It was so refreshing to have a conversation (which is still going on to this day) about our dairy and answer her questions. She keeps an open mind to learn, and even her questions will stop and cause me to think as well about maybe a different way we can practice on the farm. I tell my dad that I am not on social media to change the minds of activists but to educate the middle-ground consumers, and she is a prime example of how farmers sharing their story can gain a new consumer.





PROGRESSIVE **EVENTS**

Automation, technology will play greater role in the future of dairy

Progressive Dairy Editors **Dave Natzke** and **Karen Lee**



Photo by Karen Lee.

Technology adoption at Wichman Farms allows for calves to consume milk that was automatically collected, sorted, pasteurized, routed and fed. Wichman Farms was one of three stops on the Alltech Dairy School farm tours in November.

AT A GLANCE

Alltech's annual Dairy School highlighted technology inroads covering all aspects of dairy management, from calves and feeding to milking and manure.

Ongoing struggles with labor costs and availability are at the forefront of increased discussions regarding automation in many industries, and dairy is no exception. Alltech's annual Dairy School took the discussion beyond current labor pains to address technology's impact on future dairy management.

Held Nov. 30 – Dec. 1, the event featured tours of three farms utilizing automation and technology, followed by a day of formal presentations at Lambeau Field in Green Bay, Wisconsin. With more than 230 attendees, including dairy farmers, nutritionists, veterinarians and other technical experts, topics ranged from precision feeding, calf management and the implementation of new milking systems to the financial implications facing dairy producers.

Farm tours

Starting the two-day event, two coach buses traveled through northeastern Wisconsin to find various forms of technology being implemented on dairy farms.

The first stop was Green Valley Dairy in Krakow, Wisconsin. This farm featured an automated milking facility with 12 robots built in addition to the farm's conventional parlor system. Two years ago, the farm converted to capturing and shipping renewable natural gas from its anaerobic digester and reuses the dried solids for bedding.

At Hoffman's Happy Holsteins in Peshtigo, Wisconsin, the tour group saw one of only several automated rotary parlors in the country in operation. Cows are brought to the parlor where the milking unit self-attaches, cleans, dries, stimulates, milks and post-dips on its own. The parlor will stop on its own to allow a slow milker to finish and then start rotating again. With this technology, the farm has only one employee monitoring the milking process.

The final tour stop at Wichman Farms in Seymour, Wisconsin, showcased interacting automation from the milking barn to the calf facility. The Wichman family converted to automated milking in 2013 when they built a new facility with four robots. Six years later, they built a new group calf barn, 200 feet from the automated milking barn. Using a small pasteurizer in the milking barn, they collect waste milk from the cows and pasteurize it before piping it underground to the calf facility where it is stored and fed out through two automated calf feeders.

Weiland: Impact of technology

In kicking off the formal program, Dan Weiland, Alltech's U.S. dairy business manager, said that in addition to genetics, technology "will take dairy to the next level" by 2050. In addition to robotic milking, feeding technology will lead to more consistent diets and automated cooling systems will enhance cow comfort while minimizing water usage. Those and other technology, such as systems that monitor a cow's breath for methane emissions, will have a far-reaching impact on future dairy managers, Weiland said. One key to success will be working through all the data generated and using it to manage cows individually.

DeVries: Feeding technology

While addressing the need for additional precision in dairy management, Trevor DeVries, professor and dairy cattle behavior and welfare research chair at the University of Guelph, focused specifically on the use of feeding technology. While dairy feeding is still generally managed at the group level, robotic milking combined with other technology will provide more opportunity to manage cows at the individual level, he said.

When it comes to managing cows, feeding requires both accuracy and precision, DeVries said. Accuracy means hitting the feeding target, matching the delivered ration to the formulation, while precision means hitting the same spot on the target every day to meet the cow's consistency needs.

"We want consistency in the way that we house, manage and milk cows," DeVries said. At the same time, striving for more consistency in feed ingredients, mixing, delivery and pushing up feed leads to more efficient and consistent digestion, cow health and productivity.

"The reality is: For most farms, the process of mixing and delivering feed is something that is controlled by humans," he said. "The challenge we have with any human-operated task is the risk of variation, both within a person as well as between persons."

DeVries expects dairy labor challenges will continue to impact dairy, creating bottlenecks and inconsistency, and fuel the need for automation and technology adoption.

"Automated technologies, particularly in feeding, are allowing us to maintain greater accuracy and precision in diet preparation and delivery," he concluded.

Costa: Starting early

In "Setting Up the Next Generation: Raising Calves to Go Above and Beyond," Joao Costa, dairy instructor and researcher at the University of Kentucky, summarized studies on calves, including nutrition, housing and behavior.

Automation and technology in calf raising is providing the tools to collect data that is changing the management relationship with calves, Costa said. Those changes can improve calf nutrition, socialization, diseases and calf health.

"If we want to raise those calves, we need to do it right from the beginning, especially with nutrition," Costa said. Automated feeding systems can help deliver milk and feed to calves

Continued on page 20

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Progressive Events, cont'd from page 19

when they want it, and using activity monitors in calves provides early detection of the onset of disease, well before clinical signs appear.

Costa said cows of the future will have to be adaptable, able to thrive in a complex environment. He said individual housing of calves leads to later social ranking, increased aggression and increased fear response. He said socialization between and among calves at an early age improves social facilitation and learning as they age, with a big impact on their future productivity. Additionally, calves that "learn" technology early in life may be better suited for robotic milkers and other technology as cows.

"We need to proactively plan what we expect the calves to do and change automated management to do what we want to do," Costa said.

Rodenburg: An automation mindset

Jack Rodenburg of DairyLogix Consulting in Woodstock, Ontario, Canada, shared insights and numbers he's collected while working with dairy farmers adopting automation and technology over the past two decades. He reviewed experiences with automated systems covering milking, feeding, bedding, manure handling and calf management.

When it comes to adopting automation, Rodenburg said embracing technology frequently requires a change in mindset.

"A lot of older dairy farmers tell me they're too old and not making changes while waiting for the kids to take over," he said. "I would really like to encourage you to embrace the idea of staying relevant and challenging yourself with new ideas and new approaches. It also will teach your children the right things and give them the right example."

Rodenburg described variations in performance and challenges among automated milking systems, urging producers to match those attributes with personal farm goals and herd size.

"Be aware and understand those differences and pick the things that matter to you and write the protocols for the things you then have to adapt to," he said. "But I think as robots get better and cheaper, and labor gets harder to find and is more expensive, it's really time to revisit that, and I think today robotic milking fits everywhere."

However, he urged producers to look at the expected life of their current milking systems.

"The time to invest in new technology is when the old technology is worn out. It can't replace the parlor you bought five years ago but haven't paid for yet," he said. "So when I said I think a robot is in everyone's future, it might be 20 years from now when your parlor is at the point where [it's time to be replaced]."

In terms of the newness of technology and companies developing new products, he advised producers to avoid being guinea pigs. "It's nice to be leading edge, but you need to avoid the bleeding edge," Rodenburg said.

Monger: Evaluating financials

Cassie Monger of Compeer Financial discussed adoption of dairy automation, especially robotics, from a financial perspective.

Raised on a dairy near St. Cloud, Minnesota, Monger shared experiences as both a producer and a lender. She recalled a time about seven years ago when her family farm was faced with challenges in finding adequate labor and considering a move toward automated milking. Initially, they encountered a lender with little knowledge of the technology.

"We're now working with advisers on our farm where we need them to challenge us to make sure we're geared up for success," she said. "It's truly about what we know, who we know and what they know so they can really bring value back to us."

Considering technology adoption first requires assessing where the dairy currently is in terms of management capabilities, the condition of facilities and production metrics, and gauging where the dairy is compared to others. That helps determine whether the dairy can make improvements without significant investments.

It's also important to know the dairy's equity position to determine whether it's in the position to borrow money to invest in technology – along with related items such as purchasing additional cows, expanding or improving facilities, or a manure-handling system.

Frequently, she noted, producers look at the capital investment but forget to include operating costs – including repairs and maintenance, supplies and energy costs – when comparing automation systems.

"Robotics is an area where we tend to see the most variances when it comes to operating expenses and how it impacts income," Monger said. "If you're only looking at the capital costs, you're going to come up with an incomplete analysis. There are a lot of other factors that go into comparing these systems."

Monger warned that automation may redefine and raise the caliber of labor needs on the dairy, but not eliminate it. It will also require changes in cow management.

"We know these new technologies and systems improve our efficiencies, and they're giving us more data to manage our cows better, to manage our dairies better, through more targeted feeding and a focus on improving overall cow health, leading to increased productivity," she said. "At the end of the day, our main goal is really managing these tools so we can be the most effective."

ALLTECH WISCONSIN NAMES MVE AWARD WINNERS

Progressive Dairy Editor **Dave Natzke**

Recognizing the importance and value of dairy employees, the Alltech Dairy School, held in early December in Green Bay, Wisconsin, featured the presentation of the 2022 Most Valuable Employee (MVE) Awards.

Awarded by Alltech Wisconsin, the MVE award recognizes top dairy farm employees in Wisconsin, Minnesota and northern Illinois. Nominations are made by farm managers, dairy owners, farm consultants or nutritionists, with emphasis on employee work ethic, perseverance, honesty and integrity.

Winning the 2022 MVE Award was Derek Dusek of Dusek Family Farm in Pepin, Wisconsin.

Nominated by Lee Kloeckner of AgPartners, Dusek had the desire to get involved on his family's dairy farm early in life. At the age of 3, he would sneak out in the morning to help his father and grandfather do chores. As he got older, he could not wait to get home from school to help with farm activities and would try to convince the bus driver to drop him off at the field where they may have been working at the time. When Dusek was in high school, he and his father, Mark, began to make plans to build a new parlor and grow their dairy herd.



Alltech Wisconsin presented 2022 Most Valuable Employee (MVE) Awards during the Alltech Dairy School, held in early December in Green Bay, Wisconsin. Award recipients were: first place, Derek Dusek (center), pictured here with (left to right) Lee Kloeckner of AgPartners, Bailey Fagerland, Gabriella and Sue Dusek.



Photos courtesy of Alltech.

Second place, Angel Sánchez and Estela Melenudo of Zirbel Dairy Farm, DePere, Wisconsin.



Third place, Mitch Guyette of Norm-E-Lane Dairy, Chili, Wisconsin.

In the fall of 2018, Mark was diagnosed with non-Hodgkin's lymphoma. During his father's medical treatment, Derek was forced to take on additional challenges and overcome limited labor availability. When Mark passed away on Aug. 30, 2019, Derek was faced with a decision to quit farming or carry on his father's legacy.

Choosing to do what he loved, Dusek began to rebuild the herd. In February 2022, the family leased a nearby dairy facility with a parlor and freestall barn and are now milking about 160 cows. Derek has become the father figure to his 14-year-old sister and works closely with his brothers to complete the day-to-day tasks on the farm.

Kloeckner said Derek's perseverance and excellence compelled him to nominate Dusek for the Alltech award.

"He went from working with his father to being the person in charge; Derek does it all," Kloeckner said.

"Dairy farmers face many challenges, and in situations such as Derek's, they must wake up the next morning and continue to milk cows even after losing a loved one," said Jorge Delgado, manager of the Alltech Training, Talent Development and Retention Program for Dairy Workers.

Other finalists

The other finalists honored during the Alltech Dairy School included Angel Sánchez and Estela Melenudo of Zirbel Dairy Farm, DePere, Wisconsin, nominated by Kris and Chelsea Scheider; and Mitch Guyette of Norm-E-Lane Dairy, Chili, Wisconsin, nominated by Jim Barmore of GPS Dairy Consulting.

Sánchez and Melenudo joined Zirbel Dairy Farm during the beginning phases of a farm transition and expansion. Since then, Sánchez has excelled in areas of animal health, worker relations, parlor troubleshooting and equipment maintenance. Melenudo's specialty is stockmanship, managing individual cows and cow groups. Together, they've grown to become the foundation for the dairy's past 15 years of success.

"While all of those things make them worthy of this honor, their humble dedication, care and devotion to the farm is unwavering," the Scheiders said in their nomination form. "They have persevered with us through expansions, labor issues, animal health crises and bad weather – all while hardly missing a day of work."

Joining Norm-E-Lane Dairy as a cattle feeder out of college, Guyette exhibited a strong desire for learning and involvement. His responsibilities have grown to include managing and operating the feeding center for the 2,300-cow dairy.

"Along with his desire to learn and always better himself, Guyette is very conscientious about his performance, the herd's performance and the team he works with," Barmore said. "His caring, positive and respectful personality, along with being an effective communicator, makes him a great team member. He is a powerful example for all of us for his dedication and perseverance."

"The best employees add value to the dairy by thriving in their roles, maintaining their responsibilities, creating a safe and positive work environment for their co-workers and speaking highly of their employers, both on and off the farm," said Delgado. "When dairy farms and their employees develop long-term relationships and celebrate each other's hard work, everyone involved reaps valuable benefits."

PROGRESSIVE **EVENTS**

Global Dairy Experience

Progressive Dairy Editor **Kimmi Devaney**

"Feeding and supporting a growing population" was the theme of the 2022 Global Dairy Experience (GDX), which focused on large herds and was held Dec. 6-8 in Las Vegas. Speakers discussed a variety of topics including sustainability, technology and caring for our communities both on and off the farm.

The event kicked off with an evening welcome reception on Dec. 6, followed by two days of speakers, panel discussions and additional networking opportunities. Golf enthusiasts also had many opportunities to practice their swing during networking breaks at the virtual golf competition. GDX was held at the same time as the National Finals Rodeo (NFR), and some attendees spent their free evenings enjoying the NFR events or exploring Las Vegas.

Keynote speaker Tara Vander Dussen, who is an environmental consultant and dairy farmer from New Mexico who has built a large online following, discussed dairy's role in sustainable food supply systems and how we can collectively speak with one voice to share our message and convey what it is we do as a dairy community.

"I think dairy is leading the way in sustainable agriculture," she said. "I go to a lot of conferences and talk to a lot of farmers across [agricultural sectors], and one thing I always hear is how dairy is so progressive in the [sustainability] space and how we continue to lead the way for others. So that's something to be super proud of."

When it comes to connecting with consumers, she says we need to be careful about trying to "educate" them.

"When I first started sharing [my story online] seven years ago, I wanted to educate people. I was going to go out and teach people and tell them what they needed to know about dairy. I learned really quickly that people don't want to be preached to; they don't want to be educated [about how their food is produced]. Our modern consumers are actually very educated and very tech-savvy. They know what they are doing. They just don't know anything or know very little about [modern] agriculture," Vander Dussen said.

She compared the average consumer's understanding of food production and farming to something else that we all use – banking.

"We probably all use a bank just like we all eat food, and if I'm being honest, I don't really know a lot about my bank," she added. "I know I can make a mobile deposit on my cell phone and somehow money ends up in my account, and I pay my bills online. I don't understand the inner workings of a bank at all, but if a banker came up to me and told me I didn't know about my money and I didn't know where it was, I would get defensive, and I might come off really angry. I don't want to be told that I don't know about my money, and it's the same with food. People feel very connected to the food they eat or something they serve in their home. What is more personal than that? So, when we come at them trying to educate them and trying to preach at them, they come off negative too."

Vander Dussen encouraged the audience to think about the other products their farms produce.

"Milk is not the only product that leaves our dairy," she said. "What if cow manure is just as valuable as the milk leaving our farm? I know that may seem like it's on the horizon and coming, but I truly believe we are at a place where we are going to be turning this risk into a reward, and there is a ton of opportunity there, including untapped markets and new places we're going."

In addition to manure and nutrient management, water is another topic on many dairy producers' minds when it comes to sustainability.

"It was when we put in our first drip irrigation system that I had a bit of an 'aha' moment as I realized that I now have the level of control that I had in my greenhouse on a larger scale," said Kurt Grimm with Netafim. "As we start to think about introducing manure and nutrient management into cropping productions, how do we think about that? Water is usually the most limiting factor, and so we have to address that first."

Viewing manure, wastewater and other things commonly thought of as liabilities as assets instead and adopting a sustainability mindset can be beneficial, he said.

"I think a lot of times we look at the flush water, the runoff water from the buildings, the leachate off the silage piles, the irrigation water and then the manure as a liability," Grimm said. "We look at leachate water and we say, 'Well, this doesn't do anything for me and it's a liability on my farm.' And if we are going to think about dairy in a sustainable light, we need to change that conversation and look at some of those things as assets. How do we look at manure as a true asset on the farm? How do we look at leachate water or runoff water that's coming off those facilities and recycle that and use it again and again and again. I think if we can do that, we can also win over a lot of consumers and markets that will be available to us in the future."

Richie Mayo, chief financial officer of DeJager Farms Inc., described the changing landscape of California's dairy industry and how they approach sustainability.

"Regulations have single-handedly changed the face of dairy farming in California, and many of those regulations pertain to water and air quality and other sustainability [measures]," Mayo said. "Efficiency is the driving factor for how we plan to address sustainability going forward on our dairies."



Photos by Kimmi Devaney.

"There's a lot of questions that need to be answered around sustainability, and each of us experiences sustainability from different points of view," said Fabian Bernal, global head of sustainability for DeLaval.



Keynote speaker Tara Vander Dussen sits down with emcee Peggy Coffeen after her presentation to answer questions from the audience.

During another panel, Fabian Bernal, global head of sustainability for DeLaval, added that one of the threats facing animal agriculture is policymaking.

"Policymaking, especially policies made by lawmakers without proper knowledge [of animal agriculture] and the proper language and terminology, can have a tremendous impact on what we can and cannot do [on the farm]," Bernal said.

Don Schindler from Dairy Management Inc. (DMI) agreed.

"Policy is where a lot of [anti-animal agriculture] activists are right now, and they are picking on states that can be a little bit more friendly toward what they want to get across, and I believe that's where they are hitting harder now," Schindler said.

Your Dairy Checkoff in Action – The following update is provided by Dairy Management Inc. (DMI), which manages the national dairy checkoff program on behalf of America's dairy farmers and dairy importers. DMI is the domestic and international planning and management organization responsible for increasing sales of and demand for dairy products and ingredients.

National Dairy Council's roundtable discussions attract top experts

Katie Brown for *Progressive Dairy*

The National Dairy Council's (NDC) ability to convene top nutrition researchers and subject matter experts around our common value of improving public health and wellness has been a longtime part of our annual calendar.

Our NDC-hosted roundtable gatherings allow us to discuss shared priorities related to nutrition as well as to understand what we can say based on the current body of research. They also allow us to explore research gaps that could lead to untapped dairy wellness benefits.

Along the way, these third-party experts help us look around the corner for opportunities that can help dairy be relevant to consumers' health and wellness needs.

We held three dynamic roundtables in 2022 that related to exciting and emerging aspects of achieving wellness through including dairy foods as part of a healthy diet. Our discussions focused on:

• Dairy's benefits in supporting healthy brain development and cognition, particularly in the first 1,000 days, from conception to just around a child's second birthday.

• A renewed focus on helping to ensure that the growing population of aging Americans is getting proper nutrition, including their three recommended daily servings of dairy.

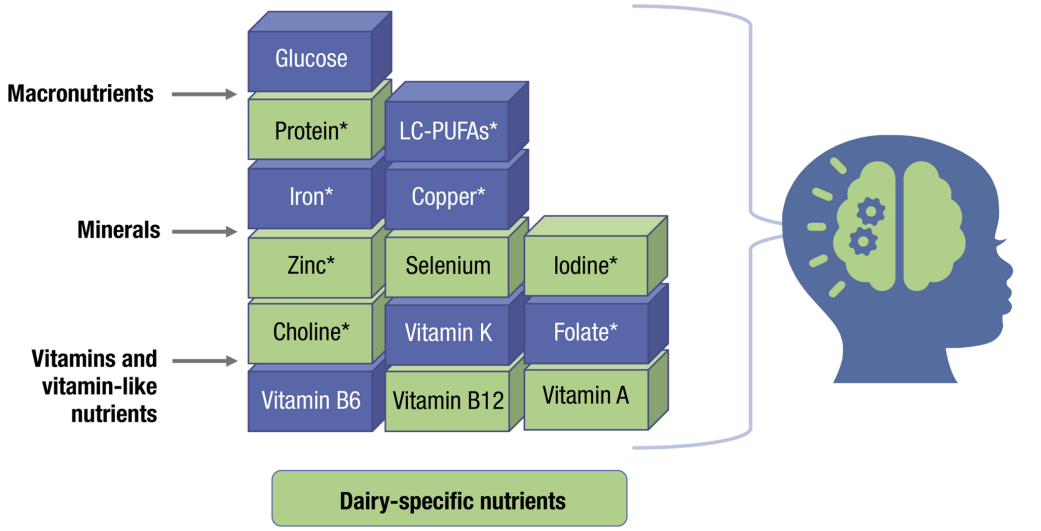
• Modern wellness and how healthy eating, including dairy, can potentially have a positive impact on anxiety, stress and sleep. These benefits are of special interest to younger consumers, many of whom do not meet their daily dairy recommendations and may see these emerging areas as a reason to include dairy in their nutrition routine.

To give you an idea of the expertise NDC engages with at these roundtables, here is a snapshot of attendees at last fall's cognition meeting. Experts at our two-day session included:

• Dr. Carol Cheatham from the Nutrition Research Institute at the University of North Carolina at Chapel Hill, who has studied how brain development supports cognition and how nutrition affects both.

• Dr. Robert Murray, an expert in pediatric nutrition, who spent his career at the Ohio State University School of Medicine.

FIGURE 1 Dairy foods provide 7 of the 14 essential nutrients for early brain development



*Demonstrate a critical or sensitive period during development

• Dr. Yolanda Lawson, a Dallas-based OB-GYN and president-elect of the National Medical Association, the largest and oldest organization representing African-American physicians and their patients.

• Dr. Elizabeth Pearce, a renowned clinical investigator, endocrinologist and epidemiologist at the Boston University School of Medicine.

• Dr. Taylor Wallace, a nutrition and food studies professor at George Mason University.

I can't underscore enough just how renowned and busy these professionals are. I also can't underscore enough how committed they are to the same goals we have when it comes to believing proper nutrition and health go hand-in-hand, and dairy is an important part of the solution.

At the cognition roundtable, we explored how nutrition sets a foundation of brain development in a child's first 1,000 days that could impact their future cognitive ability. The experts shared how much of this depends on how well a person eats during pregnancy, and even before pregnancy begins.

We discussed and dissected dairy benefits that may not be widely known to the average consumer (**Figure 1**). For example, iodine, which is found in milk, is recognized by the medical and nutrition communities for its role in brain development and health.

Choline is another essential nutrient known for its cognition benefits. Though the liver produces small amounts of choline, the rest must be obtained through the diet, and milk contributes about 8% of the daily value for choline per an 8-ounce serving. Despite its benefits, 90% of Americans and 92% of pregnant women consume below-adequate choline intake levels.

Subjects such as these and much more continue to give us the facts and proof points of dairy's many benefits that are important to people across their lifespan. In fact, that was the emphasis of NDC's roundtable, which focused on healthy aging.

While it's true the dairy checkoff has many strategies to reach younger consumers, we also see the need to not overlook those on the other end of the age spectrum. It is projected that 98 million Americans (23.5%) will be 65 or older by 2060, an unprecedented level in the U.S.

Yet, a U.S. Government Accountability Office report is shedding new urgency and called for the 2025-2030 Dietary Guidelines for Americans to better address this life stage's unique nutrition needs.

At this roundtable, NDC gathered more than 30 nutrition thought leaders and scientists to elevate the importance of nutrition for healthy aging. The meeting identified opportunities where core elements of dietary patterns, including dairy, can support cognition, muscular/skeletal health and the prevention of metabolic disease.

NDC has built a century-long legacy based on our role of leading credible dairy nutrition research, which is communicated by a staff of science, health and wellness experts.

But our ability to also bring key leaders to our NDC-hosted convenings provides another element of how we are further building a research-based case for dairy's important place in healthy living.



Katie Brown
Senior Vice President – Scientific and Nutrition Affairs
National Dairy Council

To learn more about your national dairy checkoff, visit the website (www.usdairy.com) or send a request to join our Dairy Checkoff Farmer Group on Facebook. To reach us directly, send an email (talktothecheckoff@dairy.org).

References omitted but are available upon request.

ASSURANCE WATCH

The National Dairy Farmers Assuring Responsible Management (FARM) Program was created by the National Milk Producers Federation in partnership with Dairy Management Inc. The FARM Program works with dairy producers, cooperatives, processors and industry partners through five program areas – animal care, antibiotic stewardship, biosecurity, environmental stewardship and workforce development – to show customers and consumers that the dairy industry holds itself to the highest standards and best management practices. Visit nationaldairyfarm.com to learn more.

Ensure animal safety and wellness through fitness to transport

Beverly Hampton Phifer for *Progressive Dairy*

Our industry responsibility is to ensure the welfare and safety of our animals at all life stages. Evaluating fitness to transport – the animal's ability to withstand transportation without compromising its welfare – is an important piece of that. Fitness to transport protocols impact not only an animal's welfare and safety but also the economy and the safety of our food supply.

The FARM Program's current Animal Care Version 4 standards require that all facilities have an effective written protocol for fitness to transport. The protocol should include the definition of animals that are eligible to be marketed for beef and outline adherence to milk and meat withdrawal times.

Ensure all employees involved in animal handling and transport are up to date on their training and documentation and always make decisions promptly to prioritize animal well-being. If you need to establish a protocol, consult your veterinarian and lean on your FARM evaluator to create a practice relevant to your farm. If you'd like help getting started, visit http://nationaldairyfarm.com/producer-resources for a fillable template.

Assess animal condition and guarantee safety

Fitness to transport evaluations are crucial any time an animal is being moved, whether for slaughter or other purposes. They apply to animals of all ages.

Many conditions can impact an animal's fitness to transport. Animals with the following conditions should not be transported (except for transport to a veterinarian):

- Non-ambulatory
- Recent bone fractures or spine injuries
- Poor body condition
- Cows that are calving or have a high likelihood of calving
- Medical conditions that risk well-being and are unlikely to pass pre-slaughter inspection (such as cancer eye, blindness in both eyes, fever over 103°F, unreduced prolapses)

If an animal appears exhausted or dehydrated, delay transport until the animal is rested, fed and rehydrated. Also delay transport of any animals until all proper milk and meat withdrawal times have been followed. The FARM Milk & Dairy Beef Drug Residue Prevention Manual provides more guidance on withdrawal times. Animals with these conditions should be treated and allowed sufficient time for recovery or be euthanized promptly.

Calves are more susceptible to stress, particularly during transportation, so extra attention should be paid to them. Before transport, calves should receive colostrum (if less than 24 hours old), milk or milk replacer. Calves should be clean and dry and have adequate space and bedding during transport. Calves should never be handled solely by their ears or tail. Willful or purposeful abuse, neglect or other maltreatment of calves for any reason – including using electric prods on young calves and withholding food, milk or water during the pre-transportation period – by anyone handling animals should never be tolerated.

Proactive decision-making and employee training are vital

Quick decision-making in choosing if treatment or euthanasia is the best option for animals deemed unfit for transport can save valuable time and money. A euthanasia decision tree poster can help guide you through treatment decisions in consultation with your veterinarian. In addition to an effective written protocol, regularly training employees will allow for more efficient decision-making. Many dairies already implement this practice – 87% of dairies evaluated for Animal Care Version 4 standards reported having annual employee training on fitness to transport.

Take some time to reflect on your protocols and see where improvements can be made. Work with your veterinarian and use FARM Program resources to help guide your discussions and training. The following fitness to transport resources are available on the FARM Program website (https://nationaldairyfarm.com):

- Fitness to transport protocol template
- FARM Program fitness to transport poster
- FARM Program euthanasia decision tree poster (English and Spanish)
- Elanco Animal Health – end of life decision-making: fitness to transport video
- Calf Care and Quality Assurance (CCQA) caretaker training

Training starts at the farm, but it doesn't end there

Fitness to transport must be assessed every time an animal is loaded, no matter its intended destination. That's why everyone needs to be trained in proper handling procedures – not only the employees on your dairy but also the people you entrust with transport.

Work with a Beef Quality Assurance Transportation (BQAT)-certified hauler who is knowledgeable about your animal care expectations and provides safe and comfortable animal transport. Proper in-transit care – including handling practices and providing adequate time for trips to allow for periodic animal checks, ensuring ample space and bedding, and checking weather conditions before transport – will minimize animal injuries, bruises and carcass damage, which can impair an animal's well-being and value.

It's important to guarantee every animal leaving your farm is fit to transport. Always consult your veterinarian if you are unsure if an animal should be transported. Focusing on strong protocols and proactive animal health decisions will help uphold the integrity of our industry and mitigate risk.



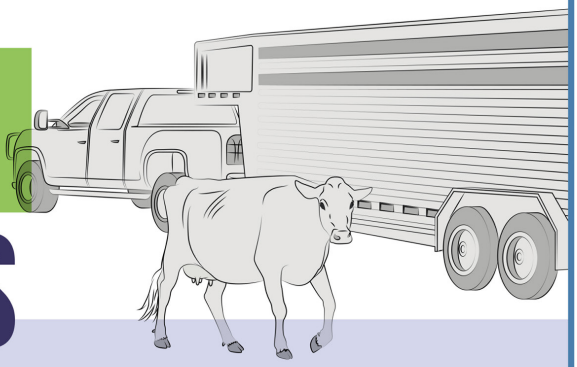
Beverly Hampton Phifer
Director of Animal Care
FARM Program
bhamptonphifer@nmpf.org

Order a free laminated 9 inch-by-13 inch fitness to transport poster for your farm using the code "transport" at the FARM Program store and have it shipped directly to you.



CONSIDERATIONS WHEN

TRANSPORTING DAIRY ANIMALS



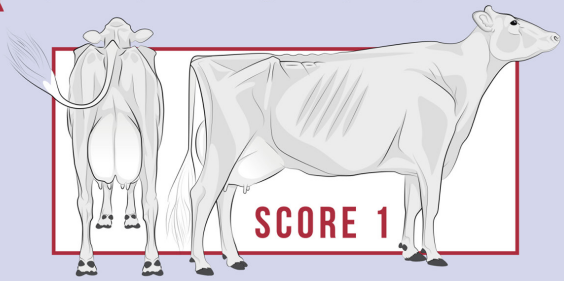
Make decisions in a timely and efficient manner, always considering animal well-being first.

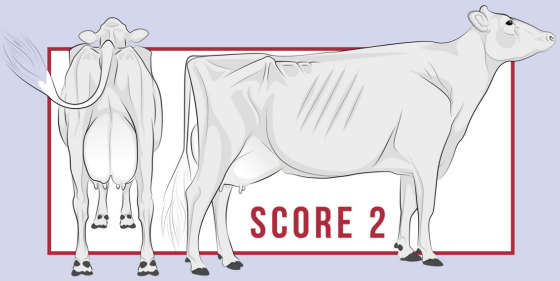
DO

- Treat, cull or euthanize animals promptly. Segregate sick, injured and non-ambulatory animals from the rest of the herd.
- Use a BQA Transportation (BQAT)-certified company that is knowledgeable about your animal care expectations and provides safe and comfortable transport for animals. To become certified, visit www.bqa.org
- Delay transport of animals that appear exhausted or dehydrated. Cows experiencing heat stress or exhaustion may exhibit open-mouth panting and be reluctant to move. Transport once the animal is rested, fed and rehydrated.
- Milk lactating cows just prior to transport.

DON'T TRANSPORT ANIMALS

- That are non-ambulatory.
- Until all proper milk and meat withdrawal times have been followed. Refer to the ***FARM Milk & Dairy Beef Residue Prevention Manual*** for proper withdrawal times.
- With bone fractures of the limbs or injuries to the spine.
  - Animals with recent fractures unrelated to mobility should be culled and transported directly to a packing or processing facility.
- In poor body condition, generally a body condition score of less than 2:





- With conditions that risk their well-being and are unlikely to pass pre-slaughter inspection, including but not limited to:
  - Emaciated animals
  - Cancer eye
  - Blindness in both eyes
  - Fever greater than 103°F
  - Drug residues
  - Peritonitis
  - Visible open wounds
  - Suspected central nervous system symptoms
  - Fractures or lameness *(a score greater than 2 using the FARM locomotion scoring system)*
  - Unreduced prolapses
  - Cows that are calving or have a high likelihood of calving during transport
  - Distended udder causing pain and ambulatory issues

Always consult with your veterinarian if you are unsure if an animal should be transported. And, remember, abuse is never tolerated – including pre-transport and during transport.

This resource was created by the collaboration of the following organizations

FARM Responsible Management · NMPF National Milk Producers Federation · BEEF Funded in part by the Beef Checkoff. · Beef Quality Assurance Transportation

nationaldairyfarm.com | bqa.org

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Dear Nutritionists,

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The quantity and quality of my milk[2].

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Mabel





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Learn more and locate a seller in your area at wholecottonseed.com/dear-nutritionist/.

The cost-effective, concentrated nutrition of whole cottonseed is good for dairy cow performance[3] and milk production[2].

[1]Kellog, D. W., J. A. Pennington, Z. B. Johnson, and R. Panivivat. 2001. Survey of management practices used for the highest producing DHI herds in the United States. *J. Dairy. Sci.* 84:E120– E127. doi:10.3168/jds.S0022-0302(01)70206–8

[2]Smith, NE. et. al. Digestibility and Effects of Whole Cottonseed Fed to Lactating Cows. Journal of Dairy Science, vol. 64, no. 11, November 1981, pp. 2209-2215., doi: https://doi.org/10.3168/jds.S0022-0302(81)82831-7.

[3]Comerford, JW. Added Fat in the Ration of Beef Cows to Enhance Reproduction. PennState Extension website. Available at: https://extension.psu.edu/added-fat-in-the-ration-of-beef-cows-to-enhance-reproduction. January 2, 2014. Accessed June 2, 2020.

Additional benefits of whole cottonseed

WIDELY AVAILABLE.

Since whole cottonseed is a byproduct of the cotton ginning process, it is widely available and often competitively priced.

HIGHLY DIGESTIBLE

Whole cottonseed is highly digestible since its energy is primarily from fat.[4]

HAY SUPPLEMENT

Can be used to increase the nutrition content of a ration and is great for replacing or supplementing poor quality forages.[5]

IMPROVED BODY CONDITION:

Research has shown the fat in whole cottonseed improves body condition, which can lead to better reproductive performance.[3]

SMART ALTERNATIVE

High nutritional quality often reduces the total number of other feedstuffs needed in a ration.

FORAGE EXTENDER

Functions as an excellent, high-fiber forage extender, especially if forage quality is a concern.[5]

HIGHER MILK PRODUCTION AND BUTTERFAT

In trial after trial, whole cottonseed has been proven to increase both milk production and milk fat when added to dairy cow rations.[6]

See the research and find a supplier at wholecottonseed.com.

cotton seed

[4]Horner, J.L., et al. (1988). Effects of niacin and whole cottonseed on ruminal fermentation, protein degradability, and nutrient digestibility. J. Dairy Sci. Vol. 71, no. 5, pp. 1239–1247., doi: 10.3168/jds.S0022-0302(88)79679-4

[5]Warner, Andrea L, et al. Effects of utilizing cotton byproducts in a finishing diet on beef cattle performance, carcass traits, fecal characteristics, and plasma metabolites. J. Anim. Sci., 4 Feb. 2020, doi:10.1093/jas/skaa038.

[6]DePeters, E. J., Taylor, S. J., Franke, A. A., Aguirre, A. (1985). Effects of Feeding Whole Cottonseed on Composition of Milk. J. Dairy Sci. Vol. 68, No. 4, pp. 902. https://www.sciencedirect.com/science/article/pii/S0022030285809073

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Meet the influential people in dairy

Progressive Dairy Editorial Staff

AT A GLANCE

Progressive Dairy readers share reflections of those people who helped shape their lives, careers and dairy farms.

Beginning last summer and extending into autumn, *Progressive Dairy* invited its readers to identify the people who were or continue to be influential within the dairy industry.

In the social media world, "influencer" has become a term used to describe someone who can sway a target audience, often measured by the number of their "followers." We took a broader, perhaps "old-school" approach, seeking individuals who personally shape, engage, motivate and inspire others, creating a positive impact locally, regionally and/or nationally.

When we extended the invitation, it was not meant to create an "award" program. Rather, it was meant to provide an opportunity for readers to publicly recognize those who helped shape their lives, careers and dairy farms. We asked for not only a brief description of "what" those influencers do, but also for personal reflections on the "why" that makes them so influential.

Our readers responded, recognizing teachers, advisers, entrepreneurs, innovators, advocates, other producers and family members.

You may recognize several influencers from previous pages of *Progressive Dairy*, either through their articles highlighting research or features sharing their dairy management insights. Some are recognizable through their presentations at conferences or their organizational leadership. There are industry veterans and some representing a new generation of involvement.

From these narratives, it's obvious that dairy's influencers combine both knowledge and passion, with their impact calculated not in numbers but measured in the effect they have in the personal and professional lives of others.

Here are brief tributes to dairy's influencers (in alphabetical order) from those who nominated them.



Austin Allred, Royal Dairy, Royal City, Washington

Austin Allred is trying to show that regenerative ag is possible on large-scale operations. He is also trying to show that a dairy operation, correctly managed, can be carbon-neutral. Austin's approach is rooted in family – past, present and future generations – and he views sustainability as the right thing to do, as it will leave not only his animals in a better place, but his farm and the land in a better condition for his descendants. Through his public speaking, press and podcasts, I also find that Austin is showing the greater population what it means to farm, humanizing and explaining it in a way for those who have never been near a cow to come away with a greater understanding of this beautiful profession.

—Nominated by Eva Diaz and Matias Sjogren



Sherry Arnold, Busses Barron Acres, Barron, Wisconsin

Sherry Arnold entered the agriculture industry at a time when women were not taken seriously in ag, let alone as the owner of a farm or an authority on animal care. She set a standard of expectation for her employees, her animals and those who did business with her. Even though her operation did custom raising where the animals were not their own, calf comfort and performance were always number one on her list. Sherry has influenced countless fellow calf raisers, industry professionals, employees (including ones from other countries), students from various programs touring the farm and people from other nations through her travels, educational outreach and passion for better calf care, encouraging and motivating everyone, no matter what their role, to "do better."

—Nominated by Lorri Meister



Barry Bradford, Michigan State University

Barry Bradford is currently the Clint Meadows Endowed Chair at Michigan State University. In this role, he conducts research, mentors graduate students and serves an extension appointment actively serving and supporting Michigan dairy industry producers. His research is an expansion of his extension program, answering important questions producers are interested in learning throughout the industry. I have been blessed to be mentored by Barry in my graduate degree program and witness firsthand his passion for serving producers and investing in people. Personally, he has influenced my life by caring for me beyond being just another student. He deeply cares for me as a person and has allowed me to pursue a graduate degree while covering topics I am passionate about, empowering me to build connections with other industry professionals. Barry has helped countless graduate students reach their goals and be successful in every aspect of the industry. Barry will continue to be influential in the dairy industry through his research endeavors and connections he builds with industry professionals.

—Nominated by Lynn Olthof, Kirby Krogstad, Mikayla, Katie Meier and Gail Carpenter





Ann and David Buck, Buck's Unlimited Dairy, Goodhue, Minnesota

With their sons, David and Ann Buck operate Buck's Unlimited Dairy in Goodhue, Minnesota. Farming on two sites, milking 800 cows and supporting a custom manure application operation, they have worked hard on their dairy and their sustainability and community efforts.

Dave has been an instrumental leader in the Minnesota Milk Producers Association, serving on the board for over eight years, including as president. He has been an advocate for legislation that makes sense and helped lead the charge to get the Dairy Assistance, Investment and Relief Initiative (DAIRI) program implemented in Minnesota, resulting in one of the highest Dairy Margin Coverage (DMC) participation rates in the country. He has been involved in researching Federal Milk Marketing Order reform, fair milk pricing and working across state lines.

Ann is active in the community, serving on the local school board and leading the charge to serve chocolate milk to school athletes and adding breakfast carts and bulk milk to the school lunch programs.

Both are active on their local dairy promotion boards and have hosted the Goodhue County Breakfast on the Farm. As parents and now as grandparents, they are also great supporters of local schools and athletics. As innovative thinkers, they have showcased new technology and cover crop applications to help provide feedback to ensure common-sense legislation.

—Nominated by Shannon Watrin



John de Jonge, president of Hydrogreen and interim CEO of Cubic Farms

John de Jonge is someone who has been a mentor to me, while also spreading his influence in the dairy industry across the globe. There are a few key takeaways from my years with John that I will never forget. First, he taught me that while the global dairy industry is large in scale, it is also very small: It is still an industry built on relationships and personal touches. John has used his knack for connecting people and ideas to build personal brand and following. The other key thing I learned from John is that there is still work to be done. There are two phrases you will hear John use a lot: "We need to feed the world," and "The dairy farm of the future." Both are guiding principles for how he approaches business. John fully understands the dairy industry is changing and needs to change to meet the demands of the ever-growing consumer population. He is always looking for new ways that allow the industry to be better than it was yesterday. By challenging the status quo, he always stresses the importance of thinking outside the box and asking tough questions.

—Nominated by Dan Veeneman



Joe Domecq, academic specialist, Michigan State University

Frankly, I may not be alive today if it weren't for Joe Domecq. Coordinator, coach, colleague – those titles don't begin to describe his positive impact. What Joe does is beyond measure, with thoughtfulness and persistence. He coined the phrase that every Michigan State University "Dairy Teacher" walks away remembering: "It depends." I grew up participating in the Michigan 4-H Youth Dairy Days events and knew Joe as the guy zipping around on a scooter. My original career ambitions after high school didn't involve dairy. However, I wound up at his office door and he made a place for me in his classes. That's what Joe does best; he holds space for everyone. He has a way of seeing people sometimes better than themselves. He matches students to dairies for internships globally and visits each one. He pushes kids to be involved in judging, Dairy Challenge and Study Abroad trips. What Joe has built at MSU is a legacy of people. My biggest life role models are because of his programs, and I now see myself as a role model for others. It's because of the confidence he instilled in me; the support and encouragement, sometimes unspoken, that's helped me to thrive as a professional. The biggest unspoken lesson he's taught me is to show up and do the work. Because of Joe, I plan to show up for the dairy industry endlessly.

—Nominated by Allison Pung and 29 others



Bob Hagenow, Vita Plus Corporation

If you wrote down all the ways in which Bob Hagenow has served, worked in and led various facets of the dairy industry, your pen would likely run out of ink. For Bob, these activities have never been about boosting a resume or gaining recognition. He has a genuine love and passion for the cows and the people who make up the U.S. dairy industry. His personal and professional experiences are intricately woven, as he has invested his time and talent into serving farmers and developing new generations of dairy leaders. Bob grew up on a dairy farm in Manitowoc County, Wisconsin, participating in 4-H, FFA and dairy judging programs. He studied dairy science at UW – Madison and has been a Vita Plus employee owner for the past 35 years, currently working as a nutritionist and sales manager. Bob coached and mentored many dairy judging teams and youth programs. He continues to volunteer at numerous consumer-facing dairy promotion events and judges many local, state and national dairy shows. He also serves on the World Dairy Expo board of directors and volunteers in the show ring. Bob and his wife, Lisa, have raised two daughters who are embarking on their own futures in agriculture. Bob has an infamously strong handshake, looking everyone in the eye and offering a smile. No matter how full his schedule, he always

Continued on page 30

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returns a phone call and asks, "How can I help?" His spirited and warm personality quickly fills a room, but just as often, he can be spotted quietly encouraging others to develop their own skills, talents and confidence. Bob looks at the dairy industry with a long-term view. Rather than focusing on his own legacy, he constantly considers what he can do to help future leaders make a positive difference for the dairy industry.
—Nominated by Marjorie Stieve



Daphne and Lloyd Holterman, dairy farmers, Rosy-Lane Holsteins LLC

Over their dairy farming career of 40-plus years, Lloyd and Daphne Holterman have created a profitable farm business with globally recognized genetics and management strategies. Sought-after speakers, they have presented to and consulted dairy farmers and industry professionals around the world on topics such as management techniques, breeding strategies, farm transitions and more. Lloyd and Daphne have hosted numerous interns from across the U.S. and around the globe, many of whom still stay in close contact with them as mentors. They are always willing to take the time to help other dairy farmers and are especially passionate about supporting young people and encouraging them to take risks, think outside the box and do what is right for their goals and agricultural careers. Lloyd and Daphne go above and beyond – from the daily routine on the farm, doing every job right the first time and giving their time and talent to individuals or organizations. They share their knowledge, talents and resources with a variety of audiences including dairy farmers, community groups, industry professionals and students. The Holtermans have hosted countless tours, especially during World Dairy Expo, when thousands visit the farm in a short time. Draws to the farm include their willingness to speak honestly about their experiences, the impeccable farm appearance and unique cattle genetics. They are now phasing out of full-time dairy farming but remain active in farm consulting and management. Lloyd and Daphne have cultivated the atmosphere for other individuals to have an opportunity in farm leadership and ownership, setting the stage for Rosy-Lane to be successful for future generations.
—Nominated by Lauren Brey and others



Mike Hutjens, professor emeritus, University of Illinois

Mike Hutjens is a dairy educator in the truest sense of the term. He has been a mentor and role model for countless numbers of students and colleagues for more than five decades. Raised on a Holstein farm in Wisconsin, he was active in both 4-H and FFA. His bachelor's, master's and Ph.D. degrees were earned at the University of Wisconsin – Madison. From 1971 to 1979, Mike was an extension dairy specialist at the University of Minnesota, where he coached the World Dairy Expo national champion team in 1978. Since 1979, he has been an extension dairy specialist member of the University of Illinois. He won the title of Extensionist of the Year, Outstanding Teacher in the United States, Most Influential Person in the American Dairy Industry and received the ADSA Honor Award. Many in the dairy industry feel like they have known Dr. Hutjens for decades now, educating the dairy industry through his numerous articles and columns in popular dairy magazines, as well as being extremely active on the dairy speaking circuit in the U.S. and globally. He has also received numerous teaching awards at the University of Illinois and was a pioneer in teaching dairy internet courses to the masses. He has a gift for taking complex research studies and translating them in a practical way to the dairy industry for field application.
—Nominated by Clay Zimmerman



Gordie Jones, veterinarian, independent dairy consultant

It will be impossible to share all that Gordie Jones has done for

individuals, families, businesses and the dairy industry. If not for Gordie, there is a good chance my family would not be farming today. He was our veterinarian when my wife, Pam, and I took over my parents' farm. We were milking 65 cows in a stanchion barn, struggling to generate the profit necessary to pay off our debts and be successful in the future. We went to the kitchen table with Gordie after herd check, and he drastically stretched our options to bring about positive change. He helped create a plan that included a TMR mixer and a new way of feeding cows that lowered cost and improved production. We began to drastically change how cows were managed with a strong focus on cow comfort. He helped us evaluate our milking system, which helped with production and milk quality. Then he pushed us out of our own comfort zone by sending us to Michigan to see naturally ventilated freestall barns. After our return, he told us to lay out our farm to one day have 1,000 cows. We told him he was nuts, but because of our trust in him, we listened and have one puzzle piece left to make our vision complete. Gordie has duplicated this process with thousands of other farms in our local community and across the world. Cows, farms, farm families and the entire dairy industry owe Gordie Jones a bunker full of gratitude.

—Nominated by Hank Wagner



Mike Kelley, regional sales manager, Paul Mueller Company

Mike Kelley began his career as a dairy producer in Pennsylvania. He and his dad soon transitioned into a dairy equipment service and supply dealership. Mike found his true calling in helping other dairy families to improve their lives. Several years into this labor of love, Mike was recruited to Springfield, Missouri, by the folks at the Paul Mueller Company so that he could utilize his caring nature and dedication to task over a much wider audience. Mike has spent over 30 years investing virtually every minute of his days helping others solve their concerns for "cooling the world's milk." He has been instrumental in helping guide the industry regulations toward better milk quality. He has been a key voice in product enhancements and designs to improve the ease of operations or higher performance. He calls himself "Soapbox Kelley" for always being willing to stand up and be heard when calling out shortcomings and the need for action. His dedication to the task is legendary, as he is often still at his phone or computer late into the evenings following up on a promised response or solution. Most of all, Mike is a true friend to everyone in this industry. He respects the contributions of all, from the 4-H kids who needed support for their ice cream stand at the Canadian Dairy XPO to the dairy technician who can't get his cooler running, to the CEO of a multinational corporation. He exemplifies commitment and self-sacrifice to his chosen path.

—Nominated by Rick McClenning, Mike Jensen, Jordan Blunt, Adam Sharp, Eric Schmeling and Kevin Bartholomaus



Mike McCloskey, dairy farmer, veterinarian and CEO

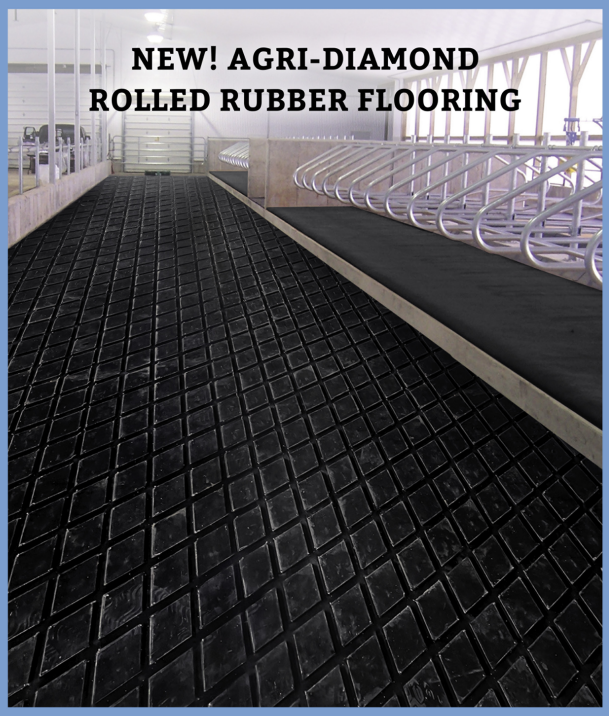
Mike McCloskey is a force of nature. He has tirelessly served on numerous industry boards and committees. Mike's fingerprints are on virtually every program and policy in the industry today. His belief that we as an industry can do better has helped make the U.S. dairy community better prepared for the future. Mike was instrumental in the development of the FARM program and its wide acceptance among dairy processors – not a small task. He is passionate in his belief that the dairy community should be viewed as an environmental solution, not a problem. Mike's work as chair of the environmental committee at the Innovation Center for U.S. Dairy led to the formation of Newtrient. Mike has testified before congressional committees and has met with the head of EPA to promote policies that help dairy farmers be sustainable and profitable.

Mike and his wife, Sue, dairy in Indiana and are very involved in agritourism, with about 600,000 people visiting their farm annually. They run their fleet of milk trucks on the gas produced in their methane digester. In their spare time, they pioneered the process of ultra-filtering milk and produced fairlife. Mike is also the founder and long-time CEO of Select Milk Producers, a leading co-op.

—Nominated by Jim Werkhoven

Continued on page 32

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Sheila McGuirk, veterinarian, professor emeritus, School of Veterinary Medicine, University of Wisconsin

As a veterinarian and publisher of a calf health scoring guide and application, as well as numerous other publications on calf, heifer and cow health, Dr. McGuirk's contributions to large-animal veterinary medicine and the agriculture industry are far-reaching and have re-shaped how we care for and raise animals. She was also a pioneer for women in the veterinary field at a time when female veterinarians were not the "norm," a mentor and role model for hundreds of veterinary students and an educator for all in the industry.
—Nominated by Lorrie Meister



Frank Mitloehner, professor and air quality specialist, University of California – Davis

We will be discussing the contributions Frank Mitloehner has made to the dairy sector for decades to come. His research has helped set the pathway for the sector to go from being in the throes of climate blame to a potential solution provider on a scale no other sector has come to match. The work carried out by his lab at UC – Davis and the producers he works with is absolutely critical to ensuring farmers and ranchers continue to provide essential foods for the world, while making sure we don't harm it or the animals we depend on. Furthermore, the effort he puts into teaching and mentoring animal scientists will provide dividends for generations. The same rigor in which he approaches scientific questions in the dairy sector is passed on to those who come through his lab and will continue to influence dairy production across the world for many years. Enough can't be said about his ability to communicate. He is fearless in his task to share with the world the value dairy production has and its ability to operate with the highest environmental standards in mind. It is difficult to convey how tough of a job that is, but Frank does it with deftness and grace. Above all, Frank is a tremendous person. He is someone I look up to because of his compassion and strength.
—Nominated by Joe Proudman



Cheryl Mohn, Udder Tech Inc.

Cheryl Mohn started Udder Tech Inc. out of her mobile home on their dairy farm. At the time, she was farming with her husband and three young children, serving as the main milker for morning and evening milkings, and working off the farm during the day. The Towel Tote was her first product, designed to help her get through morning milkings quicker and to help do a better job. Having everything around her waist, she was faster and more likely to use that second towel to make sure the cows were really clean. She has continued to create and design many products over the past 28 years. As the industry moved from udder wash and a bucket of sanitizer to paper towels and teat dip cups, to cloth towels and now to robots, she's added items to help with each of those transitions. She is always listening to customers and collaborating with others to help fix an issue or fill a need. The milking sleeve with a thumbhole was designed for a dairy producer out West who was desperate to keep his best milker, but her arm would get a rash from the teat dip. She has been an influential part of the dairy industry as both a dairy producer for 30 years and business owner for 28. She served on boards and volunteered as a producer. As a business owner, she has impacted the industry not only by supplying products but by sponsoring, supporting and mentoring many people along the way. She has encouraged and mentored many young individuals to join or to become more involved in the dairy industry and has helped them to succeed in their careers as adults.
—Nominated by Dana Casto



Randy Mooney, dairy farmer, head of NMPF and DFA, Rogersville, Missouri

Randy Mooney is a unique combination of intelligence, competence, empathy and humility. He is a genuine dairy farmer, clearly connected to his farm and cows, and able to operate effectively in the corporate world. He has earned the trust of his fellow dairy farmer leaders and used the confidence of his colleagues to be elected to a position where he can exert leadership and direction to the biggest dairy farmer cooperative in the country as well as the national organization of cooperatives. From that position, he has been hugely influential in bringing the producer side of the dairy industry together for the purpose of actively advocating for farmer interests. The National Milk Producers Federation has been able to expand its footprint far beyond the historic milk pricing/policy issues into many less obvious but just as important issue areas that impact the long-term viability of dairy farmers. Obviously, Randy did not do it by himself, but he set the tone and shaped the direction of a couple of the most important organizations in the U.S. dairy industry.

Randy was engaged as we brought California into the Federal Milk Marketing Order (FMMO) system. He took his lead from his California producers instead of imposing his own will. We have collaborated on efficiencies in our industry to benefit all producers. Randy truly cares for the dairy industry and has given an immense amount of his own time to our industry, even though his favorite place to be is home on the dairy with his wife and family.

—Nominated by Simon Vander Woude and Geoffrey Vandenheuvel



Dan Natzke, Wayside Dairy, Greenleaf, Wisconsin

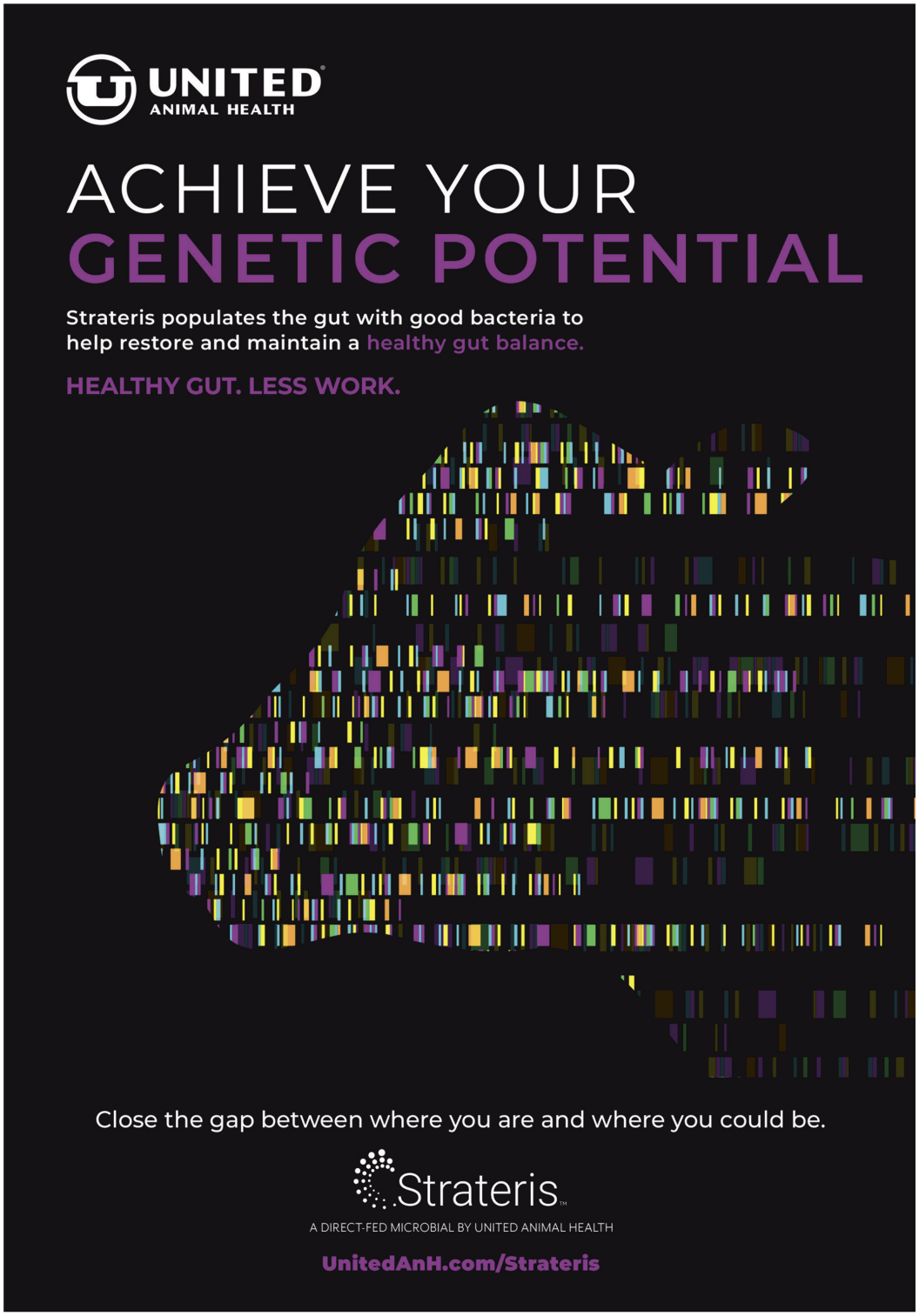
My sister and I were 11 and 12 years old and struggling showing our farm's cattle at our county fair. Someone told us we should each buy a registered calf and suggested we go and talk to Dan Natzke at Wayside Dairy in Greenleaf, Wisconsin. We set up an appointment and were immediately blown away. Dan was and is a class act. He took time to show two young kids around his farm and explain how and why his family did things. He was proud of his farm and proud to be a dairy farmer, and that had a big impact on me. He opened my eyes to bigger opportunities as a dairy farmer. He has a love for dairy farming but also loves people, treating all with respect, and that has also worn off on our family and our business. It was also Dan who pushed me to run for a position on the Professional Dairy Producers of Wisconsin board, which turned out to be one of the biggest growth opportunities of my life. Dan has unselfishly helped many individuals and farm businesses. He has also served on many boards and committees in his community and throughout our industry. I have traveled with Dan to other countries and witnessed his servant leadership and desire to help others. Dan started out with selling me a calf but has been a great role model, mentor, adviser and friend.

—Nominated by Hank Wagner

Jerry Olson, retired veterinarian, Denver, Colorado

Jerry Olson's influential reach in the dairy industry has been truly personal, local, regional and national. I was fortunate to meet Jerry at industry meetings and became his work colleague at Pharmacia/UpJohn. He was the "go-to" resource for the dairy reproductive revolution that started in 2000. He was a leading

Continued on page 34



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Meet the influential people in dairy, cont'd from page 33

specialist in the science of fresh cow management and care, with impeccable research knowledge that allowed everyone to speak to the science that benefited dairy operations every day. Jerry was on the academic staff at both Colorado State University and University of Minnesota, and there are countless numbers of veterinarians who fondly and humorously remember being trained by him in theriogenology and bovine health. He laid the professional foundations for many veterinarians to provide dedicated service to the dairy industry. Jerry was a highly regarded influencer in the Pacific Northwest and Western dairy industry, directly working with dairy producers and veterinarians. He didn't step onto an operation without performing in-depth reproductive analyses, health assessments and walk-throughs. Jerry's focus was all about the operational health of each individual dairy he worked with, and it is not a stretch to suggest that Jerry has had a key influence on the reproductive and health progress that the dairy industry has made in the last 20 years. Like his students, I owe him a great personal debt, as he was willing to actively mentor me in the 16 years we were able to work together.
—Nominated by Mark Kirkpatrick



Tom Overton, chair of the animal science department, Cornell University

Tom Overton has spent much of his career in extension, educating dairy farmers and nutritionists in the northeastern U.S. He is a respected scientist and gifted communicator, and his platform in extension has provided him the opportunity to significantly impact and influence the dairy industry in New York and beyond. His research and the research of those he mentors has had a large impact in dairy cattle nutrition, especially in the area of transition cows. His leadership in the PRO-DAIRY program has been instrumental in its growth, going beyond dairy cattle nutrition to include labor issues, herd health, finances, sustainability and more. As a professor at Cornell, he provides exceptional leadership to his students by planning and executing international trips and farm tours, all related to dairy. He is also the adviser and coach of the very successful Dairy Challenge team.
—Nominated by Scott Sorrell and others



Chuck Schwab, professor emeritus, University of New Hampshire

Without a doubt, a key influencer in the area of dairy cattle nutrition was Chuck Schwab. To ruminant nutritionists, Chuck's contributions in the area of amino acid nutrition for lactating dairy cows are legend. His long research career shaped our understanding of the protein and amino acid needs of the cow and her ability to make milk. The recommendations we use today are based in no small part on the many studies conducted by Chuck and his teams throughout the years. However, Chuck's influence goes far beyond his research abilities. His friendly demeanor and genuine concern for "his people" made it a joy to work with him. Never one for self-aggrandizement, Chuck preferred to point his students in the right direction, give them the tools to accomplish their goals, and then he got out of the way and let you thrive. Chuck was always ready with thoughtful suggestions and comments and was truly dedicated to the science. It was an honor to be associated with Dr. Schwab. I'm a better person for his acquaintance.
—Nominated by James D. Quigley



Jayne Sebright, executive director, Pennsylvania Center for Dairy Excellence

Jayne Sebright's official title is executive director at the Center for Dairy Excellence (CDE), but at heart she is a dairy farmer, mother and writer. All of these roles – different but interconnected – make her even more influential. In her CDE leadership role, Jayne and her staff provide resources and programs to strengthen dairy farm families and processors, leveraging Commonwealth

of Pennsylvania funds to provide grants to cover consulting services and resources to assist with business planning, decision-making and transitions, and offering seed money to fund low-cost improvements directly impacting cow comfort, on-farm productivity and reinvestment in processing. She is constantly looking for ways to serve the real-time needs of dairy farm families. Jayne is also a strong communicator, hosting a *Cow-Side Conversations* podcast and writing weekly and monthly columns in dairy industry publications. Authentic and sincere, she has the unique ability to connect with most people and express her thoughts in a refreshingly articulate way. She is creative and strategic and has helped drive the growth of CDE Foundation programs, supporting students and young people passionate about dairy careers. On a personal level, Jayne has served as one of the most influential mentors I have ever worked with in the communications field. I didn't grow up in the dairy industry, but Jayne has never questioned my intellect. She is open-minded and always willing to teach me what she knows in a compassionate, down-to-earth way.
—Nominated by Emily Barge and Walt Moore



Justin Stewart, Arizona Dairy, Mesa, Arizona

I have had the pleasure of having Arizona Dairy Company as a client. Over the past three years, I would consider Justin Stewart to have become a friend. In fact, I think the way Justin welcomes people into his life as friends is the reason behind his impact within the dairy industry. It is a personality trait that not only opens doors for influence but creates the unique ability to connect with people in a deep and meaningful way. Whether it is a fellow dairy producer, an international genetics trainee, UPS delivery driver, a college student interning on the dairy, a new dairy employee with a language barrier, a mother living in the suburbs of Phoenix concerned about nutrition or misinformed consumers at a county fair, Justin makes them part of the family, which creates a sphere of influence. They trust his opinion and are not afraid to ask him vulnerable questions about dairying. He is building on a strong platform of transparency, personal experience and direct connection that is fantastic for the dairy industry in so many facets. Our industry is fortunate to have such a personable advocate on our team.
—Nominated by Mandy Brazil



Mike Van Amburgh, animal science professor, Cornell University

I have known Mike since his days in grad school at Cornell, when he was doing groundbreaking research in dairy calf growth and development. His work has changed how we feed dairy calves and grow dairy heifers in this country. I believe this is one of his great contributions to our industry. Mike has also been involved with the Cornell Nutrition Model (CNCPS) since its early days. He now is managing the program that does the research and updates the model as needed. This software is used by many (if not the majority) of nutritionists feeding dairy cows in this county. Due to his calf and heifer work and the CNCPS work, he is a popular speaker at conferences around the country with the ability to talk to academics and to farmers. He also runs the Dairy Fellows program at Cornell and coaches the Dairy Challenge team, influencing many students. When I look at land-grant dairy academic programs, there are a handful of people who have made a significant impact on the dairy industry with their research, teaching or extension work. Mike Van Amburgh is in that group. The U.S. dairy industry is better for his being here.
—Nominated by Brian Troyer



Annaliese Wegner, Modern Day Farm Chick, Ettrick, Wisconsin

Annaliese Wegner (aka Modern Day Farm Chick) farms with her husband, Tom, their rambunctious twins and Tom's parents on Wegnerlann Dairy. Their daily tasks keep them busy, yet Annaliese has carved a special niche in her life to build a very robust social media community where she shares her farm stories to connect people to their food and farmers. Besides educating her followers about animal care, production and farm life, she also gives them an inside peek into a farm family's daily shenanigans, sharing funny stories, personal heartbreaks, wins and losses, and great healthy recipes. Her passion is not only sharing her story but encouraging others to share theirs to remove some of the farming myths that exist and connect consumers to farmers. She is helping other farm gals and guys by offering courses, e-books and in-person speaking engagements geared toward giving others the tools needed to open up to their communities and consumers. Modern Day Farm Chick has over 41,000 Instagram followers, 122,000 Facebook followers and 4,000 email subscribers. That impact is evident by the questions she consistently receives from people wanting to "know more" about agriculture. I am in awe of the way she can be "real" and yet connect with her audience.
—Nominated by Liz Doornink



Mike Yager, Road View Dairy in Mineral Point, Wisconsin

Mike Yager; his wife, Sherri; son Chad and daughter-in-law Whitney are the owners of Road View Dairy, situated on 336 acres of rolling hills in southeast Iowa County, Wisconsin. The best leaders I know are those who positively influence those in their corner of the world. Having known and worked with Mike for the better part of two decades, I think the main way he impacts the dairy industry is that he is a humble teacher. People with whom he interacts leave the encounter with a broader knowledge of the dairy industry and crucial insights into running a family dairy farm. I have witnessed this in his mentoring and developing long-lasting relationships with young people on five different continents through involvement with Communicating for Agricultural Exchange Programs (CEAP), exposing them to all aspects of dairy farms and allied businesses to help them learn about the U.S. dairy industry.

I've seen Mike's influence in how he teaches his five grandkids about life, death, how to treat animals, how to treat people, how to win and how to lose. Mike has spent hours with politicians to inform them about dairy issues and how to actually impact dairy farms. None of these things directly benefit Mike, but he does them. That is the nature of someone who is a leader, who influences where it really matters. When I think of Mike, I think of influential, dedicated, compassionate, family-oriented and respectful. He is one of the humblest dairy farmers I know, but also not afraid to speak up for dairy farmers.
—Nominated by Whitney Yager

Honorable mention

- Heather Anfang, senior vice president, Land O'Lakes Dairy Foods
- Lauren Brey, managing director of Farmers for Sustainable Food
- Katie Coyne, New York, editor of *Progressive Dairy – Canada*
- Laura Daniels, farmer, coach, consultant and agriculture advocate, founder of Dairy Girl Network
- Michael Etchebarne, California dairy nutritionist
- Tim and Marlene Haverkamp and Darrin and Cheryl Deters, dairy producers, Baileyville, Kansas
- Joshua Hoffman, Americas regional sales manager for Genos, the farmer cooperative breeding organization for Norwegian Red cattle
- Ron, Pam, Allan, Katie, Aaron and Melanie Kutz, Kutz Dairy LLC, innovators, Jefferson, Wisconsin
- Sam Leadley, large-animal veterinarian, blogger, statistician, global contributor and influencer (in memory)
- Maurice Loehmer, dairy and grain producer, Loehmer Dairy LLC, Monterey, Indiana
- Tom Pemberton, farmer and YouTuber, United Kingdom
- Amy Penterman, Wisconsin dairy producer and president of the Dairy Business Association
- Arthur Charles "Chuck" Rogers III, founder, Blue Diamond Dairy Service
- Brody Stapel, Wisconsin dairy producer and president of Edge Dairy Farmer Cooperative
- Tim Trotter, CEO of Dairy Business Association, Edge Dairy Farmer Cooperative and Farmers for Sustainable Food
- Inga Witscher, farmer, Osseo, Wisconsin and host of *Around the Farm Table* on Wisconsin PBS.



Photo courtesy of PortaCheck.



Photo courtesy of Automated Dairy.



Photo courtesy of Automated Dairy.

New dairy products at World Ag Expo

Progressive Dairy Editor **Matti McBride**

Each February, agriculture producers around the U.S. gather in Tulare, California, for the World Ag Expo (WAE) to learn from one another and about the latest and greatest technologies in each respective industry. This year, several new dairy products will be at the show and soon available for purchase. Get a sneak peak of these products here.

1 PortaReader – PortaCheck

High somatic cell counts (SCCs) shrink your dairy profits. Early mastitis detection may reduce the time bacteria is shed in the bulk tank and allows for rapid intervention, which is good for your bottom line.

It just got easier to integrate accurate, affordable subclinical mastitis screening into your herd management program. Introducing the PortaReader by PortaCheck.

- Clear, quantitative results for subclinical mastitis screening.
- Integrates with PortaSCC mastitis tests to accurately detect subclinical mastitis
- Conveniently perform milk tests cowside in the milking parlor
- Easy-to-use interface displays clear, quantitative results
- Increase milk production and premiums while reducing treatment costs

Increase your milk production and profit: With the PortaReader from PortaCheck, the health of the herd is in your hands.

Ask for the PortaReader at your local farm supply store or visit portacheck.com to find a distributor near you.

2 TurboSpray 2.0 – Automated Dairy

Automated Dairy's TurboSpray is an automatic walkover teat sprayer that has been specifically engineered to ease the pre- and post-spray application process.

It is powered by an industry-leading central programmable logic controller (PLC), DairyLink, which takes full control of your barn and its automation.

New features for TurboSpray 2.0 will be released early 2023. The system utilizes a unique design of air-to-chemical blend to apply an even coating of dip on cows as they enter and/or exit the milking parlor. A sophisticated set of sensors track each individual cow, and angled nozzles in the pod dispense chemical, ensuring all four teats are covered.

TurboSpray applies an even coating of dip on cows as they enter and/or exit the milking parlor. This system was the first to use a blend of air and chemical to apply the dip on cows, ensuring every cow gets the protection it needs with a minimal loss of product.

Visit automateddairy.com/products/ for more information.



Matti McBride
Editor
Progressive Dairy
matti@progressivepublish.com

3 DairyLink – Automated Dairy

DairyLink from Automated Dairy is designed to enable producers to have greater insight into and control of their on-farm operation utilizing cutting-edge automation technology. The system can be as simple or as complex as desired. DairyLink is infinitely expandable to meet the needs of dairies today and into the future. Rather than having numerous stand-alone systems to maintain and monitor, DairyLink is designed to serve as a single point of control for your operation. Dairylink's new app will be unveiled during WAE 2023.

This product gives dairy producers insight into their operations without having to step foot on the property. DairyLink will notify you when a system is down, which benefits dairy producers and the dealers who install the systems. Some of the notifications you will receive are hot milk, barn not milking, barn in wash mode, silos full and various other notifications to help run a dairy operation as smoothly as possible. It will notify milk haulers when silos/tanks are full and ready for pickup, and it makes the pickup process easier with a touchscreen interface.

Does executive coaching work on farms?

David Jones for *Progressive Dairy*

Like most farm kids, I grew up in a home where remaining inside during good weather was not an option. If you didn't have something to do, someone would gladly hand you a tool of some kind and provide a job to complete. Whenever I sensed the shovel fairy (my dad) was nearby, I would sneak off to the farthest corral, sit on the highest rail and watch cows.

This habit stuck for many years, and it's something I still enjoy when back on the family farm. Over the years, books on behavioral science found their way onto my bookshelf, and this fascination is one of many that led me to the pursuit of an advanced certification in executive coaching and the launch of my coaching practice. What started as an interest in understanding the motivating factors of animals led to an unbound curiosity about people and the experiences that form who they are and how they interpret the world around them, myself included.

Today, I work with professionals across many different industries: law, tech, media, academia, non-profit, agriculture and others. I've worked with Fortune 500 executives, entrepreneurs, mid-career professionals and people looking to transition toward retirement. No two stories are the same, but one theme is consistent: Change is difficult. That is where a coach can help.

While I know some farms that work with coaches, it's not as common as it is in other industries. As agricultural businesses scale up to meet today's demands, coaches can be there to help cultivate the growth of your leadership bench and develop healthy habits and systems along the way.

What is coaching?

It's hard to give a general overview of executive and developmental coaching because it helps with so many issues and obstacles. Typically, every executive or entrepreneur I've met has some sort of pinch point. Something that's holding back the growth of the business, a mental block that prevents the next step or something that frustrates them.

Coaching helps facilitate learning and development, overall well-being and optimal performance. Coaching raises self-awareness and involves feedback from the coach and often other stakeholders (i.e., direct reports, managers, owners, customers, etc.). The coaching process builds resilient leaders, helping to develop new skills, identify paths out of current challenges and create change in attitudes and behaviors.

Simply put, the goal of coaching is to close a gap between an individual's potential and their current state.

A common misconception is that an executive coach only looks at roadblocks related to a career and helps you move past them. The fact of the matter is: When a behavior or mental block is keeping you stuck professionally, it likely affects other parts of your life as well. Coaching involves the whole person, not just the version of yourself you bring to work.

In a coaching engagement, we identify a goal, break it down and refine it over the course of the work. We look at strengths, uncover areas for growth, build new practices, execute a plan with a test and learn mindset. Most engagements last between six and 12 months.

What example do you set?

To be an effective leader, self-awareness, self-management, social awareness and relationship management skills are non-negotiable. It is particularly difficult to be self-aware or to manage the relationships with direct reports if you have no idea how your employees experience you. This is

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Does executive coaching work on farms? cont'd from page 37

why many coaching engagements often involve employee feedback. This helps us understand how things are going and whether or not our teams operate with trust.

Anxiety thrives in ambiguity. When we are unaware of how our teams feel about us, we may think we are behaving in a way that keeps everyone happy, healthy and productive, but there's no way to be sure without asking. We gather a tremendous amount of data on the modern dairy farm, but perhaps the most important metric we aren't measuring at the same rate as other industries is how well we manage and lead our employees.

The mental and physical health of the leaders in an organization typically set the tone for the mental and physical health of those they lead. Leaders who don't make their own health and well-being a priority typically find that their employees don't either. The easiest example of this occurs on teams where the boss never takes a vacation. As a result, employees tend to get the perception that taking time off isn't acceptable and thus rarely take vacation. These teams tend to have higher rates of burnout and turnover.

If you are leading a business in growth mode, there's one thing that is certain: Any management issues or deficits in leadership ability tend to scale up as businesses do. If your management style is working on a small scale, it doesn't mean you will be effective as you grow.

You are resourceful

The habits, behaviors and systems that get us to where we are currently are typically not the same ones that take us where we want to go next. I do believe that you have everything you need to arrive at the life you want. And I would never suggest you can't get there on your own.

But, perhaps, it might be a quicker journey if you have someone on your team. Somebody invested in you as a person. Somebody who will tell you the truth but never what to do. Somebody who holds no judgment of your past or of you as a human being. Someone who will hold you accountable to the life you want to lead and the type of person you wish to become.

The hope of any coach worth their salt is that at some point, you won't need us anymore. Your world must eventually be able to function without our presence, which is why coaching is not about giving you an endless supply of advice and telling you what to do.

If that's what you're looking for, there are many of us who would love to work with you to get there. I promise we don't just sit on the rail and observe; we'll be beside you the whole time.

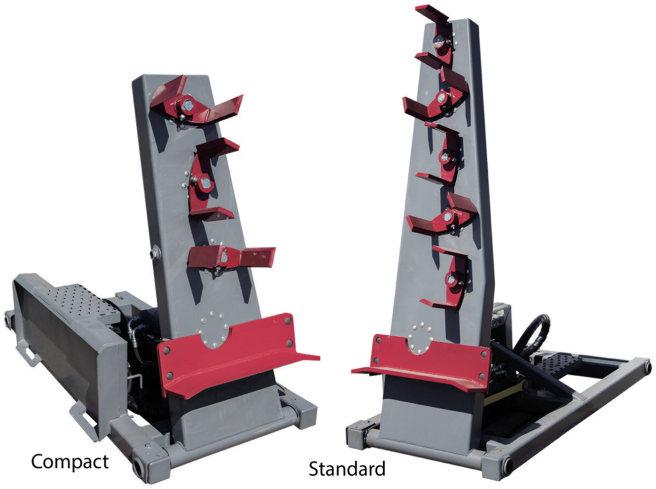
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Executive Coach
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David's expertise is built on his combined experience as an entrepreneur, sales and relationship management executive, dairy farmer and his experience developing leaders as a certified Hudson Institute coach.

He led employees and executed strategic plans within the family farm. He worked as a sales executive in dairy equipment, interfacing directly with some of the largest farms in the U.S. Today, he runs two companies, his developmental coaching practice and Develo, a training, learning and development consultancy.

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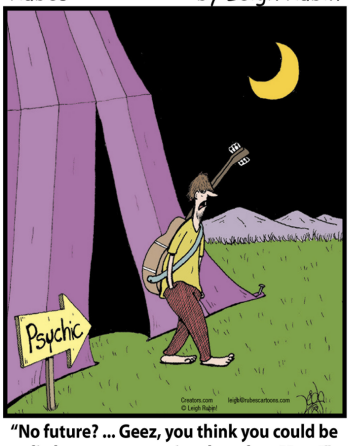
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Technologies at work improve dairy's environmental impact

Progressive Dairy Editor **Jenn Coyne**

AT A GLANCE

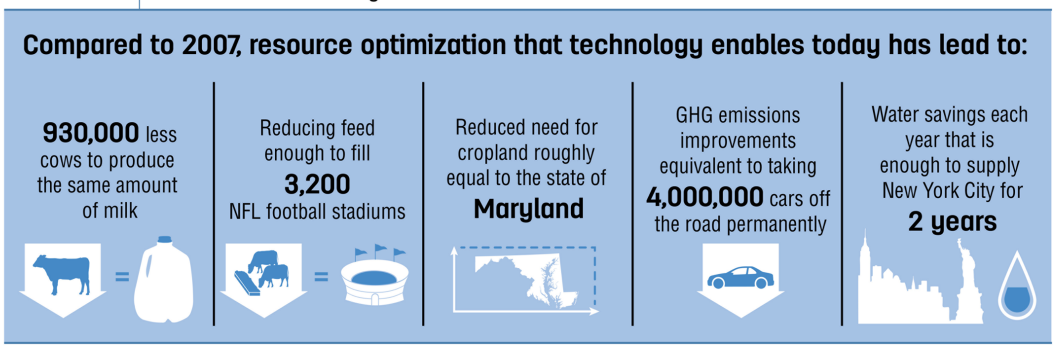
Industry experts weigh in on recent research that reveals the green benefits of modern dairy technologies.

A collaborative study among the Association of Equipment Manufacturers (AEM), the National Milk Producers Federation (NMPF) and Dairy Farmers of America (DFA) revealed significant environmental benefits of modern dairy, hay and forage production technologies in North America over the last 15 years.

"We are living in a new age of agriculture," stated Curt Blades in an AEM press release about the research findings. "Today's modern … technologies have an enormous positive impact on dairy farmers, cows, consumers and the environment."

Blades is the senior vice president of industry sectors and product leadership at AEM.

FIGURE 1 Improvements in productivity levels per cow compared to 2007 as a result of technological advances in the industry



Source: Dairy Herd, USDA ERS, Context Analysis

One component of the study reflected on dairy industry practices from 2007 to today. With resource optimization from technology, the industry produces the same amount of milk with 930,000 fewer cows, has reduced feed enough to fill 3,200 National Football League stadiums, has reduced the need for cropland almost equal to the size of Maryland, has improved greenhouse gas (GHG) emissions equivalent to removing 4 million cars from the road and has improved water use so much so that the savings each year could supply New York City for two years (**Figure 1**).

The research revealed that not only has technology played a critical role in the industry's output and sustainability but so has insights driven by data, genetic selection, large-scale dairies and knowledge sharing.

Such findings position the dairy industries in the U.S. and Canada to increase milk yield by 11%; decrease land use by 9%, feed use by 19% and water use by 4%; and decrease GHG emissions by 19% all by 2030, according to the final report (**Figure 2**, page 2).

"If the road we're on is any indication, the next 15 to 20 years are going to be quite interesting," said Chad Huyser, president of Lely North America. "That's what we're trying to do with the study – put things out there and collectively look at how we

Continued on page 2

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Huyser was joined by Fabian Bernal, head of sustainability for DeLaval; and Matt Daley, North American president of GEA Farm Technologies, at World Dairy Expo 2022 where they spoke of the unveiled results and what they mean for the industry. The panel was moderated by Taylor Schaefer, Wisconsin's 75th Alice in Dairyland.

When you think 10 years ahead, what does the dairy industry look like to you?

BERNAL: My belief is the farmers are simply going to be capable of managing data a lot better. Farms will be capable of using their own data for better decision-making processes. Small data will create sets of large data to make better decisions around our market. By then, farmers will have a larger influence on what markets will look like. Will there be more consolidation? Yes. And productivity? Yes.

DALEY: In the U.S. and Canada, there will be a more regulated environment. Whatever those regulations may be, we will meet that need with product. Every day there are 18 to 20 new digesters installed in the U.S. at the moment. We're going to have more powered energy. Farmers, themselves, are getting better at what they do, which means they have to be cognizant of the public that surrounds them and what they see. We'll see a lot more openness because the public needs to know where food comes from.

HUYSER: We have to keep the animal front and center. We have a transparency opportunity to show how our farms are producing and be clear with consumers where their food is coming from. The macro-challenge is the demand for nutritional sources as the population grows. We have to produce in a stable, data-minded way that best utilizes the resources we have like land and water. Like it or not, we have to run head-long into it because this is where we're being pushed. We should look at it as an opportunity, and I believe data technology is a key part of that opportunity.

The study shows how dairy farmers reduce water usage to sustain New York City for two years. How are dairy farmers accomplishing this, and how do we continue to grow that number?

BERNAL: I do believe water is simple, but the most difficult thing to manage and measure extremely well. When we start talking about water as a key ingredient in a dairy ration as a nutrient, a lot changes. We're unlocking interesting things there and things we're seeing are great with the technology and application farmers are doing today, but there's more to be done.

DALEY: It was a big deal when farms started using water twice with a plate cooler. Now, water is used three to five times or for forever on farms. The reclamation systems continue to become more professional. You can measure how well you're doing by how much water you're pumping out of the ground every day. We've improved by being more professional, taking care of the cow better and there are a lot of new technologies coming from that direction. There's a big need to reduce water usage, and our industry is poised to meet that need head on.

FIGURE 2 Aggregate improvements in the dairy industry by 2030 based on improvements observed in the last 15 years

Given the improvements the industry has observed over the last 15 years, there is the **potential** to continue this into the future	From 2007-2021	From 2022-2030
Resource intensity of the following	Aggregate improvement	Aggregate improvement
Milk yield	19%	11%
Feed use Intensity	-15%	-19%
Land use Intensity	-26%	-9%
GHG emission Intensity	-17%	-19%
Water use Intensity	-10%	-4%





Photo by Jenn Coyne.

During World Dairy Expo on Oct. 4 in Madison, Wisconsin, 75th Alice in Dairyland Taylor Schaefer (left) moderates a panel with Matt Daley, president of GEA Farm Technologies North America; Fabian Bernal, global head of sustainability for DeLaval; and Chad Huyser, president of Lely North America.

HUYSER: The study looked at land utilized to grow feedstock as a critical component to cost of production, health of the animal and doing that in a smart way. Farmers did that in a sustainable way as they monitored water usage in and around the dairy. As we look ahead 10 years, certain parts of the nation are going to be challenged by water supply as cows continue to move where resources are available. Basics of smart irrigation, from land-base application to nutrient management, is a critical component.

Feed usage has been reduced by 3,200 NFL stadiums. What ways are farmers able to do this?

BERNAL: My expertise is in animal welfare and productivity, and there was a lot happening in the early 1990s and 2000s. I saw technologies coming up, the metrics and explaining those metrics to farmers. Technology and science have taken us to this place and the application has been taken to heart, and farmers have figured this out. With more of these data points, technologies will allow farmers to make these applications and drive productivity. Most importantly is knowledge transfer, and farm application has created opportunity like none other.

DALEY: Not a day goes by where the nutritionist or vet or consultant isn't working on our farm to use science. Young farmers of today are much more knowledgeable and educated on the subject matter. They are utilizing the science so much better, and that's why we're seeing such big gains. Real science has really come a long way in our industry. You don't have to harvest as much with some of the new digestibility of forages, and it's still the high-quality feed you want without running the tractor across the field as much as you used to.

HUYSER: Some technologies on modern hay equipment today have farmers harvesting and making decisions based on optimization of the greatest quality out of the field. We know feed is the number one driver on production. How do we use that feed? More importantly, how does she utilize that feed? Looking across the genetic potential, how do we feed her with the genetics we know and how traits play into each other? When we understand that fully, we start to see opportunities of feeding less overall feed, but there's more production and a healthier animal. Farmers can benefit, financially, and we build consumer awareness. There's a strong message there.

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The following section contains content for use in dairy training. The article on this page is available in Spanish on page 6.

Take steps to prevent the salmonella cycle in calves

Ruby Wu for *Progressive Dairy*

AT A GLANCE

Salmonella can kill a calf in under 48 hours. Prevent this deadly disease through regular vaccinations, good colostrum management, careful sanitization, gradual transitions and a healthy rumen.

Salmonella is a potential concern on many dairy operations. It's important for all dairy producers to understand and manage this devastating disease – not only to protect herd health but also to prevent potential impact on food safety for consumers.

Although many salmonella serovars affect dairy cattle, of particular concern is serovar Dublin. Once rarely seen in dairy herds, serovar Dublin is now the most common form of salmonella found on dairies. It also is growing in prevalence among foodborne infections in humans.

Animals can contract salmonella at any point in their lives and become active, asymptomatic shedders. These shedders then pass the pathogen on to other animals that become shedders, too. This invisible salmonella cycle often creates endemic infections in herds, leading to significant losses even if cases are subclinical. Clinical salmonellosis is rarely fatal in cows, but it can be deadly for young calves.

Calves are most susceptible to salmonella in the first 30 days of life, although infections can occur throughout the first six months. Clinical manifestations are also common during the seven- to 10-week period when calves transition to full-grain rations. Symptoms include off-feed, fever and watery diarrhea.

When these signs of salmonella occur, administer electrolytes and antibiotics as soon as possible, as directed by your veterinarian. Without prompt treatment, dehydration sets in very quickly and animals may succumb in as little as 12 to 48 hours. When planning antibiotic treatment, consider asking your veterinarian to perform antimicrobial susceptibility tests to ensure selected treatments are effective against the strains on your operation.


Getty Images.

Prevention before treatment

The best way to control salmonella in calves is through prevention. Focus on a systematic approach that includes animal care and effective sanitation protocols.

Like many pathogens, salmonella is opportunistic, attacking animals under stress or with compromised immunity. Calves are most susceptible to salmonella at the time of birth due to their immature immune systems.

Protecting calves against salmonella starts with the dam, with vaccinations at pregnancy check and again at day 55 of the dry period.

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The initial vaccination will help the cow develop her own immunity, while the second will help build immunity to pass on to her calf through colostrum.

Calving-time considerations

Follow these steps to control salmonella infections at calving:

- *Sanitize calving pens.* While it is impossible to completely sanitize calving areas, take steps to make sure the calf is born into a clean environment.

  o If possible, only calve one cow per pen at a time. After calving, clean the area thoroughly and replenish with clean, dry bedding.

  o Move calves to a clean, sanitized pen or hutch within the first day of calving.

- *Feed high-quality colostrum.* One of the most important ways to protect a calf from salmonella is to provide adequate amounts of clean colostrum immediately after birth.

  o Feed up to 10% of the calf's bodyweight (4 quarts for a 90-pound, average-sized calf) within the first two hours of birth. Follow six to eight hours later with additional colostrum at 5% of bodyweight (2 quarts).

  o Follow hygienic practices when collecting colostrum. Thoroughly clean and sanitize feeding equipment, bottles, nipples and esophageal feeders. Read the label on the sanitizing product you use to ensure it is labeled as a disinfectant or sanitizer, not just a cleaner. Use sanitizers at temperatures and dilutions as directed on the label.

  o Where possible, pasteurize the colostrum. Place colostrum in a pasteurizer for 30 to 60 minutes at 140°F, then cool it down and feed.

  o Avoid the potential for spreading contaminated colostrum by keeping colostrum from each cow separate. Only feed colostrum from a single cow to a single calf.

Ongoing prevention practices

If adequate levels of high-quality colostrum are administered properly and timely, the calf should be well-protected in the first few weeks of life. Ongoing management practices will help protect the calf against the threat of salmonella.

- *Continue to clean.* Proper sanitizing procedures should be part of any calf-care protocol. After every feeding, make sure anything that contacts calves or their environment is sanitized.

- *Consider calf handling.* If calves are sick, make sure you care for those calves separately. Feed or care for them after all other animals are cared for, or dedicate one employee to only managing sick calves.

- *Watch grain transition.* After birth, calves are most susceptible to salmonella during weaning. Make the transition as easy as possible by slowly stepping down milk feeding and stepping up starter intake. Avoid abrupt pen changes from single pens to large group housing that can add to stress. Slowly making changes over time will help reduce the stress of weaning.

- *Build resiliency.* A healthy rumen environment helps establish strong immune function and can be a first line of defense against salmonella infection. In a University of Florida study, feeding refined functional carbohydrates (RFCs) was shown to bind pathogens and significantly reduce incidence of serovar Newport and serovar Dublin in calves.

Protect your workforce

Finally, keep in mind that salmonella can easily transfer to humans. Train your employees in proper hygiene practices and provide designated areas to wash up with soaps and sanitizers.

Attention to detail from birth through calfhood can help break the cycle of salmonella infection. Contact your veterinarian for further guidance.

References omitted but are available upon request.

This article originally appeared in the PD newsletter.



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Tome medidas para prevenir el ciclo de la salmonela en los becerros

Ruby Wu para *El Lechero*

La salmonela es un problema potencial en muchas operaciones lecheras. Es importante que todos los productores de leche comprendan y manejen esta devastadora enfermedad, no solo para proteger la salud del hato, sino también para evitar el impacto potencial en la seguridad alimentaria de los consumidores.

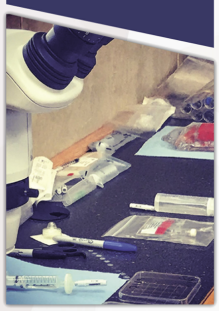
Aunque muchas variedades de salmonela afectan al ganado lechero, la variedad Dublín es motivo de especial preocupación. Si anteriormente rara vez se veía en los hatos lecheros, ahora la variedad Dublín es la forma más común de salmonela que se encuentra en las lecherías. También está aumentando su prevalencia entre las infecciones transmitidas por alimentos en humanos.

Los animales pueden contraer salmonela en cualquier momento de sus vidas y convertirse en portadores asintomaticos activos. Estos portadores transmiten el patógeno a otros animales convirtiéndolos tambien en portadores activos. Este ciclo invisible de salmonela a menudo crea infecciones endémicas en los hatos, lo que genera pérdidas significativas incluso si los casos son subclínicos. La salmonelosis clínica rara vez es mortal en las vacas, pero puede ser mortal para los becerros jóvenes.

Si anteriormente rara vez se veía en los hatos lecheros, ahora la variedad Dublín es la forma más común de salmonela que se encuentra en las lecherías. También está aumentando su prevalencia entre las infecciones transmitidas por alimentos en humanos.

Los becerros son más susceptibles a la salmonela en los primeros 30 días de vida, aunque las infecciones pueden ocurrir durante los primeros seis meses. Las manifestaciones clínicas también son comunes durante el período de 7 a 10 semanas, cuando los becerros hacen la transición a raciones de grano completamente. Los síntomas incluyen pérdida de apetito, fiebre y diarrea acuosa.

Cuando se presenten estos signos de salmonela, administre electrolitos y antibióticos lo antes posible, según las indicaciones de su veterinario. Sin un tratamiento oportuno, la deshidratación se presenta muy rápidamente y los animales pueden morir en tan solo 12 a 48 horas. Al planificar el tratamiento con

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antibióticos, considere pedirle a su veterinario que realice pruebas de susceptibilidad a los antimicrobianos para garantizar que los tratamientos seleccionados sean efectivos contra las cepas en su operación.

Prevención antes del tratamiento

La mejor manera de controlar la salmonela en los becerros es a través de la prevención. Céntrese en un enfoque sistemático que incluya el cuidado de los animales y protocolos de desinfección efectivos.

Como muchos patógenos, la salmonela es oportunista y ataca a los animales bajo estrés o con inmunidad comprometida. Los becerros son más susceptibles a la salmonela en el momento del nacimiento debido a su sistema inmune inmaduro.

La protección de los becerros contra la salmonela comienza con la vaca, con las vacunas en el chequeo de preñéz y nuevamente en el día 55 del período seco. La vacunación inicial ayudará a la vaca a desarrollar su propia inmunidad, mientras que la segunda ayudará a generar inmunidad para transmitirla a su becerro a través del calostro.

Consideraciones para el momento del parto

Siga estos pasos para controlar las infecciones por salmonela al momento del parto:

• Desinfecte los corrales de parto. Si bien es imposible desinfectar completamente las áreas de parto, tome medidas para asegurarse de que el becerro nazca en un ambiente limpio.

o Si es posible, solo debe haber una vaca por corral pariendo a la vez. Después del parto, limpie bien el área y vuelva a colocar material limpio y seco en el echadero.

o Mueva los becerros a un corral o jaula limpio y desinfectado dentro del primer día del parto.

• Alimente con calostro de alta calidad. Una de las formas más importantes de proteger a un becerro de la salmonela es proporcionar cantidades adecuadas de calostro limpio inmediatamente después del nacimiento.

o Alimente hasta el 10% del peso corporal del becerro (4 cuartos para un becerro de 90 libras, tamaño promedio) dentro de las primeras dos horas de vida. Luego de seis a ocho horas más tarde con calostro adicional al 5% del peso corporal (2 cuartos).

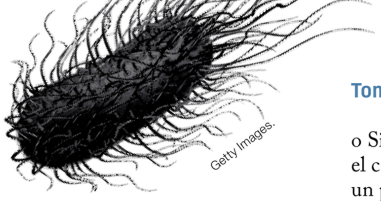
o Siga las prácticas higiénicas al recolectar el calostro. Limpie y desinfecte a fondo el equipo de alimentación, botellas, mamaderas y los alimentadores esofágicos. Lea la etiqueta del producto desinfectante que usa para asegurarse de que esté etiquetado como desinfectante o antiséptico, no solo como limpiador. Use desinfectantes a las temperaturas y diluciones como se indica en la etiqueta.

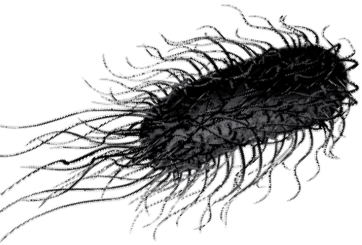
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Tome medidas para prevenir el ciclo de la salmonela en los becerros, cont'd from page 7

o Siempre que sea posible, pasteurice el calostro. Coloque el calostro en un pasteurizador durante 30 a 60 minutos a 140°F, y alimente cuando el calostro llegue a una temperatura de 100°F a 104°F.

o Evite la posibilidad de esparcir calostro contaminado, manteniendo separado el calostro de cada vaca. Alimente con el calostro de una sola vaca a un solo becerro.

Prácticas de prevención continuas

Si los niveles adecuados de calostro de alta calidad se administran de manera adecuada y oportuna, el becerro debería estar bien protegido en las primeras semanas de vida. Las prácticas de manejo continuas ayudarán a proteger a la cría contra la amenaza de la salmonela.

• Continúe limpiando. Los procedimientos de desinfección adecuados deben ser parte de cualquier protocolo de cuidado de becerros. Después de cada alimentación, asegúrese de desinfectar todo lo que entre en contacto con los becerro o su entorno.



Ruby Wu
Gerente de Servicios Técnicos
Arm & Hammer Animal and Food Production

• Considere el manejo de becerro. Si los becerro están enfermos, asegúrese de cuidarlos por separado. Aliméntelos o cuídelos después de que todos los demás animales hayan sido atendidos, o dedique a un empleado a manejar solo a los becerro enfermos.

• Observe la transición a grano. Después del nacimiento, los becerro son más susceptibles a la salmonela durante el desleche. Haga que la transición sea lo más fácil posible reduciendo lentamente la alimentación con leche y aumentando el consumo de alimento iniciador. Evite los cambios abruptos de corrales individuales a alojamientos en grupos grandes que puedan aumentar el estrés. Hacer cambios lentamente ayudará a reducir el estrés del desleche.

• Genere resiliencia. Un ambiente ruminal saludable ayuda a establecer una función inmunológica fuerte y puede ser una primera línea de defensa contra la infección por salmonela. En un estudio de la Universidad de Florida, se demostró que la alimentación con carbohidratos funcionales refinados (RFC) se une a los patógenos y reduce significativamente la incidencia de la variedad Newport y la variedad Dublín en becerros.

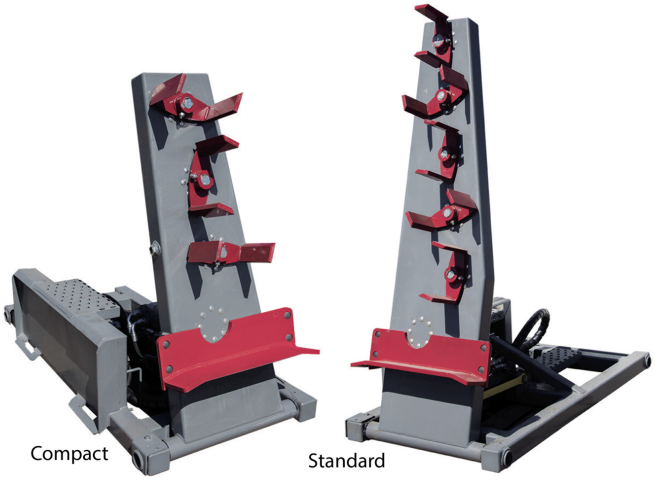
Proteja a su fuerza de trabajo

Finalmente, tenga en cuenta que la salmonela puede transferirse fácilmente a los humanos. Entrene a sus empleados en las prácticas de higiene adecuadas y proporcione áreas designadas para lavarse con jabón y desinfectante.

La atención a los detalles desde el nacimiento, durante toda la vida del becerro puede ayudar a romper el ciclo de la infección por salmonela. Póngase en contacto con su veterinario para obtener más orientación.

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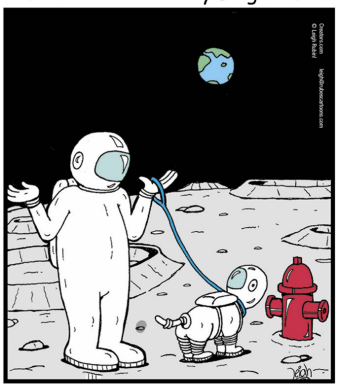
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2023 Pennsylvania Dairy Summit slated for Feb. 8-9

Emily Barge for *Progressive Dairy*

AT A GLANCE

Affordable registration rates will allow for dairy producers from any state to hear from dynamic speakers on real-time industry issues.

Dairy producers across the industry are constantly working to find fusion with each sector of the supply chain, with family and business, with current and future generations, with their products and consumers, and with their mental and physical wellness. It takes collaboration, innovation and communication to connect all of these dots.

During the 2023 Pennsylvania Dairy Summit, dairy producers and industry professionals will hear from dynamic speakers on real-time industry issues, including farm succession and family dynamics, what dairies can learn from the avian influenza pandemic, diversifying the family farm, change management and multigenerational family businesses. Hosted by the Professional Dairy Managers of Pennsylvania and Center for Dairy Excellence, the 2023 event is slated for Feb. 8 and 9 at the Penn Stater Hotel and Conference Center in State College, Pennsylvania.

"The Dairy Summit is an exciting way to network, reconnect and exchange ideas with other dairy farmers and professionals from across the industry. I look forward to it every year," said Tony Brubaker, the 2023 Pennsylvania Dairy Summit chair and a dairy farmer from Lancaster County. "The program and speakers we have lined up for the 2023 event will help us find the winning combination for success at a personal and professional level, and help us envision what the future of dairy looks like."

With this year's theme of "Fusion," the dairy summit will feature interactive breakout sessions, discussion groups and networking opportunities designed to help attendees find fusion within their dairy teams and across the broad industry.

Keynote speakers

The featured speakers for the 2023 Dairy Summit are taking their years of experience serving the agriculture industry and infusing that with real-time issues that are affecting today's dairy farm families.



Andy Junkin

• *"Bulletproof Your Farm: How Stubborn Farmers Can Work Better Together."* Andy Junkin will share insight on how to stop being stubborn with each other and start being stubborn with the critical habits that make a farm successful. Junkin was born and raised a dairy farmer in Bobcaygeon, Ontario, Canada. After walking away from his family's dairy barn in 2007, he has been focused on figuring out how to help stubborn farmers work better together. He is widely recognized as an expert on farm succession and farm debt turnarounds, having written five books on the topic, spoken in 14 states and provinces, and having helped farmers in 22 states and provinces.



Dr. Kevin Brightbill



Jennifer Reed-Harry

• *"Lessons Learned From the Avian Influenza Pandemic, a Panel Discussion."* Until it happens, it is hard for dairy producers to imagine what a highly contagious outbreak in their animal population could do to their family business. Panelists from Pennsylvania's poultry industry will discuss what they wish they had known when avian influenza hit and what they are doing to never let it happen again. Dr. Kevin Brightbill is the state veterinarian and director of the Bureau of Animal Health and Diagnostic Services at Pennsylvania Department of Agriculture. Byron Shaffer has worked at Kreider Farms for 22 years, including the last 12 as director of food safety and quality assurance, and was part of the leadership team at Kreider Farms that managed the index case of high path avian influenza in Pennsylvania. Jennifer Reed-Harry joined PennAg Industries Association in 2009 and works on issues related to environmental regulations and legislation, transportation, workforce labor and serves as a registered lobbyist.

• *"A Diversified Family Business: Producer Showcase with Ideal Dairy Farms."* From sustainability and nutrient management to high-quality genetics and cheese processing, Ideal Dairy Farms has diversified their family business and built new partnerships. Ideal Dairy Farms, owned and operated by the Dickinson and Getty families, cares for their herd of registered Holsteins



Photo courtesy of Ideal Dairy Farms.

including 1,900 heifers and 3,200 mature cows. They produce 210,000 pounds of milk per day. To support the nutritional needs of the herd, they operate 4,500 acres in Washington and Warren counties of New York. They remain committed to the production of quality milk and using superior genetics.



Joe DelGrosso



Amy Mearkle

• *"From Our Kitchen to Your Table: Family Business Showcase."* Now in its third generation, DelGrosso Foods has taken its place among the most highly regarded producers of fine sauces anywhere. Joe DelGrosso and Amy Mearkle will have a conversation about what they have learned about food production and running a successful family business that spans decades. Joe DelGrosso took a permanent position at DelGrosso Foods in 1979 and has since led the company's rapid growth and development. He serves as president. Amy Mearkle is the director of marketing and events at DelGrosso's.



Col. Leon "Sam" Barringer

• *"Change Management: Adapting Your Mindset."* Col. Leon "Sam" Barringer will share lessons learned from his combat experience on leadership, teamsmanship, detecting abnormal/normal behavior and enriching life through intentional, unforgettable moments. Barringer retired from the Air Force in September 2021. His 34-year career includes time as commander, 302nd ASTS, Peterson AFB, Colorado. He was responsible for overseeing the mission of deploying medical personnel to provide command, surgical support, aeromedical evacuation, nursing and specialty functions along with mental health triage and traumatic stress management, critical care expertise and surgical and dental support, and initial environmental and disease assessments. Barringer is a rancher and large-animal veterinarian consultant in the civilian sector.

Discounts available for dairy producers from all states

Join the event on Feb. 8-9 and find fusion with your peers across the industry. Thanks to grants and support from the Northeast Dairy Business Innovation Center, Center for Dairy Excellence, Professional Dairy Managers of Pennsylvania and summit sponsors, registration fees for dairy producers are set to be as affordable as possible. Dairy producers from any state can attend the full two-day dairy summit for $100, with one-day rates available for $50.

"This year's event should be filled with insightful, eye-opening conversations, packed with specific takeaways and tactics we can implement directly on the farm," Brubaker added.

For dairy producers from any state who want to take advantage of the discounts, register online (www.padairysummit.org). Use the code "FUSION23" for each attendee who registers from the farm. Contact the Pennsylvania Dairy Summit Business Office at (814) 355-2467 or by email (info@padairysummit.org) for more information.



Emily Barge
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With this year's theme of 'Fusion,' the dairy summit will feature interactive breakout sessions, discussion groups and networking opportunities designed to help attendees find fusion within their dairy teams and across the broad industry.

It's time to pay attention to your interest costs again

Brad Guse for *Progressive Dairy*

AT A GLANCE

Considerations for dairy producers as interest rates rise.

How you manage interest risk is much like managing all of your pricing risks – the more you leave variable, the larger the impact could be on your working capital needs in a tight margin year.

It's been quite a while since dairy operators have had to budget for interest rate expenses. But the Federal Reserve raised interest rates six times in 2022, and policymakers expect more to come in 2023 in an effort to slow inflation by increasing the cost of borrowing. That means as your cost of production increases due to inflation, the rising interest rate environment in response to that inflation adds to the pressure on your margins. While rates are sharply higher, how it impacts your operation's cost of production may differ greatly depending on several factors.

Your debt mix

The first factor is the amount of debt you have. Interest cost is like milk revenue; it is a function of both volume and price. In mid-November, the prime rate was 7%; a year ago it was 3.25%. For every $1 million of debt, the move from 3.25% to 7% results in your interest cost going from $32,500 per year to $70,000 – more than double. In today's capital-intensive agriculture industry, the impact of that rising cost adds up quickly. With current markets, it may make sense to take a walk through the machinery shed. If it has rust or dust, it should go. The conversion of unused assets to pay down debt can help reduce your exposure to higher rates and improve margins.

Managing the risk

Calculating the impact is further impacted by how you deployed interest cost risk management strategies in the past. That is, what is your mix of fixed and variable rates? While both current long-term rates and variable rates have increased in the past year, when and how you used fixed rates in the past could significantly impact your interest rate costs.

Table 1 illustrates the impact of various strategies and their impacts on total interest rate costs, noting that for the $1 million borrowed, the difference from the highest cost to the lowest is $13,750. Using the example above on the impact of rising variable rates on interest costs, the placing of the debt in various rate buckets cut the operation's exposure to the $40,000 rate increase in half. It should be noted that this strategy in a falling interest rate market also makes sense, as it allows the operation to take advantage of declining variable rates while still managing the upside risk.

An additional advantage to this strategy is that not all interest rates mature at the same time. With the interest rate market's ability to both rise and fall, having all of your debt maturing at the same time could put you at risk for repricing all your debt at a high. How you manage interest risk is much like managing all of your pricing risks – the more you leave variable, the larger the impact could be on your working capital needs in a tight margin year. That is, if margins are at or below breakeven, you'll need your working capital to fund the $37,500 increase in costs if you remained 100% variable rate. Like all portions of your risk management plans, being proactive typically wins.

Another area to consider going forward is the impact of the higher interest costs on future capital spending plans. Smart use of leverage to improve your operation's efficiency and profitability are still wise choices, but the return now needs to be higher to offset the higher cost of funds. This is especially important to consider on longer-term investments such as buildings.

Fortunately, we have come into this rising interest rate environment from a good place. That is, most farms have a strong working capital position, including strong balance sheets with higher cash and prepaid balances going into 2023. Staying vigilant and proactive with all of your risk management plans will maintain that strong position and put you in a position to absorb the tighter margins we all know are coming.



Brad Guse
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TABLE 1 Sample interest expense chart

Rate type	Variable 7.00%	3-year fixed 4.25%	15-year fixed 4.75%	Total annual interest cost
Scenario 1				
Loan balances	$1,000,000			
Annual interest cost	$70,000			$70,000
Scenario 2				
Loan balances	$750,000	$250,000		
Annual interest cost	$52,500	$10,625		$63,125
Scenario 3				
Loan balances	$500,000	$250,000	$250,000	
Annual interest cost	$35,000	$10,625	$11,875	$57,500





The 5 C's of generational continuity of the dairy

Dave Specht for *Progressive Dairy*



Dave Specht
Director, Global Family Business Institute
Drucker School of Management
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AT A GLANCE

Cash flow, management and ownership contingency plans, compensation, communication and conflict are five factors that can make or break generational continuity.

Blend one large measure of hard work with equal amount ingenuity, gradually fold in nearly all existing assets alternating with tenacity and sprinkle with luck, then simmer for several decades and enjoy.

Unfortunately, there is no magic recipe that will guarantee the preservation of your family relationships and the perpetuation of the dairy. There are, however, five key ingredients that if *not* planned for will almost assuredly lead to blackened heartache, tasteless family dynamics and burned chances of the dairy succeeding generationally.

Cash flow

Cash flow clarity is key – every dairy owner must have a clear and thorough understanding of the business's financial basics. Furthermore, it is important to "stress test" the operation to see what types of shocks, specific to input costs or prices, it can withstand. Besides the cash flow of the dairy, the operation needs to consider the monetary needs and resources of the retiring generation. If retiring owners do not have assets accumulated outside of the operation, then their retirement would logically be funded through the successful operation of the enterprise. When founders are dependent on the perpetual success of the dairy for grocery money, it inevitably leads to second-guessing decisions and continued invasive involvement in the operation. Only after careful analysis of standard expenses, economic shock resistance and retirement outflow will a dairy have enough accurate information to reliably decide if it can sustain the livelihood of other family members interested in returning to work for the family dairy.

Questions to consider

• From a cash flow perspective, can the dairy survive serious production cost increases?

• From a cash flow perspective, how prepared is the retiring generation to create sufficient cash flow for retirement without supplementation from the dairy operation?

• From a cash flow perspective, how ready is the operation to invite another family member back?

Contingency plans for management and ownership

Every ag operation needs a documented, communicated and frequently revisited contingency plan for both management and ownership to successfully survive through several generations.

A management contingency plan looks at the people in the operation and identifies the duties and decisions made solely by one person. When single individuals make purchasing, marketing and other decisions entirely by themselves, risk is created and continuity is jeopardized if they become incapacitated, die or simply leave the operation. Therefore, each dairy should identify these risks and train back-up personnel on how to minimize them. Plans should also be considered as owners age and want to slow down.

An ownership contingency plan provides and establishes clarity regarding the flow of assets should any owner pass away, become disabled or retire. Although it sounds like a simple and logical expectation, few have a clearly documented and communicated plan in place. The flow of ownership should not be a surprise and should include conversations about debt assumption and the rights, roles and responsibilities of owners.

Questions to consider

• If one of the key managers didn't come to work on Monday, how big is the knowing/doing gap between them and the person who needs to do their job?

• If one of the owners were to pass away tomorrow, how would ownership flow and how would the dairy be impacted?

Compensation

Often overlooked but always present is the question of how people are compensated. As a family business invites a member of the rising generation back, it is crucial that there is clarity around their compensation. Compensating each individual fair market value for the job they do is always a best practice. When compensation is blended with gifting or is not tied to the job being performed, there will be confusion and unintended consequences. Paying siblings or cousins the same amount when they do vastly different jobs almost always leads to problematic situations of either entitlement or feelings of unfair treatment.

Questions to consider

• How aligned is the family member's compensation in the dairy with the job they perform?

• If a non-family employee was asked to step in and do the same job as a family member, would their compensation go up, down or stay the same?

Communication

Successful enterprises create structures and expectations for how shareholders and the families that control the operation communicate; however, this is where many farm operations fall short. It is crucial that a regular pattern of communication be established to keep shareholders informed, provide a venue for questions and establish an environment of transparency and trust. Regular family meetings with structured agendas and a place for people to ask questions without fear of retaliation are key.

Questions to consider

• What venue is there for family members to become educated about the family operation and to ask questions?

• What conversations should be held to help shape expectations and prepare the rising generation?

Conflict

Conflict is not bad, and it's actually normal. All humans, no matter how close their bloodlines or life experiences, undoubtedly have different perspectives and opinions. Deciding how you will handle conflict when you are not actively in conflict is a best practice. Thinking you will always avoid conflict is a flawed assumption and can be a fatal business strategy. It will leave you lacking the structure and understanding required to move through conflict with your personal relationships intact and your operation moving forward.

Questions to consider

• What processes exist to help resolve conflict in an organized and fair manner?

• What are the financial and relationship costs of not having a clear process for dealing with conflict in the family operation?

Family dairies that seriously consider their current status and future plans in relation to cash, contingency, compensation, communication and conflict put themselves in a much stronger position to succeed today and for many years to come.



New balcony enhances visitor experience, safety on South Dakota dairy farm

Progressive Dairy Editor **Kimmi Devaney**

A South Dakota dairy farm that frequently provides farm tours to industry members, farmers and consumers developed a solution to maximize visitor experience while minimizing the disturbance to cows and employees in their maternity barn.

Boadwine Farms in Baltic, South Dakota, added a balcony over the top of the maternity area in spring 2022 in preparation for their first big summer open house since the COVID-19 pandemic.

"The feedback has been great," fifth-generation dairy farmer Riley Boadwine says. "I've had people recognize me in town or flag me down just to tell me how much they and their child loved the dairy tour and how it was one of their favorite trips. It says a lot about your dairy and the animals when the environment is so welcoming that it really sticks with people for a long time, which is exactly what we want to do."

Boadwine says accessibility is an important consideration for tours with non-farm guests.

"Build things that make these areas easily accessible to people that aren't going to be wearing work pants and rubber boots, and think about safety for both your guests and your herd," he says. "Cleanliness goes a long way in presentability. Think about people's potential handicaps and keep them in mind because you don't want anyone missing out on what you have to offer. I think the next step in safety for us is providing increased accessibility for those with disabilities and creating more opportunities for them to see the agronomic side of the operation and some of the powerful tools we use for fieldwork in a way that's easy to show quickly and safely during an hourlong tour."



Photo courtesy of Roadwine Farms.

Visitors look out over the cows from the new platform during a tour.



"Build things that make these areas easily accessible to people that aren't going to be wearing work pants and rubber boots, and think about safety for both your guests and your herd. Cleanliness goes a long way in presentability. Think about people's potential handicaps and keep them in mind …"

—Riley Boadwine, Boadwine Farms in Baltic, South Dakota

Boadwine Farms was originally homesteaded in what is now Baltic, South Dakota, in 1874 by the family's Norwegian ancestors. Today, they have three locations and raise all their own heifers while milking 2,300 cows in a 4,100-cow system. They raise mostly Holsteins that are genomically tested, and the top percent is bred back to Holstein to join the herd. They have tunnel-ventilated barns with negative-pressure fans and high-pressure mist systems for climate control and milk in a double-30 parallel parlor.

"Our previous herd manager, Heidi Zwinger, was always very active and adamant that we participate in ag outreach whenever we get the chance, but in the last few years or so since the slowdown of the coronavirus, we've seen our efforts in environmental sustainability attract a lot of attention both in our local area and nationwide, which has led to a lot of people and organizations asking to come out and see the dairy," Boadwine says.

Their primary audience is anyone that wants to learn more about dairy in general or them specifically, Boadwine says. Some past tour participants included schoolchildren, interest groups, politicians, and farmers.

"What we show and what we talk about all depends on the audience," he says. "For elementary school kids, some of them are fascinated for half-an-hour just petting calves. For non-industry adults, I can show them the basics on how our technologies and protocols work, and for other farmers, they want the hard details on stall length, fan types, barn design, vaccine programs, etc."

In addition to offering visitors a glimpse into farm life, the tours are an opportunity to highlight cow comfort and maternity care.

"Our maternity area and fresh cow barn has always been a hit on tours, and people [who] don't spend a lot of time around animals get to see some of the realities of the birthing process – and, of course, everyone loves to see the newborn calves with their mothers and learning about the giving of colostrum," Boadwine says. "Our fresh cow barn houses the maternity area and is a great place to show just how comfortable our animals are."

They built the balcony to help guests get a good view of everything going on while being able to stand and talk comfortably without disturbing employees and cow traffic during the tours.

"We worked with the contractors that build a lot of our barns on the balcony project, and the most important thing is that it's high enough you get to see the maternity area without spooking the cows, but also the rest of the barn around it, including the feed alley and the freestalls where the cows lay. And [it has] a railing, of course, safety first!"

The original barn that was built around 1900 was used until the 1980s as a stanchion parlor. The hayloft has been converted into a gathering area for work, tours and events like graduations or birthdays for their employees' families.

"The loft also serves as a bit of a history museum for the farm, and it has photos along the walls of previous generations with information about them along with various aerial photos that show how the farm has grown. It's a special place," Boadwine says.

"We believe in bridging the divide between the farm and the consumer, as so many people nowadays, even if they live nearby, don't know exactly how a modern agricultural practice actually operates and how much work, technology and investment goes into making our product and taking care of our animals," he says. "It's always a joy for me to see people leave here with so much interest and a completely changed perspective on ag compared to what they previously thought. Without the understanding and support from the people around us, it's hard to grow the farm when and how you want, so we always want to be known for our transparency and the value we bring to our area."

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Organic dairy: Calf health concerns

Tamara Scully for *Progressive Dairy*

AT A GLANCE

An overview of calf health topics discussed at NODPA's annual Field Days, including scours, pinkeye, ringworm and more.

The Northeast Organic Dairy Producers Alliance (NODPA) recently held its annual Field Days, touring several organic dairy farms near Middlebury, Vermont, and hosting experts – including panels of organic dairy farmers – to discuss industry news, share concerns, offer solutions and promote the best practices for organic dairy success.

Herd health is always a topic of discussion for organic dairy farmers. NODPA maintains an active Listserve, O-Dairy, where prevention, diagnosis and treatment of herd health issues are often discussed. And at the Field Days, the "Ask the Vet" conference session featured veterinarians Dayna Locitzer from Green Mountain Bovine and Equine Clinic in New Hampshire and Elizabeth Martens of Valleywide Veterinary Services of Bridport, Vermont, who answered questions from dairy farming participants.

Ask the vet

One prominent concern voiced by producers was calf scours. Scours is not simply a disease caused by one pathogen. Instead, it is an illness caused by multiple pathogens, each of which predominates depending on the age of the calf.

"Certain pathogens show up at different times," Locitzer said. "Identifying when you're having the scours will help you with your management strategies."

Escherichia coli, a bacteria, causes scours in calves up to 10 days old. Rotaviruses and coronaviruses, as well as cryptosporidium – a parasitic protozoa – tend to cause scours that appear from 10 days old to a few weeks old. After that time frame, coccidia, which is an oocyte, is often the cause.

E. coli requires cleanliness in the maternity pen, as it lives in the intestinal tract and is transferred via feces. Cryptosporidium requires a "good immunity and a good nutritional plane" to combat, beginning – as always – with colostrum, Locitzer said.

A contributing factor to scours due to cryptosporidium is underfeeding milk to calves. At a minimum, calves require 10% of their bodyweight, preferably more, in milk each day, Locitzer said. That is at least a gallon of milk per feeding at 2 weeks old.

Calves have no immune system or antibodies of their own when born. Colostrum provides antibodies from the mother, protecting against calf scours no matter the pathogen. Another option to get antibodies into calves is to provide an oral antibody, such as First Defense Tri-Shield paste, which protects against early-life scours from rotavirus, coronavirus and *E. coli*, and should be given on day one, along with colostrum.

"So vaccination would be specifically vaccinating the cow, and then colostrum, or Tri-Shield, which is antibodies," should be given to the calf to provide protection from scours in early life, Martens said.

Treating scours

Milk feeding should not be stopped when scours is present. Instead, smaller and more frequent feedings should occur. Electrolytes should be given – 2 quarts – as soon as calves show any signs of scours. The quality of electrolytes matters, and some mixes are better than others.

"When a calf has scours, she basically has four problems. She's dehydrated. ... She's acidotic because the food in her gut that she's not digesting is fermenting and causing a lot of acid, and also her diarrhea is full of base or bicarb," Martens said. "They also have low blood sugar, and they tend to be cold."

Scours leaves calves weak and not able to suck well. Providing nutrition, keeping them warm, and providing fluids and electrolytes to neutralize acids is required. Tubing a calf can work, but cannot be done on a calf that has no suckle reflex. The suckle reflex indicates the digestive tract is working. If it isn't, IV fluids are needed instead.

Without a reliance on antibiotics, organic dairy farmers must focus on keeping the herd healthy. Good nutrition, clean environments and proactive, preventative measures all are a part of the tools organic dairy farmers have for prioritizing cow health.

Baking soda is very cost-effective for adding a base, but feeding it orally is not the best option as it goes into the abomasum and can make the stomach less acidic so it can't function properly. Instead, propionate and acetate are available in many commercial electrolyte mixes and are allowed in organic production, and serve the same purpose of buffering excess acids.

During scours, lactase enzymes aren't being made in the intestine, leading to temporary lactose intolerance. If allowed by the organic certifier – there are other ingredients in many of the commercial formulations – adding lactase is an inexpensive way to help calves digest milk and reduce fermentation of milk in the intestine. It won't cure scours but will help to maintain nutrition and to increase comfort, Martens said.

Pinkeye

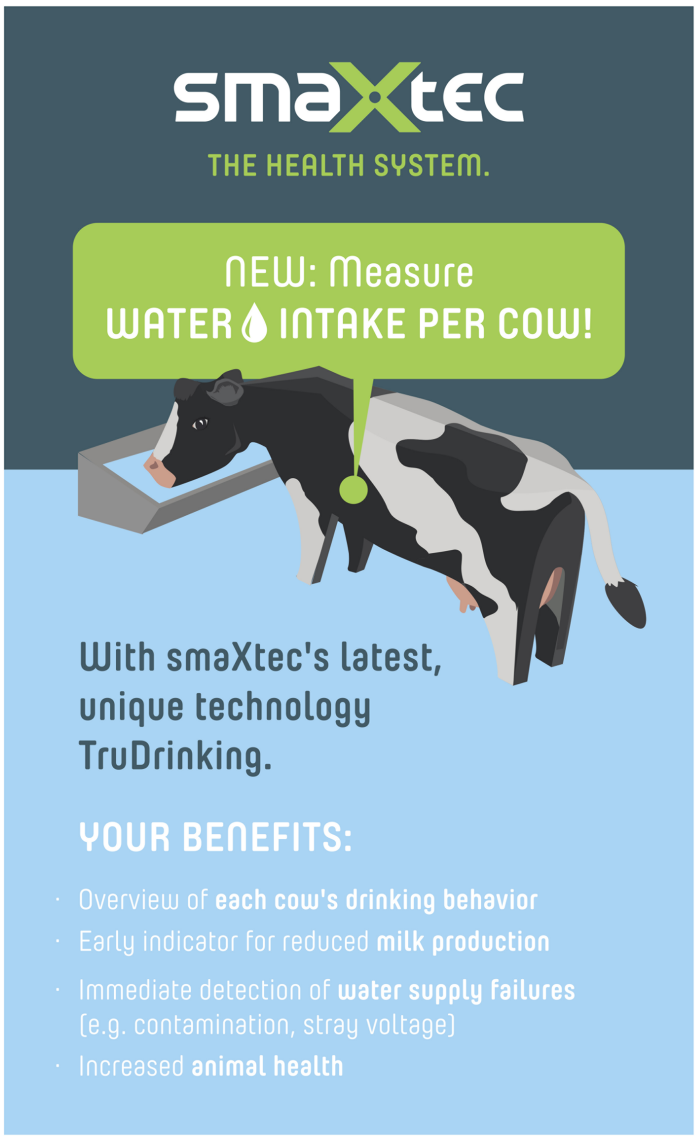
"Vaccination is effective" but difficult due to at least three pathogenic agents commonly causing pinkeye, but the available vaccines each only cover one type of pathogen. And some pinkeye pathogens don't have an effective vaccine.

Vaccination needs to be initiated prior to any exposure to risk factors, and – as with most vaccines – boosters are required. Full immunity should be achieved before flies and tall grass, which are the two primary risk factors for pinkeye, are encountered.

"A multi-pronged approach is really important," in prevention, Locitzer said.

Pinkeye does occur in the absence of flies, which spread the pathogens, and it happens to non-grazing herds. Ultraviolet light, dust, blown bedding and any other means of damaging the cornea will allow bacteria to enter and grow in the eyes, Martens said.

Corneas don't have a blood supply,



so healing is complicated. Saline sprays help bring in healing factors found naturally in the body and reduce discomfort. Sewing the eyelids shut can help prevent UV light irritation when pinkeye is present. Taking serum from the sick cow – drawn from her blood into a red-topped tube and centrifuged, then drawing off the fluid from the top – to put into the eye will also provide healing factors and lubrication.

Antibiotics are not effective and only decrease the course of disease by a day or two, Locitzer said.

Skin deep

Ringworm is a fungal disease often contracted during weaning, when calves are under increased stress. It does not normally hurt the calves. Calves with lower immune status are the ones who contract the disease, Martens said.

Ringworm is not easily prevented. It lives in wood and tends to be opportunistic, selecting weaker calves. Ringworm can become bad enough to lead to death, but healthy cows should not succumb to severe cases of disease.

Ringworm lives outside of the immune system, on the skin. Getting the skin of the calf to bleed (while protecting yourself) can bring the immune system into play. Drying ringworm out with iodine works well. Kelp is a good source of iodine, and providing kelp during weaning, along with selenium and minerals, can be a preventative, protective measure. The disease itself is self-limiting to about six weeks, but the measures above can decrease the disease's duration.

Happy lines and health

Slightly raised lines that are always present are a sign of good health, Locitzer and Martens agreed. They aren't certain why they happen, and both conventional and organic cows in great health will have these lines. It seems to indicate a healthy coat, which is representative of overall well-being. Seeing these happy lines can provide producers with a general indication of good herd health.

Without a reliance on antibiotics, organic dairy farmers must focus on keeping the herd healthy. Good nutrition, clean environments and proactive, preventative measures all are a part of the tools organic dairy farmers have for prioritizing cow health. Vaccination, immune enhancing probiotics and practices, natural healing and antimicrobial tinctures, and nutritional support are all means of establishing and maintaining herd health.

Tamara Scully, a freelance writer based in northwestern New Jersey, specializes in agricultural and food systems topics.

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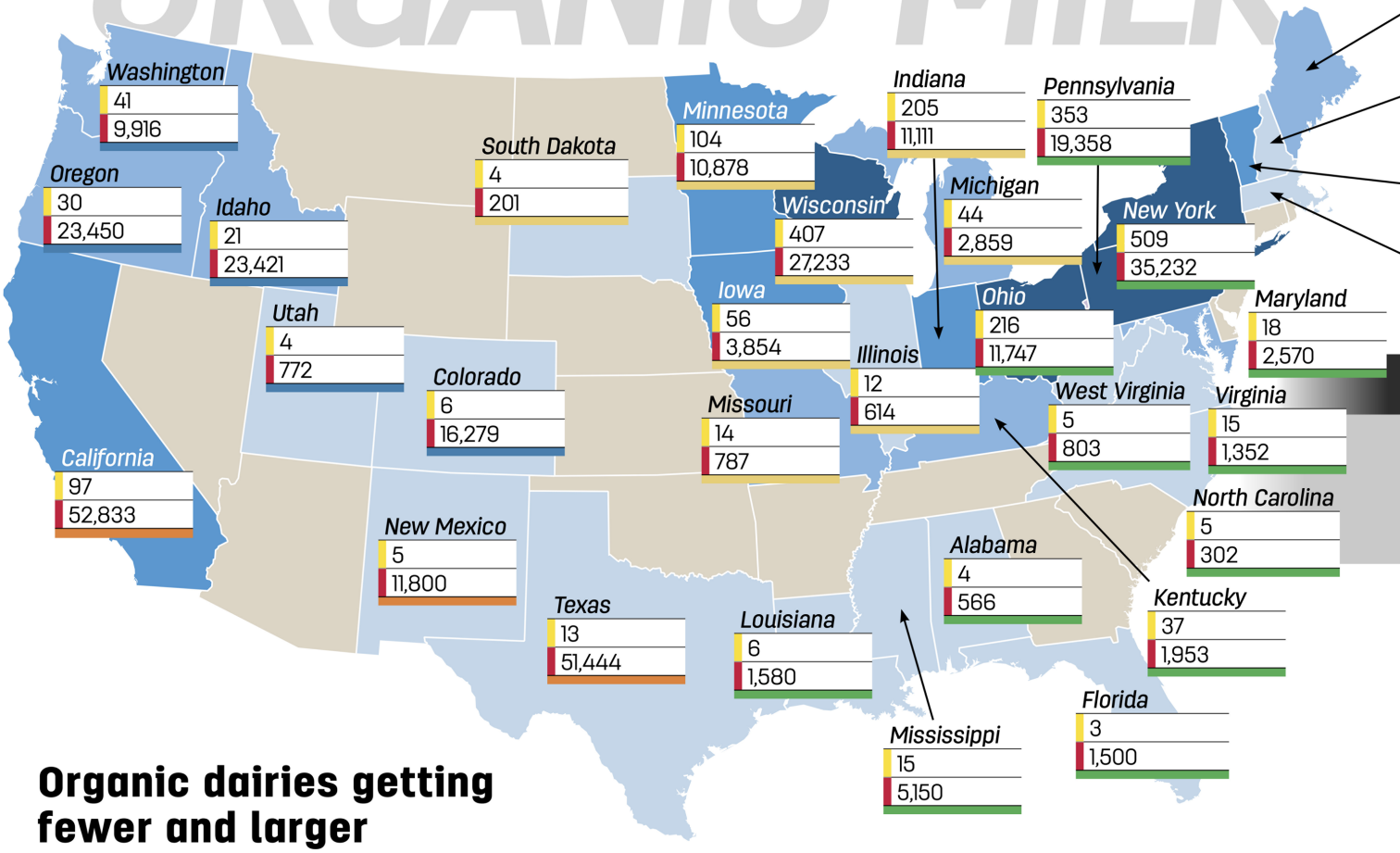
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ORGANIC MILK



Organic dairies getting fewer and larger

Progressive Dairy Editor **Dave Natzke**

Like their counterparts supplying the "conventional" milk market, the number of certified organic dairies are declining but increasing in size, according to the USDA's latest Certified Organic Survey. Based on the 2021 survey, released Dec. 15, 2022, total certified organic dairy herds and cow numbers declined but milk volume and value increased from a similar survey in 2019.

Milk remains a strong component of the overall organic market, representing about 15% of all organic sales (based on value) in 2021. Organic milk sold during the year was just under 5.2 billion pounds, up about 74 million pounds (1.4%) from 2019. The value of organic milk sold was up nearly $47.5 million (3%) from 2019, to $1.632 billion.

Separately, USDA Agricultural Marketing Service data shows 2021 organic fluid milk product sales represented about 6.5% of total packaged fluid product sales in 2021.

The number of farms with certified organic cows was estimated at 2,528 in 2021, down 572 since 2019. Approximately 50 of those herds did not market milk in commercial channels in 2021 but may have marketed organic cows.

Of all organic dairy herds, about 2,478 marketed milk in 2021, down 622 (20%) compared to the previous survey. On a percentage basis, that outpaced the decline of conventional dairy herds during the same year. Based on USDA statistics, the overall number of all dairy herds commercially licensed to sell milk fell from 34,207 in 2019 to 29,858 in 2021, a decline of about 13%.

With fewer herds than in 2019, cow numbers managed organically declined by 11,115 head from 2019. Peak U.S. organic cow numbers during 2021 were estimated at 352,289 head, ending the year slightly lower at 334,289 head.

Individual states

Three states – New York, Wisconsin and Pennsylvania – were home to nearly one-half the total number of organic herds selling milk in 2021. New York led all states, at 509, followed by Wisconsin, 407, and Pennsylvania, 353, for a three-state total of 1,269.

While ranking eighth in the number of organic herds selling milk, California retained the crown for having the most cows producing certified organic milk. Leading states based on annual peak cow numbers were California (52,832), Texas (51,444), New York (35,232) and Wisconsin (27,233).

Texas, however, took over the top spot for milk marketing volume (1 billion pounds) and value ($320.5 million) in 2021.

Organic dairy numbers are not revealed in all states. No information is provided for Alaska, Arkansas, Delaware, Hawaii, Kansas, Nebraska, New Jersey, North Dakota, Rhode Island, South Carolina and Wyoming. Additionally, information is withheld in multiple states to avoid disclosing data for individual farms.

Changes since 2019

Compared to the previous survey in 2019, Texas was the growth leader in organic herds (+4), peak cows (+8,752), milk volume (+193.4 million pounds) and sales value (+$59.2 million) in 2021. Herd growth increased in only two other states between 2019-21, state, up one each in Alabama and Montana.

The number of organic herds declined in 28 states reporting data, led by Wisconsin (-118), New York (-98), California (-53) and Iowa and Michigan (each -49). Those numbers do not reflect Northeast organic dairies receiving marketing contract termination notices in late 2021.

Looking at cow numbers compared to 2019, in addition to Texas, New Mexico added 4,095 cows, Oregon numbers were up 2,989, and Idaho was up 2,497. Leading decliners were Wisconsin (-8,963) and California (-6,595).

The increase in cow numbers also made Texas and New Mexico the leaders in terms of milk volume and sales value growth compared to 2019.

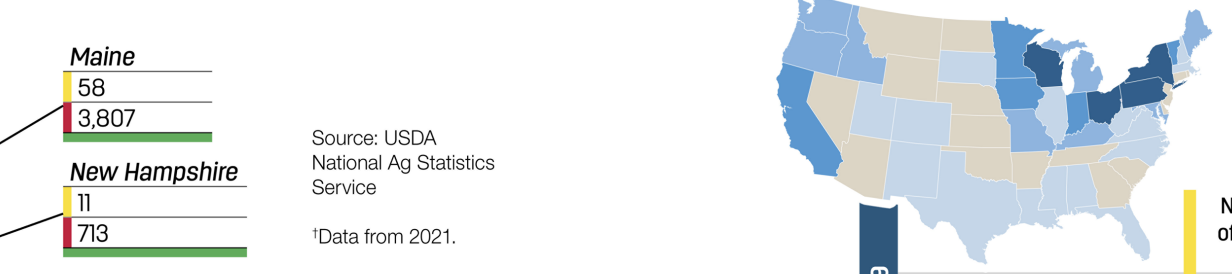
Cows per herd, milk per cow

The USDA survey report reveals a wide variation in the size of organic dairy herds, from a high of 3,430 cows in Texas and 2,713 in Colorado to less than 100 cows in 17 states for which data is provided. The U.S. average was 139 cows per herd, up about 22 cows from 2019.

Based on total cows and milk production, there's also a wide range in average annual milk production per cow, from over 19,700 pounds in New Mexico and Texas to under 5,000 pounds in Alabama. The U.S. average for milk sold per cow was 14,751 pounds in 2021, up about 655 pounds from 2019.

The 2019 USDA survey was the sixth organic production and practices survey (previous surveys were in 2008, 2011, 2014, 2016 and 2019) on a national level. Producers must meet the standards set out by the USDA Agricultural Marketing Service's National Organic Program and be certified compliant by an approved agent of the program.

Additional survey results as well as the results of previous NASS organic surveys are available at www.nass.usda.gov/organics.



Source: USDA National Ag Statistics Service

†Data from 2021.

Note: USDA withholds data from some states to prevent disclosure from single operations or businesses.

Legend

	State
Number of organic dairy farms	9
Peak number of cows	42,692

15% Organic milk sales totaled 5.2 billion pounds and represented about 15% of all "organic" sales in 2021.

Top states, organic milk sales volume, milk per cow and average cows per herd

State	Milk sales volume (lbs)	Average cows per herd at peak	Milk sold per cow (lbs)
Texas	1,015,247,902	3,430	19,735
California	827,210,681	534	15,657
New York	409,049,654	68	11,610
Idaho	367,752,536	1,115	15,702
Wisconsin	359,800,417	66	13,212
Oregon	354,694,052	782	15,126
New Mexico	235,181,024	2,360	19,931
Pennsylvania	230,213,692	54	11,892
Vermont	187,490,768	94	12,735
Washington	146,158,917	220	14,740
Minnesota	139,728,831	105	12,845
Ohio	131,625,487	54	11,205
Indiana	130,656,993	54	11,759
Mississippi	49,387,761	343	9,590
Maine	45,555,037	63	11,966
Iowa	42,734,760	66	11,088
Maryland	37,697,598	129	14,668
Michigan	32,150,638	65	11,245
Kentucky	17,748,382	53	9,088
Louisiana	17,687,600	263	11,195
United States	**5,196,491,771**	**139**	**14,751**

Source: USDA National Agricultural Statistics Service 2021 Summary, Certified Organic Survey, Dec. 15, 2022

(D) Information withheld in multiple states to avoid disclosing data for individual farms. No information is provided for Alaska, Arkansas, Delaware, Hawaii, Kansas, Nebraska, New Jersey, North Dakota, Rhode Island, South Carolina and Wyoming.

		Number of farms	Number of cows
251 - 509	New York	509	35,232
	Wisconsin	407	27,233
	Pennsylvania	353	19,358
100 - 250	Ohio	216	11,747
	Indiana	205	11,111
	Vermont	147	14,723
	Minnesota	104	10,878
21 - 99	California	97	52,832
	Maine	58	3,807
	Iowa	56	3,854
	Michigan	44	2,859
	Washington	41	9,916
	Kentucky	37	1,953
	Oregon	30	23,450
	Idaho	21	23,421
1 - 20	Maryland	18	2,570
	Mississippi	15	5,150
	Virginia	15	1,352
	Missouri	14	787
	Texas	13	51,444
	Illinois	12	614
	New Hampshire	11	713
	Colorado	6	16,279
	Louisiana	6	1,580
	New Mexico	5	11,800
	North Carolina	5	302
	West Virginia	5	803
	Alabama	4	566
	Massachusetts	4	351
	South Dakota	4	201
	Utah	4	772
	Florida	3	1,500
	United States	**2,478**	**352,289**

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Mitigate leaky gut to prevent leaking energy, animal production

Progressive Dairy Editorial Intern **Ashley Hagenow**

AT A GLANCE

Promoting gastrointestinal (GI) tract health at every stage of a calf's growth and development is important. These mitigation strategies can help prevent systemic inflammation.

Across agriculture, producers face the challenge of suboptimal production in their animals. While not the entire cause of deficiencies in production, "leaky gut" can offer some explanation for suboptimal animal performance.

In the Dairy Calf and Heifer Association webinar, "Intestinal Barrier Dysfunction in Cattle: Causes and Consequences," Dr. Sara Kvidera, dairy technical consultant at Elanco Animal Health, addressed promoting gastrointestinal (GI) tract health at every stage of a calf's growth and development while sharing mitigation strategies to prevent systemic inflammation.

The gastrointestinal tract

The GI tract has numerous functions, which include serving as an important barrier and absorbing nutrients. The barrier function prevents parasites, pathogens, enzymes, acids, toxins and other materials from infiltrating the animal. The gut accounts for 30% of all metabolic and protein synthesis in dairy cows and uses 20% of oxygen from the whole animal.

With 75% of the immune system residing in the GI tract, the gut is an important part of the overall immune response.

"The gut is an enormous amount of area to defend that depends upon what we eat and take in on a daily basis," Kvidera said. "This is often where the first line of defense occurs if there are dietary or stress problems animals are facing."

When differentiating between the rumen and the lower gut, there is a big difference between potential exposure to pathogens. The layers in the ruminal epithelium equate to 85 microns (µ), whereas the intestinal epithelium is only one cell layer at 20 µ. The inner and outer layers of mucus in the lower gut are important components to help keep microbes in place without getting too close to the barrier of the GI tract.

In a healthy gut, normal mucosa, well-structured villi and presence of mucus keeps pathogens in the lumen of the intestine. Enteropathy, defined as damage or irritation and swelling to the small intestine, occurs when villi are shortened and the mucus layer is sloughed off, which allows for pathogens to enter the gut.

An important component of the mucosal immune system, IgA is an immunoglobulin produced locally by plasma cells present in the mucosal wall. IgA can bind and neutralize without inducing an immune response. While IgG is one of the most common immunoglobulins mentioned in youngstock research, IgA is produced in greater quantities than all other types of antibodies to neutralize microbial toxins or enzymes in and out of epithelial cells in the gut.

Intestinal dysfunction in ruminants

Gut health impacts ruminants in a variety of ways, starting with rumen acidosis. Low pH levels in the rumen can cause issues in both the rumen and hindgut, with the hindgut at higher risk of bacterial translocation.

"The hindgut might be more susceptible to bacterial impacts since it is thinner and has the dual role of nutrient absorption and barrier function," Kvidera said.

Another example of intestinal dysfunction is heat stress. When animals become overheated, blood flow is redistributed to the skin in an attempt to dissipate heat. This constricts blood flow to the gut, which creates a hypoxic environment with reduced barrier function.

Feed restriction is a third example of intestinal dysfunction, but the exact mechanism of its impact is unknown. Other potential causes of leaky gut include psychological stress and peripheral inflammation, but these examples are more representative of monogastric animals.

Energy demands of the immune system

"We do not want gut health problems because they activate the immune system," Kvidera said. "When the immune system is activated, immune cells demand large quantities of energy."

Infection of the immune system can cause a drain in energy, and glucose is the preferred fuel source to replenish cells. Used as an important metabolic fuel, it is challenging to quantify glucose usage since the immune system resides in all tissues of the body.

Considering most energy from feed goes toward milk production in dairy cattle or tissue accretion in a growing animal, energy directed toward the immune system takes away from dollars that might otherwise go in the pockets of producers.

"An immune response means a negative bottom line for producers," Kvidera stated. "We want energy to go toward productive purposes and not toward immune activation."

Mitigation strategies for leaky gut

With rumen acidosis, heat stress and inadequate feed intake as some of the top causes for leaky gut, there are numerous strategies to reduce this problem. Starting with the producer, minimal stress through weaning, shipping, overcrowding and feed changes can go a long way to prevent exposure to infection, in addition to maintaining a clean environment.

On the nutritionist side, using feed ingredients to support gut health and exploring immunomodulatory changes can help mitigate leaky gut. When working together, producers and nutritionists can help prevent rumen acidosis by making dietary changes gradually and collaborating on management strategies related to feed intake and feed additives.

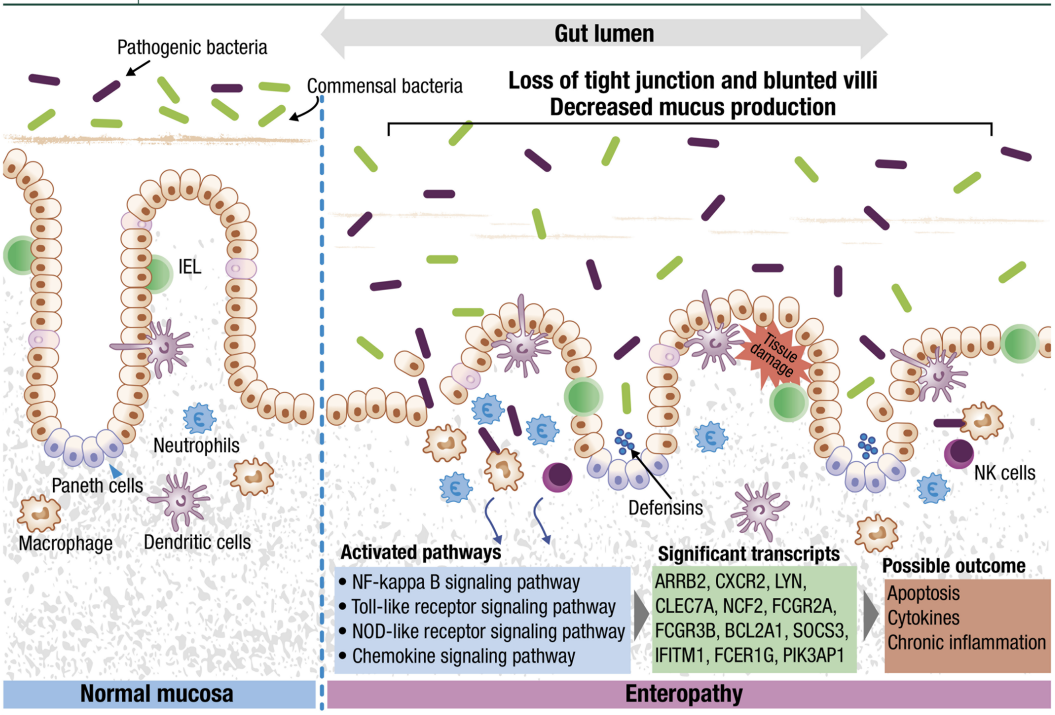
A feed additive, *Saccharomyces cerevisiae boulardii* (SCB), helps to support lower gut health. In 7-day-old calves, supplementing SCB helped form more IgA in the gut. In another study of veal calves over several weeks, supplementing SCB reduced fecal scores and diarrhea cases.

SCB is able to get through the acidic environment of the abomasum in order to target the hindgut as a probiotic, where it can neutralize toxins and lead to positive gut health outcomes.

Overall, gut health in dairy animals of all ages is important, and systemic inflammation can occur if poor gut health is left untreated. Inflammation in the gut is costly, both to animals and producers, from an energy and economic standpoint. Gut inflammation can steal energy supply from other bodily processes, such as tissue growth or milk production, eventually taking away from a producer's paycheck.

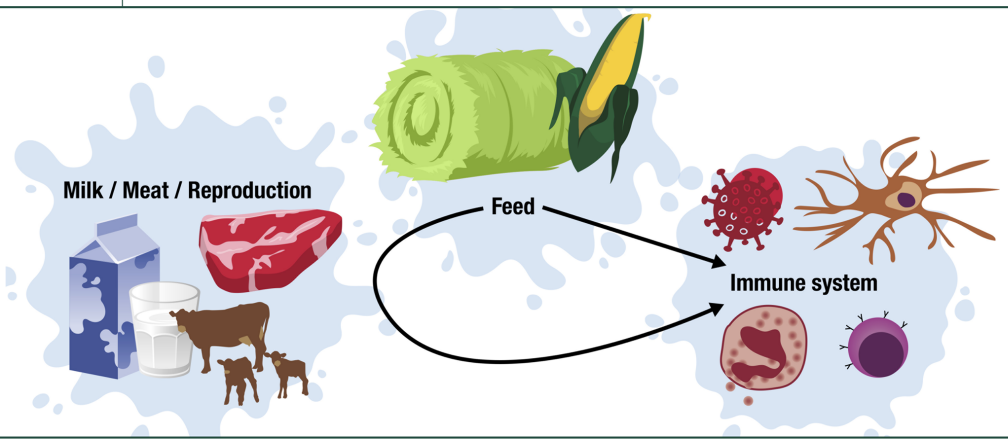
Ashley Hagenow was a 2022 Progressive Dairy *intern.*

FIGURE 1 The figure depicts a healthy gut (left) versus enteropathy (right) in the gut lumen; enteropathy is caused by tissue damage, decreased mucus production and loss of tight junction and blunted villi

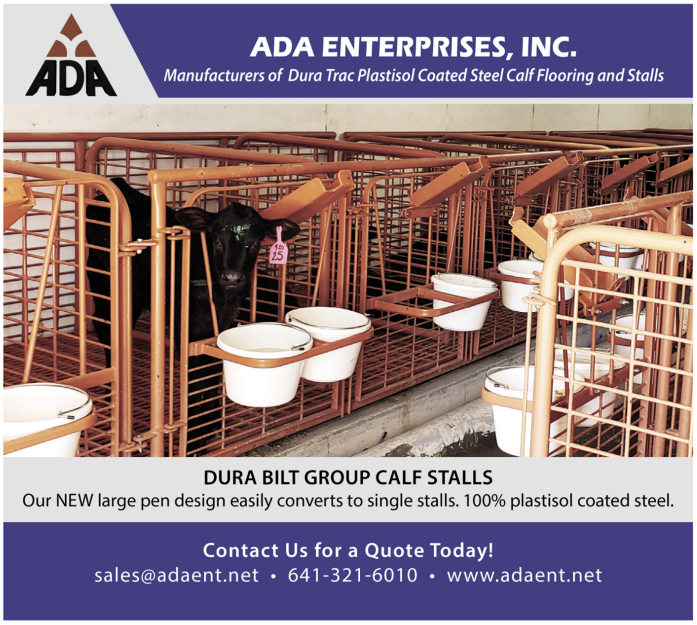


Source: YU, J et al. 2016. "Environmental enteric dysfunction includes a broad spectrum of inflammatory responses and epithelial repair processes." CMGH, 2: 158-174.e1.

FIGURE 2 Energy that is directed for an immune response instead of milk or meat reproduction means less profitability for producers







Is hemorrhagic bowel syndrome killing your most productive cows?

Angela Rowson for *Progressive Dairy*

AT A GLANCE

Predisposing factors that cause hemorrhagic bowel syndrome and management practices to prevent it in herds.

Hemorrhagic bowel syndrome (HBS), also known as jejunal hematoma or jejunal hemorrhage syndrome, is a sudden death disease primarily of adult dairy cows. It was first reported in the early 1990s and continues to be a disease of concern today to many dairy producers, veterinarians and nutritionists because little is known about what exactly causes it.

Scientists are unable to recreate HBS in a laboratory, and natural cases occur sporadically and unpredictably on farms, making it a poorly understood disease. HBS receives very little to no funding for research; therefore determining predisposing factors, causative agents, pathogenesis, effective treatments and, most importantly, how to prevent cases from occurring is lacking.

FIGURE 1

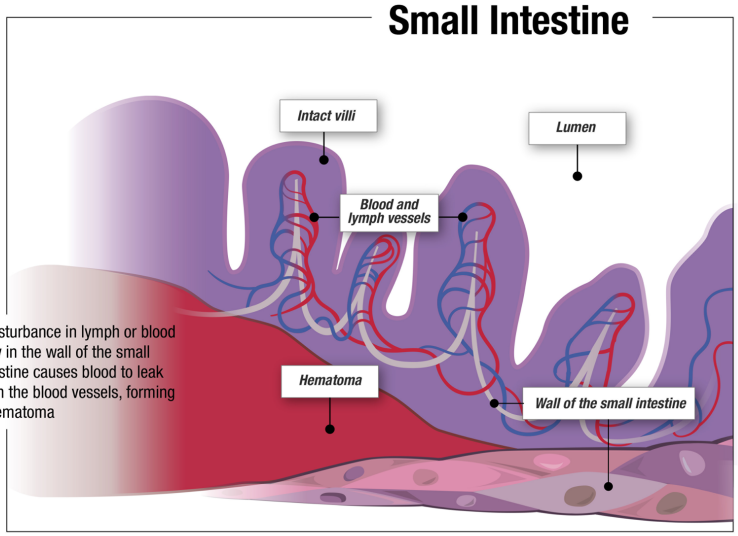
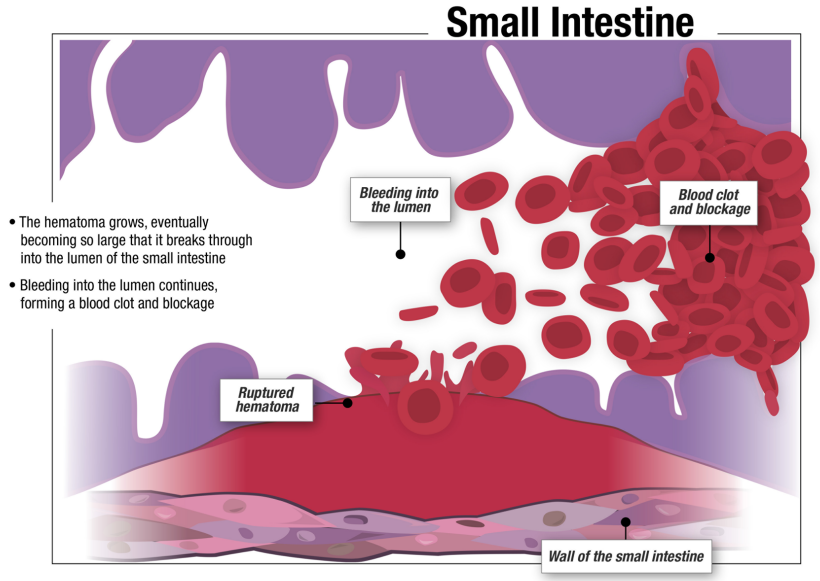


FIGURE 2



What is HBS?

Approximately 86% to 100% of cows with HBS die. Animals typically succumb within the first six to 36 hours of showing symptoms of HBS. The disease is characterized by a sudden and sometimes massive hemorrhage of blood into the small intestine. These blood clots form an obstruction that blocks the passage of feed material through the rest of the gastrointestinal tract. Eventually, the affected intestine becomes necrotic and dies, leading to septic shock and death of the cow. Blood clots within the intestine can range in size from a few inches to several feet long, and there may be more than one clot present.

Commonly, HBS affects high-producing dairy cows in their second or greater lactation. The average number of days in milk (DIM) when cows develop HBS is between 100 and 120. However, it can occur at any stage of the lactation cycle, including in late lactation and the dry period. Every breed of cow can develop HBS, and Brown Swiss might be more predisposed due to breed-specific intestinal motility disorders. HBS can occur all throughout the year but, anecdotally, more cases are reported in the fall and winter months.

Clinical symptoms

Cows with HBS are often found dead or dying. If caught early, animals will be depressed and have a sudden drop in milk production and dry matter intake (DMI). Because they aren't eating or drinking very much, they can become dehydrated and have sunken eyes. The blockage caused by the blood clot is painful; thus cows may appear colicky, commonly kicking at their belly or grinding their teeth. Their abdomen may enlarge and appear bloated. In the initial stages, cows with HBS will have little to no manure because nothing can get past the blockage created by the blood clot. However, over the following hours, feces may become dark red with black clots of digested blood. This specific feature has been termed "red currant jelly" manure. Also, cows with HBS may be down and unable to rise, mimicking mid-lactation milk fever. Dairy producers sometimes describe cows with HBS as aggressive eaters or "the best cow in the barn" prior to developing the disease.

Diagnosing HBS on clinical signs alone is typically not possible because other diseases such as abomasal ulcers, hardware disease, intussusception, intestinal volvulus, inflammation of the intestine (caused by salmonella, coronavirus or bovine viral diarrhea virus) have similar symptoms. Veterinarians can use ultrasound to try to locate the blood clot within the intestines; however, this method is only effective in diagnosing HBS in up to 25% of cases. Therefore, exploratory surgery (if the cow is alive) or necropsy (if the cow is dead) must be performed to confirm the diagnosis of HBS.

Without confirmation, HBS is often under- or overdiagnosed, with the latter being most common. Scientists from the University of Minnesota investigated 15 cows that were diagnosed with HBS by farm personnel. Of those, 14 were determined not to have HBS. This research underscores the importance of confirming the cause of death in dairy cows, especially those that die suddenly.

Treating cows with HBS can be very challenging – and most of the time unrewarding. Their best chance of survival starts with an early diagnosis followed by aggressive medical and/or surgical therapy. Antibiotics, fluids (intravenous and oral), laxatives, non-steroidal anti-inflammatories and antitoxins have all been used to treat cows with HBS. Surgically, best results are seen when the intestine containing the blood clot is massaged to break down the clot so it can be passed. Unfortunately, even with aggressive treatment, survival from HBS is low. To make matters worse, nearly 40% of survivors go on to develop HBS again within the next year.

How and where does the blood clot form?

Research from the University of California – Davis shows that the blood clot found in HBS cases starts in the wall of the small intestine. It is suspected that disturbances in blood or lymph flow in this tissue leads to the formation of a hematoma, or bruise (**Figure 1**). This hematoma grows in size until it is so large that it eventually ruptures into the lumen, or inside, of the intestine. The bleeding continues and eventually forms a blood clot and blockage (**Figure 2**).



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Potential predisposing factors

The exact cause of HBS is not known. The small amount of research that has been performed on the disease tells us the cause is most likely multifactorial in nature, meaning there are several different factors that must come together for HBS to occur. Examples of these factors include:

- High milk production and fast rate of passage of feed through the gastrointestinal tract
- Too much highly digestible carbohydrates and/or protein in the ration
- Inadequate physically effective fiber in the ration
- Slug feeding/sorting
- Improperly fermented forages
- Genetic predisposition
- Stressors/immunosuppression
- Gastrointestinal motility disorders
- Pathogens like *Clostridium perfringens* type A and/or *Aspergillus fumigatus*

We don't know for sure which of these potential predisposing factors are important for the development of HBS. Or rather, is it the interaction of several of these factors that trigger HBS?

Suggestions for preventing HBS

HBS is difficult to diagnose and even more difficult to treat; therefore prevention is key. Utilize these approaches to help prevent HBS in your herd.

1 *Necropsy all (suddenly) dead cows* to confirm the diagnosis of HBS and determine the true incidence of the disease within your herd.

2 *Review ration formulations and confirm proper mixing of the diet.* Dairy producers should work with their nutritionist to perform a thorough evaluation of their rations. Particular attention should be paid to fermentable carbohydrates, protein and physically effective fiber levels. An inadequate rumen fiber mat and starch overflow into the small intestine can have negative effects on cow health. The Penn State Particle Separator may be used to analyze particle length and sorting.

3 *Feed high-quality ingredients.* Commodity handling and silage management should be assessed and necessary improvements made to limit spoilage, inadequate fermentation and mold, wild yeast and bacterial formation. Spoiled areas in the bunker, including the crust and along sidewalls, should be removed prior to feeding.

4 *Ensure proper feeding management.* Cows crave consistency. This includes feeding the same diet at the same time, every day. Additionally, feed should be pushed up regularly throughout the day and night. Limit the amount of time cows are without feed to prevent slug feeding.

5 *Identify and correct management and environmental stressors* that might impair immune function. Examples of stressors of dairy cows include overcrowding, frequent pen moves, limited bunk space, poor cow comfort and heat stress.

6 *Consider using a feed additive and/or vaccine.* There are a number of different feed additives and autogenous vaccines for *Clostridium perfringens* type A marketed to help prevent HBS. Dairy producers should work with their nutritionist and veterinarian to determine if one of these interventions might be right for their herd.



Revisiting essential oils in dairy feeding

Stephen B. Blezinger for *Progressive Dairy*

AT A GLANCE

A practical understanding and application in feeding essential oils and plant extracts.

By now, most producers and nutritionists have at least heard of the use of the various essential oil products that are becoming more common in the dairy feeding industry. Because of research and practice, some promise has been shown for use of these various products, but unfortunately, there is still quite a bit of confusion.

Start with the names used in describing the overall group of additives. The name essential oil is only one of several descriptors used for a class of oil-based materials produced from various species of plants, extracted from roots, stems, bark, leaves, needles, rinds or seeds. When fed at very low levels, these compounds can produce a variety of results. Part of this confusion comes from the fact that similar products to these are also sold in the retail home market and are used for air treatments (aromatherapy), something you put in your bubble bath, etc. It's understandable why you might scratch your head as to how this product might improve feed efficiency or reduce stress in an animal.

Other names for this class of products include *plant extracts* or *phytobiotics*, both of which are reasonably accurate descriptors. So, when you hear any of these names, they are referring to, more or less, the same thing.

Another complicating factor is that the American Association of Feed Control Officials (AAFCO), a regulating body for the feed industry, does not allow us to include these materials on a feed tag under these names since they are not recognized as such yet. In most cases, these ingredients are most commonly listed as a flavor. On a tag, you will commonly see these fall under the listing of "natural or artificial flavors," in the same manner that a true flavoring agent would be listed. Many essential oils do, in fact, retain the aroma or flavor of the source plant material they are taken from, so this is not an inaccurate description either.

How essential oils are produced

Going back in history, it is well known that a variety of plants have medicinal properties. Before we had antibiotics, pain relievers and other useful drugs and compounds, a great deal of medicine was based on the use of various plants to help aid in the healing process from sickness, injury, digestive upsets, headaches and so on. Our forefathers knew a great deal about which plants held which properties, and by the time more modern medicine replaced these compounds as the treatment of choice, man had developed quite an extensive knowledge of the multitude of effective plant chemicals available. One particular property a number of essential oils possess is as an antimicrobial or having effects on a microbial population on a surface or in a liquid media. This gave rise to use in the rumen of the cow.

The constituents of an essential oil are created by specialized plant cells, which secrete them into very tiny sacs or glands, either on the surface of a leaf or flower, or deeper inside the plant tissue. Most essential oils are extracted using one of two methods: mechanical expression, which is generally used mainly for citrus fruits, and distillation, which causes the glands in the plant containing the essential oils to release their contents.

• *Mechanical expression:* This method is commonly used for extracting essential oils from citrus fruits. Whole fruits are tossed around in a large drum device while being scarified or rasped by thousands of micro-spikes. These pierce the essential oil glands dotting the surface of the fruit, and this extracts the oil in a cold process. Water is used to flush the essential oils away from the fruit, and a centrifugal separator then separates the essential oil from the water and fruit juice. The process is highly mechanized. Expression is generally preferred, as it produces an essential oil with a superior odor compared to distillation.

• *Distillation:* This method makes use of water and heat to achieve separation of the essential oil from the plant material. Also known as hydro-distillation (a method that has been in use for about 1,000 years), plant matter is boiled in water, and the water vapor plus

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volatile essential oil components are captured and condensed back into liquid form through cooling. Since essential oils float on water, separation is straightforward. A more modern form of distillation, steam distillation, uses either "dry" or "wet" pressurized steam to cause evaporation of the volatile components. During this process, plant matter is placed in a closed chamber and steam is passed through it, which again causes the volatile compounds in the plant to evaporate. In the final step, as in hydro-distillation, the water and oil are condensed and then separated, leaving just the pure essential oil.

For products used in the animal feed industry, in many cases the essential oils are blended onto a dry carrier, which simplifies handling and mixing. Some products remain in highly concentrated liquid forms and can be incorporated into feed and nutritional products.

Practical applications

Over recent years, the use of essential oils in the dairy industry has become more common. Since there are literally hundreds of essential oil products on the market, both individual and in combination, selecting a particular product can be a challenge. Additionally, given the large number of essential oils to choose from, there are a large variety of potential effects these products can have on the animal when fed through the total mixed ration (TMR). Here are some examples:

- Cloves and cinnamon have an antimicrobial effect in the rumen, as well as being potent antioxidants.
- Thyme stimulates the digestive system and may promote animal growth and productivity.
- Vanilla and anise may improve feed intake and efficiency.
- Oregano has documented antibacterial and antimicrobial properties.
- Garlic, lavender, anise and citronella may have an insect (fly, mosquitos) repellant effect.
- Citrus, lavender and rosemary have been shown to modulate the stress message in the brains of animals.
- Turmeric, black and red pepper, and ginger have been shown to promote saliva production and pH (improved rumen buffering in ruminants).

There are numerous companies producing a wide variety of essential oil blends targeting a number of effects positive to production. A few individual (single-component) products are available, but the majority are blends of two or more essential oils (you will also see some reference to spices) in an effort to accentuate the effect to the animal.

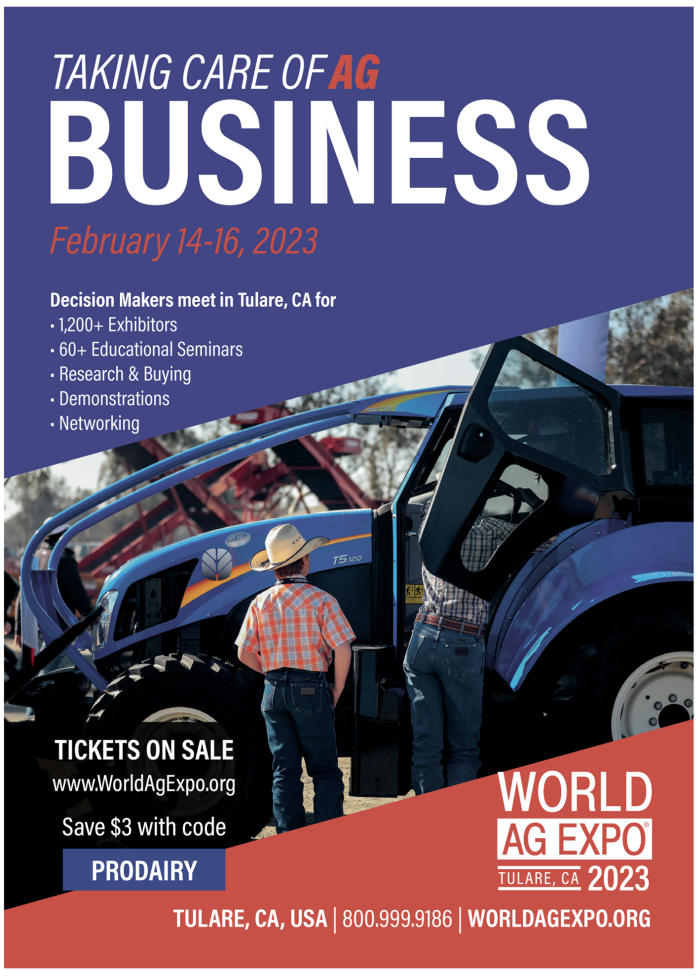
For example, there is a trend in the current animal feed market to identify essential oil products that can effectively replace monensin. A commonly used feed additive and antibiotic, monensin is included in both dairy and beef feeding programs to improve feed efficiency. But because it is an antibiotic, there is pressure from the consuming public to reduce or eliminate its use. Recently, several trials have been conducted comparing the use of monensin and different essential oil blend products in both beef and dairy feeding programs. Interestingly, several of these studies have shown that the essential oil product has very similar responses in the animal to monensin, having almost identical effects on feed efficiency, animal performance and economics.

Other products have been used to mitigate stress effects in receiving/transition cattle, as well as high-producing dairy cows or cattle subjected to heat stress. Some of these effects in the animal are related to changes in brain chemistry, which subsequently accentuates the stress. This can depress feed intake, immune response and other metabolic processes. Some essential oil products have shown promise in offsetting changes in brain chemistry during these periods and may help minimize the overall stress in the animal.

Conclusions

Essential oils appear to have a very promising role in dairy and animal nutrition and feeding in general. We still have a way to go in understanding these materials overall and certainly in recognizing which individual essential oils and combinations or blends can be the most effective. This will take more research and application. For the dairy producer, work with your nutritionist to review the products on the market and determine which may have the most promise in your particular operation and are the most cost-effective. Evaluate the effect of a particular product on your farm, and remember that there are many choices on the market.

Dr. Stephen Blezinger is a nutritional and management consultant with an office in New Ulm, Texas. He can be reached by email or by phone at (903) 352-3475.









When transitioning a calf from the bottle to the autofeeder, you should use the autofeeder to prepare the bottles for a day or two in advance of transitioning. Any animal transition is stressful. By preparing the milk with the autofeeder for a day or two before moving the calf to the autofeeder, the calf has a few feedings to adjust to the new ration.



Courtesy photos.

Set up for success: 7 tips for getting the most out of your autofeeder

Bradley Biehl for *Progressive Dairy*

AT A GLANCE

Automatic calf feeders certainly have many pros, but they are still a tool that must be managed properly to be effective. Managing calves correctly, maintaining the machines and feeding them appropriately are key to success.

An automated calf feeder is a great tool for many calf programs. As with any piece of equipment, management is a key contributor to the success or failure of your autofeeder. There are several common areas that can be overlooked when using this equipment. Here are seven tips to build a successful autofeeder program.

1 Verify your milk replacer mixing temperature

Most milk replacers have a higher mixing temperature than feeding temperature. Often, autofeeder users set their program to mix at the feeding temperature rather than the mixing temperature. This results in the fat globules in the milk replacer not fully breaking down and therefore cannot be fully absorbed by the calf. So, if your mixing temperature is too low, your calves are not getting the full energy of the milk replacer. When a calf does not receive enough energy to meet their needs, they can be at higher risk for health challenges, including respiratory issues. Work with your nutritionist or vet to select a high-quality milk replacer and be sure to set the feeder to mix according to the instructions on your milk replacer bag. The distance between your feeder and the nipple should help ensure the milk is not too warm for the calf to consume.

2 Feed calves from the autofeeder prior to transitioning

When transitioning a calf from the bottle to the autofeeder, you should use the autofeeder to prepare the bottles for a day or two in advance of transitioning. Any animal transition is stressful. By preparing the milk with the autofeeder, the calf has a few feedings to adjust to the new ration. You are thereby removing one of the stress points and helping create an easier transition by feeding the identical dry matter content and temperature.



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3 Mix according to measurement

If your autofeeder has the option between mixing based on measurement or calibration, make sure you choose direct measurement. This creates a more accurate mix. If you have to mix based on calibration, be sure to calibrate your equipment at least once a month and also have a regulator on your water to provide a more consistent flow.

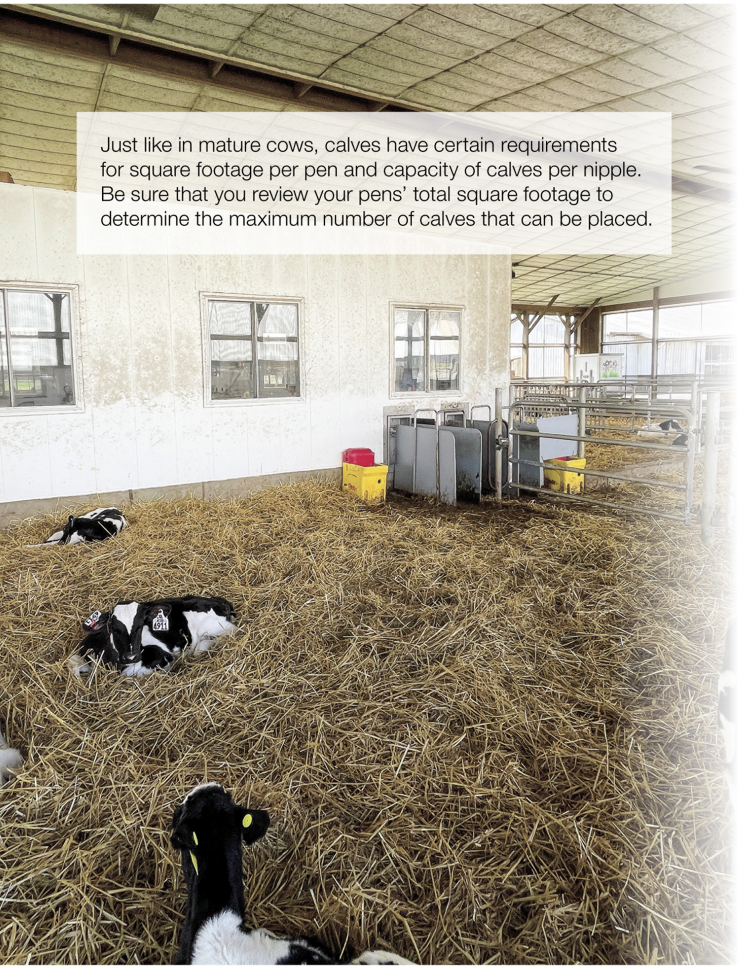
4 Feed at least 2 liters per feeding

One of the great benefits of an automatic calf feeder is the ability to serve multiple small portions per day. It is recommended that a calf get at least 2 liters per feeding. That means the total amount of milk per day divided by the number of portions should be no less than 2 liters per feeding.

5 The first autofeeder portions should be at least as large as the last portion fed before transition

Often, people will set up their autofeeder for calves to start at their normal total milk consumption for the day but set that to be fed over the new desired number of portions.

Let's look at an example. You normally feed 3 liters twice per day for a total of 6 liters. You set up the calf to start on the autofeeder at 6 liters per day, divided into 3 meals. This means the calf is receiving 2 liters per meal. This is enough per meal; however, the calf is used to getting 3 liters per meal and is now suddenly reduced to 2 liters per meal. She likely will only eat the two times in the day that you



Just like in mature cows, calves have certain requirements for square footage per pen and capacity of calves per nipple. Be sure that you review your pens' total square footage to determine the maximum number of calves that can be placed.

push her to the feeder. This means she will receive a reduced amount at each meal, plus she is also likely receiving a lesser amount for the first few days of her transition.

You transitioned to an autofeeder for calves to be fed more, but you are starving them for the first few days. Don't make the mistake of adding extra stress to calves at transition by limiting their total consumption. To help alleviate this issue, it is recommended to transition the calf to the autofeeder at the morning feeding. Go back four hours later to push the calf to the nipple for a small portion. If you wait, the calf will likely get hungry and start wandering the group pen looking for things to suck on that are not clean.

6 Appropriately size pens and adjust crowding

Just like in mature cows, calves have certain requirements for square footage per pen and capacity of calves per nipple. Be sure that you review your pens' total square footage to determine the maximum number of calves that can be placed. It's also important to not overcrowd the nipple. More dominant calves will keep younger, smaller or weaker calves from accessing the nipple. Another good tip for preventing too much bullying is to keep calves within just a few weeks of age in the same pen. Not only does this help reduce bullying of the younger calves, it also minimizes diseases spread from the older calves to those with less developed immune systems.

7 Maintenance

Of course, we would be remiss if we didn't emphasize the need for maintenance and cleaning. Change, disinfect and scrub nipples daily. Be sure to keep all milk and calf contact surfaces clean and in good working order. Bacteria can quickly grow in milk lines and other surfaces, so it is incredibly important to clean regularly and minimize calves' exposure to disease.

Autofeeders can be a really great addition to your calf program. But as with anything, an autofeeder does not eliminate the need for management. Following a few simple tips can help ensure your calves are growing happily and healthily.





Getting calves to drink water is a yearlong pursuit

Tana Dennis for *Progressive Dairy*

AT A GLANCE

A calf's body is 70% water, and water intake is closely tied to rumen development and starter intake. To encourage intake, producers should provide clean water frequently. Providing warm water or water with electrolytes in a bottle may also encourage additional intake.

Calf hydration isn't just for hot weather. A year-round plan for feeding water and electrolytes can help calves stay healthy and productive through all seasons and temperatures. Water is key to hydration and for calves, has major effects on starter intake, rumen development and overall health.

Why focus on water year-round?

• A calf's body is 70% water.



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• Water is necessary for kick-starting rumen development.

• When calves have diarrhea, they drink more water.

• When starter intake increases, they drink more water.

Here is the research and answers to commonly asked questions about feeding calves water, as well as a producer's experience with feeding daily electrolytes.

Do calves get enough water through drinking milk or milk replacer?

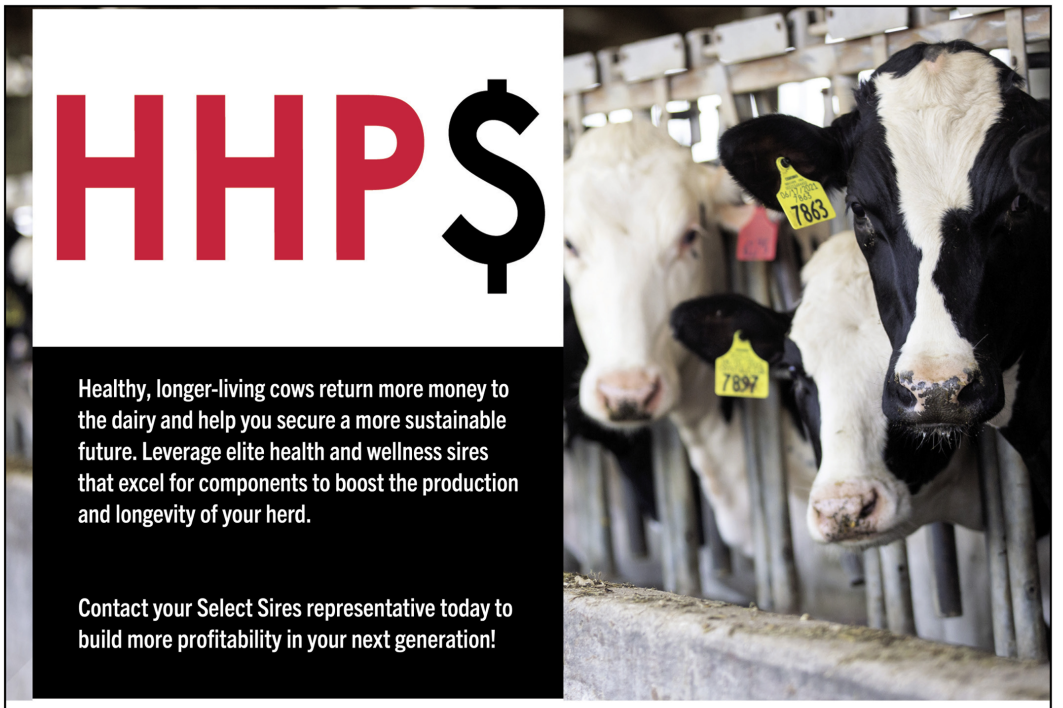
The short answer is: "Generally, no." While milk and milk replacer are around 87% water, a calf can easily lose 10% of its bodyweight in one day from having diarrhea. For a 100-pound calf, that would equate to just over 1 gallon of water.

This can be an issue when feeding low to moderate milk allowances (less than 1.5 gallons of milk or milk replacer per day). In comparison, calves fed unrestricted amounts of milk on automated feeders will drink little to no free-choice water in the first few weeks of life. Nevertheless, it is important to encourage early water intake regardless of the feeding or housing system to stimulate starter consumption.

Dr. Al Kertz published a study in the mid 1980s showing a 60% increase in weight gain when calves were given free-choice access to water, driven by a 45% increase in starter intake compared to calves not given additional water.

More recently, researchers at Iowa State University showed long-term impacts of early water intake for calves fed a high allowance of pasteurized milk. When offered water from birth, calves consumed more milk pre-weaning and were larger in frame than calves offered water two weeks later. Additionally, fiber digestibility was improved at 10 weeks old, and calves were nearly 30 pounds heavier at 5 months old when they were offered water from birth. These observations suggest improvements in rumen function when water is provided as early as possible.

Since water is essential for digestion and nutrient absorption, it should be offered free-choice, beginning on day one when calves



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250HO14310	COFFEE	924	137	99
7HO14320	ALPHABET	919	164	99
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14HO16069	MADURO*	1,215	164	80
250HO16257	DENALI*	1,196	166	80
7HO16148	BAMBAM	1,193	173	79
7HO15913	KAHN*	1,188	186	79
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7 = Select Sires, 14 = Accelerated Genetics, 250 = GenerVations

FIGURE 1 Water and electrolyte intake during first 3 weeks of life

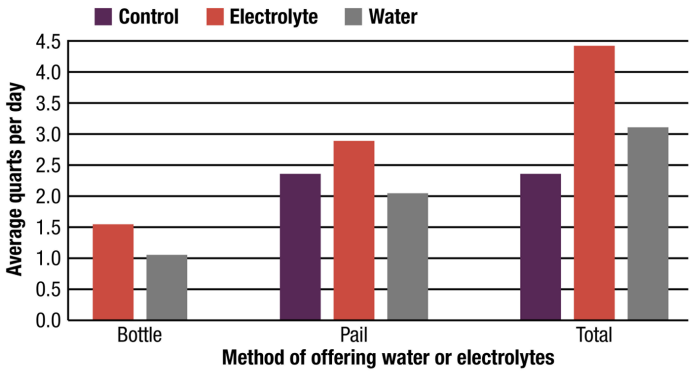
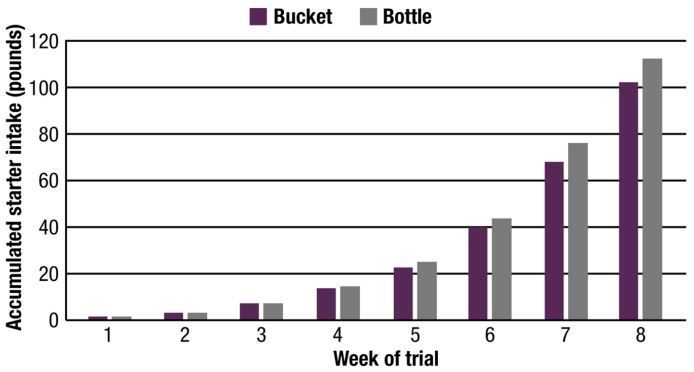


FIGURE 2 Starter intake when offered hot water in a bottle vs. bucket



The bottom axis compares the amount of fluid consumed either from a bottle or from a pail free-choice. On the right is the total water intake in quarts per day. The control group was only offered water free-choice from the pail, which is why a purple bar is missing from the bottle method. During the trial, calves given electrolytes consumed about half a quart more water from the bottle, as well as more water from the pail. This resulted in an average increase in water consumption of over a quart per day for calves fed electrolytes.

are moved to hutches or other housing. Beyond cellular functions, water is fundamental for the development of the rumen, initiating starter intake and setting the calf up for life post weaning.

How much water should calves be drinking?

When gauging water intake, a good ratio to follow is 4 to 1, meaning a calf should consume 4 pounds of water (or about half a gallon) to every 1 pound of starter intake. Optimal rumen fermentation occurs when a 4-to-1 ratio is met. Water enables microbial fermentation in the rumen, producing volatile fatty acids (VFA) that result in papillae development. These same papillae then absorb VFA, which provides energy to the developing rumen and prepares the calf for a smooth post-weaning transition.

How can I get my calves to drink more water?

The tried-and-true answer is to offer clean water starting on day one in the hutch or other housing. But what about regularly offering calves electrolytes in addition to water? Feeding electrolytes daily, or even weekly, can increase a calf's water intake and thus starter intake – two necessary components for rumen development.

When it comes to water, what and how we feed will likely affect consumption. A trial conducted at the Nurture Research Center compared the use of pails versus bottles when feeding water and electrolytes daily. The findings showed feeding an electrolyte product increased total water intake and supported greater growth rates through 8 weeks old compared to feeding water only. (**Figure 1**).

Case study: On-farm experience feeding daily electrolytes

For over three years, a dairy in the Northeast has been feeding daily electrolytes to their calves. The 300-cow dairy made this decision after experiencing years of inconsistency in calf health and feed intake, which they felt could be affecting their lactating herd's performance down the road.

The farm struggled with some calves doing well while others did not, and rate of gain was all over the board. One sickness, extreme stress event or even just low starter intake had rippling effects on the animals' average daily gain (ADG) and future health.

Currently, the farm's protocol is to start feeding electrolytes to calves after they stop receiving colostrum at 3 days old and up until 21 days old. The calves are bucket fed milk, and then approximately two hours after the morning milk meal, electrolytes are added to their buckets.

Consistent manure and an increase in starter intake were the first signs of improvement. The calves finally made the jump from 1.7 to 2 pounds of ADG. More recently, the calves began eating 5 to 6 pounds of starter before weaning.

While speedy progress was evident in the calves, the dairy values the long-term investment in rumen development for future growth and production.

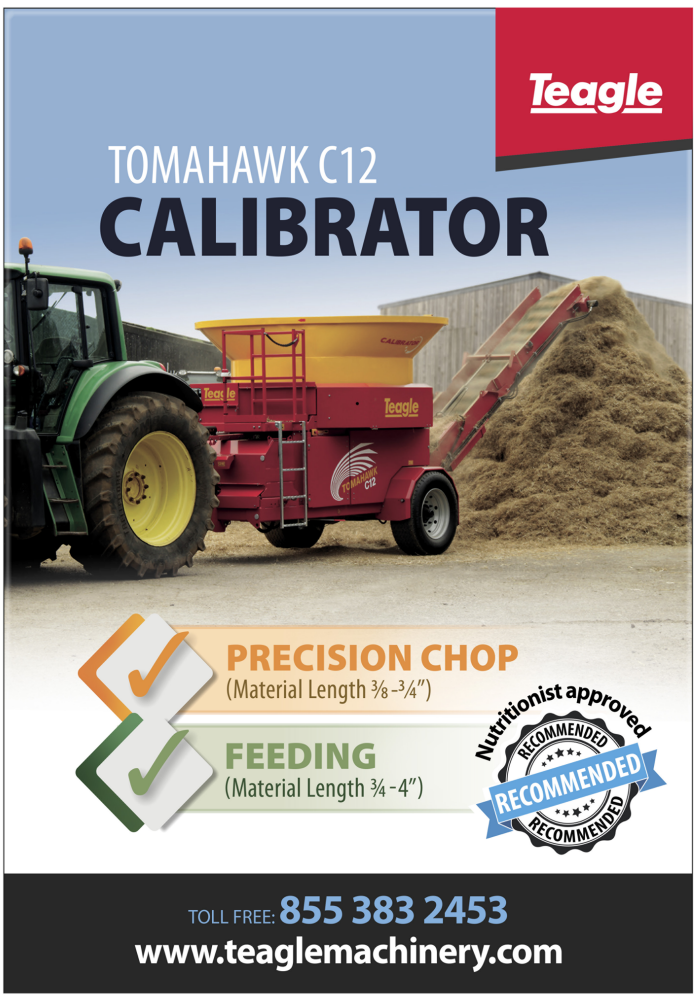
How can I promote drinking during colder weather?

Delivering water in winter to calves can be a tricky task, particularly to those housed outdoors. Breaking ice in buckets is tedious and often leads to increased labor or farms not feeding water at all during winter. However, there is an easy way to continue feeding water in winter with minimal additional labor. A Nurture Research Center study found that calves given a 3-quart bottle of hot water daily for one hour at midday consumed an additional 10 pounds of grain over a period of eight weeks (**Figure 2**). This was compared to calves given free-choice ambient-temperature water in a bucket, which often iced over during the trial.

Based on daily averages, bottle drinkers consumed 1.4 quarts of water compared to 0.2 quart for bucket drinkers, showing that calves prefer drinking hot water from a bottle during the winter.

My advice is to provide water at 100°F to 105°F and to offer it 15 to 20 minutes after milk feedings. When you add a third bottle feeding of at least 2 quarts of water (in addition to two feedings of milk), it should provide enough water for an additional 0.5 to 1 pound of grain intake per day.

References omitted but are available upon request.



Elevate your manure management to align with 2023's input projections

Nikki Wagner for *Progressive Dairy*



Nikki Wagner
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AT A GLANCE

The goal of nutrient management is to adequately supply soils and plants with the nutrients necessary to produce food, forage, fiber and cover while minimizing the transport of nutrients to ground and surface waters.

The headlines, tweets and rumor mill all seem to resonate the same message as we head into 2023: Hold onto your hat for 2023 crop input prices and availability. When such concerns arise, growers and their agronomists have looked toward those of us in the nutrient management field for help in making manure the hero. Manure is an excellent fertilizer source and soil amendment, as it supplies the nutrients needed for crop production. It can also improve soil health and quality thanks to its organic matter. But in order for manure to carry this heavy torch in the year ahead, producers need to take their manure management to the next level.

For manure to save this ship, it's important to know its nutrient value. Knowing what is actually available can help make informed decisions for the 2023 growing season. You can't manage what you don't measure. Weather, management practices and other conditions all affect the nutrient content of manure. And sampling manure – while not glamorous – is essential.

Plan it out

Frequent manure sampling is the best way to identify trends and gain an understanding of baseline recommendations. However, every farm manages its manure sources differently, and frequent sampling isn't always feasible. I recommend at least annual sampling to my clients, but increase that frequency to each hauling season when working with liquid manure. In these liquid manure systems, sampling should be completed after agitation, and several subsamples should be pulled throughout pumping. These can then be combined to form a composite sample for analysis.

Leveling up manure management also means getting your team all on the same page. The only way to ensure the sampling frequency you've decided on is to adequately equip those working with manure. I suggest supplying the custom manure hauler with sampling supplies upon arrival or delegating the job to a specific team member on or off the farm. Typically, the sampling supplies needed can be collected from the laboratory set to receive the samples. They will likely also supply additional directions to ensure any shipped samples don't cause a mess in the mail. As valuable as manure is, I don't think anyone from the postal service, or even the laboratory, can pretend to be comfortable with incorrectly packaged samples that break open in transit. The horror stories amassed in our lab are enough to make anyone double-check the enclosure before shipment.

Analysis backed by certification

Choosing a lab for your samples shouldn't be taken lightly. Much like nutrition, working with a reputable laboratory is pertinent if manure is going to be carrying the nutrient load for acres in 2023. And working with a certified manure analysis laboratory ensures accurate manure analysis results. They have a track record of providing consistent sample results using the approved analysis procedures outlined by the University of Minnesota. To gain and maintain certification, the department deploys blind samples to the laboratories for analysis on a quarterly basis. They are then scored based on the results of the analysis. If unable to pass proficiency rounds, laboratories must complete and pass a retest to be recertified. Certified laboratories are enrolled with and report data to the Minnesota Department of Ag Manure Analysis Proficiency Program, but the certification spans nationally.

Is the dirty work worth it?

Nutrients must be managed carefully. Statistical analysis of liquid dairy manure samples analyzed at Rock River Laboratory between 2021 and 2022 showed tremendous variability. The average total nitrogen value was 16.4 pounds per 1,000 gallons, with a normal range of 11.9 to 21 pounds of total nitrogen per 1,000 gallons.

The nitrogen cycle is one of the most important cycles to all living organisms, and nitrogen is one of the most challenging nutrients to manage. Not all nitrogen in manure is immediately available for crop uptake, so knowing the nitrogen breakdown can help inform best management practices in manure handling. Whether it comes from manure or fertilizers, it is mobile both in the soil and in the plant. The nitrate form of nitrogen is Wisconsin's leading cause of groundwater contamination. It is estimated that 90% of nitrate in groundwater is due to fertilizer and manure applications.

Meanwhile, the overapplication of phosphorus fertilizers and manure degrades surface water quality. The average phosphorus value in that same statistical analysis of liquid dairy manure mentioned prior was 6.88 pounds of total phosphorus with a range of 4.04 to 9.46 pounds of total phosphorus per 1,000 gallons. Unlike nitrogen, phosphorus is primarily immobile in the soil, and phosphorus loss is driven by erosion.

The most accurate way to manage manure for nutrients is to sample and analyze the nutrient content. Manure testing not only helps farmers make informed decisions at the field level, but it also helps to create book values for the entire state. Knowing the nutrient content of the available manure is also the first step in reducing the overapplication of these key nutrients. And it's a great way to understand the true value of what is applied. In reviewing information from my nutrient management colleague Scott Fleming and the 2021 Iowa Farm Custom Rate Survey, even with application costs considered, for every $1 spent on application of liquid dairy manure, users are receiving almost $2 back in fertilizer. With such impressive value, sampling manure seems like a no-brainer from several angles.

Management of any resource usually requires employing a few different tactics and a little extra work. Manure is no different. But in doing so, more-informed decisions are made. Through management – including analysis and evaluation – farmers can utilize the available nutrients appropriately and look to reduce other fertilizer costs as they plan for the year ahead. The goal of nutrient management is to adequately supply soils and plants with the nutrients necessary to produce food, forage, fiber and cover, while minimizing the transport of nutrients to the ground and surface waters. The management practices discussed here can do just that, all while adding peace of mind and value to the bottom line.



America's largest manure digester supports producers' environmental goals

Progressive Dairy Editor **Jenn Coyne**

AT A GLANCE

The 16-unit anaerobic digester and water filtration system aids in reducing phosphorus runoff and improving farming practices for 11 Wisconsin dairies.



Photo courtesy of Digested Organics.

BC Organics is a 16-unit anaerobic digester in eastern Wisconsin. The site processes manure from 11 area dairy farmers.

Dan Wiese knows the importance of safe and sustainable practices for the future of his livelihood, and with a recent partnership to reduce manure application and improve environmental surroundings, the outlook of Wiese Brothers Farms is promising.

"When my family first started dairy farming, we treated our manure as an inconvenience, but in the last 15 years, we've valued our manure for what it is and treat it as a nutrient source," Wiese says. "This is another attempt for us to use technology to help us manage nutrients and do a better job, be better stewards of the environment."

Wiese Brothers Farms is one of 11 dairies working in partnership to provide manure for Wisconsin's latest anaerobic digester, BC Organics owned and operated by Dynamic Renewables.

The Brown County plant, with 16 digesters on site, has the capabilities to process 900,000 gallons of manure daily.

In addition, the plant creates 1.6 million British thermal units (Btus) of renewable natural gas each day (equivalent to 11,000 gallons of gasoline per day when used as compressed natural gas) and more than 400,000 gallons of clean water daily through the filtration technology provided by Digested Organics. The site also produces 135 tons of fiber bedding daily as a byproduct for use on participating farms.

"[This project] is the largest methane digester in the U.S., and it includes post-digestion water treatment, organic fertilizer and clean water," says Dan Nemke, chief technology officer at Dynamic Renewables.

Unlike other methane digesters, the water filtration technology makes BC Organics unique.

The process uses several steps of filtration to convert digested manure into nutrient-rich concentrates and clean water.

"Before it runs through our system, it looks like a chocolate milk shake," says Scott Crosby, project

Continued on page 60

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Superfiltration technology removes organic matter to create clean water as a byproduct of the anaerobic digesters.

Photo courtesy of Digested Organics.

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PROGRESSIVE DAIRY

America's largest manure digester supports producers' environmental goals, cont'd from page 59

engineer at Digested Organics. "We first use ultrafiltration to remove suspended solids and then a combination of superfiltration, forward osmosis and reverse osmosis to make water clean enough to drink."

Altogether, the filtration systems make about 45 gallons of clean water for every 100 gallons of raw manure that went into the digesters, according to Crosby.

"As a final step, the filtered water is exposed to an ultraviolet light before it goes back to the farms as irrigation water or is discharged to a nearby stream," he says.

For dairy producer Mike Gerrits, the water filtration technology enticed him and his family to become a partner farm.

"With this filtration technology, we don't have to haul as much water to our fields," Gerrits says. "We can haul drier material to the field, and that's more encouraging than just simply digesting [the manure]."

In participating, the Gerrits family anticipates moving 40 million gallons of manure through the pipeline every year, minimizing truck hauling, noise and odor.

"There's a lot of animal units per square mile here, and we all know we have to be sustainable now and in the future for the next generation," Gerrits says. "We're trying to be a little more environmentally friendly. With this partnership, we're going to be able to use more cover crops, no-till all of our acres and have the potential to be carbon negative."

Nemke agrees.

"Especially in this part of the country, there are some very progressive farmers who are looking to do really good things for their area and be more transparent with their practices," he says. "Farmers are excellent stewards of the land to start with, but this project gives them more – more tools to work with and more opportunity to manage to the best of their abilities to help their community and the environment."

The project was authorized in fall 2017 following a feasibility study that evaluated phosphorus runoff into the Fox River watershed. Specifically, its goal was to examine anaerobic digestion with water treatment for the possibility of improving the sustainability of agriculture in Brown County.

Dynamic Renewables broke ground on the project in summer 2022 and commissioned the facility this winter.

"In ways that agriculture was affecting the watershed, the biggest pieces were to reduce the manure volume and control nutrients, which allows lower manure application rates, reduced tillage, reduced compaction and a greater use of cover crops," Nemke says. "All of these things together help decrease the potential of phosphorus entering the surface water."

Gerrits estimates that the digester with the water filtration technology will eliminate about 50% to 60% of the water that would otherwise be applied to the fields with little nutrient value.

"That is a great advantage for us because we're not hauling all that water back into the field, and the water has value being used elsewhere," Gerrits says.

Wiese agrees.

"Of our normal haul, 7 percent is solids, about 3 percent is actual fertilizer and the rest is water," he says. "The fact that we can have some volume reduction and improved concentration of our manure is the number one goal overall. This opened my world to a whole new set of application methods and tools where I can grow cover crops a lot better."

After the filtration process, the clean water discharged into the environment is cleaner than the water already there, Crosby says. That concept is where the entire community benefits.



Jenn Coyne
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"Really, this project isn't nearly as much about making money as it is about making less manure for the fields, which is an advantage for everyone," Wiese says.

Wiese is a part of the third generation to dairy farm at Wiese Brothers Farms.

He led the business in the partnership with BC Organics. Unlike other participating farms, Wiese Brothers Farms constructed their own underground pipeline to deliver manure to the site. In doing so, Wiese created a path for the manure to be transported to the digester site but also left useful space aboveground.

"I wanted to go underground from point A to point B, so there's redundancy for any future plans," Wiese says.

For both Wiese and Gerrits, they have high hopes for this project in creating more sustainable dairy businesses as well as improving the environment that surrounds them.

"We have to do these things, like getting trucks off the road and reducing runoff, in order to sustain farming here in the next five years," Gerrits says. "It's a lot closer than we think."

Wiese agrees.

"During this whole process, we've had great confidence and excitement [about the possibilities and potential], but we've also been cautious at the same time because we don't know what exactly our reduction looks like yet," he says. "The question is, 'What is going to happen?'"

Time will tell as the participating farms of BC Organics see the return on this investment.

Where does selecting to utilize feed fit into your genetic plan?

Larry Schirm for *Progressive Dairy*

AT A GLANCE

Traits and indexes can aid in genetic planning, especially when it comes to feed efficiency.



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Saving money on feed costs is never a question to be debated. In 2020, the Council for Dairy Cattle Breeding (CDCB) began offering a genetic indicator designed to aid in creating dairy cows able to utilize the feed they consume more efficiently for the level of milk, fat and protein they produce. The trait is called Feed Saved (FS), and it is designed to identify cows that produce at common levels on a reduced feed intake. Sounds like what many dairy farmers are looking for, so why would I suggest there could be a debate? Let's first define FS as a genetic trait and then look at where FS might fit into our genetic list of priorities.

"The FS predicted transmitting ability [PTA] represents the expected pounds of feed saved per lactation based on evaluations for Bodyweight Composite (BWC) and Residual Feed Intake (RFI). Evaluations are expressed in pounds of feed saved per lactation above or below the breed average. Larger, positive values are more favorable," according to the CDCB (**Figure 1**, page 62).

As you can see, there are two moving parts in the FS calculation; one is essentially the feed required for maintenance based on body size – smaller cows need less maintenance – and the second and newer calculation is the RFI, which the CDCB defines as, "the difference between an animal's actual feed intake and its expected feed intake based on its size and growth compared to the breed average base."

CDCB expresses RFI in pounds of dry matter intake (DMI).

For example, daughters of a Holstein bull with a FS PTA of over 200 pounds per lactation are expected to consume an average of 200 pounds less than expected feed based on production and body size. Daughters of a Holstein bull with a FS PTA of -300 pounds per lactation are expected to consume an average of 300 pounds of feed per lactation more than expected based on production and body size.

In simplest terms, if cow A uses less feed to produce the same level of production as cow B, cow A is more feed efficient and its genetic profile offers reduced feed costs. What can we expect monetarily from utilizing FS values? The Holstein Association USA illustrates the impact of FS in **Figure 2** (page 62) as to what each point of FS could equate to in each cow's lifetime on average. In this example, each point of FS is valued at 11 cents per pound of dry matter saved, so for the 100 pounds of feed saved (via a combination of reduced maintenance or efficiency in feed conversion), at 11 cents per pound of DMI, you would save $11 for that lactation. And as expressed in this example, in an average lifetime of 2.6 lactations, this cow saves $29 in feed costs over the breed average for its production level.

So now that we have a working illustration of what genetic opportunities are available to select for using PTA FS, how might we utilize FS from the December 2022 CDCB Sire Summary?

The average top 100 active PTA FS sires in the December 2022

Continued on page 62

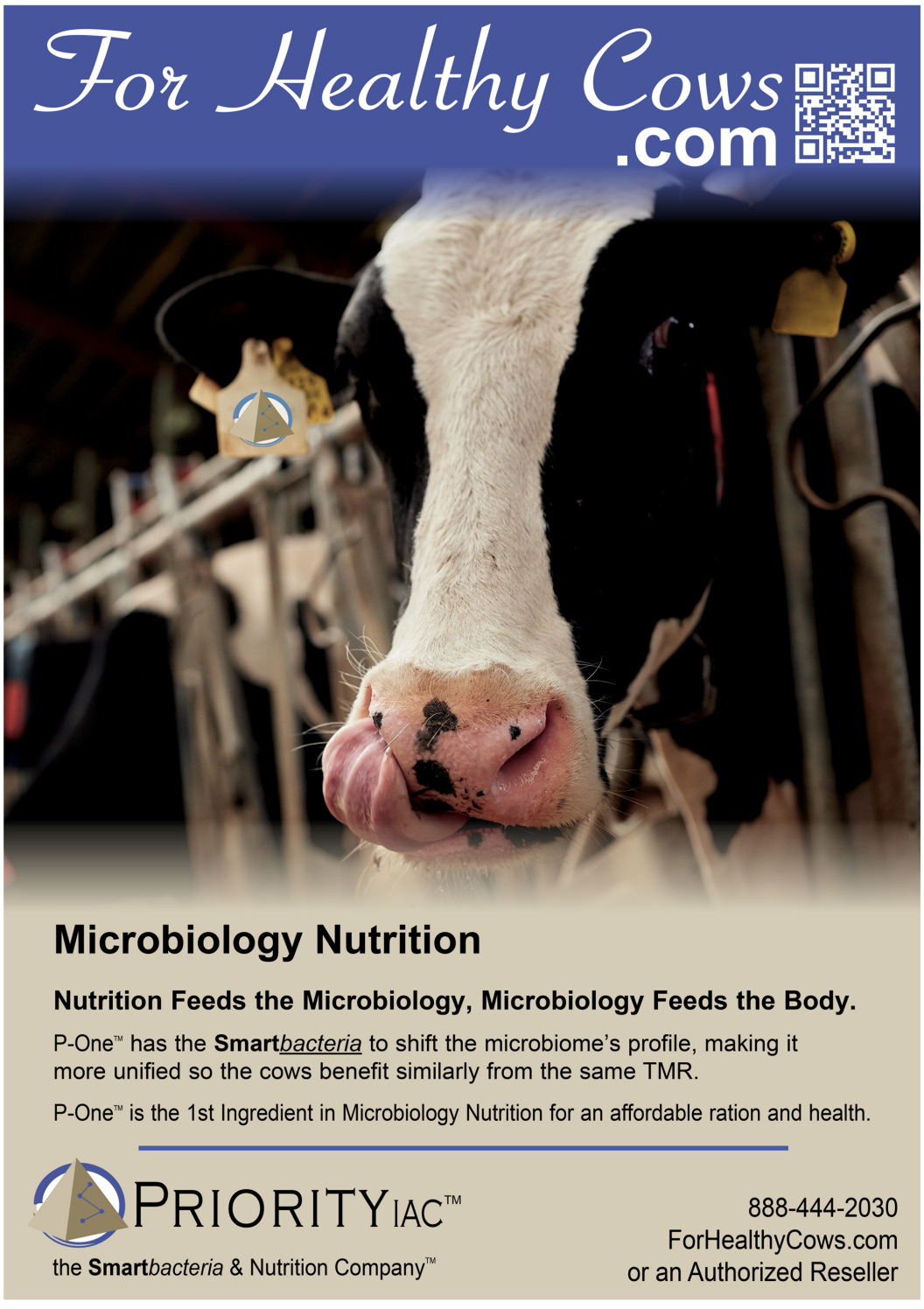


FIGURE 1

Feed efficiency (FE)	• Expressed in USD • (0.0008 x PTA milk) + (1.55 x PTA fat) + (1.73 x PTA protein) + **(0.11 feed saved)**
Feed saved (FSAV)	• Pounds of dry matter per lactation • (-138 x BWC*) + (-1 x PTA RFI) • 37% reliability (because of high BWC reliability)
*Bodyweight composite (BWC)	• Pounds of bodyweight (1.0 BWC = 35 pounds) • (0.23 x stature) + (0.72 x strength) + (0.08 x body depth) + (0.17 x rump width) - (0.47 x dairy form)

FIGURE 2 Lifetime value of feed saved



- Example:
  - +100 PTA FSAV = 100 pounds of feed saved per lactation
  - 100 pounds/lactation x $0.11/pound = $11 per lactation
  - $11/lactation x 2.6 lactations = $29 lifetime

Note: 1 kg = 2.2 pounds

Source: Holstein Assn USA Aug. 22

Where does selecting to utilize feed fit into your genetic plan?
cont'd from page 61

CDCB Sire Summary have a 470 PTAFSAV. At 11 cents per pound of dry matter saved, multiplied by 470 pounds of dry matter, that's $51.70 in feed savings per lactation. This can be thought of as an average of $134.42 reduction in DMI in the cow's lifetime production costs when compared with its breed average feed-saved contemporaries that produce at the same level of production.

Sounds impressive, right? The debate begins when we start to consider where feed saved should fit as a genetic tool in our overall future genetic strategy profile (**Table 1**).

These top 100 PTAFS sires with their average 470 PTAFSAV have an overall average of $880 Lifetime Net Merit (NM$) or $768 Herd Health Profit Dollars (HHP$), depending on where your genetic selection goals align. (For this discussion, we'll be referencing HHP$, but this index can be substituted for the index of your choice.) In contrast, the top 100 NM$ sires average 1,188 NM$ for overall lifetime profit, while providing a 278 PTAFSAV included and the top 100 HHP$ sires average 1,182 HHP$ in lifetime net profit, while providing 147 PTAFSAV.

TABLE 1

	HHP$	NM$	FS	RFI	BWC	PTAM	CFP	DPR	SCS	MAST
Top 100 FSAV	768	880	470	-173	-1.96	968	112	-0.2	2.87	1.1
Top 100 NM$	1,130	1,188	278	-51	-1.50	1,431	177	-0.3	2.81	1.6
Top 100 HHP$	1,182	1,140	147	-61	-0.57	1,264	176	0.0	2.71	2.7

When we do the math, we see that the current top 100 genetic sire offerings for FS reduced DMI an average of $135 in lifetime savings, but unfortunately those sires are limited to only 880 NM$ or 768 HHP$ in lifetime profit. At the same time, the top 100 genetic sire offerings for overall profitability defined either by NM$ or HHP$ are providing an additional 308 NM$ in lifetime profit or an additional 414 HHP$ lifetime profitability, though one does give up ($54.92) in increased DMI for a NM$ focus or ($92.42) in increased DMI for an HHP$ selection index focus compared to the $135 lifetime reduction in DMI from the top 100 PTAFS sires.

Clearly, Feed Efficiency or FS gains are being realized when we maintain selection pressure for NM$ or HHP$, without the need to focus directly on PTAs for FS. This is in part because "reduced stature genetics" are being rewarded in every selection index today, with stature moderation a common denominator in which profit-based indexes are simultaneously providing gains in feed efficiency, as well as utilization RFI.

The point here is that while feed costs are the largest daily cash flow cost for any dairy, many variables influence any replacement's lifetime profitability, and they all need to have appropriate consideration – thus the debate as to where one is to place a focus on the utilization of feed-saving genetic opportunities.

Still not sure where to focus genetically for reducing feed costs? Consider a greater focus on your female population. You have much greater genetic opportunity for change in any trait looking within your female population than you do in sire segmentation. A female genetic ranking quickly points out who should and should not be the maternal contributors to your next generation. Draw up an alternative plan for those lower-ranking, less-feed-efficient females. Selection pressure on the maternal side of your genetic selection process has more feed-efficiency opportunities for the next generation than you will ever find in the available sires who rank well for your genetic index of choice.

The "great feed debate" lies in the following question: Where do you position feed efficiency into creating your future genetic profile?



A new beginning

By **Tom Heck**



New Year's Day is past, and many people made many resolutions about things they were going to change in their lives. And now, just a short time later, almost all those good resolutions that were supposed to make them better have been broken. I know from experience; as a young person, I'd make some wonderful resolutions only to fail to keep them. Somehow, I just didn't have the strength within me to keep them. It's sad to say it had to do with my fallen nature.

It has to do with two kingdoms: the Kingdom of God – light – and the Kingdom of Satan – darkness. As an infant, I was baptized in mid-January in the local church, and my family attended that church regularly. Being baptized and going to a church doesn't make one a Christian or a child of God, just like going out to my dairy barn where my cows are doesn't make me a cow. Any farmer knows that.

I remember many years ago, life looked totally hopeless, and I knew from experience that no good resolutions would change it. Oh, yes, the pastor in our local church told us repeatedly that we were all going to Heaven. But as I sat there and listened to him, I would look down at the floor knowing I was going to Hell. Down in my heart, I knew I was a wicked sinner, and I had no relationship with God at all. I knew the pastor was very wrong about me; he certainly didn't see my heart.

Looking back now, I see myself back then as a chief of sinners. I couldn't change myself, even though I tried very hard. I always failed; life looked totally hopeless and empty. I nearly committed suicide. Life at home was terrible, even though we went to the local church every week. People thought our family was a great Christian family; looking at it from the outside, it appeared so. But nothing could be further from the truth.

I was a chief of sinners, but on Jan. 17, 1982, God reached out to me. He moved upon my heart and let me know that He loved me. I had never experienced love like that before in my life. I got down on my knees that day and confessed to God the terrible sins I had committed over the years the best I could and asked Him to forgive me. I then asked Jesus to come into my heart and be my Lord and Savior. I told Him my life wasn't worth anything, but I was giving it totally to Him. If He could use it in any way for His glory, He could. But at the time, I didn't see how He could at all.

When I got off my knees that day, I was a new person. I finally stepped over into God's Kingdom. My horrible sins, all of them, were fully forgiven. I knew right then that if I were to die, I'd go to Heaven to be with my Lord. I was a changed man, not because of a resolution but because of an earnest prayer and a wonderful, loving God.

Sadly, after this, one person in my old family would continually remind me of sins I had committed in the past, to bring me down to his level. All I could tell him was, "Yes, I committed those sins, but God has forgiven me." With that, he would mumble some words and walk away. I knew I was fully forgiven. The Bible tells us the blood of Jesus cleanses us from all unrighteousness. It also tells us, "And their sins and iniquities will I remember no more" (Hebrews 10:17 KJV). I'm so glad that God forgives and forgets all our sins when we truly come to Him.

Needless to say, life has never been the same for me since. He has led and guided me these many years and blessed me above and beyond what I could ask or think. I have to admit that I have failed Him many times, but He always welcomes me back with loving arms when I repent and ask Him for forgiveness. I love Him more than anything or anyone in this world. He is life to me. Jesus even said, "I am come that they might have life, and that they might have it more abundantly" (John 10:10 KJV).

I have a question to ask, "Why didn't God let me go to Hell? I was in the fast lane going there, so why didn't He just let me go?" All I can say is that His love is so great for me. And I know His love is the same for you. Even if we are chief of sinners, God's great love is greater than all of our sin. A New Year's resolution probably won't do you much good, but a prayer certainly will. I know.

Tom Heck, his wife, Joanne, and their two children own and operate a dairy farm in Wisconsin. Contact him at lifeonthefamilyfarm@gmail.com or order his book online.







The family is a wall

By **Yevet Crandell Tenney**

When I was a child, I walked through my mother's garden with a sense of awe and wonder. The velvet emerald grass spread under the Chinese elm trees and lilac bushes. The roses in brilliant hues of red and gold climbed the wall of our old ranch house. The sweet peas huddled near the gate, and the phlox, morning glories and baby's breath rambled in the beds near the house. It was a wonderland of beauty at every turn.

I did not think too much about the effort it took to make an Eden like that. It just came alive with the first breath of spring and stayed until the first frost. I remember seeing my mother in her floppy straw hat kneeling in the flowerbeds pulling out the weeds and grass that grew among the flowers or planting new varieties of plants among the old ones, but the entire process seemed like wondrous magic wrought by a fairy queen.

It was not until I started trying to grow a flowerbed of my own that I realized what backbreaking, heart-rending, risk-taking work it was. I put in the effort to make my Eden. I planted the best varieties, I weeded the beds and I watered them just as I saw my mother do. I even asked her advice and followed it, but my flower garden never looked like it came out of *Better Homes and Gardens*. It looked more like the backyard playground.



Getty Images.

I got the floppy straw hat and the hoe. I watered and weeded. In fact, I thought I would do more just for safety's sake. Just as the flowers started to come up, I started weeding. I was not familiar enough with the weeds or the plants, so I took the hoe and chopped up everything that looked like a weed. A few weeks later, I wondered why some varieties never bloomed. It was a no-brainer for some people, but it took me a while to realize that weeds need to be pulled by hand until one can distinguish the weeds from the flowers.

There were other problems that did not plague my mother: dogs. I bought pre-grown flowers from the nursery and planted them. They looked lovely with their fresh blooms. I was so excited. I would finally have my Eden. Next thing I knew, there was Wylie, our big black dog, sleeping on my flowers. After I took the broom and chased him away, I examined my flowers. They were a mass of crushed petals and broken stems. I knew they would never be the same again.

The dogs were not the only problem. I had horses and cows wander by, eat my blossoms and leave unwanted fertilizer piles among my posies. My garden was more of a mess than magic. Even the rabbits, who should have been more respectful, being a symbol of Easter and all, would come by and level my plants to the ground. They ate everything: leaves, stems and blossoms.

Finally, I concluded, I needed a fence. My mom had a big high fence with locking gates, and she kept those gates closed. Anyone who left them open had to face her wrath. She knew the importance of fences and gates. I do not know why it took me so long to get the picture.

Raising children resembles gardening. It takes time and effort, and the family is designed to provide the strong high wall to keep the predators out. When we were raising our children, it was easier than it is now. The predators enter the home from every direction. Children

are given a cellphone to play with from the minute they can hold it in their hands. They are bombarded with images hardly before they know what they are. Color and entertainment constantly shape their world. They don't take time to play outside. They would rather watch someone else play on the TV than do it themselves. I often wonder what kind of adults they will become. Playing is a rehearsal for the future. It develops problem-solving skills and builds strong imaginations. I shudder to think of the confusion that is fostered in the young mind when they grow up thinking that problems are solved with a swipe on the screen.

With the current trend in attitudes about marriage and divorce, more and more children find themselves in broken homes surrounded by people with broken lives. Children need a father and mother to raise them in a family like my mother's garden. She was diligent and careful to plant and weed. She took time to get to know the plants. That is the way she raised her children.

I remember when my husband and I were training for foster care. Both of us coming from stable families, we were shocked to learn the challenges children face in foster care. These children come from homes that resemble my flower garden. There is no protection from the outside world. Appalling stories of 18-month-old children in diapers wandering alone on the busy streets of Show Low, Arizona, made me cringe. I do not even like to drive on the streets of Show Low because the traffic is so bad. I winced at stories of parents who drove by the social services office and dropped off their teenagers because they are tired of the struggle. I wept to hear of toddlers and preschool children being abandoned in cars to care for themselves. I gasped at the idea of parents doing drugs with their own precious children. I became nauseous at the idea of fathers taking sexual advantage of their children. I could not believe that mothers could defend and lie about the father's behavior and in some cases joined him in the acts. Worst of all, I could not believe that these crimes were unpunished, and in many cases children, after 15 months of foster care, are sent back to these parents.

We are living in a crazy world where children are exploited with false ideas. Children, unlike flowers, are not bought or sold at a nursery. They are the hope of future generations, our leaders of tomorrow. They are the gardeners who will raise the flowers in the Eden of the future. If they have never seen Eden, how will they do that?

Foster parenting is a calling to be angels to the rescue. Often, foster parents receive calls at 2 a.m. for a child to be brought into their home. The child comes through the door toting a black plastic garbage bag containing all their belongings. They have just witnessed the struggle between a police officer and their parent. The child is afraid, hurt and alone. The foster parent fixes a meal and tries to make the child comfortable and secure. The child only wants to know what is going to happen to their parents. Even an abusive parent is a hero to their child.

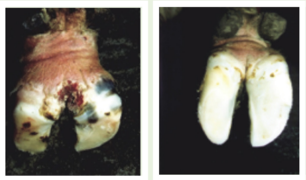
The foster parent loves and nurtures the child for months while the parents try to make necessary changes. If the parents improve a little in their parenting skills, the child goes back to the parents. If the parents do not improve, parents' rights are terminated and the child goes into long-term foster care, where they wait for a kind family who wants to adopt them. If the child's behavior is bad in foster care, they are sent to another foster family. With each foster care disruption, the child's chances of finding a permanent family diminish. If the child gets to 18 without adoption, they are on their own. Hopefully in foster care they learned skills to help them become productive adults. If they have not learned these skills, they revert to the way they were treated by their parents and plant their gardens without fences, and the cycle repeats over and over for generations.

After raising four children from foster care, I could not help think of how parenting and love is like my flower garden. The weeds need to be plucked, the wall needs to be high, and the gates need to have locks to keep out the dogs and other predators. Children need to be able to see Eden before they will ever know that family gardens are a place of peace and safety.

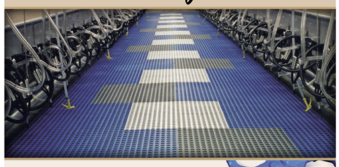
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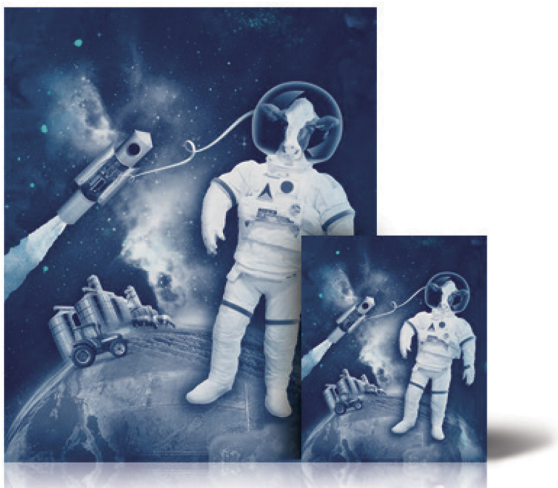
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Carolyn Cooks!

My lovely sister-in-law, Audrey, is from Ohio (aka the Buckeye State). Several years ago, she introduced me to a delicious chocolate treat called buckeyes. My youngest daughter found this recipe at www.the-girl-who-ate-everything.com. These are very rich and taste just like the famous buckeyes from Ohio.

Have a great recipe that includes dairy? Submit your favorites to editor@progressivedairy.com

Buckeye brownies



Brownie base:
1 box brownie mix (water, vegetable oil and eggs called for on brownie mix box)

Filling:
1/2 cup butter, softened
3/4 cup creamy peanut butter
2 cups powdered sugar
2 teaspoons milk

Topping:
1 cup semisweet chocolate chips
1/4 cup butter

Instructions:

Heat oven to 350 degrees Fahrenheit. Grease bottom only of 13-inch-by-9-inch pan. In medium bowl, make brownie mix according to the package directions. Spread in pan. Bake according to package directions. Cool completely.

In medium bowl, beat filling ingredients with electric mixer on medium speed until smooth. Spread mixture evenly over brownie base. In small microwavable bowl, microwave topping ingredients, uncovered, on high for 30 to 60 seconds; stir until smooth. Cool 10 minutes; spread over filling. Refrigerate about 30 minutes. Store covered in refrigerator.

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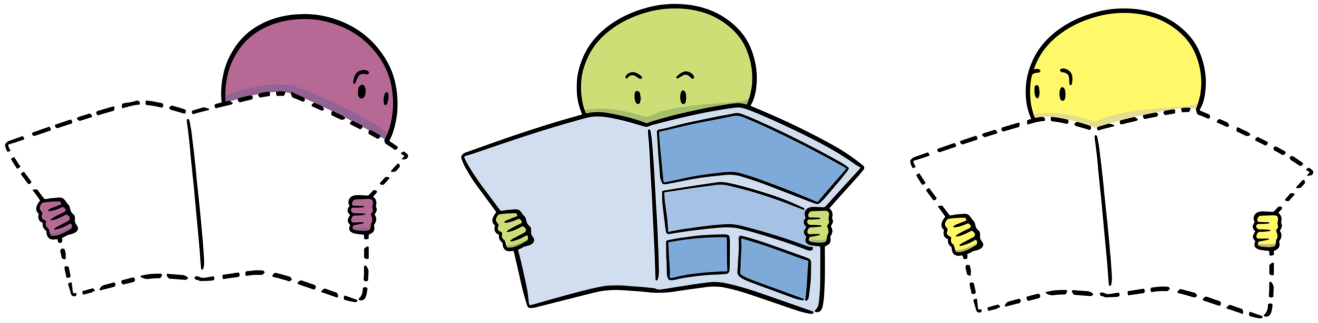
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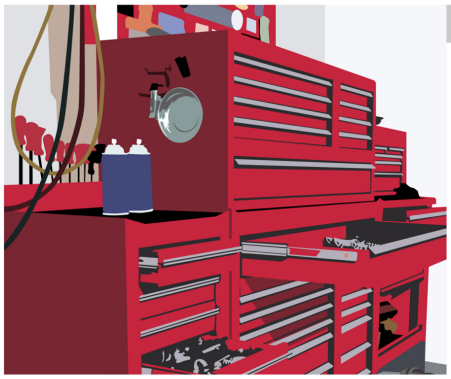
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Talking technology

Andy Overbay for *Progressive Dairy*



Andy Overbay
Extension Agent
Virginia Cooperative Extension
aoverbay@vt.edu

Technology can be a wonderful thing, and just like anything else, too much of a good thing can go badly. I was visiting with a trusted friend recently about topics in agriculture, and she made the observation that it seemed to her that all anyone wanted to talk about was technology. I understand.

Frankly, I am a fan of technology, but I have also seen people invest in what they thought were answers only to find more problems. So how does one go about telling the difference between a valuable tool and a poor purchase decision?

I have several farming friends who are gadget junkies. They are first adopters of the latest technology and, for the most part, they make the most of their investment. I have also witnessed farmers who live nearby these early adopters and try to follow in their neighbors' footsteps, only to fail.

For example, many years ago, a close family friend and tremendous dairy and cow man decided he was going to invest in a new cow management system that used pedometers and milk conductivity to predict cow health matters almost before the cow knew itself. He had some health issues, and his thinking was to invest in technology that would help his brother and son manage the herd as he would in case his condition took a bad turn.

He was so far ahead of his time that he actually outpaced our state's land-grant university herd in upgrading their dairy herd management systems. Everyone in our close-knit community took notice.

A fellow dairy producer in the next county was also making some changes. He and his son were expanding their herd and had built new facilities to house and care for their growing numbers. When it came time to decide on a new milking system, the father and son team followed the lead of the early adopter, but their experience wasn't as successful.

From my personal observations, the difference between the two was their investment in time. The more successful technology user investigated his system investment thoroughly. He knew about the manufacturer (which was overseas). He knew about the other products they made besides milking equipment. He knew what the system he was investing in would do. He also knew what it wouldn't do. He knew the system so well he could explain it to someone completely unfamiliar with computers or cattle, and it made perfect sense.

And that is the key point. Over the years, I have found that a great test for your mastery of any subject is best revealed in your ability to explain the topic in your own words in a way most people can understand and see the logic in.

While I am not saying the father and son who were less successful were lazy or lacking, I think that if they took more time to investigate the system, they would have realized the problems they were having weren't going to be fixed by that particular investment in technology.

It's not unlike cable/satellite television. Many of us grew up in the three-channel days. We got our local station fairly clearly, tolerated some snowiness on one channel and fought tooth and nail with the antenna for that third channel. (Can I get an "Amen" from the readers who held one rabbit ear in one hand and extended the other in the direction of the fleeting broadcast?) Now my wife and I get hundreds of channels, watch mostly four or five and usually find there still isn't anything on.

The other danger of technology is that sooner or later it becomes obsolete, unsupported or it flat breaks down. A simple example of this is a memory from my senior year in high school. My mom was a bookkeeper for many years and, after a long search, had found a calculator that printed tallies on tape like an old adding machine.

While doing our taxes that year, she was double-checking her figures, and things weren't matching up. I was using it to track a fundraiser we were doing at school and had the same issue. When we compared the tapes on duplicate calculations, the summations were not the same. A third attempt yielded even wilder results.

The problem wasn't human error; Mom's calculator was shot … junk … totally unreliable. That is why I cringe still when I hear how students are allowed to use a calculator in math class. If you aren't aware of at least somewhere an answer should fall, your chances of letting your technology tools mislead you are increased exponentially.

This leads to a final consideration we have discussed before. Are you going to be hamstrung if your technology fails and you need to get things done? Is there a backup plan when something as simple as a power outage or a broken belt or chain happens or when a needed part is weeks from being in your hands? Can you park the technology and manually feed the cows or do that algebra with a pencil?

Don't get me wrong. I like my gadgets too. However, the handiest tool in the world is useless in the hands of an uninformed user. A hammer is a useful tool if you are putting a roof on a cathedral, but in the wrong hands, it can ruin every window in the church.

When you invest in technology, first invest in yourself. Be the most informed consumer you can be, and if you aren't completely comfortable with your abilities, wait. Something better is likely only a few months away from being released.

Andy Overbay holds a Ph.D. in ag education and has more than 40 years of hands-on dairy and farming experience.





5 Little Words

Find the 5 words to match the 5 clues using each letter tile only once.

Clues	Solutions
1. Across the pond	8 letters
— — — — — — — —	
2. Full-body wince	6 letters
— — — — — —	
3. Negligent	6 letters
— — — — — —	
4. Cats and snakes both do so	4 letters
— — — —	
5. Subject to change	8 letters
— — — — — — — —	

ss in se va as sh er ab

re le cr ed ov ri ge mi

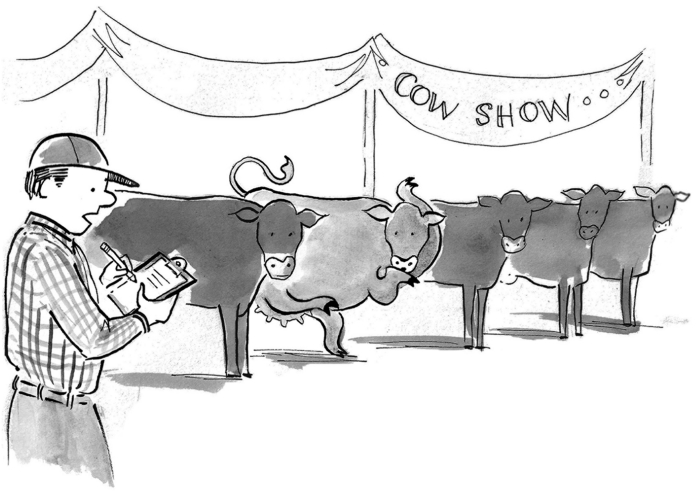
Answers are on page 74

EXAMPLE:
If the clue is "deep-fried treats," you would pick:

DO + NU + TS
DONUTS

Groundhog Hill

by Rose Anne Prevec



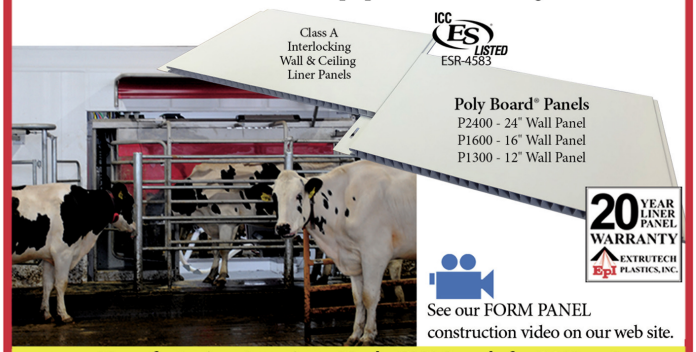
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Please describe your agricultural background.

I grew up in south Texas, where I was able to work with local hay producers and farmers. During my Ph.D. at the Miner Institute, I lived at the dairy and was involved with daily farm operations.

What territory will you cover?

Southwest (Texas, New Mexico, Colorado, Oklahoma, Kansas) and New York

What are your new responsibilities?

• Providing nutritional and whole-farm management for large dairies

• Support and overall technical leadership for the nutrition team

What previous positions have you held?

• Sales manager, Trouw Nutrition

• Dairy nutrition consultant, Trouw Nutrition

Who has made the biggest impact on your career?

Dr. Rick Grant, he was my mentor and adviser during my Ph.D. He has an exceptional ability to relate science at the farm level with practicality at the forefront. This has given me the ability to be more effective as a consultant for my customers.

How will you be of most help to producers in your region or area of expertise?

I believe I bring a unique mix of knowledge and experience from my past opportunities working in multiple regions. I plan to leverage this for producers to bring outside-of-the-box thinking to make them more profitable.

Why did you choose this company?

This company has a strong customer focus, and this aligns with my passion to serve my customers effectively.

What goals would you like to accomplish while in this position?

To make dairies more profitable and sustainable for the next generation using whole-farm consulting. Also train and support new nutritionists so they can provide the best support to their customers.

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3 lessons learned on my journey to dairy herd manager

Kate Kulp for *Progressive Dairy*



Over the last two years, I have worked full time on my family's farm – Kulp Family Dairy LLC. During this time, I have aimed toward a major milestone and asked myself, am I ready and able to hold a position of ownership/leadership within our family business?

The answer? Absolutely. I feel incredibly blessed and fortunate to have lived, learned and grown up on a dairy farm, which I am now a part of leading. Stepping into a management role on a 3,000-milking-cow dairy, at 23 years old, can be a daunting task. I'm still learning every day, but I'd like to share three key lessons that have helped me feel prepared and excited for this next chapter.

1 Be curious

I've always been a curious person, which has helped me greatly since returning to the farm after finishing my college degree. After graduating, my main responsibility entailed taking care of the cows, which was new to me compared to other operations. It was a natural fit because I enjoy animals, but I had limited experience working with cows at the time – growing up, my siblings and I started out feeding and caring for calves, eventually moving to field work. Now, a curious nature was critical to helping me navigate this transition. I watched and worked closely with various employees, asked many questions and have since moved into the role of herd manager.

That doesn't mean I've stopped asking questions, though. Like I said earlier, I realize that learning is a lifelong endeavor and mindset, and I have a great example to demonstrate that. We recently worked through a unique mastitis issue on our farm. As the summer months came to an end, we saw a somatic cell count (SCC) level we weren't happy with. Despite making all the recommended changes, we weren't seeing a drop in SCC. So, I set up an on-farm lab to culture our own milk samples to create a shorter turnaround time. This led to an interesting discovery – up to this point, our issues were ruled as environmental cases. However, a few weeks after setting up my lab, I found *Streptococcus agalactiae*. After confirming this with one of our testing companies, we were able to make more specific changes that have since made drastic improvements – after a month of hard work, our SCC dropped by more than 100,000. If it weren't for that curiosity, I'd still be "spinning in circles," as some would say.

2 Find mentors

I've been blessed with some great mentors while training to be a good herd manager at our dairy farm. Sticking with the mastitis example, I worked closely with our dairy management consultant, Nate Heim from Next Level ROI LLC, when I started to sense the severity of the case. He helped me to look at the situation in a non-conventional way and was encouraging when I made the decision to set up my own testing lab on the farm.

Having someone like Nate, who has unique experience working with different dairy farms, along with our vet, nutritionist and other vendors, is a tremendous asset when learning and growing in your role. That's who I believe make the best partners and mentors – those who are supportive and bring a perspective you wouldn't get on your own. There is always a new skill or trick you can learn in the process.

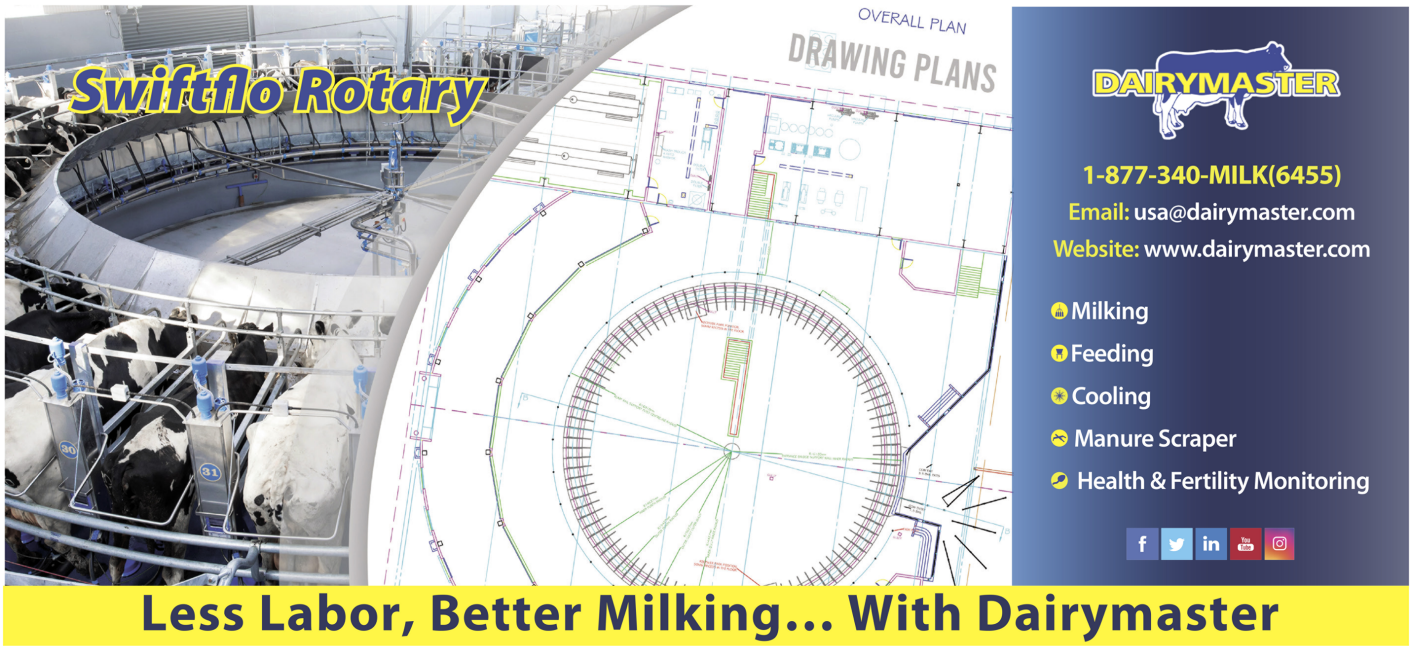
Kate Kulp
Herd Manager
Kulp Family Dairy LLC
kkulp714@yahoo.com

3 Use your strengths

My siblings and I each have our own unique interests, abilities and strengths, which not only produce much joy and purpose when utilized but have even helped us on our professional career journeys. As for me, my strengths are: listening, learning, optimism and trying new things on our family dairy farm. I'm ready to use my strengths, along with my organizational and detail-oriented skill sets, to optimize my leadership role as herd manager. I know I can help provide a better environment for our cows and a better experience for our employees.

I'm honored to play a role in helping our family and our business take on the next generation of success.

Stepping into a management role on a 3,000-milking-cow dairy, at 23 years old, can be a daunting task. I'm still learning every day, but I'd like to share three key lessons that have helped me feel prepared and excited for this next chapter.



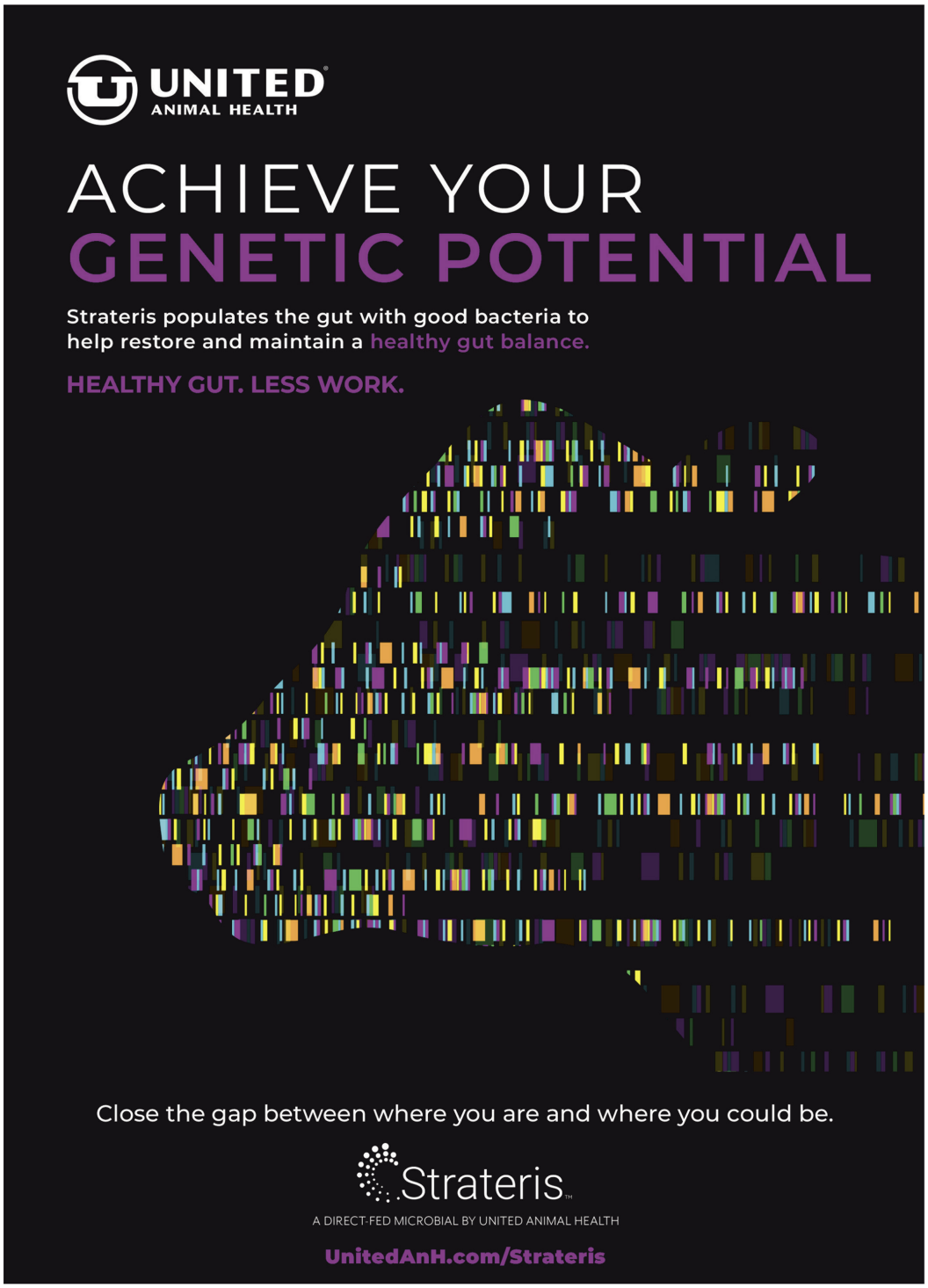
Split-herd research confirms Agolin Ruminant improves milk production and feed efficiency

Feedworks USA recently completed seven large-scale, split-herd Agolin Ruminant trials measuring milk performance by cow and feed efficiency by pen over three- to four-month periods. There were more than 6,000 cows included in the summary with half receiving a diet containing the product and half a control diet. Only data collected from cows that remained in the test pens for the duration of the trial were used in the analyses. Results show an average 2.57-pound improvement in energy-corrected milk (ECM) with a 1.45-pound decrease in dry matter intake (DMI) for the Agolin-fed cows.

"These trials demonstrate an average 12-to-1 benefit-to-cost ratio or a profit of 60 cents per cow per day," says Peter Williams, Agolin Ruminant manager. "The potential gains of more milk and less feed dwarf the approximate 5 cent cost per cow per day."

Dr. Essi Evans, an independent consulting nutritionist, assisted Feedworks with trial design and data analysis, helping to ensure accurate results. "Feedworks USA implemented the side-by-side testing to generate sound information on Agolin's effect on energy-corrected milk yield and feed efficiency," Evans says. "These results were determined on working farms that deal with the many typical daily events that impact milk production. The treated cows and the control cows were all exposed to the same conditions, the same environmental factors and the same feed ingredient changes for the exact same period."

Fed to more than 2 million dairy cows worldwide, the product is a plant-based feed additive that harnesses a blend of scientifically selected essential oils. Visit theagolinstory.com and www.feedworksusa.com to learn more.



Apply for the DCHA $1,000 scholarship

The Dairy Calf and Heifer Association (DCHA) will award a $1,000 scholarship. Applicants must be a college student and DCHA member, or the parent/legal guardian must belong to DCHA. Applications are due Feb. 22. An individual may only receive the scholarship once.

To apply, applicants must:

- Have completed at least one year of post high school education
- Be an enrolled student in good standing at an accredited college or university
- Be enrolled in a field of agriculture or in a course of study with relevance to agriculture
- Be a DCHA member; or the son, daughter or legal dependent of a DCHA member

Go to calfandheifer.org/scholarship for more information and to apply. E-mail completed applications to jodee@calfandheifer.org.

Holstein Association USA seeks nominations for 2023 annual awards

Nominations are open for Holstein Association USA's annual awards. These include the 2023 Distinguished Young Holstein Breeder, Elite Breeder, and Distinguished Leadership awards.

The Distinguished Young Holstein Breeder Award recognizes significant accomplishments of young Registered Holstein breeders ages 21 to 40. Submissions can be made for individuals, a couple or business partners. The winning applicant will receive travel and lodging expenses (for up to two people) to the convention, complimentary tickets to the convention banquet and a $2,000 cash award.

The Elite Breeder Award honors a living Holstein Association USA member, family, partnership or corporation who has bred outstanding animals and thereby made a notable contribution to the advancement of U.S. Registered Holsteins.

The Distinguished Leadership Award is given to an individual who has provided outstanding and unselfish leadership that has contributed to the improvement of Holstein Association USA and/or the dairy industry.

Applications for the Elite Breeder and Distinguished Leadership awards are considered for three years after initial submission.

Visit www.holsteinusa.com/awards/individuals to view the award applications. Nomination applications must be postmarked by Jan. 31. Honorees will receive their recognition during the 2023 National Holstein Convention, June 23-27, in Lexington, Kentucky.



A case of the cat crazy

By **Ryan Dennis**

Recently, my mother offered a new theory on why farmers would take up an occupation that is high risk, offers a low financial reward and requires a lot of work: There's a parasite in their brain.

Being a high school animal science teacher, she was discussing *Toxoplasma gondii* with her students, more commonly called toxo. Those in agriculture, particularly sheep farmers, will be familiar with the parasite, as it is one of the leading causes of abortion in livestock. Pregnant women are often warned to stay away from cats for the same reason, as the parasite is shed in cat feces. Distantly related to malaria, *T. gondii* can only reproduce in the gut of felines, both domestic and wild. How it gets there is impressively clever.

The protozoan parasite can infect all warm-blooded species, remaining inside them for years. Transmission occurs from being in contact with feline feces, drinking contaminated water or ingesting meat that carries the parasite. In order to return to its desired environment, *T. gondii* affects the brain of the host and encourages the host to engage in more risky behavior – which hopefully gets it eaten by a cat of some sorts.

Scientists have observed that mice infected with toxo are less likely to be afraid of cats and the scent of their urine and are sometimes even attracted to the smell. Additionally, the parasite also affects the behavior of wildlife. Researchers have always wondered what drives certain wolves to go out on their own or to fight to become leader of their pack. Kira Cassidy and the Yellowstone Wolf Project recorded how wolves that share a habitat with cougars are more prone to be infected with toxo, and those infected are 11-times more likely to leave the pack and 46-times more likely to become leader of the pack than uninfected wolves. Other research has determined that chimpanzees infected with toxo are attracted to the urine of leopards, their natural enemy, and spotted hyena cubs with the parasite are more likely to approach lions.

Nature is dealing with a clever parasite, and one that is widespread. It is estimated that 40% of warm-blooded animals in the world are infected with toxo.

Still much is unknown regarding how *T. gondii* operates, but in 2009, U.K. researchers discovered that the protozoa attaches to white blood cells – the cells that are supposed to kill them – and uses them to produce neurotransmitters that block or reduce fear responses. Scientists noticed GABA, a neurotransmitter that is associated with schizophrenia, in the immune system of infected hosts – where it shouldn't be. It seems the parasite produces GABA to "get a lift" to the brain in Trojan-horse style, where it can affect the behavior of the host.

Does this crafty parasite change the way people behave? The answer, it turns out, is yes. Czech evolutionary biologist Jaroslav Flegr has discovered that *T. gondii* is controlling our brains too.

In 1990 he was diagnosed with toxo, after which he noticed he experienced less sensations of fear. He realized he was doing things like crossing the street more casually and not jumping when cars honked at him. It was already known that the parasite can be found in up to a third of the human population at any one time, although most people with a healthy immune system would likely be unaware of it. However, recent studies suggest that toxo is responsible for increasing risky behavior in people as well, as Flegr observed. Individuals infected with toxo are more likely to die in a car accident due to dangerous driving, but at the same time are more likely to become entrepreneurs and start their own businesses, being less inhibited by the fear of failure. It may be interesting to research how many world leaders are currently infected.

After reading about it, I find it startling how much can be explained by toxo when I stop and think about it. A friend in Berlin we call Drama John was known for getting into bar fights, mocking police to their face, and once, stealing a taxi and driving it around all night. We weren't sure where such behavior would lead, but we knew it wouldn't be good. Then, we were shocked when we found out about his most outrageous move yet: He bought two sphynx kittens for $1,200 each. At the time, we couldn't believe it. Now, however, it all makes sense.

In the same way, many people have looked at farmers and wondered what keeps them going. With volatile milk prices and the high costs of feed and fuel, it's a precarious venture that doesn't seem logical from the outside looking in. How often have we heard one farmer muse to another that they must be crazy to farm? How many jokes involve all the money a farmer doesn't make or all the more-fun ways they could lose it instead? At its worst, farming is a behavior that defies rational judgment.

And running around on all of these farms are barn cats. I hate to admit it, but perhaps my mother might have a point.

Ryan Dennis is the author of The Beasts They Turned Away, *a novel set on a dairy farm. Visit his website: penofryandennis.com*



January 20-24, 2023
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February 28, 2023
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(800) 947-7379





5 Little Words Answer Key

1. ov er se as
2. cr in ge
3. re mi ss
4. sh ed
5. va ri ab le

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Life with three daughters

By **Dwayne Faber**

There is seemingly an inordinate number of dairy farm families that have a lot of girls, and we are no exception. My wife and I have been blessed with three beautiful daughters. While many theories abound, it is my belief that our success with sexed semen on the farm has also found success in the farmhouse. I have been asked on occasion when we are going to try for a boy and it always seems like an odd question to answer. I'd like to take this moment to share with you what life is like with three daughters.

Living in a house with four women isn't always sunshine and roses. For the uninitiated, life with a house full of women looks like this.

I typically need to move a minimum of three pillows in order to sit down or go to sleep. Girls also love smells, and not boy smells. There are usually 14 candles lit on any given evening and, contrary to most public perception, it is not a memorial. Every candle has fun names like "An autumn walk in the rain through the trees," or "Spring flowers with notes of honey and citrus." There has yet to be a candle named "Freshly mowed, first-cutting silage" or "Turned-over dirt in the spring."

The smells don't stop at the candles. My shower used to contain one giant bottle of Mane 'n Tail that worked great for hair, armpits and every other corner of the body. Not anymore. My shower now consists of shampoos that sound more like dessert than shampoo. Shampoos with names like "Wild Berry Orange Peel" or "Coconut Mango Passion." It doesn't stop there. For 26 years of my life, I thought there was only one moisturizer for cracked hands and feet. The moisturizer with a ringing endorsement from farmers and cows all over the country – Bag Balm. Now my cabinet consists of "Private Island Secret Sunrise" or "Tropical Morning Banana." The smelly soap marketing game looks fairly simple actually. Just pick a color, your favorite tropical location and a fruit. Boom, congratulations, you're in marketing.

Life with daughters is challenging with moments of levity. It was a couple of years ago where we were in the throes of potty training an obstinate 3-year-old.

Out of the corner of my eye, I witnessed a scurrying 3-year-old heading into the bathroom, and I showed up just in time to see her in front of the toilet peeing in her pants and standing in a puddle. After chastising her for a clear inability to use the toilet, Mrs. Faber walked in, looked me in the eye and said, "Easy there, hot shot, you're at about 80 percent yourself."

Life with daughters has been an amazing experience, and I wouldn't trade it for the world. The maternal instinct in my daughters has taught me that spending the extra time to feed the struggling baby calf is worth it. They have taught me to view every cow as a mother who needs to be treated as such. Seeing the farm through the eyes of a 6-year-old provides moments of joy. Moments where my daughter proudly stated that she knows which baby calves are girls because they are the ones with eyelashes. This was the same girl who, after dropping beef cows off at the auction barn and sitting down for a donut, asked how many cows we traded to get her donut.

Life with girls is unique and special. My girls make me a much better, kinder person. So, when I get asked if we're going to try for a boy, my answer is no. I'm a girl dad.

Dwayne Faber is a writer, speaker and dairy farmer. He and his family operate farms in Oregon and Washington. To contact him, visit his website (dwaynefaber.com) or follow him on Twitter (@dfaber84).





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Matt is the 'cow guy.' He and his father Steve, cousin Tommy and uncle Tom operate the third generation Nealand Farms, milking 400 cows near Newville, Pennsylvania, MDVA co-op's 2020 Producer of the Year, recognized for outstanding milk quality, animal care, farm and environmental practices.

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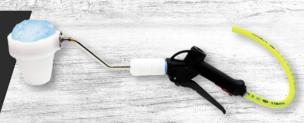
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