

FOOD EXPORT ASSOCIATION OF THE MIDWEST USA AND FOOD EXPORT USA - NORTHEAST

U.S. Feedlink

A publication highlighting information about the U.S. animal feed and pet food ingredients and additives industries

Feeding to Manage Heat Stress in Ruminants

In mid-June, the U.S. Great Plains state of Kansas, known for its feedlot industry, made headlines as more than 2000 cattle perished due to extreme heat and humidity. As a summer heat wave moved through Europe and the United States environmentalists pointed to climate shifts that are making the frequency and duration of heat waves around the world more common. To battle these changes producers are leaning into the science of feeding to manage heat stress in ruminants.

As early as 2011, the first large scale studies of heat stress were conducted on dairy cows, indicating both short- and long-term issues related to milk production, growth, reproduction and longevity. Other studies have recognized similar issues for beef cattle and small ruminants, like goats and sheep, that also include impacts on meat production.

In most situations, breed adaptations are made to minimize environmental impact and common abatement strategies like shade, feeding when its cool, utilizing sprinklers or misters and providing adequate access to water are all viable solutions. But weather patterns change quickly and feeding and nutrition plans can also play a role in managing animal welfare.

The main reality of heat stress in ruminants is reduced feed intake and altered endocrine status, reduction in rumination and nutrient absorption and increased maintenance requirements. Less feed and more stress ultimately creates an energy imbalance.

Researchers, offer a few feeding strategies to minimize heat stress.

Maximize Digestibility: Ruminants are known for their high fiber diets which they manage through chewing and rumen microorganism digestion that converts fiber based carbohydrates into energy. When subject to heat stress, ruminants are less likely to spend time eating and chewing and therefore they will voluntarily reduce their dry mater intake and ruminating activity. To make up for the decreased feeding activity but production needs to maintain needed energy, a shift to a lower fiber, higher protein feed is useful. Additional digestibility strategies include supplemental use of essential amino acids and sugar concentrates like molasses to improve palatability.

Avoid Hot Silage: Just like you might not want a heavy hot meal on a hot summer day, cattle also avoid hot feed. Not to mention, hot silage potentially has some quality issues offering less nutritional value.

Antioxidants are Key: Levels of Vitamin A & E are always important in a balanced ration, and niacin was found to improve metabolism and vasodilation which helps regulate body temperature maintaining a more neutral rumen environment.

Probiotics for a Healthy Gut: Utilizing probiotics in a ration also helps manage rumen stress and immune system function and further avoid animals going off feed during times of heat stress.

Producers might not be able to control the weather, but they can control the environments in which they help their livestock perform. Feed ingredient suppliers throughout the Midwest see firsthand the impact of heat stress and continue to develop high quality products like high protein digestible feeds, probiotics, yeast extracts and trace minerals that are the basis for superior dry matter rations.



The U.S. is the number one producer of alfalfa in the world with many of the Midwest states leading in production and quality. In fact, alfalfa has long been valued for its fiber, energy, protein, mineral and vitamin content and its ability to serve as a rumen

Not only is alfalfa high in protein, but it also has a faster rate of fiber digestion than grasses (including corn silage), but slow enough for energy absorption and prevention of acidification of the rumen. Speaking of protein, a ton of alfalfa contains as much total digestible nutrient (TDN) as 25 bushels of corn and as much as two-thirds of a ton of soybean meal. Good-quality alfalfa runs 16-20% crude protein, while corn silage is approximately 8-9% crude protein. In addition to protein, alfalfa contains concentrations of minerals and vitamins including: calcium, phosphorus, potassium, magnesium, sulfur, iron, zinc, and selenium, along with being high in carotene, the precursor of vitamin A.

Today, the U.S. alfalfa market is usually segmented by product types including bales, pellets and cubes and is used mostly for the ruminant industry for meat and dairy animal feed, but is also used in poultry and horse feed rations. Thanks to access to quality land, the U.S. alfalfa market is growing at an annual rate of 8.7% – stronger than the global rate of 5.2% – and finding its way to leading export markets in China, Japan, Saudi Arabia and the United Arab Emirates. Expansion of the global population and growth of the animal protein industry projects a market size of \$46.20 billion by 2030.

Alfalfa an Important Value-Based Protein



buffer and overall improved animal health. Today, as the cost of feed grain proteins increase, it might be time to take a closer look at alfalfa for some of your protein ingredient needs.

“ I got a lot of help from Food Export’s programs and services for my business in the past several years. In the U.S., and in China, I participated in their Buyers Missions, Trade Missions, and Industrial Exhibitions. Through these activities, I had great chances to meet many valuable suppliers in the animal health field and food business industry and I started business with some of them. I really appreciate the professional supports from Food Export.”

Akira Ran, President-Trading Business, Purchase & Trade Center | CP GROUP CHINA CP Investment Co., Ltd.



the ruminant feed market

The Global Ruminant Feed Market is expected to grow at a rate of 3.2% with the fastest growing marketing being Asia Pacific and the largest market being Europe.

Major drivers of the market include demand for high-value animal protein and increased awareness regarding food safety, but growth may be slowed by rising costs of raw materials and government regulations.

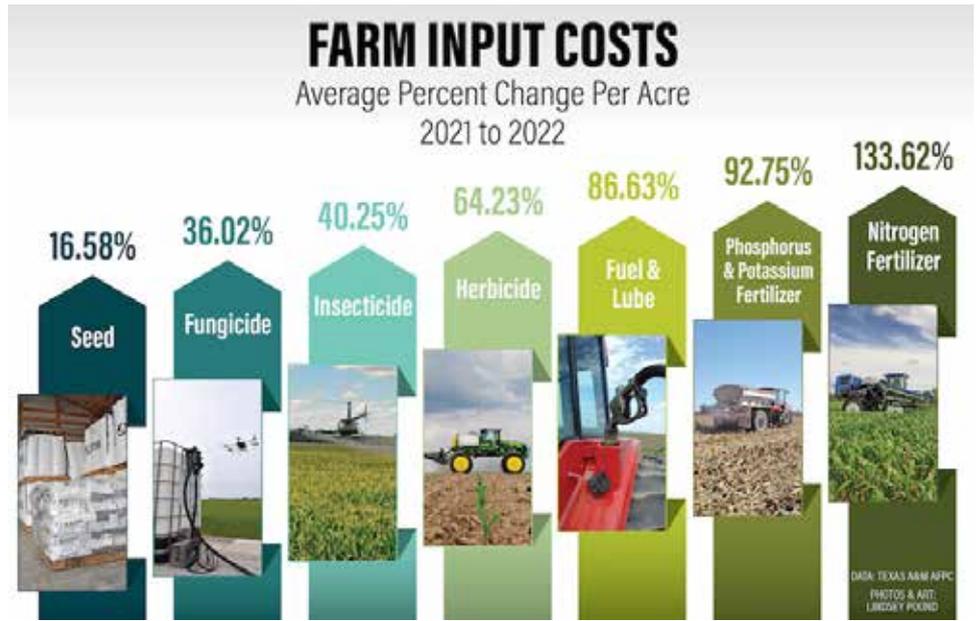


Inflation Expected to Have Multiple Impacts on Feed Industry

There is no doubt that a convergence of global issues related to a two-year pandemic, logistics issues impacting shipping patterns, weather events around the world and the conflict in Ukraine have all collided to create significant market disruptions that are fueling inflationary pricing and driving up markets.

It is estimated that a continued drought across the Great Plains might impact the U.S. small grains harvest by 30%. Early estimates from the Focus on Feedlots newsletter estimates has been tracking feed conversions and pricing and they estimate that feeding costs may increase 8-12% per cwt by the end of the year, but may increase more as corn prices continue to rise and face market volatility. Early harvest estimates through the south show tonnage down, but protein up. Despite a late start, good crop conditions in the Dakotas is a bright light for many grain and row crops including wheat, barley, soybeans and corn.

Additionally, rising input costs for fuel, fertilizer, packaging and more are all on the move, but fertilizer pricing has shown some small downward wins. Gas prices, including off-road diesel are also hitting record levels. Off-road diesel is currently above



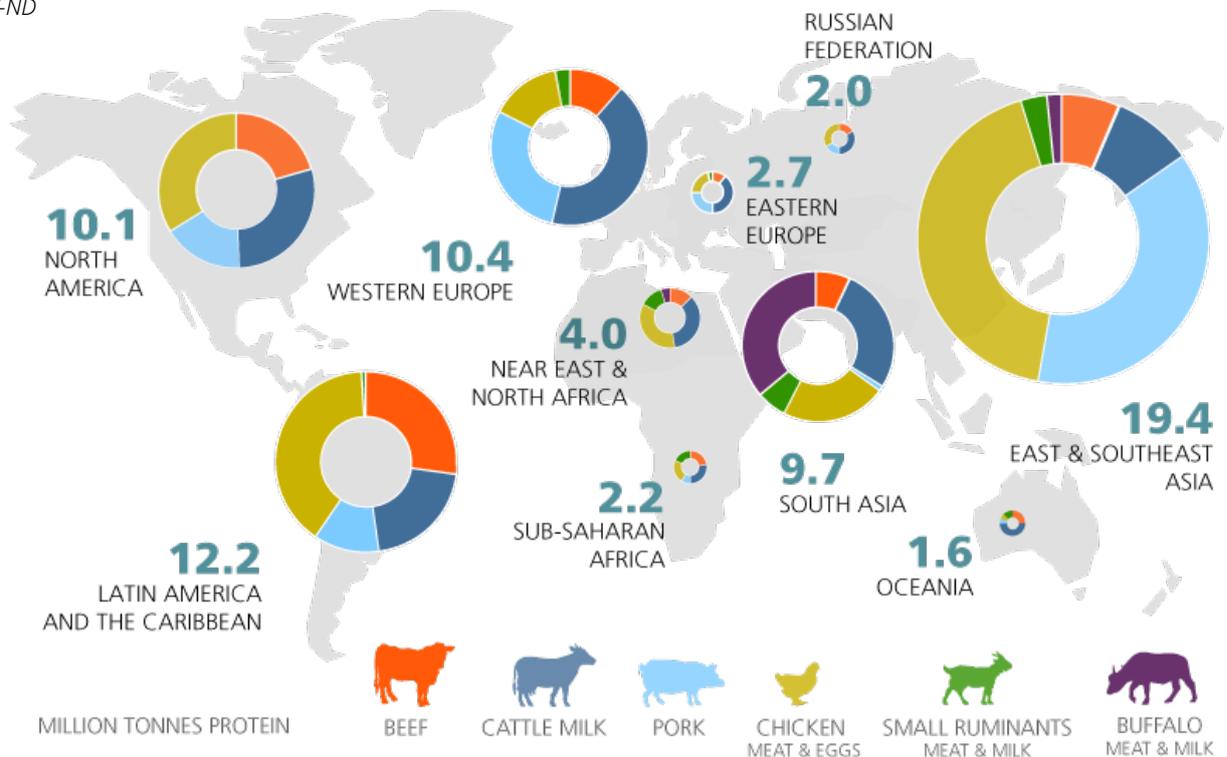
\$5/gallon and recent research by Texas A&M Agricultural and Food Policy Center (AFPC) shows double and triple digit pricing increases across all traditional farm inputs.

As producers and processors around the globe manage higher interest rates and input costs, they may reduce total acreage planted putting future pressure on raw input availability and feed ingredient pricing. Economists expect that any pricing

adjustments will be nominal, and 12-24 months should be the expected timeline for overall input pricing relief. But the news is not dire. Years of research and investment in the feed ingredient industry will pay dividends as manufacturers leverage new technology, by-products and nutritional supplementation to maximize nutritional output and manage cost increases in traditional feeds.

Global Livestock Production by Region (Milk and eggs expressed in protein terms)

FAO, CC BY-ND



featured products



For more information about these or other featured products please email: feedlink@foodexport.org

Universal Probiotics Linwood, Kansas

A natural Symbiotic specially formulated for each animal species, Universal Probiotics include a unique and proprietary blend of beneficial bacteria, yeast and molds with prebiotics to encourage growth of beneficial organisms in the digestive tract by providing food for the probiotics as they colonize the animals' intestines. universalprobiotics.com



NutraStart Milk Replacer Milk Specialties Global Eden Prairie, Minnesota

Instant mixing milk replacers formulated to meet your performance needs, ranging from all-milk protein milk replacers to high performing, economical alternative ingredient combinations. Custom-blended milk replacers provide protein and fat level options to match your nutrition and growth objectives. milkspecialties.com



Organic and Non-GMO High Bypass Soybean Meal for the dairy industry Global Processing Inc. Kanawha, Iowa

We provide organic and non-GMO high bypass soybean meal for the dairy industry. The controlled heat treatment makes the protein more resistant to degradation in the rumen. The special processing technique creates a more digestible meal, resulting in a higher milk yield. globalprocessing.org



Mineralate Nutech Biosciences Inc. | Oneida, New York

NuTech amino acid chelated trace minerals are products of proven chemistry and innovative technology, from processes perfected in more than 50 years of quality manufacture. nutechbiosciences.com

HP800 Great Lakes Bio Systems, Inc. Sturtevant, Wisconsin

Designed to keep the shrimp hepatopancreas in a constant state of peak performance. HP800 ingredients enable the safe evacuation of systemic toxins that have accumulated from the environment, all the while enabling the shrimp to digest, synthesize and store nutrients more efficiently. greatlakesbiosystems.com

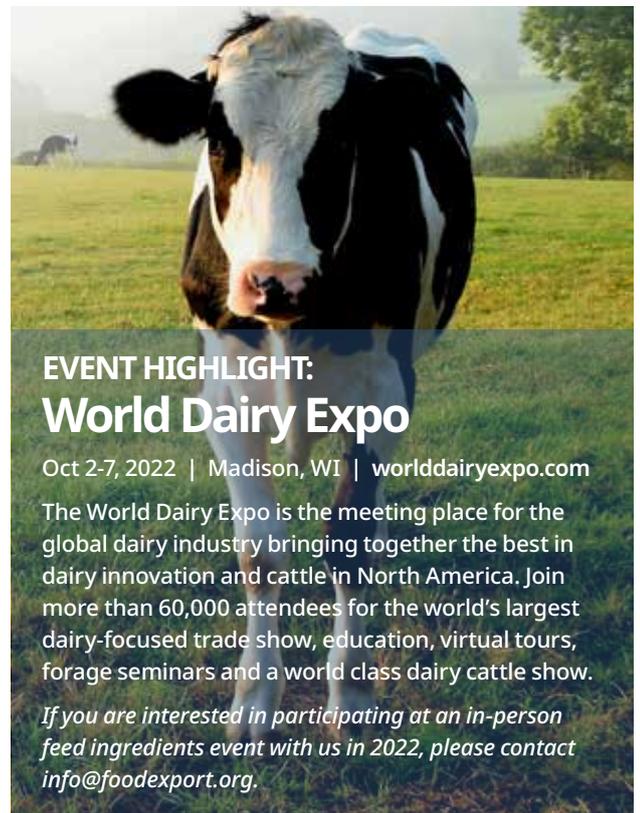
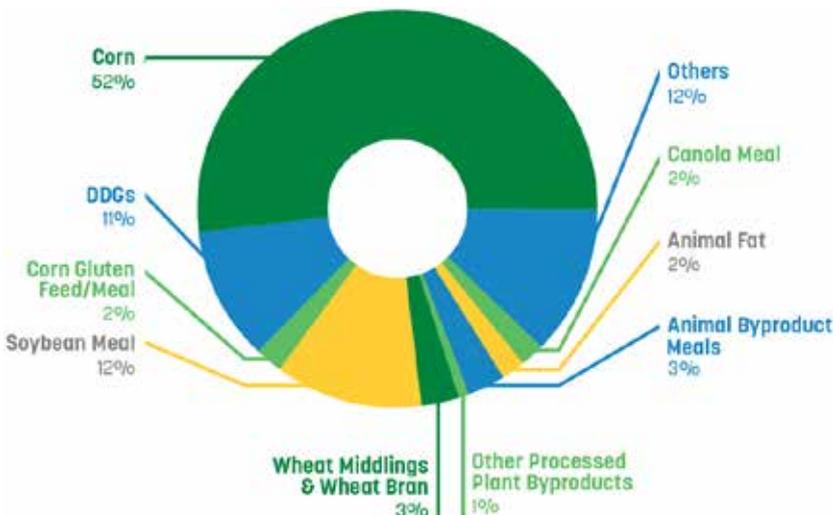


Bleachable Fancy Tallow Bridgepathway LLC | Jericho, New York

Animal fat obtained from the tissues of mammals and/or poultry. In animal feeds, it improves the product's organoleptic properties, serves as an economical energy source and is a vehicle for fat-soluble vitamins. In pet foods, it is used as covering film as a digest base. bridgepathway.com



Total Animal Feed Composition WITHOUT HARVESTED FORAGES



EVENT HIGHLIGHT: World Dairy Expo

Oct 2-7, 2022 | Madison, WI | worlddairyexpo.com

The World Dairy Expo is the meeting place for the global dairy industry bringing together the best in dairy innovation and cattle in North America. Join more than 60,000 attendees for the world's largest dairy-focused trade show, education, virtual tours, forage seminars and a world class dairy cattle show.

If you are interested in participating at an in-person feed ingredients event with us in 2022, please contact info@foodexport.org.

supplier directory

For more information about these or other companies please email: feedlink@foodexport.org

Company Website City/State	Directory Name Directory Email	Cattle, Beef	Cattle, Dairy	Equine	Fish	Goats	Poultry	Sheep	Swine	Zoo/ Exotics	Bird	Dog	Cat	Rabbit	Other
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Enzyme Development Corp. enzymedevelopment.com New York, New York	Christina S Barsa info@EnzymeDevelopment.com	•	•	•	•	•	•	•	•	•	•	•	•	•	•
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International Feed internationalfeed.com Excelsior, Minnesota	Adel Yusupov adely@internationalfeed.com	•	•			•	•	•	•						
Milk Specialties Global milkspecialties.com Eden Prairie, Minnesota	Alex Verduzco averduzco@milkspecialties.com	•	•			•		•	•						
Nutech Biosciences Inc. nutechbiosciences.com Oneida, New York	Jesse Perez jesse@nutechbio.com	•	•	•	•	•	•	•	•	•	•	•	•	•	•
RIBUS, Inc. ribus.com St. Louis, Missouri	Alicia Kasch info@ribus.com	•	•	•	•	•	•	•	•	•	•	•	•	•	•
SCD Probiotics scdprobiotics.com Kansas City, Missouri	Fabio Duarte fabio.duarte@scdprobiotics.com											•	•		
United Sorghum Checkoff Program sorghumcheckoff.com Lubbock, Texas	Shelee Padgett shelee@sorghumcheckoff.com	•	•		•		•		•		•	•			
Universal Probiotics universalprobiotics.com Linwood, Kansas	Mark Gehrt mark@universalprobiotics.com	•	•	•	•	•	•		•			•	•		
Vesta Nutra vestanutra.com Indianapolis, Indiana	Sam Kwon samkwon@vestanutra.com	•	•	•	•	•	•	•	•	•	•	•	•		

industry spotlight

High Bypass Soybean Meal

Meet the makers of high bypass soybean meal. If you don't know what that means, it is soybean meal produced using precise heat for superior protein quality. As a leader in this technical process Global Processing (GP) is on the cutting edge of consumer trends for not just identity preserved, Non-GMO products, but also sustainability.

Aside from its sustainability advantages, high bypass protein undergoes a controlled heat treatment that makes GP soybean meal more resistant to degradation in the rumen and creates more digestible meal resulting in a higher milk yield.

For anyone doing the math, you can quickly see the benefits cost savings thanks to higher feed utilization and the ROI on higher milk outputs. With inflation increasing all input costs, including

feed, producers can get the most efficiency out of their protein. In addition to more digestible proteins this product makes more lysine and other critical amino acids more readily digestible which can mitigate some of the typical loss of milk production in heat stress situations.

Mark Albertson, Director of Global Aquaculture and Strategic Initiatives, remarked, "Every decade has yielded countless changes to the dairy industry efficiency has ruled the industry. GP is always looking ahead at trends and we understand that sustainability is here to stay, not just for consumer demand, but for its ability to produce a high quality, high yielding, lower footprint feed."

To learn more about GP products visit www.globalprocessing.org

Midwest Seeing Flurry of Soybean Crushing Facility Expansions

The continued growth of the soybean industry and the versatility of soybean products for oil, meal and hulls as a high value protein and alternative fuel source is driving expansion. Processors in North Dakota, Nebraska, Kansas, Iowa and other Midwest states have announced new and expanding facilities over the last six months. This continues to be good news for the ever-growing feed ingredient market that has come to rely on soybeans as a popular ingredient for livestock, poultry and aquatic rations.

news & trends



University of MN Offers New Research on Vitamin E for Sheep

It has long been known that trace minerals place a role in good animal health. The University of Minnesota continues to expand research on Vitamin E as an essential antioxidant for both gestating ewes and newborn lambs. Research has found that Vitamin E supplementation provides a rapid energy source to get lambs going faster and preventing white muscle disease. Small Ruminant Nutritionist Dan Morriscal, Ph.D. suggests producers consider a variety of supplementation options, but suggest that a year-round feed ration that includes trace minerals like Vitamin E is preferred.

International Working Group on Feed Ingredients Seeks Industry Feedback

Several international feed organizations have joined together to seek feedback on new guidance related to identifying and characterizing feed ingredients for registration purposes. The guidance is meant to provide standards for the submission of feed ingredients for pre-market approval. The Working Group indicates that the goal is to facilitate free trade of feed ingredients due to the reduction of technical barriers and support the supply chain in its work to develop safe and sustainable products.

U.S. Administration Adopts Ocean Reform Act

The U.S. has adopted the Ocean Reform Act as a means to address maritime disruptions that stymied the import and export of U.S. animal food products through American ports and resulted in unreasonably high costs for doing business through unnecessary detention and demurrage fees. All signs point to the fact that this Act will create a more affordable and free flow of essential goods and help ease logistics and supply chain challenges for continued global trade expansions.

USDA Makes Historic Investments in U.S. Food Systems

In early June, the U.S. Department of Agriculture (USDA) announced plans to invest more than \$4 billion to strengthen critical infrastructure and supply chains in U.S. agriculture and food systems. These investments will support production, processing, distribution, and consumer markets across the entire food chain create efforts to tackle climate related issues, resilience, technology, food safety, processing expansion, financing, market expansion and labor programming.

If you are a buyer or a seller and interested in participating in any of our in-person events and learning more, please contact info@foodexport.org

events

- **Product Showcase at The Pet Fair**
August 8-17, Shanghai, China
- **Product Showcase at SIAVS**
August 9-11, Sao Paulo, Brazil
- **Focused Trade Mission to Hong Kong for Pet Food**
August 15-16, Hong Kong
- **Focused Trade Mission to China for Pet Food**
August 17-19, Shanghai & Beijing, China
- **Value-Added Feed Ingredients Buyers Mission at the World Dairy Expo** October 5, Madison, Wisconsin
- **Product Showcase at VIV Qingdao**
September 15-17, Qingdao, China
- **Food Show PLUS!™ at FIGAP**
October 19-21, Guadalajara, Mexico
- **Value-Added Feed Ingredients Buyers Mission at the International Production & Processing Expo**
January 25, 2023, Atlanta, Georgia

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