

FALL 2023

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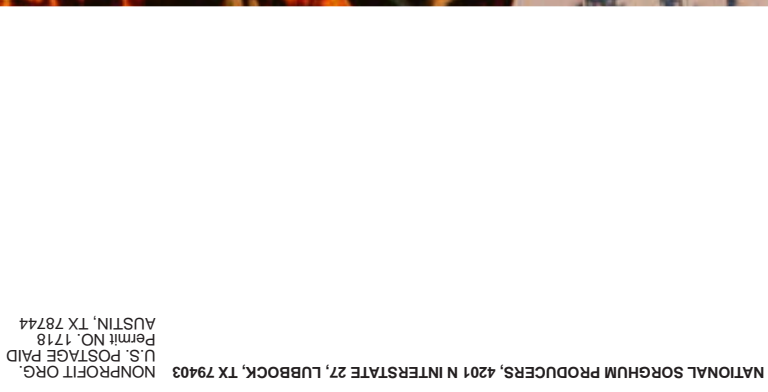
Also Inside

WHO'S HANDLING YOUR GRAIN?

FALL MAZES MADE MORE
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Included Inside

SORGHUM CHECKOFF NEWSLETTER
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FALL 2023

ON THE COVER: Tim Lust celebrated his 30-year work anniversary with sorghum this fall—30 years with NSP, 25 years as CEO and 15 years as CEO for the Sorghum Checkoff. Here, he is pictured early in his career with his predecessor Jack Eberspacher (right) and NSP's first D.C. representative Dan Shaw (middle). Cover photo by Hailey Gilbreath



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Chairman's Address

2023: Resilience, Achievements and Aspirations



As we bid farewell to the 2023 growing season, I find myself humbled and immensely grateful for the opportunity to serve a final year as your chairman. The journey of leading this tough, strong and resilient membership has been an honor, and I deeply appreciate your trust in me. Just as sorghum growers epitomize resilience, doing more with less, I've witnessed the same spirit within our industry.

Looking back at 2023, several accomplishments fill me with pride. One standout achievement is National Sorghum Producers' victory in securing a USDA climate-smart commodities grant. This win opens a significant door to demonstrate how sorghum, when integrated into crop rotations, plays a vital role in diversifying risk. The journey of shaping the farm bill has been both intense and fruitful. Although we've recently experienced some delays, I firmly believe these deliberations will lead us to the best possible legislation.

I want to express my sincere gratitude to the dedicated board members of both NSP and the Sorghum Checkoff. The commitment you've shown to the sorghum industry is nothing short of remarkable. The sacrifices you've made, both on your farms and within your families, have not gone unnoticed. Your dedication will undoubtedly yield dividends for our industry.

I must also acknowledge the incredible staff at Team Sorghum. Our team is unparalleled, comprised of exceptionally talented individuals who tirelessly advocate for sorghum growers. I'd like to shine a spotlight on two staff members who've achieved significant milestones in their careers. Shelee Padgett, with 15 years of dedicated service, has been an essential figure in directing the Leadership Sorghum program. Her guidance, teachings and hard work have been invaluable, and her influence on Class III, of which I got my start with sorghum, earned her the affectionate nickname "Mom." She is an invaluable asset to Team Sorghum.

Additionally, I'd like to commend Tim Lust, who, over the past 30 years, has dedicated himself tirelessly to the betterment of sorghum growers. As a remarkable leader, his vision and guidance have profoundly impacted everyone within sorghum country.

Looking ahead to 2024, my hopes are simple yet crucial. Adequate rain, optimal growing conditions and bountiful yields are at the forefront of our desires. I eagerly anticipate collaborating with Congress to ensure the passage of the farm bill and subsequently working with USDA on its implementation.

In conclusion, I'm firm in my belief that the Lord will provide us with exactly what we need, precisely when we need it. Our journey has been marked by bountiful sufficiency, and I'll continue to offer my prayers for all those involved in the sorghum industry.

Craig Meeker

Craig Meeker, Chair

NSP Welcomes Brad Younker and Chiree Fields to Advance Climate-Smart Commodities Grant Project

National Sorghum Producers is proud to announce Brad Younker and Chiree Fields as the latest additions to the team facilitating the Partnerships for Climate-Smart Commodities grant pilot project NSP was awarded last fall.



Brad Younker

Younker will spearhead conservation producer relations. As Conservation Implementation Director, Brad brings a wealth of experience and expertise to assist sorghum producers in safeguarding natural resources, including soil, water, air and habitat.

Brad's qualifications speak for themselves. He holds a Bachelor's Degree in Biological and Agricultural Engineering from Kansas State University with a secondary major in Natural Resources and Environmental Sciences.

As a Licensed Professional Engineer in Kansas, he possesses the skills and knowledge honed during his 15-year tenure as an agricultural engineer with USDA's Natural Resources Conservation Service (NRCS).

Hailing from a 4th generation family farm in west central Kansas, Brad's family is rooted in the production of sorghum, wheat, corn and soybeans.

Outside of his professional commitments, Brad is a dedicated family man. He shares his life's journey with his wife, Jessica, and their three young children—Carley (6), Camryn (4) and Clayton (2). Family values are at the core of his unwavering commitment to fostering a sustainable future.

When time permits, Brad can be found attending his children's activities, cheering on K-State athletics, or farming alongside his father and brother. His passion for working with producers in the Sorghum Belt on conservation goals that enhance productivity and sustainability is reflected in his approach to his new role.

Brad Younker's addition to the NSP Climate Smart Commodities Grant Project team reinforces the organization's commitment to advancing sustainable practices

within the sorghum industry. His expertise, dedication and deep-rooted connection to agriculture make him an invaluable asset to the project and the producers he will serve.

Chiree Fields

Fields takes on the role of Operations and Implementation Director for the Climate-Smart Commodities grant. Chiree's journey to this position has been marked by a deep-rooted passion for agriculture, extensive experience in the industry and a strong connection to her farming heritage.

Fields hails from eastern New Mexico where she spent her formative years on a small family farm nurturing her love for the land through involvement in 4-H and FFA. After high school, Chiree pursued her academic and professional aspirations, enrolling at Texas Tech University to study Agricultural Communications.

Over the past 19 and a half years, Fields has carved a career in West Texas's agriculture sector, which began in the retail sector, gaining valuable insights into the chemical, fertilizer and seed businesses. This initial exposure laid the foundation for her growth within the industry. For the last 17 years, Chiree has been a driving force in the cotton seed business, progressing from Office Manager to General Manager and ultimately to the Chief Operating Officer role across multiple affiliated businesses.

Chiree currently resides in Idalou, Texas, where she and her husband Dink are raising twin boys. When not working or nurturing her family, she finds immense joy in supporting her children's various sporting events. In her spare time, Chiree Fields has a few favorite activities that help her relax and unwind. She loves spending time on her patio and watching her favorite college football teams compete. She also enjoys cooking and engaging in various craft projects with her children.

Upon her appointment as operations director for the Climate-Smart Commodities grant at NSP, Fields expressed her excitement, saying, "I am excited to be able to combine my love of people and passion for agriculture here at Team Sorghum!" Her wealth of experience and personal commitment to agriculture make her a valuable asset to the NSP, and her vision for sustain-



able and climate-smart commodities aligns perfectly with the organization's goals.

For more information about the climate-smart grant visit SorghumGrowers.com/climatesmart.

NSP Board Of Directors Re-Elects Meeker To Lead Association

The National Sorghum Producers board of directors re-elected officers and a new director at its annual board and budget meeting in August. Craig Meeker of Wellington, Kansas, will serve a second term as chair, Amy France of Scott City, Kansas, will continue to serve as vice chair and Kody Carson of Olton, Texas, retains his position as past chair.

The NSP board of directors elected one new member—Scott Frazier from Chapman Ranch, Texas, where he produces sorghum, cotton, corn and cattle. Marc Adams with CoBank was also re-elected to the board. Frazier and Adams will serve a three-year term that began Oct. 1. The NSP board also recognized one leader who ended his term as director on Sept. 30—Jay Wilder of Snook, Texas.

New directors and officers took their respective positions on the NSP board Oct. 1. View NSP's entire leadership team at SorghumGrowers.com.

Padgett Celebrates 15 Years with Sorghum Industry

Shelee Padgett, who currently serves as the Director of Emerging Markets & Grower Leader Development for the Sorghum Check-off, celebrated her 15-year work anniversary with Team Sorghum in October.

Shelee began her career with sorghum as a Field Representative for the National Sorghum Producers. Over time, her passion and expertise led her to become a Regional Director for both NSP and the Sorghum Checkoff when it was established in 2008. One of her significant achievements was her instrumental role in launching the Leadership Sorghum program in 2012.

Her involvement in the AgriInstitute-Indiana Agriculture Leadership Program, where she was part of Class 13 in 2008, played a crucial role in shaping the Leadership Sorghum Program—an initiative that has been pivotal in developing future leaders for the sorghum industry.



When asked about her favorite aspect of working with sorghum, Shelee's response was unequivocal: "Oh, hands down, the farmers." Shelee Padgett also finds pride in the fact that the sorghum industry is often underestimated, yet it consistently exceeds expectations. She relishes the opportunity to be the underdog, continually proving that sorghum is a resilient and thriving crop.

Her most memorable career moment was a trip to China in 2015 when the export market was getting off the ground and gaining traction. She and Texas Sorghum Executive Director Wayne Cleveland embarked on a roadshow to open up the Chinese market. What began as a modest effort turned into a resounding success with hundreds of end users attending each stop on their journey—a testament to the global potential of U.S. sorghum and the dedication of individuals like Padgett and our partners.

Shelee's journey in the sorghum industry exemplifies leadership, and her contributions continue to shape and advance the sorghum industry, ensuring a prosperous future for sorghum farmers and advocates alike. Help us congratulate Shelee for 15 years of service to the sorghum industry.

T&O Farms Teams Up with National Sorghum Producers for the 2024 Sorghum PAC Series

National Sorghum Producers is pleased to announce T&O Farms will sponsor the 2024 Sorghum PAC Series.

"T&O Farms has been a long-standing supporter of the sorghum industry, and we are excited to have its sponsorship of the 2024 Sorghum PAC Series," NSP CEO Tim Lust said. "Collectively, we look forward to bringing forward another year of exciting fundraising opportunities that unite sorghum farmers around advocacy and advancing the legislative and regulatory interests of this industry that will continue to serve their farms in the future."

The 2024 Sorghum PAC Series, sponsored by T&O Farms, will kick off with the annual Sorghum PAC Casino Night & Auction at the conclusion of the 2024 Sorghum Yield Contest Gala to be held March 1 in conjunction with Commodity Classic in Houston, Texas. This event will be held concurrently with the annual online auction hosted by BigIron Auctions and followed by the 4th Annual Sorghum PAC Golf Tournament, scheduled April 27, 2024, returning to the Mariah Hills Golf Course in Dodge City, Kansas.

"We are thrilled to welcome our new sponsor, T&O Farms, and seize the opportunity to further elevate and enhance our Sorghum PAC Series," said NSP Industry Relations Director Jamaca Battin. "T&O Farms has been an invaluable collaborator, and I eagerly anticipate working together as we chart the course for our 2024 series."

More information and updates about the 2024 Sorghum PAC Series can be found at SorghumGrowers.com/sorghum-pac.



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MAP and FMD: A Catalyst Behind Sorghum's Global Growth

By Sydney Lundberg

International trade is a vital component of a nation's GDP calculation and serves as a key indicator of economic health and development. Exports have a large impact on the United States' economy and on average account for roughly 10% of GDP. Since the 1960's, agricultural exports have significantly contributed to the value of U.S. exports, reaching \$3 trillion in 2022. With continued investment in international markets, particularly through USDA Export Market Development Programs, there are considerable growth opportunities for the sorghum industry in both economic scale and producer well-being.

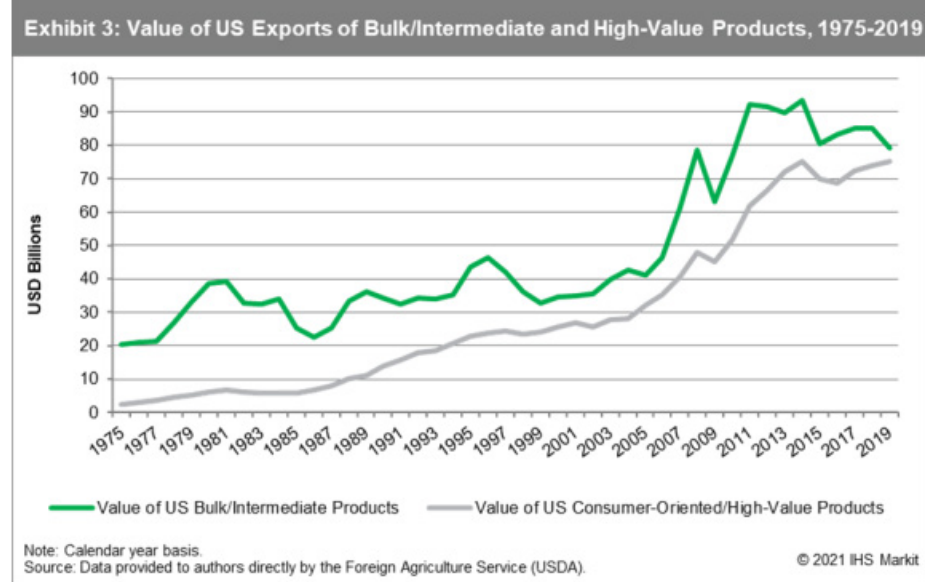
These market development programs, facilitated by USDA's Foreign Agricultural Service (FAS), provide agents in the U.S. agricultural industry opportunities to enhance their influence abroad through partnership programs. Two notable initiatives included in this category are the Market Access Program (MAP) and the Foreign Market Development (FMD) program.

MAP focuses on consumer-oriented promotion and marketing of U.S. commodities and branded products. It is implemented through a range of methods including technical assistance, trade fairs, product demonstrations and other "hands-on" product advancement. FMD is dedicated to more generic promotion of U.S. commodities and is colloquially referred to as the "Cooperator Program." Through FMD, agricultural non-profit organizations and trade associations partner with FAS to invest in long-term export market expansion and development as well as reduction of trade barriers.

The United Sorghum Checkoff Program participates in the MAP and FMD Programs through partnership with the U.S. Grains Council (USGC),

which effectively acts as the commodity's "export arm". The USGC is allotted a cost-sharing budget of \$7.89 million through MAP projects and \$3.3 million through FMD projects. These funds are strategically allocated among the various bulk grains represented by USGC to increase the value of U.S. grain abroad. A report on the economic impact of USDA Market Development Programs, prepared in February 2022 by IHS Market, a provider of financial market analysis, shows the value of bulk/intermediate exports has consistently increased from 1975 to 2019. This upward trend, spanning 44 years, has resulted in an increase of \$60 billion, indicating the valuable impact market development programs have made for U.S. agriculture.

According to USDA's Economic Research Service, the estimated return of investment on U.S. agricultural exports is profound. With every \$1000 invested in inter-



▲ THIS GRAPH DEPICTS the remarkable economic impact of MAP and FMD programs on U.S. agricultural exports, showcasing an annual average increase of \$9.6 billion in export value and a steady 13.7% growth in export revenues from 1975 to 2019.

national market promotion, there is a remarkable return of \$1800, almost doubling the foundational investment. Further analysis of MAP and FMD's economic impact to U.S. agricultural exports reveals that from 1975 to 2019, an average of \$9.6 billion has been added annually to agricultural export value. Over this same period, there was an annual lift in export revenues of 13.7%.

These programs not only boost export volume and value, but also make substantial contributions to the broader national economy. Results from the previously mentioned IHS Market Report show that from 2002 to 2019, MAP and FMD contributed \$45 billion in economic output, \$22.3 billion in GDP, and \$9.8 billion in annual labor income. Furthermore, the effect of these programs extends to producers through tangible economic impact for producers at the microeconomic level. During the 17 years between 2019 and 2002, MAP and FMD added \$12.2 billion annually to farm cash receipts, which translates to a \$3.1 billion increase in annual net cash farm income.

Given the demonstrated impact, it is evident that the USDA's cost-share programs, MAP and FMD, have effectively boosted agricultural export revenue and

allotted to MAP (a difference of 37.5%) is utilized for market promotion.

As development of the 2023 Farm Bill is underway, National Sorghum Producers is focused on ensuring MAP and FMD programs, which have a beneficial impact on U.S. sorghum, not only retain funding, but also receive an increase in funds. Simulation of a doubled funding scenario over the course of 2024-2029 estimates an additional \$44 billion in U.S. agricultural exports, an average annual increase of \$6 billion in GDP, and an average annual increase of \$630 million in net cash farm income.

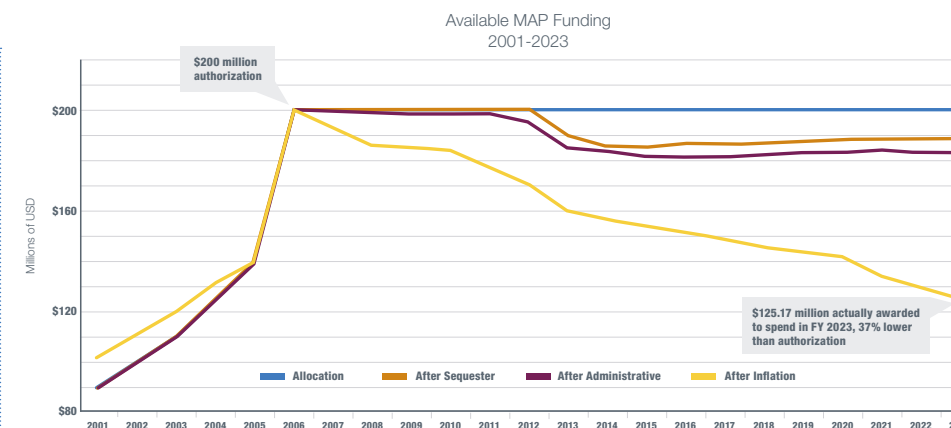
In late October, USDA announced allocation of \$2.3 billion from the Commodity Credit Corporation (CCC) for the Regional Agricultural Promotion Program (RAPP). This investment was introduced in order to address the current trade deficit, diversify export markets and combat global food insecurity. In response to the RAPP announcement industry groups thanked USDA for its continued promotion of market development. The USGC expressed its intent to use RAPP as a means of supplementing MAP and FMD funds, similarly to how it has utilized the Agricultural Trade Promotion (ATP) to advance sorghum and other grains. While increased

funding for these programs is important, NSP will continue to push for increased long-term funding of the MAP and FMD programs in a new farm bill.

The agricultural industry, as a whole, greatly benefits from these market development programs. As sorghum continues to be a foundational crop in resource conservation, a staple for both animal and human consumption and a leading grain in

MAP FUNDS HAVE BEEN ERODED OVER TIME

The Market Access Program (MAP) has been authorized by farm bills to spend \$200 million per year for more than two decades. In that time, the buying power of the program has been eroded by sequestration, administrative costs and inflation.



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volume, enhanced the national economy, and benefited producers. Under the 2018 Farm Bill, MAP and FMD were allotted a total of \$234.5 million. Although this appears to be a substantial sum, it does not accurately reflect the amount that is used to promote U.S. commodities like sorghum. According to USGC, after inflation, sequestration and administrative costs are accounted for, only \$125 million of the \$200 million

food aid, the commodity reflects the importance of MAP and FMD to the industry's growth and success. Through support of and participation in these programs, markets for sorghum will continue to expand and develop in key countries such as China, Mexico, Kenya, Spain and Vietnam. Ultimately, MAP, FMD and other FAS programs drive expansion of U.S. agricultural exports and continue to elevate sorghum on the global stage.

Sorghum's Vivid Palette: Meeting Market Demand with Colorful Grains

By Brent Bean, Ph.D., Sorghum Checkoff Agronomy Director



While grain sorghum's water-efficient nature, soil enhancement capabilities, and nutritional virtues increase in recognition, an often overlooked feature that adds a vivid stroke to the crop is the captivating array of colors of its grain kernels.

There is nothing more visually appealing in agriculture than driving by sorghum fields or visiting a variety trial just prior to harvest and observing the spectrum of grain colors. From pearly whites to lemon yellows, deep browns to fiery reds, and even obsidian blacks, the range is astonishing. But what might astonish you further is the intricate web of traits that determine the final color of each sorghum hybrid, not just the altering of the color of the outer layer of the kernel.

Color variables

Color, the defining factor, is influenced by three genetically controlled variables: the pericarp's color and thickness (the outer seed coat or bran), the presence or absence of the testa (a sub-layer beneath the pericarp), and the color and texture of the endosperm.

The pericarp is made up of multiple layers and can be red, yellow or white (colorless) and its thickness can vary greatly. A thin pericarp will be more transparent, allowing the testa and endosperm to have a greater influence on the final color. A thick pericarp will be opaque and the grain will range from white to brown with a dull appearance.

The testa will be yellow or brown but is not present in most grain sorghum hybrids planted in the U.S. This

is because the testa contains tannin which makes the grain less desirable for the animal feed industry. However, tannins are high in antioxidants and are increasingly favored in human and pet food products. Therefore, a few testa containing hybrids are planted under contract for these markets. These hybrids are normally black or burgundy in color, but there are exceptions to this rule. There are a few countries, such as Argentina, that plant high tannin containing grain sorghum hybrids for their bird resistant properties.

The endosperm of the sorghum seed is either white or yellow and influences the seed color when the pericarp is thin and transparent. For example, grain with a red thin colored pericarp with the absence of the testa or tannin layer and yellow endosperm will be bronze in color. If the pericarp is red but thin, and there is not a testa layer, then the color of the underlying endosperm will influence the final grain color. A yellow endosperm color when mixed with the red pericarp would result in a bronze-colored grain.

Color preference

As end-users often have specific preferences, such as the Chinese's inclination for red grain in baijiu production, the sorghum industry adapts to cater to varying needs.

In the U.S., the poultry and food industries have historically preferred white grain devoid of plant pigment stains. The stains come from colored (red or purple) glumes which are the two dry, leaf-like structures that surround the kernel. To meet this need, the sorghum industry has developed high yielding grain sorghums with white grain and tan glumes that are generally considered food-grade sorghum.

While there's a common belief among producers that lighter-colored seeds might germinate less efficiently than their darker counterparts, recent studies have brought surprising insights. In germination and seed vigor trials conducted by the University of Nebraska, grain color exhibited no significant influence on warm germination or seedling vigor. However, under field conditions, a slight advantage was observed for red seed over white seed. Intriguingly, in laboratory tests conducted under cool conditions, hybrids with purple glume colors exhibited higher germination and seedling vigor. Notably, substantial variations among lines suggest that other factors are at play.

Sorghum has exceptional attributes and a mesmerizing diversity of colors, which are a testament to the crop's intricate genetics and versatility. As we embark on another harvest season, let's celebrate the unique charm that sorghum brings to agriculture, reminding us that its beauty extends far beyond what meets the eye.

Pericarp Color	Pericarp Thickness	Endosperm Color	Tannin Layer	Intensifier Gene	Spreader Gene	Grain Color
White	Thick	White	Absent	Absent	Absent	Opaque White
White	Thin	White	Absent	Absent	Absent	Pearly White
White	Thick	White	Absent	Absent	Absent	Chalky White
White	Thick	White	Absent	Present	Present	Brown
White	Thin	Yellow	Absent	Absent	Absent	Yellow
White	Thick	Yellow	Absent	Absent	Absent	White
Red	Thick	White	Absent	Absent	Absent	Light Red
Red	Thick	White	Present	Absent	Absent	Bright Red
Red	Thick	Yellow	Present	Absent	Absent	Bright Red
Red	Thin	Yellow	Absent	Absent	Absent	Bronze
Red	Thick	Yellow	Absent	Present	Present	Brown
Red	Thin	Yellow	Present	Absent	Absent	Bright Orange/Bronze
Red	Thick	White	Present	Present	Present	Intense Brown/Red
Yellow	Thin	White	Absent	Absent	Absent	Lemon Yellow

▲ TABLE SHOWS THE KERNEL CHARACTERISTICS resulting in the various gain colors in sorghum (source: <https://www.pioneer.com/us/agronomy/grain-color.html>)

New Opportunity on the Horizon for U.S. Ethanol Producers

By John Duff, Sero Ag Strategies

With the partial sunset of the Renewable Fuel Standard (RFS) in 2022 and the rise of electric vehicles (EVs), sorghum farmers might be wondering about the future of liquid transportation fuels and whether ethanol will still be relevant in the future. The short answer? Absolutely.

According to ethanol and agriculture veterans Matt Durler and Paul Bertels, the future of ethanol is as bright as it has ever been, boasting a myriad of market opportunities. Low carbon fuel markets, sustainable aviation fuel (SAF) markets as well as food and industrial grade alcohol markets are paving the way for new opportunities for U.S. ethanol plants. With etha-

nol producers accounting for 20-30% of U.S. sorghum demand, the continued health of this industry remains paramount for sorghum farmers.

Low Carbon Fuel

"It is an exciting time for the ethanol industry with regard to carbon and sustainability," said Matt Durler, National Sorghum Producers managing director for climate-smart sorghum. "There have never been more opportunities for ethanol producers, and ultimately farmers, to capitalize on the sustainability benefits they are delivering to society."

A low carbon fuel market is different than a carbon credit market. Durler noted the latter prioritizes trading credit for carbon sequestered below ground, while the former looks at the entire spectrum of emissions.

"A low carbon fuel program is based on reducing CI as measured across the complete lifecycle," said Durler. "In other words, sorghum production has carbon emissions associated with it because of fuel and fertilizer usage, and ethanol production from sorghum has emissions associated with it, as well. In low carbon fuel markets, all such emissions are taken cumulatively, and ethanol producers are incentivized to reduce these cumulative emissions."

The shift toward low carbon fuels is evident from the policies being adopted across the globe.

"Worldwide, there are 66 countries that have adopted some type of sustainability target for fuels," said Durler, highlighting the U.S. as a notable example where states like California, Oregon and Washington are pioneers in low carbon fuel programs. Accordingly, the market potential is considerable.

"In many cases, it could be as much as \$0.10-\$0.20 per gallon," said Durler, adding that even higher premiums are attainable for ethanol producers, such as those in the Sorghum Belt, who are capturing and sequestering the carbon emitted during ethanol production (a process called CCS) and depending on whether farm-level CI scoring is allowed in the low carbon fuel program of tomorrow.

Beyond low carbon fuel programs, the future looks bright.

"While the RFS historically provided a floor for ethanol demand, economics drive baseline demand today," said Durler. "Removing regulatory barriers to year-round E15 will expand this baseline. Today, there are other incentives for companies, in particular publicly traded companies, to blend more ethanol to lower CI. However, the biggest potential opportunity on the horizon comes from the Inflation Reduction Act (IRA), which will create an incentive of \$0.02 per gallon for each point of CI reduction over 50%. The rules are still far from being finalized, but this could create disruptive incentives for ethanol producers and potentially even farmers to take drastic steps to reduce CI."

Sustainable Aviation Fuel

As the move toward low carbon fuels continues on the ground, a parallel shift has begun in the air, with SAF



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promising to change the landscape of aviation and unlock significant, and completely new, demand for ethanol.

"SAF is renewable jet fuel, which is the same as kerosene," said Paul Bertels, principal of Farmgate Insights, a consulting firm designed to bring farmers' perspectives to agricultural markets. "It is structurally the same as jet fuel, so it can be dropped in, although it is currently limited to a 50% blend."

"The current U.S. jet fuel market is 25 billion gallons," said Bertels, noting the vast scope of the opportunity. "This is projected to increase to 35 billion gallons by 2050. The White House has set a goal of three billion gallons of SAF by 2030 and 100% by 2050. Global demand is expected to be around 170 billion gallons by 2050."

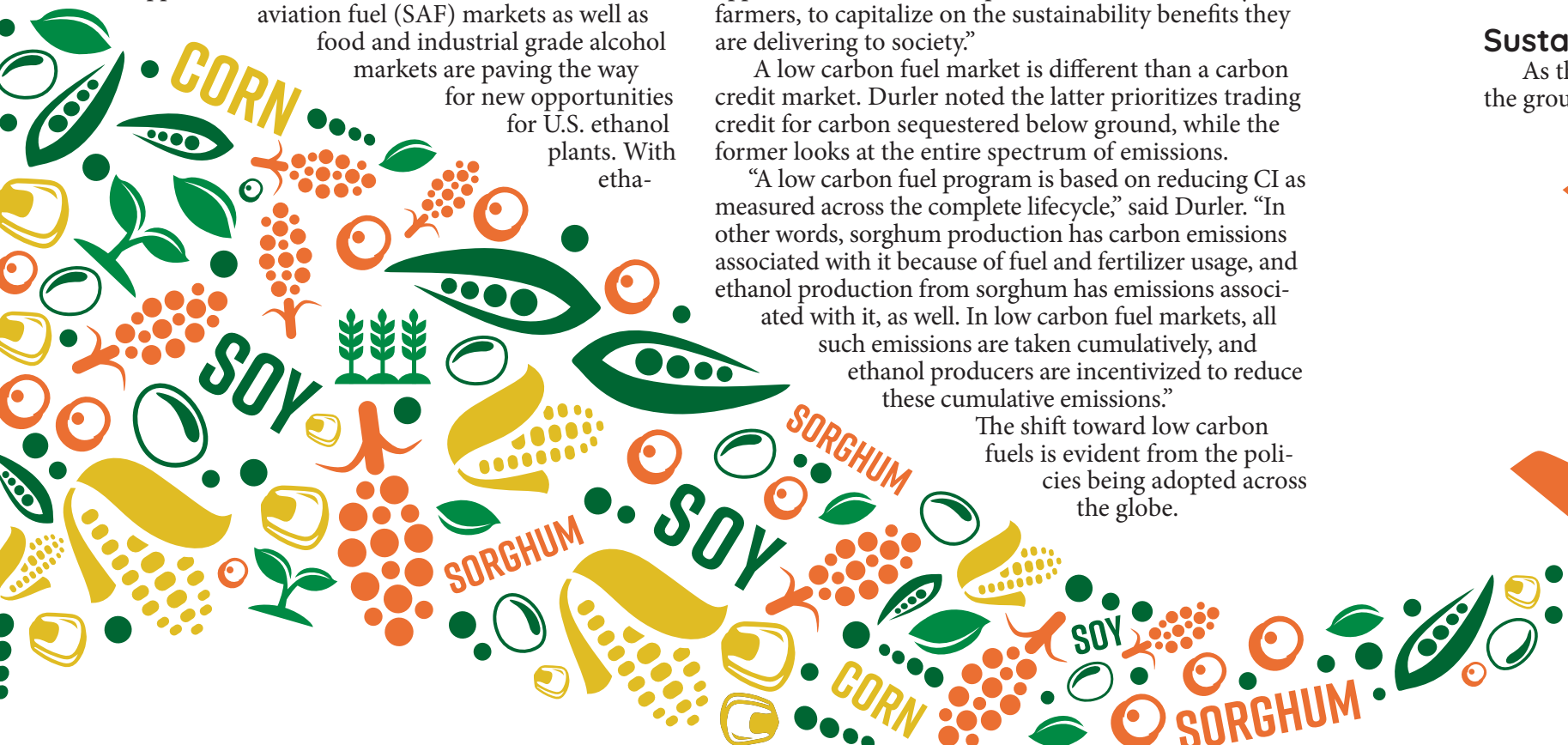
What does this mean for U.S. ethanol producers? Bertels—who together with colleague and BioCognito principal Nathan Danielson have been barnstorming the Midwest promoting knowledge of SAF and its potential—contends the potential for ethanol could be profound.

"Converting lipids like soybean oil to jet fuel will be the first method employed, but the global lipid market is getting incredibly tight," said Bertels. "Ethanol is the next most readily available feedstock, but for ethanol to capture the bulk of the 2030 target, a 15% expansion in current capacity is needed. Long term, the market potential is huge. Thirty-five billion gallons is more than twice the current demand for ethanol in the U.S."

Bertels added that aviation is the one mode of transportation that cannot be electrified, so in addition to creating new demand, SAF provides a natural hedge against EVs.

It is still unclear how much of existing ethanol production capacity will directly benefit from producing SAF versus reaping indirect benefits of greater overall demand for ethanol.

"Several [oil refiners] are already converting to make renewable diesel or SAF by hydrogenating lipids, while the ethanol-to-SAF process will require additional capital," said Bertels. "Furthermore, to qualify for expected incentives, SAF must show a 50% reduction in CI compared to



petroleum-based jet fuel. This is why processes like CCS become so important. Ethanol producers that can implement CCS are close to the threshold and thus could be in a position to directly participate.”

Echoing Durler, Bertels emphasized the importance of the IRA, noting that the legislation created a SAF credit of \$1.25 per gallon for fuel that meets the 50% CI reduction threshold and an additional incentive of \$0.01 per gallon for each point of CI reduction over 50%, and noted the expanding footprint of SAF incentive programs.

“Over the last year, states like Illinois, Washington and Minnesota have passed additional credits for SAF,” said Bertels, adding that some programs target producers while others target the end-users. “Globally, the European Union has adopted a mandate requiring an ever-increasing amount of SAF to be consumed, and the international body that governs air traffic is currently working on a system to determine how international flights will be assessed CI reduction targets.”

In any case, SAF will be a major contributor to this and similar systems.

Food and Industrial Grade Alcohol

Like SAF, several other previously unexplored markets for ethanol have surfaced in the years following the global outbreak of COVID-19. In an unexpected twist,

the pandemic brought to light adaptability and versatility in the ethanol industry.

“The short supply of hand sanitizers resulted in many ethanol producers shifting their focus to cater to this immediate need,” said Durler. “The industry’s foray into food grade alcohols and other niche markets, albeit on a small scale, speaks to the expansive horizons and potential avenues of growth.”

Durler emphasized the demand opportunity is much smaller than that created by low carbon fuel or SAF markets but noted the importance of the diversity even niche opportunities can provide.

“The rapid response to fill a need during the pandemic shows the entrepreneurial nature of these businesses and the adaptability of production processes to provide higher value products and expand market opportunities,” said Durler. “And in the end, more markets for these products directly creates more demand for U.S. sorghum.”

For sorghum farmers and their partners in the ethanol industry, the road ahead is lined with promise and potential. Whether tapping into low carbon fuel markets, pioneering the growth of SAF or diversifying into other niches, ethanol producers will be key partners for U.S. agriculture well into the future.✂



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Sorghum Exports to India Will Require Patience and Presence

By Melissa Kessler

When sorghum farmers look to markets beyond our borders, China is the first that comes to mind - and for good reason. But robust market development is about looking far down the road, and for that, the industry is turning to one of China's neighbors: India.

India is a country with just over one-third the land area of the United States and 1.4 billion people, a population expected to soon overtake China's as the largest in the world. It is incredibly diverse internally, the result of a history of many cultures melting on the subcontinent for millennia. It's a country in which half the population is engaged in agriculture, often as small holders, subsistence farmers, and that has a notably protectionist and complicated trade policy approach.

And, India knows sorghum. The country is both a large producer and consumer of the grain, ranked #6 for each in the world on a five-year average basis. The country holds large ending stocks, the third highest in the world after the United States and Argentina.

On the plus side for potential future imports of U.S. sorghum, India has a huge and growing population that wants higher-quality food. The country is a robust starch market that wants non-GMO products. The Indian government has called for meeting an E20 standard by 2025, a goal aimed at mitigating emissions and supporting local farmers but one that is pressuring grain supplies that will lead to major deficits.

The challenges: the current tariff on U.S. sorghum is 50%, and despite many years of work by National Sorghum Producers and others to achieve it, there's not a pest risk assessment (PRA) in place to pave the way for imports. India is committed to self-sufficiency throughout its economy. The large rural vote gives agricultural interests enormous power.

Shelee Padgett, the Sorghum Checkoff's director of emerging markets and grower leader development, said the sorghum industry has kept an eye on India for 15 years as part of its broader strategic approach. Now, she said, she senses new momentum despite the barriers. There's a new U.S. ambassador in Delhi, and the U.S. Grains Council, the overseas market development organization for sorghum and other feed grains, recently opened an office in the capital city, the first and only of its kind for a U.S. agriculture promotion organization at this time.

"What excites me the most is the population in India is exploding so much that at some point in time, they're

going to need our grain, and there are some small wins that I think sorghum could easily capture," she said. "Is it going to be easy? Heck no."

Reece Cannady, U.S. Grains Council director for South Asia, who lives and works in Delhi, also emphasized the potential for grains over the long term—and also the patience in the meantime.

In a country of diets that are very grain-based, Cannady noted that sorghum is a traditional food and is often incorporated in changing diets that include more products like protein bars. He noted the United Nations declared 2023 the International Year of the Millet, a celebration India takes seriously with displays and educational campaigns.

Padgett said she sees the most potential near-term in starch, followed by food uses, followed by grains—all a long way off from sales and shipments. Step one is to provide information about the product.

"The U.S. does grow varieties that India does not have access to. Currently, the sorghum they're growing is higher tannin, which does not provide the same nutrition. There's interest in these specialty products that the U.S. can use to differentiate itself," Cannady said.

Verity Ulibarri, vice chairwoman of the U.S. Grains Council and a representative from the Sorghum Checkoff, visited India in early 2023 to mark the opening of the Council's office there.

"The main takeaway that was evident to me was the importance of a physical presence and how vital that is there to prove that we are serious about working with them," she said.

Ulibarri drew a line from these efforts over the long term to increased stability and value for U.S. producers.

"It is important to further develop this market in order to create a greater demand pull and competition for sorghum and co-products. This will not happen overnight," Ulibarri said.

Dale Artho, a sorghum farmer in Wildorado, Texas, has worked in and around trade policy since taking a trade policy class sponsored by NSP in 1994. He is a past chairman of the Council and served for more than

two decades on USDA's agriculture trade and policy advisory committees.

His analysis of India's future potential is borne of the experience of seeing trade negotiators in action and the dramatic changes in his area after the North American Free Trade Agreement (NAFTA) came into effect in the mid-1990s. He concluded that the extent to which India becomes a market for U.S. sorghum, or other grains, will depend on geopolitics and the country's push for self-sufficiency, not unlike China.

"With the dietary needs of India today, there's a place for sorghum, there's probably a really good place for it. But depending on how Westernized diets become, that will be the long-term story," he said.

Like all markets, Artho said Indians want their children to have better than themselves, and, like in all markets, the market share hinges on a product customers want to buy.

"Having been in over 40 countries, people that I meet, interact with and talk with, they all have similar goals to what I have," he said. "Sometimes that desire of parents to raise the living standard of their children is tied directly to trade."

A delegation from the Sorghum Checkoff will visit India in January to learn more about the country, and market, and discover what levers there are to pull in the short-term that will pay off in the years and decades to come.

"All of the macroeconomic factors are pointing to: you need to be here," Cannady said. "And, this market will require more patience than

likely any other market we deal in. We were in China for many years before it started to take off. If you're not here to do the leg work and trudge through the mud you need to trudge through, it won't ever happen."

Artho's message for his fellow farmers is similar—and as relevant to India as it was to China and will be to other markets down the road.

"There's hope. There's a lot of hope and a tremendous amount of opportunity to partner with India for selling sorghum into that market."

Did you know? India...

- ...is the eighth largest country by area in the world (the United States is #4).
- ...has a population of an estimated 1.4 billion people, topped only (and barely!) by China.
- ...has 22 official languages in addition to English.
- ...is home to more people under the age of 14 than the entire population of the United States; 40% of India's population is comprised of people under the age of 25.
- ...about 80% of Indians are Hindu, with a sizable number of Muslims and Christians.
- ...faces serious issues with air pollution, generating interest in biofuels.
- ...is a federal parliamentary republic, with a similar democratic system of voting to the U.S. and executive, legislative and judicial branches of government.
- ...had a GDP in 2019 of \$2.836 trillion.



THE U.S. GRAINS COUNCIL held a grand opening ceremony in January for its India office in New Delhi. The event marked a milestone for the organization—and the first and only office of its kind for a U.S. agriculture promotion organization in India. (Photo provided by the USGC)



Tim Lust: 30 Years of Dedication to the Sorghum Industry

By Jennifer Warren

Tim Lust, the current CEO of the National Sorghum Producers and United Sorghum Checkoff Program, is celebrating a remarkable milestone this fall: 30 years of dedicated service to the sorghum industry. During his three decades with NSP, including 25 years as CEO and 15 years as the Sorghum Checkoff CEO, Tim has played a pivotal role in advancing the sorghum industry.

Tim's journey with NSP began in September 1993 when he joined the organization on a part-time basis. He transitioned to a full-time role in December of the same year, right after completing his MBA from Texas Tech University.

Lust's initial attraction to sorghum was deeply rooted in his upbringing on a farm in Parmer County, Texas. His family drilled some of the first wells in the area and fed cattle in a region that has become one of the greatest value-added areas to the agricultural industry, but he also witnessed the rapid depletion of irrigation water, which left a lasting impression, showing him early on that sorghum was a sustainable crop with tremendous future opportunity.

Through hands-on experience with various forms of sorghum, from grain to seed to silage, his interest in the crop was strengthened. So, ironically, his entry into the industry was somewhat serendipitous. The previous NSP executive director, Jack Eberspacher, called Tim's brother asking for recommendations for a qualified candidate to go to work at NSP. Tim's response was simple, "Well, I have those qualifications," which led to the start of his journey with the sorghum industry.

Initially serving as the Marketing and Research Director, Lust's role encompassed both areas. He navigated the challenge of securing research funding from the federal government at a time when resources were limited. On the marketing side, he recognized the need for change in the industry, particularly in working with feedyards on steam flaking. His hands-on experience in a feedyard trying to steam flake milo convinced him there had to be a better way.

Those efforts extended beyond the United States and led to spending considerable time in Mexico between 1994 and 1996, assisting end users in transitioning from central

government grain purchases to independent procurement. Additionally, Lust worked closely with the California dairy industry to introduce sorghum as a valuable feed source.

An area Tim is most known for is his policy work and relationships in Washington, D.C., and his transition into that arena was a natural progression. Although he had some exposure to policy and politics through his grandfather, his much deeper dive into policy began in the mid-90s after starting with NSP. He became increasingly involved in federal policy discussions and advocacy, solidifying his position as a key player in the sorghum industry's policy endeavors.

Over the years, Lust's role at NSP evolved significantly. He recalls the advice of one of his mentors, Neil Strong, who suggested not staying in one place for more than 10 years. Lust took his advice and, alongside producer board leadership, led radical transformations within NSP during his tenure. The establishment of the national checkoff program in 2008 and the adoption of innovative subsidiary approaches to funding were pivotal moments that reshaped the organization.

Today, as CEO, Lust enjoys the same diversity of his role he experienced in the beginning. He values the opportunity to engage in various aspects of the sorghum industry from fieldwork and research plot tours to congressional advocacy to international buyer relations and business discussions related to NSP's subsidiaries. His ability to adapt and thrive in different domains has been a crucial asset to both organizations.

Reflecting on his career, Lust cites the 2002 Farm Bill when loan rates were equalized for sorghum, adding \$197.2 million to the bottom lines of producers, as one of his proudest moments. He highlights the collective effort of a small but dedicated team, along with volunteer leaders and supporters, who rallied together to achieve a common goal. This collaborative spirit and the ability to overcome challenges have been defining characteristics of Lust's leadership.

Another significant accomplishment Lust takes pride in is helping find resolution during the trade dispute with China in 2018. His efforts, alongside Congress, those of the entire grain trade community and sorghum producer leaders, all played a vital role in reopening trade channels with China. This achievement not only benefited sorghum producers but also symbolized Lust's commitment to advocating for the industry's interests on the global stage.

When asked about his favorite aspect of working for sorghum farmers, Lust emphasizes their genuineness and straightforwardness. Sorghum producers, he notes, are driven by the desire to support a sustainable crop rather than personal ambition. He also acknowledges the well-structured and efficient organizational setup within NSP, a rare find in many similar organizations.

Looking ahead, Lust is excited about the prospect of grooming the next generation of staff to lead the organization. He hopes to delegate more responsibilities and focus

on tackling long-standing challenges, such as crop insurance. He maintains an unwavering commitment to the sorghum industry today and attributes his success to the guidance of several exceptional mentors whom he humbly sought out and attentively listened to along the way.

Tim's 30-year journey with the National Sorghum Producers is a testament to his absolute dedication to the sorghum industry and encompasses a tenure that is rare among major trade association leaders. His ability to adapt, evolve and lead has played a pivotal role in shaping the organization and advancing the interests of sorghum producers. As he looks forward to the next chapter, his passion for sorghum and the farmers it serves remains as strong as ever. His legacy is one of resilience, collaboration and a deep-rooted commitment to the future of sorghum.

Please join NSP in congratulating Tim on an exemplary 30 years with the organization, advocating on behalf of U.S. sorghum farmers and the industry. 🌾

Past Chairmen Reflect on Lust's Impact

As we celebrate Tim Lust's 30th year with the National Sorghum Producers, we reached out to some of the organization's past chairmen of the board of directors to gather their thoughts on Tim's tenure as CEO and the impact he has made so far on the sorghum industry.

Ken Tevis (1998-1999): Ken Tevis, who served as Tim's first chairman when he became CEO in 1998, reflected on their early interactions. While details from those years might be hazy, Ken emphasized how quickly Tim earned the respect and admiration of those he worked with. Tim's ability to navigate the complexity of agriculture policy and his unwavering commitment to sorghum stood out even then. Tevis recognizes Tim as a driving force behind the organization's growth and success. During this time the national office moved from Abernathy, Texas, to Lubbock, establishing the current home of the national headquarters in the heart of the Sorghum Belt.

"I did not have any doubts with Tim, but you always wonder, well, what's it going to be like? It's the unknown. I knew that Tim was a number one mentor there and he studied his lessons well. He was a quick learner. As time went on, he stepped right in and fulfilled the shoes more than adequately. He's been very good for the organization."

Kenneth Rose (2002-2003): Kenneth Rose, who served as chairman during the early 2000s, spoke about Tim's ability to foster effective relationships with policymakers in Washington, D.C. Tim's strong rapport with key figures in the nation's capital ensured sorghum's voice was heard and respected. Ken highlighted Tim's instrumental role in securing favorable policy outcomes for the sorghum industry during his tenure, including equalized loan rates for sorghum in the 2002 Farm Bill, which meant \$197.2 million to the sorghum industry.

"Equalizing the loan rates with corn seemed like a dream in the clouds. I didn't think it could ever happen. I was

amazed at how well received we were in Washington. ... And thanks to Larry Combest and Charlie Stenholm, and those groups that Tim just really had a good connection with, we were able to get that one. Dealing with those kinds of political legislative issues was something I'd never done, but when Tim's around, you learn in a hurry."

J.B. Stewart (2014-2015): J.B. Stewart, who chaired the board from 2014-2015, expressed his admiration for Tim's foresight in developing the sorghum leadership program. This program has been a breeding ground for talented leaders, ensuring continuity and success for both NSP and the United Sorghum Checkoff Program. Stewart also commended Tim's commitment to the sorghum industry, stating that his leadership had been invaluable in propelling NSP forward. During this time, NSP was able to raise the reference price for sorghum in the 2014 Farm Bill to \$3.95 per bushel, earning an additional \$275.6 million for sorghum farmers.

"I've had so many farmers tell me that we get more bang for our buck investment in sorghum than any organization we belong to. I've just always believed that is just the absolute truth, and we're just really, really fortunate for the size of our crop to have the type of activity that we create, and Tim's leadership is a driving factor in that."

Dan Atkisson (2018-2020): Dan Atkisson, who chaired the board in more recent years, underscored Tim's unwavering commitment to the sorghum cause, emphasizing his strong moral compass and dedication. He described Tim's leadership as unique due to his deep personal commitment to the industry, which goes

beyond just a job. Dan said Tim is seen as someone who knows how to navigate political circles in Washington, D.C., and has a vast network of contacts. He commended his ability to take quick and effective action in response to the 2018 China trade challenges, which, following that time, NSP was able to work with USDA as it implemented the Market Facilitation Program to account for lost profits due to regulatory tariffs on U.S. exports with \$300 million going to the sorghum industry.

"I was always continually amazed at how many doors would open to such a small organization when we went to D.C. with Tim. And that's not because we're a big organization. It's just because Tim is such a veteran of being on the Hill and just knows so many people. ... Tim knew somebody in every room in D.C. ... During the China trade interruption, I think what was amazing was that just having somebody leading the organization that knew what to do, or knew the people to talk to, just to immediately start responding to it right away. That deal came out on a Saturday. We had a conference call on a Sunday morning. By Monday I was flying to D.C. and by Monday afternoon, we were interviewing law firms."

These past chairmen, representing different eras of Tim's leadership, collectively paint a picture of a dedicated and effective CEO who has steered NSP through various challenges and milestones. Tim's commitment, leadership and ability to build strong relationships have left an indelible mark on the sorghum industry. As we celebrate his 30 years with NSP, we recognize the enduring impact of his leadership and the bright future he continues to shape for sorghum producers and the industry.

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Who's Handling Your Grain?

By Sarah Hubbard

After sorghum leaves the farm, it moves through the supply chain before reaching its final domestic or international destination. The storage, handling and transportation landscape continues to evolve along with the overall agriculture economy.

Across agriculture sectors, the trend continues toward bigger entities, greater integration and more consolidation. Macroeconomic forces are driving impacts farther down the supply chain. How does this reality impact competition and choices for farmers about where they can market their grain?

Follow the steps to market to understand the current issues shaping the modern sorghum supply chain.

Storage Availability

Grain storage is the first step after harvest. Overall, storage capacity at elevators and cooperatives has gone up in recent years in response to large harvests. October 2023 analysis by USDA found ample grain storage is available across the U.S., including key sorghum states. At the same time, regional challenges have emerged, such as aging infrastructure at country elevators, fewer overall locations and the soaring cost of storing grain.

Drying sorghum and storing it on the farm has grown in popularity in some parts of the country. Improved quality control technology has removed some of the guesswork associated with the temperature and timing of preparing sorghum for storage.

On-farm storage can add flexibility and help growers diversify risk by providing another storage option that

allows farmers to use marketing tools following harvest. It can also decrease the time spent on transportation and unloading grain during the busy harvest season.

However, the success of on-farm storage is also highly location dependent, working the best for farms located closest to markets and ports. While increasing, a relatively small number of sorghum farmers utilize it. The expense can also be a high barrier to entry, especially considering today's high interest rates for financing.

The Co-Op Landscape

Many growers rely on cooperatives to store, handle and market their grain. Cooperatives have been in a steady state of consolidation for decades. While the number of individual cooperatives and grain elevator locations continue to decline as companies grow in size and complexity, the availability of grain storage has increased.

According to Kansas State University analysis, the number of grain marketing and farm supply cooperatives in Kansas fell from 350 in 1950 to 81 in 2016. From 2016 to 2020, the number of grain storage locations slightly decreased. However, the total amount of upright grain storage by cooperatives in Kansas increased from 513 million bushels in 2016 to 574 million bushels in 2020.

"Mergers and consolidations tend to ebb and flow," said Ron Seeber, President and CEO of the Kansas Grain and Feed Association. "Bigger is the trend, but there are multiple ways to get there, including through hybrid, non-traditional partnerships with other coops and independent companies to diversify geographically and gain efficiencies of scale."

Ultimately, the decision to merge is made by the farmer-owners of the cooperatives involved to provide more financial security. While bigger isn't always better, that decision can be driven by a compelling reason, such as taking advantage of the new entity's size to get the best technology or provide improved customer service. Meanwhile, some smaller cooperatives have made the decision not to merge and continue to successfully serve their customers.

The management and culture of a cooperative, regardless of its size, makes all the difference. As both cooperatives and private grain companies get bigger, the stakes also get higher—putting a greater emphasis on the importance of putting the right leadership in place.

While the current marketplace remains competitive, it features fewer individual players. Farmers are adept at navigating this reality.

Transportation Headaches Continue

Transportation costs continue to be a burden for farmers and cooperatives alike. In addition to the high cost of diesel fuel, sorghum growers face extreme competition from other sectors for truck drivers, which are a crucial link in the sorghum supply chain. About 4% of sorghum for export is transported throughout the U.S. by truck—that number much higher for domestic use.

"A huge issue for the grain industry is a shortage of truck drivers," Seeber said, referencing the tough competition that all of agriculture faces from other industries for drivers.

The nationwide shortage of truck drivers continues to grow, with no quick fix in sight given the expense and time it takes to earn a Commercial Driver License that can cross state lines. Proposed policy solutions at the federal level have also been slow moving, even as the stakes get higher every year.

Other transportation methods are a mixed bag. Rail transportation service from Kansas has largely improved from the height of pandemic-era disruptions due to employee shortages and the low availability of railcar space. However, low water levels on the Mississippi River are once again slowing grain shipments on barges bound for the Port of Catoosa. A small percentage of the sorghum crop is shipped using barges.

Ethanol Drives Domestic Demand

The ethanol industry drives domestic demand for sorghum in Kansas, where sorghum has become an important part of some ethanol producers' diversification strategies. About one-third of the annual sorghum crop is sold to ethanol producers.

Recently, gasoline prices at the pump have pushed upward, which usually also pulls ethanol values higher. However, the ethanol industry has been dealing with a challenge of oversupply that is leveling out heading into fall 2023.

"Our region is coming off of a drought that pushed our basis values extremely high. As we are getting into sorghum harvest, basis values are getting closer to normal," said Derek Peine, CEO of Western Plains Energy, LLC. "Last year we didn't take as much grain as usual, but this year we should be back to our normal rate."

Peine expects that less than half of the total grain used at their plants will be sorghum, with a higher concentration of sorghum later in the year. Growing conditions and competition from China for sorghum exports impact the competitiveness of sorghum in the ethanol market.

"When China enters the market, they come in very strong. It cuts us out of the market but I think it is a good thing for U.S. producers to capture that value," Peine said. "I always think of the U.S. ethanol industry as a backstop. We will always purchase sorghum as long as it is available."

The Outlook for Exports

As the world's top exporter of sorghum, much of the U.S. crop is destined for ports. About 94% of sorghum destined for international destinations is transported by ocean vessel. China is by far the largest buyer of U.S. sorghum, followed by Mexico and Sudan.

While exports for 2022/2023 were down due to the small size of the sorghum crop following the drought, international demand for U.S. sorghum continues to be strong. The U.S. seeks to maintain a competitive pricing advantage over other sorghum exporters including Brazil, Argentina and Australia.

The 16 ports located in Texas play a crucial role in connecting U.S. sorghum with the world. Every port—from Galveston to Brownsville—is critical in ensuring sorghum keeps flowing to the world.

The ports continue to operate smoothly and without the slowdowns experienced by agricultural shippers elsewhere. The limiting factor today is the availability of grain—and farmers are taking notice of the opportunity to grow more sorghum to meet market demand.

Looking Ahead

Now, perhaps more than ever, it is important for sorghum growers to be adaptable to the many outside forces impacting the supply chain.

"I think about the Benjamin Franklin quote: 'when you think you're finished, you're finished.' You will always need to be evolving to be agile and roll with the punches to succeed," Seeber said.

The marketplace looks different today than even 10 years ago as cooperatives and private companies continue to grow and merge. Ongoing uncertainty due to transportation and workforce challenges underscores the importance of having a risk management strategy in place. While the future holds many unknowns, farmers can rest assured that change is the only constant. 🌾



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- Red sorghum offering that combines excellent yield with toughness for top performance across a host of yield environments. Offers dependable agronomics and standability.

85P81

- 70 RM leader hybrid for earlier maturity southern acres. Offers exceptional test weight and excellent yield potential across all environments including tough dryland.

82P22

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89P52

- High yielding, very early 59 RM option that offers exceptional yield potential across environments. Offers very good pre and post-drought tolerance and standability. Good sorghum aphid tolerance for maturity.

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85Y88

- Leader product that offers outstanding top-end yield potential in a 70 RM full-season white hybrid with excellent test weight across yield environments

83P27

- Full-maturity hybrid with a slightly earlier flowering date possessing outstanding yield for maturity, offering favorable stalks and roots, and above-average head exertion for tough dryland acres

The foregoing is provided for informational use only. Please contact your Pioneer sales professional for information and management suggestions specific to your operation. Pioneer® brand sorghum hybrids with the Pioneer Protector® technology designation have a sorghum aphid tolerance rating of 5 or greater. Pioneer® brand products are provided subject to the terms and conditions of purchase which are part of the labeling and purchase documents.  **CORTEVA**
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Sorghum Makes Fall Mazes More Sustainable

By Matthew Winterholler

There's no season that the value of agritourism becomes more evident than fall—the bustle of pumpkin patches, hayrides and mazes of...sorghum? You read that right—sorghum may just be the new corn when it comes to the whimsy of crisp, fall nights at a maze.

With increasingly intense drought conditions over the last two decades and water resources becoming

scarcer, some agritourism farms are turning to sorghum to make their fall mazes more sustainable. At'l Do Farms in Lubbock, Texas, is one of those farms, making the switch in 2022.

"The [Ogallala] aquifer is depleting and becoming more mineral-dense, and the weather has been more sporadic and increasingly drier," said Eric Simpson, co-manager of At'l Do Farms.

"A sorghum sudangrass mixture just feels way more appropriate for the area that we're in," Simpson continued. "[The switch to sorghum sudangrass] became solidified when the winter before that decision, we received no rain and no snowfall, so we just had no moisture to begin with."

At'l Do Farms creates memorable family experiences for its 60,000 annual visitors during the fall season with many activities, like a pumpkin patch, cow train, petting zoo and more—but the main attraction at the farm is the maze. And while Simpson says they were nervous about the sorghum sudangrass having a negative impact on the maze experience, the switch was quite the opposite.

"We've found that people enjoy [the sorghum sudangrass mix] better," Simpson said. "Whenever they're walking through the maze now, they're seeing things that are blooming and flowering. They're seeing the sorghum heads turn from these slightly yellow, cream-ish colors to beautiful gold, red and sometimes black grains."

Simpson said that the crop mix they use for the maze is primarily sorghum sudangrass, but it also includes millet, sunflowers and sun hemp. That mix creates a more resilient and lush maze at At'l Do Farms, according to Simpson.

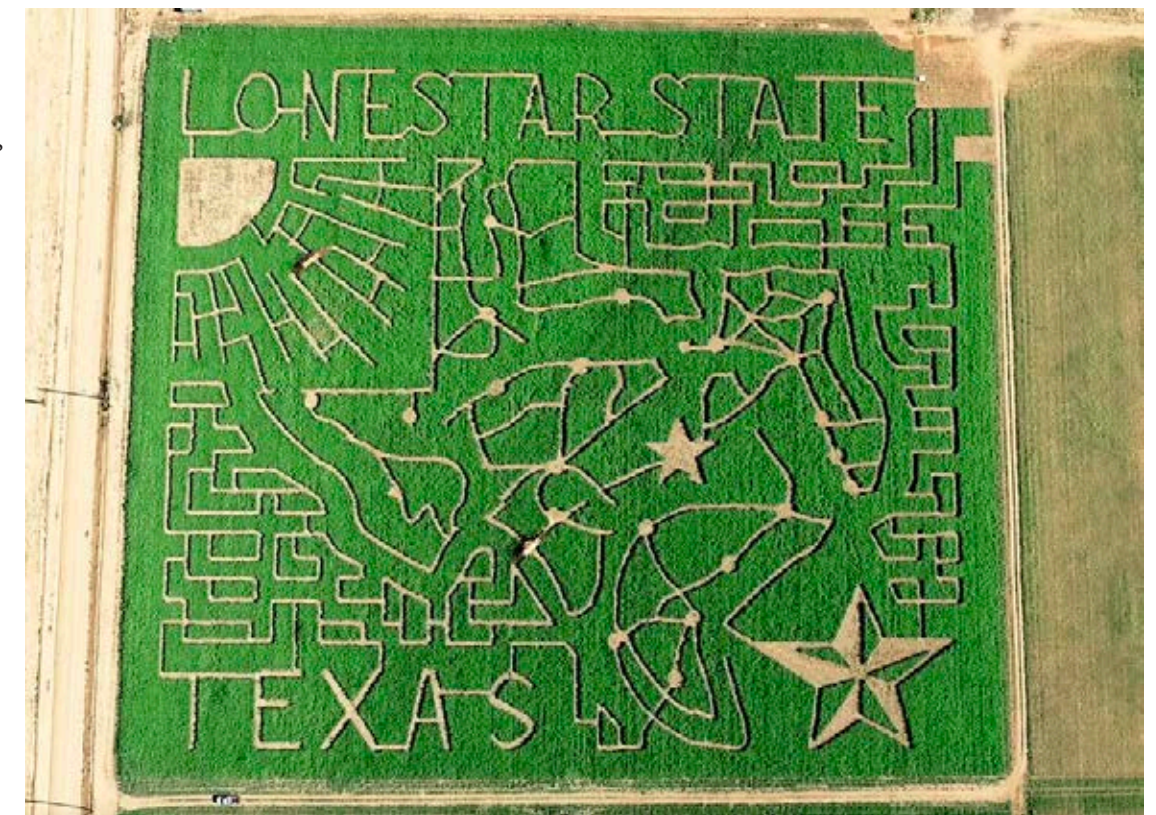
"It's really keeping our maze looking like a maze until we close," Simpson said. "It's a much more sturdy crop. When people are walking through it, they don't see rows like they used to see with the corn. It's allowed us to preserve our maze longer."

Simpson isn't the only one who has noticed sorghum sudangrass' benefits for fall mazes. Sweet Berry Farm in Marble Falls, Texas, also made the switch to sorghum sudangrass. According to a 2022 article from ABC 7 News in Amarillo, Texas, Sweet Berry Farm also cited sorghum sudangrass' height, long-lasting color, drought resistance and water conservation as reasons for the maze's switch and success.

The benefits of the sorghum sudangrass go far beyond the experiences they're creating in their agritourism business. Simpson said they're also seeing far less need for more intensive inputs like herbicides and fertilizers.

West Texas agritourism farms aren't the only ones replacing corn with sorghum sudangrass. Wills Family Orchard in Adel, Iowa; Mean Greens Farm in Seymour, Missouri; Clark Farms near Vardaman, Mississippi; Poppell Farms in Odum, Georgia; Pigeon Roost Farm in Hebron, Ohio; and beyond are also making the switch. And the story is much the same between all the farms: drought, water and input costs.

Simpson, like many other agritourism farmers who have made the switch to sorghum sudangrass for their mazes, is eager to become more sustainable to keep the agritourism-focused farm thriving for generations.



▲ AT'L DO FARMS SELECTS A NEW MAZE pattern each year. This year's maze is a tribute to the Lone Star State made up primarily of sorghum sudangrass with some millet, sunflowers and sun hemp.

"If there is to be a future in agriculture, sustainability is going to have to be at the forefront," Simpson said.

"We have people that come out to our farm year after year," Simpson continued. "They're getting to have the same experiences, but now it's evolved. That gives me a lot of hope to continue to make the changes that we're making, as far as sustainability."

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Serving Up Sorghum



Food Grade Sorghum Redefined

By Lanier Dabruzzi, MS, RD, LD,
Sorghum Checkoff Director of Food Innovations & Institutional Markets

When I started at the Sorghum Checkoff, one of the first things told to me was that “food-grade sorghum” is a misnomer because all sorghum is technically edible. While this is true, there are a few distinguishing factors of food grade that help it to stand out.

First of all, there are specific standards that sorghum used in some food production meet, such as certified gluten-free. Additionally, while food grade was traditionally thought of as cream and white colored sorghum, many companies are seeking a variety of colors due to their health benefits. Lastly, sorghum used in food production has certain health benefits that are sought out by food companies and consumers.


Depending on the requirements of the end user of grain sorghum, there are a variety of standards that the grain must meet. For example, if the grain is to be certified as gluten-free, there must be no cross contamination of the sorghum with gluten-containing grains, such as wheat, barley and rye. As school foodservice becomes more of a future market for the sorghum industry, the ability of sorghum to claim that it is free from the top 9 allergens is becoming more of an asset. Beyond the food safety standards, consumers look for a variety of certifications that sorghum products often use as marketing, such as USDA Organic and non-GMO.

While white and cream varieties of sorghum are often included in food products, more colors are now being used, such as red and black. The darker colors offer more of a nutty flavor, with slight bitter notes, which is used by chefs to add additional interest to dishes. The darker colored sorghum is also used for its high antioxidant levels. In addition to the health promoting properties, antioxidants can serve as a natural shelf-life extender, which decreases the need for synthetic preservatives. Research is still evolving about the many benefits of various colors of sorghum, but one exciting area is the use of sorghum as a natural food colorant to replace imitation food dyes.

Consumers are more concerned than ever about their health and diet. Luckily, sorghum is a star ingredient in healthful diets. A serving of cooked whole grain sorghum is an excellent source of 12 essential nutrients, including protein, zinc, selenium and copper, which may contribute

to a healthy immune system. Additionally, cooked whole grain sorghum is a source of tryptophan, an amino acid that research has shown may be an effective approach to decrease anxiety and increase positive mood in healthy individuals. Who wouldn't love eating their way to a calmer, more positive self? Lastly, sorghum is a natural source of antioxidants, which may help to lower your risk of cancer, diabetes, heart disease and some neurological diseases.

It is an exciting time to be in the world of sorghum as the landscape of food applications broadens. Sorghum is staking its claim in the consumer food world and the opportunities are endless.



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USCP Staff Represent U.S. Sorghum Industry During U.S. Chile Agribusiness Trade Mission

In a significant milestone for the U.S. sorghum industry, the United Sorghum Checkoff Program's Director of Emerging Markets and Grower Leader Development Shelee Padgett and Director of Feed Ingredient Utilization Brent Crafton represented the industry at the 2023 USDA Agribusiness Trade Mission to Chile. This endeavor, led by Under Secretary for Trade and Foreign Agricultural Affairs Alexis Taylor, was held alongside the 200th anniversary of U.S.-Chile relations and marked the 20th anniversary of the U.S.-Chile Free Trade Agreement.

Chile is a major player in the production of animal protein, relying heavily on imported ingredients to maintain its position, and the significance of the industry lent itself to many opportunities for the U.S. delegation to explore market opportunities to cultivate new trade relationships.

Chile's food processing industry, which encompasses salmon, beef, dairy, pork and poultry production, has a strong export focus. These sectors heavily depend on imported feed products. In 2022, Chilean protein producers spent a staggering \$126 million on U.S. feed products, such as corn gluten meal and soybean flour and oil, for their production.

Yet, conversations with industry giants, including Agrosuper, Tresmontes Lucchetti, ALPROSA and ALICORP, highlighted a growing interest in sorghum as an alternative feed ingredient due to its sustainability and value-added benefits for feed.

The Sorghum Checkoff remains committed to nurturing these newly established connections, offering technical nutrition insights specific to poultry, pork, salmon and trout production—and providing invaluable supply-chain support. Additionally, the team is exploring opportunities to introduce U.S. sorghum in Chilean and Peruvian pet foods and human food applications, offering a promising look into future opportunities for U.S. sorghum in Chile.



Brent Crafton (left) and Shelee Padgett

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Sorghum Sustains Docuseries: An Exploration into Sustainable Agriculture

The United Sorghum Checkoff Program, committed to advancing the sorghum sector with research, promotion and education, has sponsored the YouTube docuseries "Sorghum Sustains." This series, consisting of four videos, explores sorghum's contribution to sustainable farming:

Sorghum & Food: This video addresses the role of sustainable agriculture in meeting the growing global demand for protein. It examines the challenges posed by changing weather patterns to food production and highlights sorghum as The Resource-Conserving Ingredient®. The segment provides an overview of the journey food takes from the field to grocery stores.

Sorghum & Soil Health: This segment discusses the importance of soil health in agriculture. It presents the practices adopted by sorghum farmers to maintain soil health and the advantages of including sorghum in crop rotations. The video also touches upon the benefits of reduced-till practices and regenerative soil strategies.

Sorghum & Water Conservation: Focusing on water conservation, this episode discusses the challenges posed by declining water levels, specifically referencing the Ogallala Aquifer. It explores the impact of drought and changing weather pat-

terns on this essential resource. The video features interviews with experts and farmers, shedding light on the benefits of growing drought-tolerant crops like sorghum.

What is Sustainability?: This video aims to define sustainability within the context of food and agriculture systems. It looks at the challenges posed by changing weather patterns and the importance of developing sustainable agricultural practices.

Through the creation and promotion of projects like this, the Sorghum Checkoff seeks to boost the earnings of sorghum growers across the country. Beyond showcasing sorghum's adaptability, the series offers valuable insights into sustainable farming for both producers, customers and consumers.

For those interested in learning about sorghum's role in sustainable agriculture, the "Sorghum Sustains" series offers detailed insights. The series is available for viewing on youtube.com/sorghumcheckoff.



Scan the QR Code to View the Series

Mental Health Matters in Rural America

By Sorghum Checkoff Board Director, Macey Mueller

I am not one to wish away time, but this time of the year I just have to pray to "get through." It is a taxing time for our family for many reasons compounded by the stress of early mornings shipping cattle, late nights in the field or the office, extreme weather conditions affecting production (cattle, crop and personal) and the sinking feeling that there is far more to get done than the hours in the day will allow.

The dog days of summer often leave me physically, mentally and emotionally drained, and I know I'm not alone. Seasonal and chronic stress and anxiety are all too common in an industry highly dependent on factors outside our control—volatile weather conditions, fluctuating commodity mar-

kets and increasing debt burdens all lead to financial instability and the added mental burden of carrying on a multi-generational family legacy. My husband and I are believers in the power of prayer and try hard to lay life's burdens—especially those we can't control—at the Lord's feet, but there are times when those thoughts of worry and uncertainty linger and lead to deeper mental distress.

According to a five-year University of Illinois – Urbana study, nearly a quarter of the farm parents surveyed met the criteria for mild depression and moderate depression and 11.5% met the criteria for moderately severe depression. Furthermore, nearly a third of adult participants in the sample met the criteria for mild Generalized Anxiety Disorder.



MENTAL HEALTH MATTERS

in Rural America

der (GAD), and 18.9% and 4.9% met the criteria for moderate and severe GAD, respectively.

Unfortunately, the mental health of U.S. farmers and ranchers has been overlooked and almost taboo for many years. As inherently proud and often private people, seeking help for mental health issues has been seen as a sign of weakness and has prevented many producers from reaching out for support. A recent poll by the American Farm Bureau Federation showed the stigma around seeking help or treatment for mental health has decreased but is still a factor in agriculture. While farmers and farm workers indicate an 11% decrease in the stigma attached to those who seek help for mental health, 63% say there is still at least some stigma around stress and mental health in the agriculture community.

In an effort to further reduce this stigma and address the growing rural mental health crisis, many agricultural organizations, universities and mental health advocacy groups have initiated programs to provide mental health education, crisis hotlines and support services specifically tailored to farmers. For resources compiled by the Kansas Farm Bureau to assist farmers and ranchers with depression, stress, addictions, and other mental/behavioral health concerns, visit www.kfb.org/Article/Mental-Health-Resources

Identifying Mental Health Distress

Oftentimes, signs of mental struggle are overlooked by family, friends and neighbors. According to NY FarmNet, the more signs of stress you or a farm family member is exhibiting, the greater the need for additional help and support. Many of

these are signs and symptoms of fatigue and stress, but when there are multiple signs, they should be taken seriously.

- Appearance: Sad face, slow movements, unkempt appearance, lack of facial expression
- Anxiety and/or depression
- Unhappy feelings
- Withdrawal or isolation
- Negative thoughts: "I'm a failure," or "I'm no good"
- Helpless and hopeless: Sense of complete powerlessness, sense that no one cares.
- Reduced activity: Absence of planning, increased sleeping, feeling that "doing anything is just too much"
- Substance abuse
- People problems: Lack of interest in being social ("I don't want anyone to see me.")
- Previous suicide attempts
- Physical problems: Sleeping problems, decreased appetite, various physical ailments from aches and pains to severe muscle tension or chronic pain
- Suicidal plan: Frequent or constant thoughts of a specific suicide plan
- Guilt and low self-esteem: "It's all my fault," or "I should be punished"
- Cries for help: Making a will, giving away possessions, making statements such as "I'm calling it quits" or "Maybe my family would be better off without me"

Coping with Stress

Recently, I have started to identify potentially

stressful times of the year and attempt to "head them off at the pass" with some strategic planning and built-in personal time to decompress. Being organized seems to alleviate some of my mental burden and helps me feel more in control of my wellbeing. The U.S. Centers for Disease Control and Prevention also suggests these healthy ways to deal with stress:

- Take breaks from watching, reading or listening to news stories
- Take care of yourself and your body
- Make time to unwind
- Connect with your community – or faith-based organizations
- Avoid drugs and alcohol

Recognize when you need more help

George Washington once said "Agriculture is the most healthful, most useful and most noble employment of man," and I think it's safe to say he got two out of three right. Unfortunately, the stress that comes with the job many of us love can sometimes take its toll on our health and lead to mental and emotional distress, substance abuse, anxiety, depression and even suicide. Caring for our own health and wellness in this high-stress profession can be easy to overlook but is just as important as caring for our farm business.

September is National Suicide Prevention Month and a time to shine a light on mental health issues in our country. Specifically, September 17-23 is National Farm Safety and Health Week, which

encompasses "brain health" and aims to promote overall wellness as a key to keeping producers safe on their operations, but we know this is an issue that deserves attention year-round.

If you would like to learn more about recognizing the signs and symptoms of stress and suicide, ways to effectively communicate with people under stress and how to reduce stigma related to mental health concerns, the Rural Resilience Open Online Course equips farmers, their families and the agricultural community with tools and resources to help in time of need.

Moreover, if you are a farmer in crisis, or know of someone in need of immediate assistance, contact a local treatment resource or call the National Suicide Prevention Line at 988.

SORGHUM DISH SHOWCASE

Instant Pot Tuscan Sorghum & Sausage Soup



SORGHUM INDUSTRY EVENTS

Nov 23-24 Thanksgiving Holiday
Office Closed

Dec 5-7 Leadership Sorghum Class VI Session 4
New Orleans, LA

Dec 13-14 USCP Annual Board Meeting
Lubbock, TX

For more events, visit sorghumcheckoff.com/calendar

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Sorghum Update

Brought to you by the Kansas Grain Sorghum Commission

Sorghum's Life Lessons

By Maddy Meier

Back in September, I was volunteering at the Agriland booth at the Kansas State Fair. For those who are unfamiliar, Agriland provides an interactive experience for young children to learn about agriculture within different stations, such as a mechanical dairy cow named Maybelle; virtual combine rides; a soil tunnel; and more. I often got lots of questions from kids asking about what breed of cow Maybelle is or what the difference is between soybeans and grain sorghum.

While these answers may have seemed obvious to many of us, they made me appreciate growing up around agriculture and the life lessons that accompanied the lifestyle. I learned some of the most valuable life lessons from my grandparent's farm and carry them with me to this day. Now, as a member of the Kansas Grain Sorghum staff, it's easy to see how these themes reflect toward the sorghum industry. They truly remind me of this tiny, yet mighty, crop.

Lesson 1: embrace who you are. If there's anything we can take away from sorghum, it's that embracing who we are as individuals can lead to rewarding opportunities. Sorghum may be less commonly grown than other commodities, but that doesn't mean it is less sustainable or valuable.

Sorghum's drought-tolerant traits allow it to thrive across the High Plains and can be used across a variety of sectors. According to the Kansas Department of Agriculture, grain sorghum generated approximately \$1.48 billion towards the state's direct economic output and created over 3,100 employment opportunities in 2022.

While we typically think of sorghum as an ingredient in live-stock feed rations, sorghum has quickly become a staple within pet food, food aid, and ethanol production, among other products. Sorghum is also praised for its ability to enhance soil health by increasing above-ground residue, and, simultaneously, better root structures, which protects the crop from erosion from weather elements. Thanks to these traits and many others, doors continue to open up for the sorghum industry.

Lesson 2: invest in those who invest in you. Each fall, Kansas Grain Sorghum hosts a board meeting to determine a budget for the upcoming fiscal year. In 2024, Kansas Grain Sorghum plans to invest an estimated \$1.79 million across areas such as research, market development, communications, and industry information.

With new innovations, programs at both the state and national levels recognize the importance of sorghum and its potential. It is an exciting time to be involved with sorghum as our industry prioritizes conservation efforts, promotion, and new market development. These investments will allow industry leaders to form new connections while sustaining those previously established. By investing in those who invest in sorghum, we can truly better our industry through networks and collaboration.

Lesson 3: never give up. I stepped into my role as a staff member during what may have been the worst drought on record. However, despite the lack of rainfall in 2022, growers persisted. Our industry saw numerous wins, including multiple grant-funding opportunities, increased awareness, and even a nationwide increase in planted sorghum acres. As I attended events throughout the summer and earlier this fall, I had many producers from multiple regions comment that their grain sorghum was doing very well.

We saw increased rainfall amounts across Kansas during the summer, and things began to turn around. The crop quality improved in comparison to last year's, despite facing yet another dry period in the second half of the summer. More rain is something we will always hope for, however, that is where sorghum's water-sipping traits come into play, and the crop's quality has remained in good condition since. After last year, many sorghum farmers could have thrown in the towel and left the crop out of their rotations.

The strength our farmers have to push through when things are tough is something I will always admire, and perhaps that is the greatest lesson of all. I'm very fortunate to have gained some insight from these individuals as they have served as great mentors as I continue into my career.

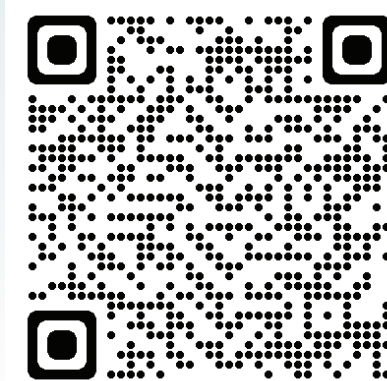
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Sorghum Shortcuts

Yield Contest Harvest Reports Due



The 2023 National Sorghum Yield Contest is coming to a close. Please return all forms, including harvest forms, no later than Nov. 25, 2023. Contest results will be announced in December, and state and national winners will be recognized at the annual Commodity Classic March 1, 2024, in Houston, Texas. To view official contest rules, visit SorghumGrowers.com/yieldcontest.

Save the Date! SICNA Set for April 2-4 in Oklahoma City



Save the date for the 2024 Sorghum Improvement Conference of North America to be held April 2-4 in Oklahoma City. The 2024 event, themed "Sorghum, Adapting for Future" will take place at the Sheraton

Oklahoma City Downtown Hotel. SICNA's mission is to promote communication and collaboration in research and development among sorghum researchers and stakeholders in cooperation with universities, research centers, public institutions and private entities. It strives to link scientists and researchers with sorghum producers and industry representatives to help drive innovation and discovery in response to the industry's challenges and opportunities.

The SICNA Program Committee is taking abstract submissions for the 2024 conference. Students, early and senior career researchers, are encouraged to submit abstracts for both oral presentations and posters. The Program Committee will review submitted abstracts and select oral abstracts that provide a dynamic program reflective of the state of sorghum knowledge and breadth of the community.

Oral Abstract Submissions are due by an extended deadline of Monday, Nov. 13. Poster abstracts are due on Friday, February 2. Interested in receiving emails about this event? Sign up at SICNA.net where you can also learn more about the event and register, plus sponsorship opportunities!

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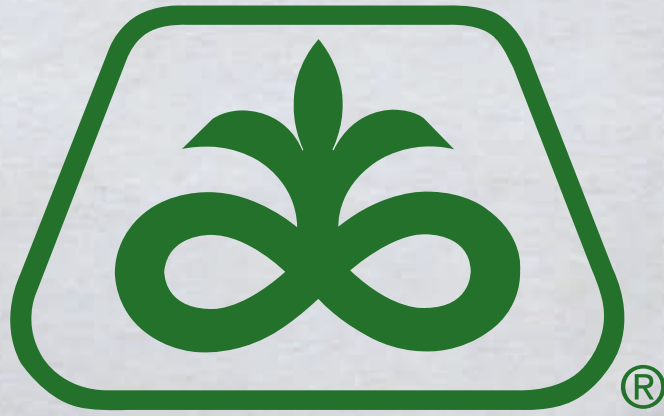
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