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NATIONAL SORGHUM PRODUCERS

SORGHUM *Grower*

WINTER 2018



Generation SORGHUM

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NATIONAL SORGHUM PRODUCERS **SORGHUM** *Grower* WINTER 2018

ON THE COVER: Billy Bob Brown and his grandson Kris have an interesting relationship on their sorghum farm in the Texas Panhandle. Learn more about their operation and focus on communication that makes this team a success.

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Chairman's Address

We Need You in 2018



After what seemed like a marathon harvest, we did get done, as did the rest of the nation's sorghum producers. The 2017 crop was a challenge for many farmers with some areas receiving too much rain and other areas too little.

In Nebraska, we became too dry during July, August and September. The lack of moisture soon separated our "dry weather" crops from other crops that require larger amounts of moisture.

While harvesting, I had plenty of time to reflect on when and why we started raising sorghum. I first raised sorghum and hogs as FFA projects because of the lower initial investment with a more assured rate of return.

When I first started farming with dad, part of our agreement was we would raise more sorghum and expand our farrow to finish hog operation. The reason, of course, was the lower input costs with a more certain income plan. These management decisions helped us survive the 1980s.

I now have two sons starting to farm, and some of the same principles remain. While so much has changed since I started farming, so much has stayed the same. We still enjoy the lower input costs that sorghum has, and in a very dry year like the one we had this year, our sorghum was still one of the best crops I ever raised.

I never dreamed when I started farming the sorghum industry would develop as it has. Through our yield contest figures, we are seeing dryland sorghum yields approaching and exceeding 200 bushels per acre. China has purchased 1 billion bushels of U.S. sorghum since its first purchase in 2013, and nearly 40 percent of the sorghum we raise will be exported. Ethanol production remains an important market for sorghum, helping to decrease our reliance on foreign oil, and farm policy efforts by National Sorghum Producers in the last farm bill delivered more than \$400 million in sorghum payments this past fall.

These achievements are not by accident. Whether advocating for a strong reference price, market access, pesticide registrations or funding to support sorghum research, NSP continues to lead legislative and regulatory change through effective policy and relationships for a more profitable, diverse and competitive sorghum industry.

Last year was a tumultuous year, but NSP staff and your board of directors fought hard on your behalf. Did we win every fight? – Not all of them, but it's a new year, and we need your support now more than ever. Between taxes, a new farm bill and dozens of other policies that have the potential to shape your farm and our industry's future, there is a lot of work to do. Can we count on you?

Donald W. Bloss
Don Bloss
Pawnee City, Nebraska
Board Chairman

Render Therefore unto Caesar the Things which are Caesar's

By Jeff Harrison, Combest Sell & Associates

At the time the first tax reform legislation since 1986 was enacted into law, we were just beginning to turn to the first things that matter in life and rendering particular gratitude unto the good Lord for all of His blessings, beginning with the Word made flesh.

But, by the time January 2, 2018, rolled around, we were back to the less celestial things in life, back at work in a New Year, perhaps a few pounds heavier, and operating under a brand new tax code that we will now have to learn.

Champions of the tax overhaul had long pledged the effort would yield tax cuts and a simplified code. Realization of this pledge, however, was not always a sure bet.

America's farmers and ranchers had a lot at stake in this reform process, and, arguably, they began with a lot more to lose than to gain.

For examples, would the cash based method of accounting be maintained? Would stepped up basis be preserved? Would 1031 like-kind exchanges survive? How would pass-through entities so frequently used by farmers and ranchers be treated under tax reform? What about net operating loss carryback for a sector that is certainly no stranger to big losses? And what about interest deductibility, section 179 expensing, and bonus depreciation for a capital intensive industry? And how about the deduction used commonly by farmer owned cooperatives and farmer members under section 199?

While vitally important to American agriculture, none of these provisions started as a sacred cow in the tax overhaul effort. Thankfully, agriculture was especially united in this exercise, and we also had some incredible friends who tipped the scales in favor of a tax code that will promote economic growth and jobs in rural America.

Finance Committee Chairman Orrin Hatch (R-UT) charged Committee Members with special agricultur-

al expertise, including Senate Agriculture Committee Chairman Pat Roberts (R-KS) and Senator John Thune (R-SD), to help develop tax policies affecting farmers and ranchers.

In the House, Ways & Means Committee, Chairman Kevin Brady (R-TX) turned to a Texas friend, a shrewd accountant and the Chairman of the House Agriculture Committee Rep. Mike Conaway (R-TX), to help navigate tax policies with special implications for agriculture.

The early results were certainly promising as later evidenced by the end results.

Cash-based accounting was expanded for farm corporations and partnerships, stepped up basis remained intact, and the exemption under the estate tax will double, at least through 2026. Section 179's immediate expensing is permanently doubled, bonus depreciation on used property is retained, and 1031 like-kind exchanges are also kept, although such exchanges are limited to real estate.

Slower in coming were resolutions to the equitable treatment of pass-through entities, continued interest deductibility, net operating loss carryback, and section 199 for cooperatives. All of these provisions were in great jeopardy in one way or another at some time during the process, but they all came through in time and in roughly that order.

Pass-through entities will continue to be taxed on personal schedules, the marginal rates of which are reduced, but married owners filing jointly are also allowed a 20 percent deduction on the first \$315,000. Farming and ranching operations generally retain interest deductibility, including those operations with higher revenues provided they use an alternative depreciation system. Net operating loss carry back provisions are maintained, and carry forward is unlimited except not more than 90 percent of income (80 percent after 2023) can be offset in any year. Farmer owned cooperatives receive a 20 percent deduction



in lieu of section 199 (which is still repealed) thanks in no small part to the efforts of Senator John Hoeven (R-ND) and Chairman Conaway.

Meanwhile, the capital gains tax remains largely unchanged and the alternative minimum tax exposure for individuals is reduced through increased exemptions, and phase-out thresholds and the AMT is eliminated altogether at the corporate level.

In short, due to unity in the agriculture sector and champions on Capitol Hill, America's farmers and ranchers may well be rendering less unto Caesar for the 2018 tax year.

Please note: always remember to rely on your tax accountant and not on our columns for official guidance when you are preparing your taxes... or you may well wind up in a bigger house but not due to valid tax savings.✍

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Generation SORGHUM

By Jennifer Blackburn

It was early summer, a warm day and four-year-old Kristopher Brown had an idea. He lived with his mom and dad on one of his grandad's farms north of Panhandle, Texas. There was a shop out back.

Kristopher pushed open the old walk-through door. Light shone in on what he hoped he would find. Inside, was a tethered seed bag—sorghum leftover from granddad's planting. Normally, the bags were kept up high, but fortunately for him, there was a bag sitting on the ground that day. He found an old tin can, emptied it out and reached down into the bag to scoop up the tiny seeds.

Holding close to his chest the can filled with his new prize, Kristopher ran outside to find the perfect place to plant them. Away from the house and in an area with plenty of sun behind the back fence, he took his mom's old garden hoe and began building rows—about 20-by-30 feet in all.

Kristopher meticulously put the seeds in the ground

then stood back in admiration of the job he had done, ready to let fate take its course. He watered the crop every day and used Miracle-Gro fertilizer each week. He took weed control seriously, taking the old garden hoe to every new weed that sprouted up. Eventually, the crop matured and made grain. It was time for harvest.

"We cut his crop with the combine," said Billy Bob Brown, Kristopher's grandad. "He sat on my lap while I cut it, and he ended up getting a little check for the grain."

That was the first crop Kris ever grew. Showing an interest in farming at an early age, Kris took every opportunity to go along with his grandad whether that meant changing water or riding on the tractor all day.

"Because they lived out on the farm, I was there every day," Billy Bob said. "It got to where almost every day, not always but most, I would go by and pick Kristopher up. He'd go with me in the pickup, and this expanded to one day he was sitting in the tractor driver's seat."

Kris is now 28 years old and a partner with Billy Bob. Kris's dad played a couple years in the NFL and now works at the nearby Pantex Plant, the nation's primary facility for the final assembly, dismantlement and maintenance of nuclear weapons. By skipping a generation, the partnership offers what Billy Bob describes as a unique relationship.

"Oh, it's special," he said. "Not many people get that opportunity."

Billy Bob said while the technical aspect of transitioning the farm to Kris is no different than it would be to his son or daughter, the difference in their relationship is the forgiveness that exists.

"You are probably more forgiving with your grandson than you are with your own son," Billy Bob said. "I can only think of one time where I really got upset with Kristopher. He thought he was at Talladega and lost an almost new air compressor off the back of his pickup."

Kris said his grandad's wisdom and patience have helped him reach where he is today. They respect one another, and over time, Kris has been given more responsibility and roles on the farm. Like most young producers, Kris has a knack for technology, keeping up with the newest equipment and practices that build greater efficiency into their operation.

"Technology is what excites me," Kris said. "We are going to be able to grow more efficiently, which is important to expanding our operation in the future."

Billy Bob said availability of land is a big factor in expanding their farm, but through Kris's intuitiveness with precision farming, they already have improved their crops and production.

Grain sorghum plays a critical role in the Browns' farm rotation, and Billy Bob said while they have diversified their crops beyond sorghum and wheat, sorghum continues to perform and provide lasting benefits to their operation.

"Sorghum is a mainstay on our farm," he said. "It's always been there, and it's always been good to us."



Billy Bob and Kris also grow seed sorghum, which provides added profitability to their operation. Kris said although there are extra steps that must be taken to produce seed sorghum, the added effort is worth it.

"Seed sorghum is a regular part of our rotation now along with regular grain sorghum," Kris said. "Sorghum adds profitability when prices are down and is a great crop for us to go in behind failed cotton. It can take a beating better and is just a good crop to have."

Billy Bob was on the founding United Sorghum Checkoff Program board of directors and said he has seen a lot of changes over the years that are providing opportunities to new a new generation of sorghum producers like his grandson Kris.

"There are a wide variety of uses for sorghum now, and a lot of that is because of checkoff dollars that are making people aware of how sorghum

We have progressed from 'here comes Billy Bob and his grandson' to 'here comes Kris with his grandad,' That's the way it should work.

can be used in so many ways," Billy Bob said. "The sorghum board has developed the resources to be able to expand the knowledge and use of sorghum for future generations."

Kris cannot remember what he bought with the small check from his first sorghum crop 14 years ago, but his sorghum today is affording him new opportunities from a profitability and farm sustainability standpoint. He also credits his grandad for the capital, land and equipment—acknowledging the challenge those three items alone often present many young farmers looking for a start.

Kris said he admires Billy Bob's work ability most and fondly calls him the No. 1 boss that keeps him going and passionate about the work they complete side by side each day.

Billy Bob is grateful their family farm legacy will continue with Kris, and as he takes steps away from the farm, Kris is eagerly filling an expanded role.

"We have progressed from 'here comes Billy Bob and his grandson' to 'here comes Kris with his grandad,'" Billy Bob said. "That's the way it should work."

A Billion-Bushel Breakthrough

By Chris Cogburn

One billion is a big number. Since China entered the market for U.S. sorghum in April 2013, the developing nation has taken delivery of the equivalent of 1.1 million semi trailers, 2,273 unit trains or 510 Panamax vessels full of sorghum. At the 2017 national average sorghum yield, producing one billion bushels of sorghum would take an area almost the size of West Virginia. Even by these almost comically high standards, it is difficult to overstate the impact China has had on the U.S. sorghum industry.

Chinese demand is even more impressive when expressed in terms of value. The total financial impact on the U.S. sorghum industry now stands at almost \$6 billion, and the transactions that enable this trade contribute positively to gross domestic product and U.S. monetary health. In an age when many lament the increasing number of goods produced overseas and the accompanying loss of U.S. jobs, billions of dollars in international sales is an accomplishment of which sorghum producers should be very proud.

The impact at the farm level has been significant. To be sure, multiple supply chain participants are reaping the benefits of China's seemingly insatiable appetite for sorghum. And, on top of the typical local participants, sometimes up to a half-dozen additional intermediaries are needed and require compensation in international deals. Still, sorghum producers have seen basis appreciation.

The most notable appreciation came in marketing year 2014/15, when the national average sorghum price was \$4.03 compared to a national average corn price of \$3.70. This 8.9 percent premium was the largest in 91

years and the report in which it was officially recorded, the World Agricultural Supply and Demand Estimates report, reflects a true U.S. average producer price. Local supply and demand issues did contribute to regional differences, but overall, sorghum producers were very well compensated for their product that year.

As with any market (and agricultural commodity markets in particular), overproduction is common and can quickly lead to a price collapse. This situation has played out in textbook fashion since the 2014/15 marketing year. On the heels of an 8.9 percent premium, acreage sharply increased and production quickly outpaced Chinese demand. Inevitably, prices fell and acreage realigned.

However, it is important to remember Chinese sorghum demand never disappeared. It contracted somewhat due to falling corn prices in the country, but a significant portion of the price decline can be attributed to growing conditions that led to a national yield record and a predictably large crop. Price declines sting regardless of the underlying causes, so to reduce the likelihood of a reoccurrence, producers should be on the lookout for opportunities to lock profit (and also protect equity).

The last several months have seen incredible pull from Chinese sorghum buyers, and many are looking to secure bushels for delivery months from now. Whether you use a broker or a local elevator, find out more about the opportunity to begin making forward sales. NSP and the Sorghum Checkoff are always willing to help guide you, as well. 🌾



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Sugarcane Aphid Tolerant Hybrid Solutions for Your Field

By Jennifer Blackburn

Upon arrival, sugarcane aphids could only be controlled through chemical application, but seed companies are responding with hybrid solutions in a triumphant and expedient way. More hybrids than ever labeled sugarcane aphid tolerant or resistant are heading to fields this spring.

It has now been close to five years since sugarcane aphids arrived in U.S. sorghum. Their onset in the south had farmers and industry scratching their heads in aggravation of how to effectively mitigate the aphid's impact.

Resiliency is nothing new for the sorghum community, however, and the entire industry stepped up to respond. Sorghum breeders and agronomists went to work, searching for hybrids equipped to stand up to the sugarcane aphid, and what they found indicated many hybrids already had varying degrees of resistance.

This enabled researchers to spend time testing commercial sorghum lines right away rather than searching for genetic resistance through germplasm collections that then require breeding into commercial lines.

There are now at least 12 seed brands that promote sorghum hybrids with tolerance or resistance to sugarcane aphids. Many of these hybrids are not new, but companies are marketing them as sugarcane aphid tolerant or resistant, removing guess work for producers who are looking for a hybrid that best meets their agronomic needs while mitigating pest challenges.

Two companies have taken the measure even farther, launching a sugarcane aphid resistant specific seed brand. Alta Seeds released its Aphix™ brand in September 2017, which includes four hybrids that Alta says deliver low sugarcane aphid damage scores through testing by the U.S. Department of Agriculture Agricultural Research Service.

In fall 2017, Warner Seeds, Inc. also launched a sugarcane aphid resistant hybrid brand Sugarcane Aphid Guard®, which includes six hybrids from early to medium-full maturity—three of which are new to the market for 2018. These are considered the best sugarcane aphid tolerant hybrids these two companies have to offer.

DefendYourCrop.com, a resource provided by the United Sorghum Checkoff Program, includes a list of hybrids showing tolerance to sugarcane aphids. It includes hybrids not only from Alta and Warner but also B-H Genetics, Dekalb, Dyna-Gro Seed, Frontier Hybrids, Golden Acres, Heartland Genetics, NuTech Seed, Pioneer, Pogue, Richardson Seeds and Sorghum Partners.

The list contains hybrids that have been identified over the last two years to have tolerance to sugarcane aphids and are based on university and other independent trials that have been identified by a third party.

You may be asking what the difference is between tolerance and resistance. Hybrids are being marketed using both terms and there is truth to both. There are three types of resistance: tolerance, antixenosis (non-preference), and antibiosis. George Teetes, Ph.D., a retired Texas A&M University entomology professor, explains the different types of resistance here <https://ipmworld.umn.edu/teetes>.

National Sorghum Producers and the Sorghum Checkoff, along with various seed companies, decided early on to call the current set of hybrids that show any of the three types of resistance tolerant merely because many growers tend to think the term resistant means immune.

Hybrids on the market today are not immune to sugarcane aphids. They need to be scouted and sprayed if aphid populations reach threshold levels. There is, however, a clear difference in susceptible hybrids and those hybrids labeled as tolerant or resistant to sugarcane aphids in the field.

Sorghum breeders with companies, universities and the USDA continue to identify new sources for sugarcane aphid resistance. In the future, hybrids with improved resistance are expected to be released, and will gradually work their way into commercial hybrids. Lucky for producers, many are ready for the field in 2018. 🌾

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New Administrator, New Rules

Scott Pruitt seeks to end sue and settle at EPA

By Joe Bischoff, Cornerstone Government Affairs

Administrator Scott Pruitt is fulfilling his promise to provide an unprecedented level of public participation and transparency in the Environmental Protection Agency.

Earlier this year, Pruitt issued an Agency-wide directive designed to end “sue and settle.” The practice known as sue and settle refers to when an advocacy group sues a regulatory agency and rather than defend itself in court, the agency settles.

We have seen this scenario play out numerous times in recent years, including in pesticide policy and registrations important to the farming community. The American Action Forum estimates that since 2005, sue and settle arrangements at EPA have cost taxpayers \$68 billion. These settlement agreements are typically nego-

tiated informally and behind closed doors without participation from the public and affected parties, particularly agriculture interest groups.

While early sue and settle agreements were aimed at new federal regulatory programs, advocacy groups are now using these agreements to pressure the EPA to override state-level environmental decisions. These groups then use aggressive and unreasonable timelines to advance their lawsuits and pressure the EPA into settling before the proper court process can occur.

A notable example is the Regional Haze requirement under the Clean Air Act. A group of nonprofit environmental advocacy organizations sued the EPA for missing deadlines in 34 states.

As a result, the EPA entered into a consent decree with aggressive deadlines by which the EPA was required to reject or accept state or federal implementation plans to supplement the state action.

Ultimately, the state implementation plans were bypassed and the EPA imposed a more aggressive and expansive federal Regional Haze implementation solution.

Further, the EPA was allowed just 45 days for comments on the rule that would impose more than \$300 million in controls not included in the state’s implementation plans and up to \$2.16 billion annually for national compliance.

As settlements like these unfold, the state is pushed to implement new regulations without any additional funding from the EPA, causing the state to redirect their program dollars and reassign personnel to complete the administrative tasks to satisfy the agreements made through sue and settle.

These actions can lead to increased state taxes and fees or funding cuts from other state programs. This puts the cost burden of the new regulation on the state’s farmers, community members, and businesses.

EPA Administrator Pruitt’s directive outlines several changes to increase public involvement when con-

sidering a settlement agreement. The directive includes, publishing a notice of intent to sue the EPA, publishing complaints or petitions, mandatory involvement of state regulatory bodies that could potentially be affected by a settlement or consent decree, providing a sufficient and reasonable timeline to modify proposed and final rules, and publishing any consent decrees and settlements for public comments or a public hearing.

This gives the public the opportunity to meaningfully comment and propose alternatives and agencies a chance to conduct proper analysis to promote better regulations. Several U.S. Representatives commended Administrator Pruitt’s initiative.

“No government agency should collude with special interest groups to redefine its priorities through covert consent decrees,” said Congressman Doug Collins (R-GA). “The EPA’s decision to crack down on this practice will give Americans back their right to know about and respond to federal rulemaking, and I applaud Secretary Pruitt for taking this step today.”

House Judiciary Chairman Bob Goodlatte (R-VA) followed with, “I commend EPA Administrator Scott Pruitt for his decision to help end the reprehensi-

ble practice of using ‘sue and settle’ tactics to regulate through litigation. This change in EPA policy represents a strong beginning to a much-needed return to transparency, due regulatory process, and respect for constitutional authority.”

Overall, the directive should lead to increased transparency in the settlement process. Administrator Pruitt also hopes the directive will reduce outside groups’ incentive to sue. The directive may have the potential to prolong litigation to the point that makes the settlement process more cumbersome and thus advocacy groups may not be as willing to engage in the process.

Another issue of the new directive is the possibility of industry groups having too much influence on the direction of potential EPA decisions and discouraging settlements when they would be appropriate, increasing pressure on the Agency’s limited resources. To the extent that the EPA pursues litigation rather than settlement, the Agency risks judicially-imposed orders that have the potential of being stricter or more intrusive.

While Administrator Pruitt is praised for his efforts, this is merely a step towards the larger movement for government transparency and accountability. ♪



▲ NATIONAL SORGHUM PRODUCERS representatives met with Scott Pruitt following his appointment to Administrator of the EPA to discuss important regulatory issues facing sorghum farmers and opportunities for sorghum oil as a biodiesel feedstock.

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Sorghum Abroad

Around the World With Sorghum

Mexico

Recent collaborations between the Sorghum Checkoff, U.S. Grains Council, and Mexico have promoted the inclusion of sorghum in pet nutrition programs. Expansion into the niche pet food market can provide opportunity to expand trade relationships with Mexico beyond existing livestock feed markets and generate opportunity in other Mexican marketplaces.

Colombia

Education in the Colombian marketplace is key in helping end users understand and recognize how they can source U.S. sorghum. Opportunity exists in Columbia and the country needs a buying signal that will allow them to purchase U.S. sorghum for livestock feed and other uses.

Peru

There have been multiple outreach programs to promote U.S. sorghum in Peru. U.S. sorghum possess qualities that are desirable for Peru's climate conditions, making it a realistic alternative to feed rations in their expanding meat and egg markets. Exports to Peru are duty-free per the U.S.-Peru Free Trade Agreement (PTPA) that went into effect in 2009. The U.S.-Peru Free Trade Agreement (PTPA) along with Peru's Callao port expansion amplifies interest in U.S. sorghum exports.

United Kingdom

The Healthy Crop is a food company that produces lil'POP sorghum in Scotland. The company touts sorghum's benefits as a nutrient rich, natural popped sorghum product that saves water and is gluten-free—gaining positive public notoriety across the United Kingdom. The company is utilizing U.S. sorghum.

Spain

U.S. sorghum is getting increased interest from end users in the Iberia Peninsula. Spanish pastry producers are drawn to the nutrient-rich milled sorghum for their artisan breads as consumer demand for gluten-free products continues to grow.

Argentina

Argentina is one of the world's leading exporters of grain sorghum. Unlike U.S. grown sorghum, Argentina grows a great amount of high-tannin sorghum to deter bird feeding in the field.

France

SorghumID is a new organization launched within the last year that brings together European sorghum stakeholders from the sorghum breeding, production and manufacturing sectors. The association's objectives are to represent and promote the interest of sorghum through national and European Institutions on par with other main crops, to implement and promote the technical and economic advantages of sorghum production, promote the potential uses of sorghum for human food, animal feed and non-food usages, and bring together and mobilize potential stakeholders to build synergies to promote sorghum over the long term.

Thailand

The Sorghum Checkoff recently went to Thailand to host a series of technical workshops and seminars to promote U.S. sorghum as a feed ingredient in the aquiculture industry. In-country feeding trials show sorghum possesses desirable feeding qualities for Pangasius, a native catfish species in Southeast Asia.

Vietnam

Sorghum producers now have possible entry into an active, high-value market in Vietnam aquaculture. The Sorghum Checkoff partnered with the U.S. Grains Council to conduct a catfish feeding trial in Vietnam. The study demonstrated the ability for sorghum to be successfully substituted in traditional aquaculture feed.

Australia

Australia is one of the leading exporters of sorghum behind the United States and Argentina. Breeding efforts have focused on developing hybrids with both drought and insect resistance. Australian hybrids are known for their stay-green characteristics and breeders have developed midge resistant hybrids. U.S. breeders and scientists routinely collaborate on projects, and National Sorghum Producers and the Sorghum Checkoff has hosted multiple teams of Australian farmers in the U.S. during summer crop tours.

China

The rapidly growing Chinese sorghum market has been a stimulant for U.S. sorghum production. China is expected to be the primary destination for the 260 million U.S. sorghum bushels to be exported in the 2017-2018 marketing year. Sorghum is being studied and used in a variety of Chinese markets, including duck feed and baijiu markets.

Japan

Sorghum for consumer use is finding a place in the health-conscious Japanese food market as a specialty, high-end product. Japanese chefs utilize U.S. sorghum because of its versatility and health attributes including high fiber and antioxidants. Collaborative efforts are placing focus on the 2020 Tokyo Olympics with sorghum education and outreach to hotel restaurants that interact with tourists for the event.

2017 NSP Yield Contest Results

IT WAS A challenging growing season for many parts of the Sorghum Belt. From dry conditions in the north to wet conditions near harvest in the south along with hurricanes and other disasters, sorghum farmers faced challenges in 2017. Despite these trials, sorghum producers overcame odds and produced yields National Sorghum Producers is proud to highlight in this issue of *Sorghum Grower*. NSP also recognizes the newest inductee into the Sorghum Yield Contest Hall of Fame—Ki Gamble. Gamble had the highest yield in the 2003, 2007 and 2012 contests in the irrigated conventional-till category planting Pioneer 84G62 in Kiowa County, Kansas. National and state winners will be recognized Wednesday, February 28, 2018, during Commodity Classic, in Anaheim, California. Congratulations all winners on an exceptional growing season.

NATIONAL WINNERS Note: National winners are selected from state first place winners

Dryland Conventional-Till

1 228.07 bu/ac
Winter Johnston
Fulton County, PA
Pioneer 84G62

2 215.03 bu/ac
Michael Dixon
Audrain County, Mo
Pioneer 84P80

3 195.42 bu/ac
James Alexander
Bond County, IL
Pioneer 84G62

Dryland Double Crop

1 192.11 bu/ac
Stephanie Santini .
Warren County, NJ
Pioneer 85Y40

2 186.92 bu/ac
Billy H. Bowers Farm Trust
Davidson County, NC
Pioneer 84P80

3 161.33 bu/ac
Robert Hoffines
Lancaster County, PA
Pioneer 84P80

Dryland No-Till

1 226.31 bu/ac
Harry Johnston
Fulton County, PA
DEKALB DKS37-07

2 198.42 bu/ac
Mark Bloss
Pawnee County, NE
Pioneer 84P72

3 187.52 bu/ac
S&A Farms
Mahaska County, IO
DEKALB DKS 53-53

Dryland Reduced-Till

1 198.00 bu/ac
Robert Santini Jr.
Warren County, NJ
Pioneer 84G62

2 193.88 bu/ac
Bob Little
Lake County, IN
Pioneer 85G03

3 186.52 bu/ac
Debra L. Vorderstrasse
Harlan County, NE
Pioneer 84P72

Irrigated Conventional-Till

1 212.70 bu/ac
Ball Farms
Canyon County, ID
Pioneer 87P06

2 207.77 bu/ac
Chad Dane
Clay County, NE
Pioneer 86P90

3 187.46 bu/ac
Mark Scates
White County, IL
Pioneer 84G62

Irrigated Double Crop

1 188.22 bu/ac
Jeff Scates
Gallatin County, IL
Pioneer 84G62

2 185.60 bu/ac
Jeffrey Barlieb
Warren County,NJ
Pioneer 84G62

3 159.92 bu/ac
Fike Farms
Hidalgo County, TX
DEKALB DKS53-53

Irrigated No-Till

1 220.49 bu/ac
Robert Santini Sr.
Warren County, NJ
Pioneer 85Y40

2 189.68 bu/ac
Kathryn Scates
White County, IL
Pioneer 84G62

3 171.19 bu/ac
Beckman Farms
Sheridan County, KS
Golden Acres Genetics 5556

Irrigated Reduced-Till

1 202.25 bu/ac
Mike Baker
Hitchcock County, NE
Fontanelle G6192

2 185.91 bu/ac
Jonathan Dansel
Wallace County, KS
Golden Acres Genetics 3960B

3 185.00 bu/ac
Joe Scates
White County, IL
Pioneer 84G62

National Food-Grade Winners

Non-Irrigated
161.88 bu/ac
Ron Robison
Harlan County, NE
Pay Dirt J300

Irrigated
191.43 bu/ac
Ron Robison
Harlan County, NE
Pay Dirt J300

STATE WINNERS

Place	State	County	Name	Yield (bu/ac)	Seed Brand	Variety
Dryland Conventional-Till						
1st	Arkansas	Jackson	DID Farms	129.14	Pioneer	84P80
1st	Delaware	Kent	A. Downes Warren Jr.	121.60	Pioneer	84G62
1st	Florida	Lafayette	Rusty McLeod & Folsom - Prine Partnership	77.74	Pioneer	83P17
1st	Illinois	Bond	James Alexander	195.42	Pioneer	84G62
2nd	Illinois	Gallatin	Chris Scates	150.20	Pioneer	84G62
1st	Indiana	Knox	Carter & Sons Farms, LLC	154.56	DEKALB	DKS37-07
1st	Iowa	Van Buren	Charles J. Livesay	92.07	Pioneer	84G62
1st	Kansas	Wichita	Galen Berning	174.16	Pioneer	85G46
2nd	Kansas	Washington	Long Farms - Jerry & Sue Long	168.22	DEKALB	DKS53-67
3rd	Kansas	Neosho	Bogner Land & Cattle	121.44	Pioneer	85G03
1st	Kentucky	Henderson	Stan Williams	178.98	Pioneer	84P80
2nd	Kentucky	Union	Voss Farms	162.92	Pioneer	84P80
1st	Maryland	Charles	Jack Welch	94.76	DEKALB	DKS37-07
1st	Michigan	Allegan	Drozdz Farms	156.43	Pioneer	86G32
1st	Missouri	Audrain	Michael Dixon	215.03	Pioneer	84P80

STATE WINNERS, *continued*

Place	State	County	Name	Yield (bu/ac)	Seed Brand	Variety
2nd	Missouri	Livingston	HRB Farming Partnership	185.84	DEKALB	DKS53-67
3rd	Missouri	Moniteau	Nicholas Schoenthal	182.80	Pioneer	84G62
1st	Nebraska	Pawnee	Matthew J. Bloss	177.27	DEKALB	DKS53-67
2nd	Nebraska	Nance	Lynn Belitz	114.44	DEKALB	DKS37-07
1st	New Jersey	Warren	Chris Santini	190.17	Pioneer	85Y40
1st	New York	Oneida	Bob Pawlowski	89.40	Channel	5B90
1st	North Carolina	Perquimans	Gretchen S. Ownley	133.02	Pioneer	84P80
2nd	North Carolina	Perquimans	Wallace N. Ownley	132.04	Pioneer	84P80
1st	Oklahoma	Ottawa	Zachary Rendel	161.21	DEKALB	DKS38-88
2nd	Oklahoma	Texas	Fischer & Fischer	132.91	Pioneer	85Y34
3rd	Oklahoma	Cimarron	Drew Allen	106.23	Alta Seeds	AG1203
1st	Pennsylvania	Fulton	Winter Johnston	228.07	Pioneer	84G62
1st	South Dakota	Charles Mix	David Knoll	136.14	Pioneer	88Y41
1st	Texas	Nueces	Dodson Farms Inc.	145.45	Pioneer	84P80
2nd	Texas	Nueces	Legacy Farms	140.21	Pioneer	83P73
3rd	Texas	Nueces	Dodson Ag Inc.	137.47	Pioneer	83P73
1st	Virginia	Surry	Jack C. Berryman Jr.	78.39	Pioneer	83P17

Dryland Double Crop

1st	Arkansas	Jackson	D&M Farms	94.55	Pioneer	84P80
1st	Florida	Lafayette	Terry Folsom & Rusty McLeod Farms	96.90	Pioneer	83P17
1st	Illinois	White	Hugh Scates	152.00	Pioneer	84G62
1st	Indiana	Gibson	Phil Scott	152.81	Pioneer	87P06
2nd	Indiana	Gibson	Will Scott	147.27	Pioneer	87P06
1st	Kansas	Ottawa	Came Farms Inc.	78.48	Pioneer	86P90
2nd	Kansas	Dickinson	Mark Pettijohn	61.57	Pioneer	86P20
1st	Kentucky	Daviess	Pat Thompson	98.12	Pioneer	84P80
2nd	Kentucky	Daviess	Philip Thompson	83.58	Pioneer	84P80
1st	Maryland	Montgomery	William F. Willard Farms, LLC	103.69	Pioneer	84P80
1st	New Jersey	Warren	Stephanie Santini	192.11	Pioneer	85Y40
2nd	New Jersey	Warren	Sam Santini Jr.	191.66	Pioneer	84G62
1st	North Carolina	Davidson	Billy H. Bowers Farm Trust	186.92	Pioneer	84P80
2nd	North Carolina	Perquimans	Laurence Chappell	68.53	Pioneer	84P80
1st	Pennsylvania	Lancaster	Robert Hoffines	161.33	Pioneer	84P80

Dryland No-Till

1st	Arkansas	Jackson	DID Farms	123.13	Pioneer	84P80
1st	Colorado	Washington	James Diamond	125.96	DEKALB	DKS28-05
1st	Delaware	Kent	A. Downes Warren Jr.	128.72	Pioneer	84G62
1st	Florida	Suwannee	Tommy & Christina Taylor	85.15	Pioneer	83P17
1st	Illinois	Gallatin	Mike Scates	156.20	Pioneer	84G62
1st	Indiana	Clark	Terry Vissing	179.59	DEKALB	DKS38-88
1st	Iowa	Mahaska	S&A Farms	187.52	DEKALB	DKS 53-53
1st	Kansas	Washington	Lee Pifer	176.88	Pioneer	84P72
2nd	Kansas	Wichita	Vulgamore Family Farms	164.22	Pioneer	86G32
3rd	Kansas	Washington	Long Farms - Jerry & Sue Long	160.20	Pioneer	84G62

STATE WINNERS, *continued*

Place	State	County	Name	Yield (bu/ac)	Seed Brand	Variety
1st	Kentucky	Daviess	Brian Thompson	167.67	Pioneer	84P80
2nd	Kentucky	McLean	Philip W. Logsdon	125.79	Pioneer	84P80
1st	Maryland	Montgomery	William F. Willard Farms, LLC	168.85	Pioneer	84P80
1st	Missouri	Cooper	Brumback Farms Inc.	154.34	Pioneer	84G62
2nd	Missouri	Livingston	David W. Hughes - Hughes Farms	147.63	Pioneer	85G03
3rd	Missouri	Livingston	Matthew L. Hughes - Hughes Farms	141.78	Pioneer	85G03
1st	Nebraska	Pawnee	Mark Bloss	198.42	Pioneer	84P72
2nd	Nebraska	Harlan	Duane L. Vorderstrasse	180.36	Pioneer	84G62
3rd	Nebraska	Sarpy	Mike Scholting	176.87	Pioneer	84G62
1st	New Jersey	Warren	Sanduff Farms	186.05	Pioneer	84G62
1st	New Mexico	Curry	Harrison Family Partnership	133.79	DEKALB	DKS37-07
1st	North Carolina	Davidson	Billy H. Bowers Farm Trust	160.85	Pioneer	84P80
2nd	North Carolina	Perquimans	Laurence Chappell	113.96	Pioneer	84P80
3rd	North Carolina	Yadkin	Peter Fleming - Triple Creek Farm	96.11	Sorghum Partners	NK8828
1st	Oklahoma	Texas	Dan Herald Farms	143.67	Sorghum Partners	SP 73B12
2nd	Oklahoma	Beaver	Kevin Pshigoda	124.38	Golden Acres Genetics	390W
3rd	Oklahoma	Texas	Mark & Ron Clancy Farms	123.66	Pioneer	86G32
1st	Pennsylvania	Fulton	Harry Johnston	226.31	DEKALB	DKS37-07
2nd	Pennsylvania	Lancaster	Bob Shearer	176.08	Pioneer	84G62
3rd	Pennsylvania	Berks	Josh Kurtz	114.11	Pioneer	86G32
1st	South Dakota	Charles Mix	Lee A. Linnell	135.69	Pioneer	87P06
2nd	South Dakota	Brule	Vanzee Ranch & Feedlot Inc.	92.13	Sorghum Partners	SP 34A19
1st	Texas	Ochiltree	Duane Pshigoda	150.54	Pioneer	85Y34
2nd	Texas	Ochiltree	Tregellas Family Farms	143.94	Pioneer	86P20
3rd	Texas	Lipscomb	L&L Farms - Lynn & Lane Born	143.79	Pioneer	86P20
1st	Virginia	Rockingham	Van Ike Farm, LLC	156.42	Pioneer	83P17
2nd	Virginia	Spotsylvania	Alex Miller	61.44	Channel	7B30

Dryland Reduced-Till

1st	Arkansas	Jackson	D&M Farms	61.95	Pioneer	84P90
1st	Colorado	Baca	Smith Bros.	103.85	Channel	6B60
2nd	Colorado	Kit Carson	Tim Stahlecker	77.11	DEKALB DKS	29-07
1st	Delaware	Kent	A. Downes Warren Jr.	139.67	Pioneer	84G62
1st	Florida	Suwannee	Rusty McLeod & Mark Randell Farms	70.94	Pioneer	83P17
1st	Illinois	Gallatin	John Scates	175.90	Pioneer	84G62
1st	Indiana	Lake	Bob Little	193.88	Pioneer	85G03
1st	Iowa	Van Buren	Courtney Merrill	89.65	Pioneer	85Y40
1st	Kansas	Kiowa	Ki Gamble	181.43	Pioneer	84G62
2nd	Kansas	Washington	Long Farms - Jerry & Sue Long	179.87	Pioneer	84G62
3rd	Kansas	Washington	Lee Pifer	169.21	Pioneer	84P72
1st	Michigan	Van Buren	Jake Drozd	68.65	Pioneer	87P06
1st	Missouri	Livingston	HRB Farming Partnership	186.38	DEKALB	DKS53-53
2nd	Missouri	Livingston	HRB Farming Partnership	185.46	DEKALB	DKS53-53
3rd	Missouri	Caldwell	Travis Walker	170.57	Pioneer	84P72
1st	Nebraska	Harlan	Debra L. Vorderstrasse	186.52	Pioneer	84P72
2nd	Nebraska	Harlan	Duane L. Vorderstrasse	181.82	Pioneer	84G62
3rd	Nebraska	Pawnee	Matthew J. Bloss	173.94	DEKALB	DKS37-07

STATE WINNERS, continued

Place	State	County	Name	Yield (bu/ac)	Seed Brand	Variety
1st	New Jersey	Warren	Robert Santini Jr.	198.00	Pioneer	84G62
1st	New Mexico	Curry	Doug Harrison	119.71	DEKALB	DKS37-07
1st	New York	Oneida	Tom Corcoran	103.79	Channel	6B13
1st	North Carolina	Davidson	Billy H. Bowers Farm Trust	162.61	Pioneer	84P80
2nd	North Carolina	Perquimans	Laurence Chappell	135.48	Pioneer	84P80
1st	Oklahoma	Beaver	Kevin Pshigoda	131.14	Golden Acres Genetics	390W
2nd	Oklahoma	Texas	Fischer & Fischer	126.08	Pioneer	85Y34
3rd	Oklahoma	Cimarron	Drew Allen	108.86	Alta Seeds	AG1203
1st	Pennsylvania	Lancaster	Michael Shearer	181.50	Pioneer	84G62
1st	South Dakota	Aurora	Ronald Glissendorf	146.84	DEKALB	DKS29-28
2nd	South Dakota	Charles Mix	Lee A. Linnell	132.99	Pioneer	87P06
3rd	South Dakota	Brule	Vanzee Ranch & Feedlot Inc.	114.88	Sorghum Partners	SP 34A19
1st	Texas	Bexar	William W. Vasbinder	153.19	Pioneer	84G62
2nd	Texas	Deaf Smith	Wayne Betzen Farms Inc.	135.43	Alta Seeds	AG1203
3rd	Texas	Ochiltree	Sell Grain Inc.	113.15	DEKALB	DKS37-07
1st	Virginia	Rockingham	Van Ike Farm, LLC	135.78	Pioneer	83P17

Irrigated Conventional-Till

1st	Arkansas	Jackson	DID Farms	121.62	Pioneer	84P80
2nd	Arkansas	Clay	EDL Farms	61.32	Pioneer	84P80
1st	Florida	Suwannee	Mark Randell & Tommy Taylor	91.95	Pioneer	83P17
1st	Idaho	Canyon	Ball Farms	212.70	Pioneer	87P06
2nd	Idaho	Canyon	Jim Boehlke Bell - Key Farms	199.82	Pioneer	85Y40
1st	Illinois	White	Mark Scates	187.46	Pioneer	84G62
1st	Kansas	Kiowa	Ki Gamble	229.47	Pioneer	84G62
2nd	Kansas	Stevens	Jerry Hull	154.46	Sorghum Partners	SP 73B12
1st	Minnesota	Stearns	Joe Krippner	128.21	DEKALB	DKS28-05
1st	Missouri	Scott	J. R. Bollinger	154.93	Pioneer	84P80
2nd	Missouri	Livingston	Dave & Matt Hughes - Hughes Cattle Co.	151.86	Pioneer	84G62
1st	Nebraska	Clay	Chad Dane	207.77	Pioneer	86P90
2nd	Nebraska	Harlan	Scott Jewett	192.01	Pioneer	84G62
1st	New Jersey	Warren	Sharon Santini	186.87	Pioneer	84G62
1st	Oklahoma	Texas	Neal Hofferber	172.44	Pioneer	86G32
1st	Pennsylvania	Fulton	Jessica Deshong	109.57	DEKALB	DKS37-07
1st	Texas	Ochiltree	Monte Wright	171.35	DEKALB	DKS53-67
2nd	Texas	Hidalgo	Fike Farms	157.09	DEKALB	DKS53-53
3rd	Texas	Floyd	Danny Nutt	139.74	Pioneer	86P20
1st	Virginia	King William	John N. Mills III	175.08	Pioneer	83P17

Irrigated Double Crop

1st	Arkansas	Jackson	D&M Farms	75.09	Pioneer	84P80
1st	Delaware	Kent	Frank G. Hrupsa	117.01	Pioneer	84G62
1st	Florida	Lafayette	Rusty McLeod & Terry Folsom Partnership	92.35	Pioneer	83P17
1st	Illinois	Gallatin	Jeff Scates	188.22	Pioneer	84G62
1st	Kansas	Kiowa	Randy Nusz	123.84	Pioneer	86G32
2nd	Kansas	Saline	Came Farms Inc.	90.65	Pioneer	86P90
1st	New Jersey	Warren	Jeffrey Barlieb	185.60	Pioneer	84G62
1st	Oklahoma	Texas	Ron & Mark Clancy Farms	148.59	Pioneer	86G32
1st	Pennsylvania	Fulton	Howard Deshong	107.81	Pioneer	87-P06
1st	Texas	Hidalgo	Fike Farms	159.92	DEKALB	DKS53-53

STATE WINNERS, continued

Place	State	County	Name	Yield (bu/ac)	Seed Brand	Variety
Irrigated No-Till						
1st	Arkansas	Jackson	DID Farms	130.28	Pioneer	84P80
1st	Delaware	Kent	Frank G. Hrupsa	157.48	Pioneer	84G62
1st	Florida	Suwannee	Mark & Randi Randell	94.45	Sorghum Partners	NK8828
1st	Illinois	White	Kathryn Scates	189.68	Pioneer	84G62
1st	Kansas	Sheridan	Beckman Farms	171.19	Golden Acres Genetics	5556
2nd	Kansas	Sheridan	Jeff Wessel	116.15	Pioneer	85G03
1st	New Jersey	Warren	Robert Santini Sr.	220.49	Pioneer	85Y40
2nd	New Jersey	Warren	Ron Sigler	161.93	Pioneer	84G62
Irrigated Reduced-Till						
1st	Arkansas	Jackson	DID Farms	128.44	Pioneer	84P80
1st	Florida	Suwannee	Mark & Taylor Randell	90.78	Pioneer	83P17
1st	Idaho	Canyon	Ball Farms	209.16	Pioneer	87P06
1st	Illinois	White	Joe Scates	185.00	Pioneer	84G62
1st	Kansas	Wallace	Jonathan Dansel	185.91	Golden Acres Genetics	3960B
2nd	Kansas	McPherson	Mark Vogts	158.89	Sorghum Partners	SP 73B12
1st	Missouri	Scott	J. R. Bollinger	159.21	Pioneer	84P80
1st	Nebraska	Hitchcock	Mike Baker	202.25	Fontanelle	G6192
2nd	Nebraska	Hall	Tom Hartman	201.27	Sorghum Partners	SP 68M57
3rd	Nebraska	Kearney	Josh Cederburg	183.18	Pioneer	84G62
1st	Oklahoma	Cimarron	Double A Irrigation	156.84	Pioneer	86P20
1st	Pennsylvania	Lancaster	Mast Farms	177.62	Pioneer	84G62
1st	Texas	Ochiltree	Monte Wright	166.31	DEKALB	DKS53-67



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RETOOLING Sorghum Breeding

By Jennifer Blackburn

Plant breeding is a numbers game. The decisions that plant breeders often make as they sort through thousands of crosses each year is less about what to keep and more about what to discard. For sorghum, this process has remained mostly unchanged since the first hybrid grain sorghums were introduced in the 1950s.

Because plant breeding is a numbers game, grain sorghum's fate, and hence the genetic gains, lies within the ability for plant breeders to screen higher volumes of material, leading to greater hybrid vigor and ultimately more yield in the farmer's field.

The production of grain sorghum hybrids, new or improved, is currently more limited by screening bandwidth than it is by sorghum genetic diversity. The sorghum genome is extremely diverse, encompassing genetic heritage from tens of thousands of lines and races from all over the world, but the bottleneck to utilization of this diversity and advancements remains bandwidth.

Eyeing New Technology

In 2013, the United Sorghum Checkoff Program board of directors took a new approach to changing sorghum's numbers game by retooling the way sorghum genetics are evaluated. A complex, yet simple, natural variation in plant breeding known as doubled haploids has long been used in corn breeding with staggering results.

Pioneer estimates that in 2012, its corn program evaluated more inbred lines as a result of using doubled haploid technology than they did in the previ-

ous 80 years combined. This had sorghum leadership asking if sorghum could benefit from this same technology? The answer was yes, and has led to what is now a six-year collaboration with Pioneer to retool sorghum breeding.

"To remain competitive and advance yields, sorghum needed a revolutionary change to allow sorghum breeders to move the needle," said Sorghum Checkoff Crop Improvement Director Justin Weinheimer. "The USCP board realized this need and thus the partnership was formed with Pioneer to explore developing a new breeding system in sorghum utilizing doubled haploids."

Doubled Haploid Advantage

In plant breeding, purity of inbred lines is achieved by multiple generations of backcrossing. These generations are used to cross heritable and desirable characteristics back into a genetic platform, the inbred, that is suitable for breeding. In most cases, this process can take up to eight generations to achieve purity. With the doubled haploid inducers the process is essentially shrunk to a single generation.

"From a breeding perspective, this could be a game-changing discovery—quite revolutionary in terms of the way we go about product development in sorghum," Pioneer research scientist Cleve Franks said. "This could give sorghum breeders the opportunity to create [finished parental lines] to go into producing hybrids in one single step."

While this does not mean increased yields will be instantaneous, it does mean that the bandwidth for a breeding program increases almost infinitely because of the re-

Conventional Sorghum Breeding



▲ DOUBLED HAPLOID SORGHUM breeding significantly reduces the amount of generations it takes to achieve a pure line through backcrossing, which significantly saves time and costs improving sorghum hybrids.

Doubled Haploid Sorghum Breeding



duction in generations that need to be planted to produce workable inbred lines that are used in hybrid programs.

"Think about a sorghum breeding program and only being able to focus on two or three characteristics at a time; now we can work on many," Franks said. "It's like exponentially expanding your bandwidth."

A Bold Discovery

The process to get to this point is like finding a needle in a haystack—in this case two of them. Pioneer discovered doubled haploid in the first phase of its collaboration with the Sorghum Checkoff.

To fully deploy a doubled haploid breeding system,

inducer lines are needed. These lines are one way of allowing plant breeders to fully utilize a doubled haploid breeding system. There was just one problem. These had never been identified in sorghum.

"Pioneer pulled out all the stops in searching for the inducer lines," Weinheimer said. "They screened thousands of lines to find these two inducers which is a monumental feat in itself."

Sorghum yields and traits that provide value farmers desire has been held back for decades, keeping sorghum yields below the pace of other commodities. There is now hope to change this destiny by retooling sorghum breeding.

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NEWSLETTER

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SORGHUM CHECKOFF EVALUATES PRODUCERS RETURN ON INVESTMENT

The Sorghum Checkoff has had a positive impact on sorghum yields, acreage and farm value, illustrating a positive return on producer investment, an independent study finds.

Over the past 10 years, the Sorghum Checkoff has worked to properly invest producer dollars into areas that offer growth, profitability and industry strength, and this return on investment evaluation indicates the organization is positively impacting the sorghum industry.

Funding in crop improvement program areas has successfully boosted the average acreage and farm value of production since the Sorghum Checkoff launched in 2008. Crop improvement investments also demonstrate a slight increase in sorghum yields, moving from an average 57.6 bushels per acre from 1960-2008 to an average of 65.2 bushels per acre during the time of the checkoff program (2008-2017). Figure 1 demonstrates the increase of sorghum yield over time, spanning from 1960-2017.

The farm value of U.S. sorghum production increased by an average of \$12.6 million per year during that same time pe-

riod, given estimated production and price impacts of Sorghum Checkoff investments. These investments show a tangible benefit to producers evidenced by the evaluation that for every Sorghum Checkoff dollar invested in crop improvement, the net return to producers was \$8.57.

Efforts by the Sorghum Checkoff to invest in food and industrial use have also been successful, showing that sorghum use in these markets increased by an average of 6 million bushels per year from 2008-2017. This equates to a total of 47.8 million bushels of additional sorghum sales since the checkoff began.

The Sorghum Checkoff's investment into high-value markets and renewables combined enhanced the farm value of sorghum sales by near \$107.4 million. The net return to the producer in this area is nearly \$11.60.

With such successful returns in these program areas, the evaluation recommends the allocation of funds to promote the use of sorghum in ethanol, gluten-free products, pet food, aquaculture and renewable chemicals to maximize the opportunity for increasing future producer profitability.

Figure 1. U.S. Sorghum Yield by Selected Periods of Time

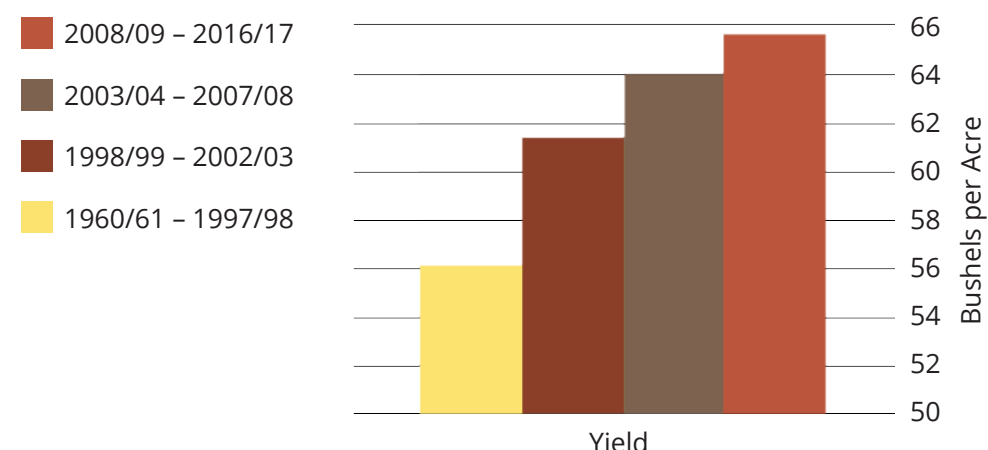
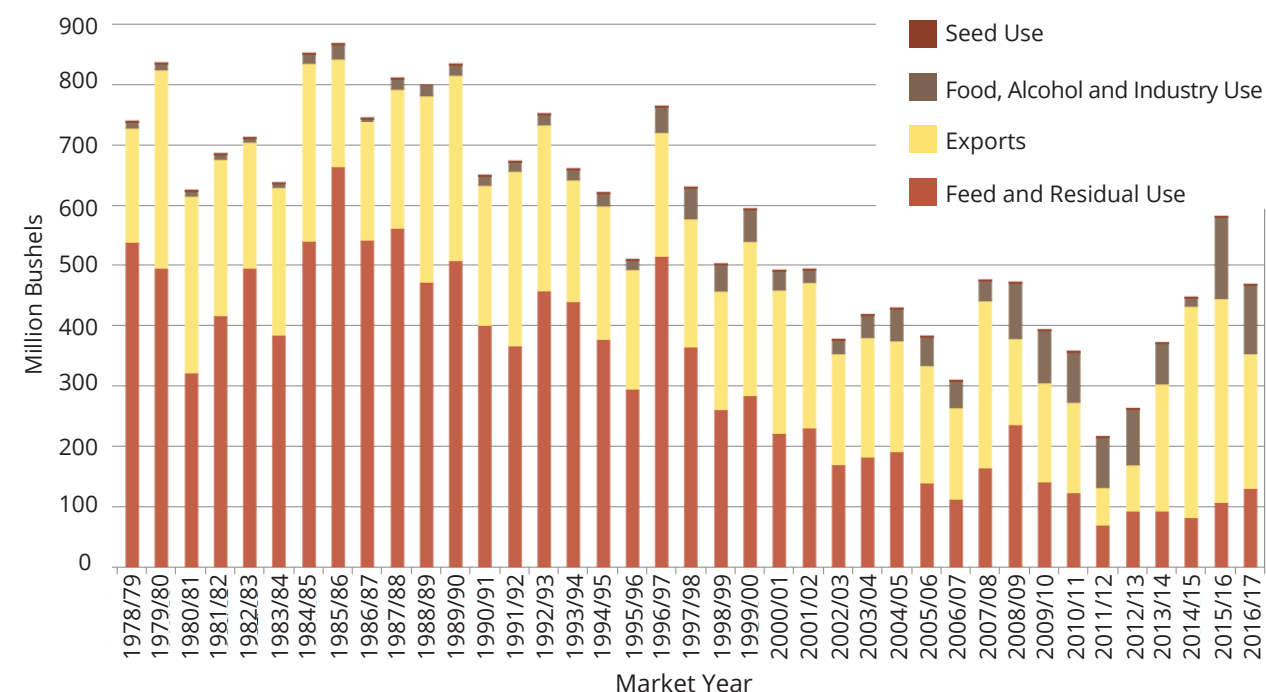


Figure 2. Sorghum End Uses by Type of Use



The evaluation also showcases the shift in demand for sorghum across multiple markets. Starting in 1975, the primary market for sorghum was classified under Feed and Residual Use. This area accounted for over 60 percent of sorghum in 1975, but in 2016 this market now accounts for roughly 15 percent of the crop.

Exports is now the leading market for sorghum accounting for more than 50 percent of the grain. Over the same time period, the market for Food, Alcohol and Industry Use increased significantly. This market increased from an average of 16.7 million bushels between 1975-1998 to an average of 86.6 million bushels between 2008-2017.

Figure 2 demonstrates the shifting demand for sorghum across Feed and Residual Use; Exports; Food, Alcohol and Industry Use; and Seed Use since 1975.

This independent evaluation was conducted in order to measure the effectiveness of the Sorghum Checkoff, ensuring the checkoff is properly investing funds and expanding markets that have a higher opportunity to return producer profitability and create success for farmers.

Recommendations were provided to increase funding for crop improvement activities that have successfully boosted acreage and farm value of production. In addition,

it was recommended to continue increasing investment into food and industrial uses to provide maximum opportunities for producer profitability, market expansion and overall growth of the industry.

The Sorghum Checkoff board of directors has reviewed the evaluation and recommendations provided, and they will meet to discuss ways to strategically invest in the areas shown to provide the best possible return to producers.

This evaluation took into consideration all projects and investments made over the course of the past 10 years, regardless if they are complete or at the initial stages. Producers may not feel the full weight of the net return or increase to farm value at the moment because of this, but the Sorghum Checkoff expects the impact to be felt as results continue to deliver positive outcomes in the future.

A full copy of the report can be found at SorghumCheckoff.com. The evaluation was conducted by Oral Capps, Jr., Ph.D., executive professor, regents professor and co-director of the Agribusiness, Food, and Consumer Economics Research Center along with Gary W. Williams, Ph.D., professor and co-director of AFCERC and Mark Welch, Ph.D., professor and extension economist at Texas A&M University. ✓

SORGHUM SETS SIGHTS ON WALMART

Nature's super grain at a super Walmart? The Sorghum Checkoff has its sights on a retail win, presenting sorghum to this major U.S. grocer.

Sorghum Checkoff Market Development Director Doug Bice and Registered Dietitian and Culinary Consultant Abbie Gellman conducted a sorghum product demonstration at Walmart's Culinary Center in Bentonville, AR, on Nov. 8.

The demonstration was given to the dry goods sector of Walmart's respective procurement division, and nearly 20 sorghum product types, such as flour and flaked sorghum, were displayed and tasted. This meeting was an opportunity to discuss the possibility of sorghum use in Walmart's private label products known as Great Value™.

"There are over 400 million bushels of grain being used in the gluten-free, whole grain and ancient grain market, and sorghum only accounts for 3 percent of that," Bice said. "There is a lot of room for sorghum to grow in this market, and we need to seize this opportunity."

As the leading retailer in the U.S., Walmart's consumer reach is unmatched, and the Sorghum Checkoff jumped at the opportunity to meet with executives and discuss the multiple opportunities for sorghum within their stores. Depending on what specific product lines may be adopted by Walmart's procurement division, there is a possibility to dedicate millions of sorghum bushels to this effort.

Though there is promising opportunity for sorghum to expand onto retail shelves, it is an extensive process to physically get the grain in stores for sale. After the initial product demonstration, supplier information was submitted to Walmart for an internal review.

The retailer is looking to launch a gluten-free healthy lifestyles product line in September 2018 and is evaluating sorghum suppliers to determine if they can meet their product launch requirements. Walmart will also consider factors such as taste, nutritional quality, shelf life and consumer awareness in addition to evaluating the supply chain.

The push to get sorghum on store shelves began several months back when a strategy was laid out to

transition from a heavy focus on promoting sorghum to placing more emphasis on direct selling and putting the grain into consumers' hands. The Sorghum Checkoff utilizes food industry consultants to help secure meetings and opportunities that led to working with Walmart.

"Sorghum recently received a lot of positive press in the food industry when we were named as a 2017 trend and a grain to watch," Bice said. "With a growing consumer market and understanding of sorghum, we reached the point where we needed to shift our efforts more to selling sorghum and getting it on shelves and in carts, rather than solely focusing on awareness."

Next steps for the Sorghum Checkoff and Walmart include evaluating the submitted supplier information, determining which products fit the retailer's needs and continuing to provide nutritional, processing and production information. In addition to the Walmart dry goods sector, the Sorghum Checkoff provided samples to the procurement division for the freezer/refrigerated goods sector to promote sorghum use in frozen or refrigerated food products.

"Now we must continue to work with retailers and consultants to spread the benefits of sorghum, and that starts with our farmers," Bice said. "We want our producers to share their sorghum story, get involved and help us promote this grain and our industry. There is still a lot of work to be done if we want sorghum to make it big time and continue to grow this market."

LEADERSHIP SORGHUM GRADUATES NEW CLASS OF LEADERS

The sorghum industry has a new crop of young leaders. A 15-month journey came to an end Dec. 12 at a graduation ceremony honoring members of Leadership Sorghum Class III.

Leadership Sorghum Class III is comprised of 15 members from seven states who are actually engaged on the farm. Class members applied to the program each hoping to learn something new about the sorghum industry and with a desire to develop strong leadership skills to take with them after graduation.

"I applied for Leadership Sorghum after reading about it in *Sorghum Grower* magazine," said Craig Meeker, class member from Wellington, Kansas. "I was yearning for knowledge and leadership within the sorghum industry, and this seemed like a good opportunity."

As a sixth generation farmer, Meeker prioritizes understanding the ins and outs of the industry to ensure he is building an operation that can continue for future generations.

Others, like Joe Krippner from Kimball, Minnesota, joined the program to gather as much information about the crop as they could in order to promote its use back home to other producers. Though sorghum is not a popular crop in his area, Krippner found with the proper management he can harvest a successful yield. He also took initiative to search out market opportunities and

found a local bird seed company that buys his sorghum. Krippner is using his experience in the program to advocate for sorghum in Minnesota, helping his fellow farmers find best management practices and market opportunities in the region.

"I knew that this would be a great opportunity to get out and see the whole industry from seed production to export markets," Krippner said. "I also learned a lot about myself through some of our sessions where you find out what kind of personality you have, what makes you tick and how that works interacting with others."

Leadership Sorghum is comprised of five sessions where members travel to different states across the



Joe Krippner receiving his Leadership Sorghum certificate from David Fremark, former Sorghum Checkoff chairman.

country, focusing on specific aspects of the sorghum industry. The program kicked off with a lesson on the sorghum seed industry followed by public research then government. For the fourth session, the group

was educated on international marketing. The final session covered the board of directors, and the class participated in a graduation ceremony.

Shelee Padgett, Sorghum Checkoff regional director, spearheaded the program and worked closely with the members throughout the five sessions. Padgett has gotten to know each class member and has seen them excel both in their sorghum industry knowledge and leadership skills.

"It has been so fulfilling to see each member in this class grow, learn and experience new things," said Padgett. "Our goal is to equip them to be leaders and advocates for sorghum, taking their knowledge back to their communities and furthering the industry by becoming involved locally and nationally."

Many past members of Leadership Sorghum have graduated from the program and moved on

to serve at state and national levels. To date, the program has seen a total of 45 members from 13 states, many now serving on state and national boards and committees. Leadership Sorghum is a program committed to developing the next generation of sorghum industry leaders and equipping members with the skills and knowledge they need to succeed.

"I am eager to bring back my knowledge and experience from Leadership Sorghum to farmers in Minnesota," Krippner said. "I want growers to try sorghum and see what a versatile crop it is, and to see how many opportunities are out there for farmers."

If you are interested or know someone who would be a good candidate for Leadership Sorghum Class IV, contact Shelee Padgett at shelee@sorghumcheckoff.com or visit LeadSorghum.com.

NEW BOARD OF DIRECTORS ANNOUNCED FOR SORGHUM CHECKOFF

Agriculture Secretary Sonny Perdue announced on Dec. 1, 2017, the appointments of five members to serve on the Sorghum Checkoff board of directors.

The five appointees include two returning board directors: Carlton Bridgeforth from Decatur, Alabama, and Verity Ulibarri from McAlister, New Mexico. New directors to the board are Klint Stewart from Columbus, Nebraska; Shayne Suppes from Scott City, Kansas; and Charles Ray Huddleston from Celina, Texas.

"We are pleased to welcome both the new and returning directors to the Sorghum Checkoff," said Sorghum Checkoff Executive Director Florentino Lopez. "The board of directors are crucial in our efforts to create producer profitability, expand market opportunities and increase demand for sorghum, and we look forward to working with the board of directors in creating success for our farmers."



Charles Huddleston, Carlton Bridgeforth and Klint Stewart swearing in to the board of directors.

The board of directors were sworn in during the Sorghum Checkoff board meeting on Dec. 13. New leadership was also elected during the December board meeting. Verity Ulibarri will serve as chairwoman, Jim Massey as vice chairman, Carlton Bridgeforth as treasurer and Craig Poore as secretary.

Dale Murden of Harlingen, Texas; John Dvoracek of Farwell, Nebraska; and Adam Baldwin of McPherson, Kansas, completed their terms as board directors. The exiting board directors were honored for their service to the Sorghum Checkoff at a ceremony on Dec. 12.

For more information on the Sorghum Checkoff board of directors, visit SorghumCheckoff.com.

SORGHUM INDUSTRY EVENTS

Jan. 29 - 2018 Sugarcane Aphid Workshop
St. Louis, Missouri

Jan. 30 - Feb. 1 - Sorghum Improvement
Conference of North America
St. Louis, Missouri

Jan. 30 - Feb. 1 - International Production &
Processing Expo
Atlanta, Georgia

Feb. 6-8 - Kansas Sorghum Schools
Dodge City, Hutchinson and Washington, Kansas

For more events, visit sorghumcheckoff.com/calendar

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SORGHUM CHECKOFF MISSION

To efficiently invest checkoff dollars to increase producer profitability and enhance the sorghum industry.

Unraveling Sorghum Genetics

By Justin Weinheimer

In the Fall 2012 issue of *Sorghum Grower* magazine, National Sorghum Producers reported on several new faces to the sorghum research world—breeders, new to the industry with understanding of the molecular tools needed to increase sorghum yields. Just over five years later, interest in sorghum genetics and improvement is transforming sorghum research, and advancements in molecular breeding make pointing out the following individuals and programs behind sorghum crop improvement important.

Texas A&M University – College Station Bill Rooney

Bill Rooney is emphasizing the genetic and molecular genetic inheritance of disease resistance, grain quality and agronomic productivity and adaptability for grain, forage and bioenergy sorghum. His team also works on crucial enabling technologies such as gene flow mitigation, allowing farmers to enhance stewardship of new technologies in sorghum. This program is also critical in training the next generation of private and public sorghum plant breeders.

Kansas State University – Manhattan Tessafye Tesso

Tessafye Tesso is evaluating yield potential for higher rainfall environments such as eastern Kansas. This program continues to explore opportunities for delivering genetics suited to regional environmental conditions and farming practices in Kansas.

Kansas State University – Hays Ramasamy Perumal

Ramasamy Perumal develops improved parental lines with major emphasis on developing lines with increased yield, improved tolerance to environmental stresses, particularly pre- and post-flowering drought and cold tolerance. Cold tolerance has long been recognized as a needed trait for U.S. sorghum.

Clemson University – Florence Steve Kresovich

Steve Kresovich and his team are delivering regionally adapted genetics suited for production in the southeastern U.S. Regionally needed characteristics such as disease resistance, grain weathering, and insect resistance are focal points of the program. The program utilizes all the latest scientific tools in sorghum breeding.

Donald Danforth Plant Science Center – St. Louis

The Danforth Plant Center is utilizing the latest genetic tools, platforms, and high throughput evaluation techniques to enhance genomic and computational understanding of sorghum genetics. This program, is one of the newest in the sorghum genetics space in the U.S.

University of California – Riverside Jeff Dahlberg

Jeff Dahlberg is screening genetics in one of the driest growing environments in the U.S. leading to a better understanding of drought tolerance in all types of sorghum. Dahlberg also serves as a valuable resource to western U.S. dairies seeking sorghum information.

Purdue University: Mitch Tuinstra

Dr. Tuinstra's research focuses on identifying genes and genetic resources that contribute to improved crop performance in stressful environments, high-resolution phenotyping, and development of new traits for sorghum including improved grain and forage quality.

USDA Agricultural Research Services – Lubbock: Chad Hayes

Chad Hayes is discovering and incorporating unique genetic characteristics such as cold tolerance and sugarcane aphid resistance. This program is a stronghold for exploring the unique variations that sorghum genetics offer.



Sorghum Update

Brought to you by the Kansas Grain Sorghum Commission

Ad Astra Per Aspera “To the Stars Through Difficulty” with Sorghum

With another fall harvest behind us, a crop that has been overlooked for some time has many Kansas farming operations surging into prominence.

In 2016, industry leaders devotedly set in motion an initiative to explore and develop new frontiers for grain sorghum. An aspiring plan for advancing sorghum yields and markets is under way at the Center for Sorghum Improvement at Kansas State University. Initial support for the program totals \$5 million, \$2 million each from the Kansas Grain Sorghum Commission and the United Sorghum Checkoff Program, \$800,000 from KSU and an additional \$200,000 from the Kansas Department of Agriculture. Managing Director Sarah Sexton-Bowser is actively seeking additional funds for projects that meet the objectives and extend the program's life beyond 2036.

The focused plan coincides with producers' interest in the potential to gain back production acres that have limited irrigation opportunities, preserve our dwindling water resources, reclaim battleground acres and take advantage of growing demand for whole grain products.

North Central Kansas farmer Stephen Bigge is the chairman of the Kansas Grain Sorghum Commission and also sits on the advisory board for the Center for Sorghum Improvement. Bigge farms 1,800 acres in Rooks County using sorghum in his rotation. He's a true believer in the advancement of the sorghum industry and sees the Center for Sorghum Improvement as a major key to meeting that goal.

“We need research to improve sorghum yields, while at the same time improving our plant traits and plant health,” Bigge explains. “Expanding opportunities for sorghum will open doors for consumer demand, which

will in turn, ultimately reduce the price discount relative to other crops.”

Bigge sees the need to develop sorghum varieties with improved genetics and management traits in five key areas: higher yields, standability, cold tolerance, insect tolerance and minimizing yield limiting factors.

The stars align for Kansas to see an increase in acreage in 2018. Despite difficulty, our producers and leaders persevere to drive toward excellence every day. Efforts like the collaboration at the Center for Sorghum Improvement match our farmers' spirit and desire for better results for sorghum.



For more information about the Kansas Grain Sorghum Commission, check out our website at www.ksgrain-sorghum.org or contact your commissioner. District 1 – Lonnie Wilson, Colby; District 2 – Greg Graff, Marienthal; District 3 – Mike O'Brate, Ingalls; District 4 – Stephen Bigge, Stockton, Chairman; District 5 – Clayton Short, Assaria, Vice-chairperson; District 6 – Jay Zimmerman, South Haven; District 7 – Nathan Larson, Riley, Secretary / Treasurer; District 8 – Kevin Kniebel, White City; District 9 – Gary Kilgore, Chanute, or contact us at admin@ksgrain-sorghum.org, www.ksgrainsorghum.org.

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Sorghum Recipe

Sorghum Lasagna Bowl

Make this recipe

WHAT YOU'LL NEED:

- 1 lb ground Italian sausage
- 2 cups cooked whole grain sorghum
- 2 tablespoons olive oil
- 1 teaspoon Italian seasoning
- Salt and pepper to taste
- 1 cup marinara sauce
- 8 ounces ricotta cheese
- 1 cup shredded mozzarella cheese
- Fresh oregano or basil (optional)

DIRECTIONS:

- 1 Preheat oven to 375°F.
- 2 In a medium skillet cook sausage over medium-high heat until cooked through, drain.
- 3 In a medium bowl combine sorghum, oil, Italian seasoning, salt and pepper.
- 4 Divide marinara sauce between four 8-ounce gratin dishes. Top sauce with cooked sausage and dollops of ricotta cheese. Divide sorghum mixture atop each dish and sprinkle with shredded mozzarella cheese.
- 5 Transfer all lasagna dishes to a baking sheet and bake for 30 minutes or until bubbly and browned on top. Garnish with fresh oregano or basil, if desired.

For this recipe and more, visit:
SimplySorghum.com

Sorghum Shortcuts

Delanie Crist Hired as Communications Coordinator

National Sorghum Producers recently hired Delanie Crist as communications coordinator. Crist will provide a broad range of public relations and marketing communications support to the organization and will serve as associate editor for *Sorghum Grower* magazine.



Crist joins NSP's staff as a recent graduate of Texas Tech University where she received a master's degree in agricultural communications. During her time at Texas Tech, Crist completed an internship in Washington, D.C., with the U.S. House Committee on Agriculture and

then worked for the joint venture Celebrity Feeders, SD Farms and Hickory Transport.

Crist earned a bachelor's degree from West Texas A&M University where she was a top-three graduating senior in agricultural business and economics.

Legislative Committee Appointed, Prepares for Annual D.C. Fly-In

In October, National Sorghum Producers Chairman Don Bloss appointed five new members to the NSP Legislative Committee. These members include Mike Brooks of Colorado, Devin Schierling of Kansas, Rex Rush of New Mexico, J.B. Stewart of Oklahoma and Samuel Sparks III of Texas. Members of the NSP Legislative Committee guide NSP on agricultural policy issues and development in accordance with NSP's mission to improve the sorghum industry through advocacy and leadership. The newly appointed and existing 12 committee members are gearing up for NSP's annual D.C. Fly-In in February. As farm bill work heats up, sorghum representatives look forward to spending time on Capitol Hill advocating for policies important to the sorghum industry.

Commodity Classic Approaching

The 2018 annual Commodity Classic is open for event registration and housing reservations. Rooms in this year's venue city of Anaheim, California, are expected to book quickly, so those interested in attending should register as soon as possible! The 23rd annual farmer-focused, farmer-led event is scheduled for February 27-March 1, 2018. Register and book rooms at <http://www.commodityclassic.com/>.

National Sorghum Producers is bringing back its renowned Casino Night. The annual Sorghum PAC fundraiser is a must-attend event at Commodity Classic that raised more than \$50,000 through ticket sales, sponsorships and auction items last year. If you wish to support this endeavor through donations to the PAC in 2018, please contact Jamaca Batten at jamaca@sorghumgrowers.com. Auction items will become available for bidding Feb. 1 through our online auction.

NSP will also award our 2017 yield contest winners and address issues important to sorghum producers at the trade show and convention. Watch for specific event details at SorghumGrowers.com/CommodityClassic.

Sorghum in the 21st Century

Sorghum in the 21st Century, the first international sorghum meeting, is slated to take place in Cape Town, South Africa, April 9-12, 2018. The five cross-cutting themes include: accelerating progress in advanced breeding for improved crop adaptation to climate risks; improving productivity and increasing profitability to expand opportunities across global markets; enhancing resilience in the face of biotic and abiotic challenges; Tackling key issues in food security and farming systems for improved livelihoods for the smallholder farmer; and exploring the future of the value-added: nutrition, bio-fuels and feedstuffs for evolving consumer demands. Learn more at <https://21centurysorghum.com/>.



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RIGHT: AERIAL APPLICATION

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Sorghum Shortcuts

