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NATIONAL SORGHUM PRODUCERS
SORGHUM Grower
SPRING 2016

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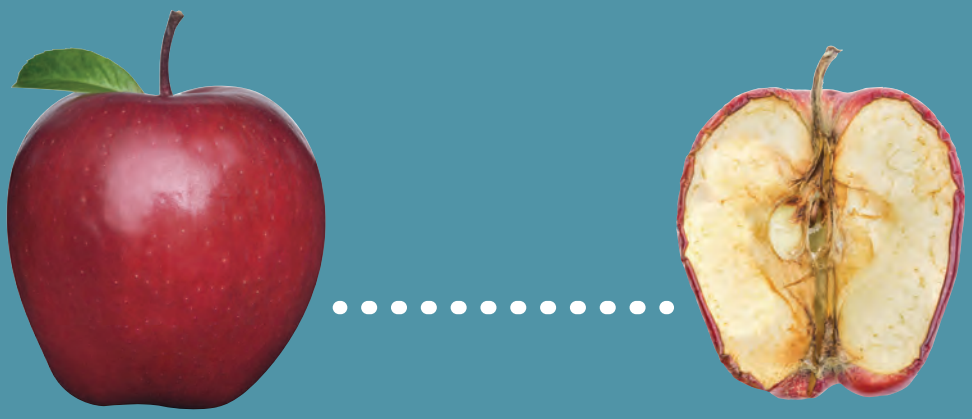

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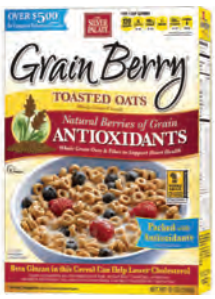

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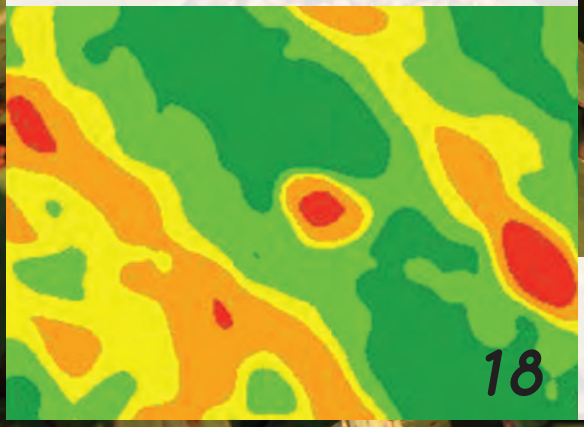

NATIONAL SORGHUM PRODUCERS
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Spring 2016, Volume 10, Issue 2

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Chairman's Column

Make Your Voice Heard in 2016

With abundant rainfall across much of the U.S. in 2015, the fall sorghum harvest lasted right until Christmas week for those of us on the southern plains. It was the first time my wife realized there was a real threat of spending Christmas Eve in the semi! However, now that the stress of that season is behind us, I cannot think of a more blessed way to usher in the holidays than the harvest of a bountiful 2015 crop. Last growing season had its share of ups and downs for most sorghum producers across the country. From record basis value opportunities to the sugarcane aphid sweeping across parts of the Sorghum Belt, producers were required to be on their game to bring the season to a profitable conclusion.

Since harvest wrapped up, I, along with many other National Sorghum Producers board members, have had the opportunity this winter to witness many other successes in the sorghum industry. I must say, it was quite rewarding to sit in the Environmental Protection Agency offices in February and hear firsthand the industry's first herbicide tolerant hybrids would actually become a reality. This reality is the harvest culminated by many laborers on the sorghum leadership team after almost a decade of hard work. This non-GM technology is just one example of the excitement we as board members witnessed this winter in the sorghum industry. In March, the industry's top producers gathered in New Orleans to be recognized at the 2015 NSP Yield Contest awards. Growers from 29 states were recognized this year for their outstanding yield accomplishments, including a non-irrigated world record of 239 bushels per acre. Although these yield contest winners represent only a portion of sorghum producers, it was the rest of the country's farmers who helped boost the national average yield to a record 76 bushels per acre this year.

As we producers transition from meeting season to growing season, I want to take a moment to remind each of you how important it is as NSP members to make your voice heard. All of us are a part of Team Sorghum, and as part of the team, the industry needs all its players' talents to be utilized. As we start a new growing season, there will be more challenges ahead of us, more contacts to make, more issues to weigh in on. It takes more than the board members listed on this page to keep our industry moving forward, so let your voice be heard in 2016!

James Born
NSP Chairman of the Board - Booker, Texas

How the Kansas Big First Became an Agricultural Political Powerhouse

By Julia Debes

Most Washington, D.C., residents would label Kansas as flyover country. Yet, the dusty state highways and lonely county blacktops stretching across the state have stories to tell of late night lights leading to Presidential campaigns and small town meetings resulting in some of the most powerful policy changes in agriculture–all connected in the 1st Congressional District of Kansas.

Touching the state's western, southern and northern borders, the 1st Congressional District of Kansas is one of the largest congressional districts in the nation. Known as the Big First, the district includes 63 of the state's 105 counties.

The primarily rural district is by far the largest sorghum-producing congressional district in the country with 1.9 million planted acres yielding 180 million bushels worth $536 million on average the last five years, according to the U.S. Department of Agriculture National Agricultural Statistics Service. The district also includes all of the state's sorghum ethanol plants, except one that sources its sorghum from the Big First. Together, those plants produce more than 380 million gallons of ethanol annually with more than half of total grain demand met from sorghum originating within the district, according to National Sorghum Producers Strategic Business Director John Duff.

This economic strength in the Big First is amplified by the political legacies established there like that of former Senator Bob Dole. Without argument, the Big First's agricultural leadership helped form the backbone of today's agricultural policy.

Building the Big First

Agriculture represents the heart of the Big First, accented by the fact the district once included none of the largest cities, according to Barry Flinchbaugh, Ph.D., agricultural economist with Kansas State University.

"The Big First historically always had more farmers than any other district in the country," Flinchbaugh said. "No district was more rural than those that represented an entire state."

As a result, Flinchbaugh explained Big First representatives naturally gravitated to working on agricultural policy in Washington. The combination of increasing farm profitability and a lack of competing business interests beyond oil production allowed the representative from the Big First to grow into a more powerful voice on the House Agriculture Committee. In fact, the Committee included a representative from the Big First's geographic area from the time of the committee's creation in 1920 until 2012.

Chapman Rackaway, Ph.D., political science professor at Fort Hays State University, described the Big First as a conservative Republican district with its eye on agriculture.

"If you are going to represent this district, you have got to know agriculture," he said.

Growing Political Influence

Rackaway attributed the rise in agricultural influence for the Big First to the economic growth and technological advances in the 1960s and 1970s, which increased farm income for residents in the district. Flinchbaugh added this profitability directly resulted from the start of irrigation in western Kansas.

"Irrigation completely transformed everything," Flinchbaugh said. "All of a sudden farmers had the one thing they were missing–water."

This time period concurred with the rise of one of the district's most respected representatives.

"You cannot talk about agriculture in Kansas and not talk about Bob Dole," Rackaway said. "His steady hand was part of developing good agricultural policy."

Dole was born into a Kansas family hit hard by the Great Depression and was wounded serving in the Army in World War II. He completed law school after returning home and served as the county attorney in his hometown of Russell for eight years before being elected to the U.S.

House of Representatives in the then 6th Congressional District. Two years later, the 6th was merged with the 3rd Congressional District to form the then 60-county Big First Congressional District.

Rackaway said Dole recognized personal visits with constituents across the Big First provided key insights into the struggles and successes of farmers–even though visiting every county required significant time on the road. Dole recalled visiting with constituents just made sense.

"It seemed to me that if I was going to make friends–not solely for political purposes–we could learn what they were doing and what was going on at the farm or in the city, so we just decided let's just go to each county and have a meeting," Dole said.

In 1968, Congressman Dole was elected Senator Dole. He was succeeded by Keith Sebelius, a Republican whose Democratic future daughter-in-law Kathleen Sebelius would serve as Governor of Kansas and U.S. Secretary of Health and Human Services. The senior Sebelius formalized the small town visits by Dole into the Big First county listening tour. In a tradition still upheld today, Sebelius would visit all 60 counties he represented to hold a town hall meeting. There, like Dole before him, Sebelius could directly gauge the pulse of the district.

Sebelius was often accompanied by his chief of staff, Pat Roberts, who would succeed his employer as the Big First congressional representative following Sebelius's retirement in 1981.

"As I traveled the roads and counties of the Big First with my boss and mentor, Keith Sebelius, and then later when I had the privilege of representing the Big First, it was never lost on me that these rural communities and ways of life needed to be preserved and promoted," Roberts said.

Today, now Senator Roberts, Senator Jerry Moran (also a Big First representative) and Congressman Tim Huelskamp all keep the tradition of visiting the Kansas counties they represent each year. Huelskamp also added a telephone town hall meeting each month, which he reported includes 10,000 to 15,000 constituents a piece.

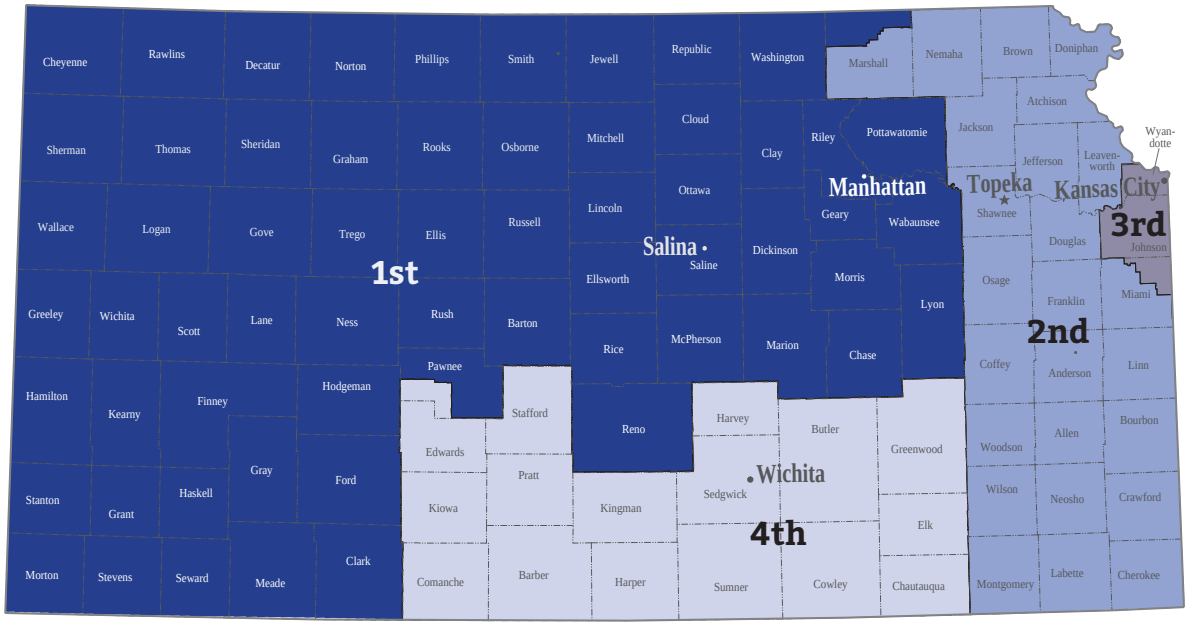
"It is the best tradition in politics," Congressman Huelskamp said. "There you hear little things you will not hear anywhere else."

For Kansans, these town halls provide a direct connection to their elected officials. Most importantly, as Dr. Roger Marshall, 2016 political candidate competing for representation of the Big First, said, "the listening tours should be just that-more listening and less campaigning."

This accountability to the farmers and ranchers of Kansas has thus influenced the voice of the Big First for more than 50 years, directly translating into some of the largest policy changes in agriculture.

"If the federal government interferes with the daily lives and pocketbooks of Kansans, I know I am going to hear about it at my next town hall meeting," Senator Roberts said. "We solve all of the world's problems at the coffee klatch."

How Big is the 1st Congressional District of Kansas?



Source: The National Atlas of the United States of America

Right Legislators at the Right Time

The strongest example of the Big First's political prowess is the 1996 farm bill, commonly referred to as Freedom to Farm Act, according to Flinchbaugh.

In the years leading up to the 1996 farm bill, loan rates escalated, farmers' grain ended up in government storage and international competitors snatched up export shares. Slowly, a small group of political leaders started to roll out the concept of decoupled farm programs, starting with a partially decoupled marketing loan in the 1985 farm bill. As explained in the sixth edition of Agricultural and Food Policy, "…the 1996 farm bill was based on the value judgement that government spending on agriculture needed to be more predictable and reduced over time."

Importantly, the Freedom to Farm Act decoupled planting decisions for major crops, including sorghum, from government payments by allowing farmers to choose what crop to plant on their land. Prior to Freedom to Farm, farmers made planting decisions based on preserving historical base and yields.

Behind the policies in the 1996 farm bill were three essential Kansans–Dole, Roberts and Dan Glickman. At the time, Dole was the Senate Majority Leader, Roberts was chairman of the House Agriculture Committee and Glickman was the U.S. Secretary of Agriculture.

When asked how the Sunflower State ended up with three Kansans as Secretary of Agriculture, Senate Majority Leader and Chairman of the House Agriculture Committee at the same time, Flinchbaugh simply stated, "It was probably an accident of time. I do not think you could plot and plan something like that."

In particular, the political one-two punch of Roberts, a Republican from the Big First, and Glickman, a Democrat who represented the 4th Congressional District prior to serving as U.S. Secretary of Agriculture, put the influence of Kansas agriculture on the map.

Flinchbaugh further postulated the three Kansans served in exactly the right era to accomplish such a large goal, noting the current political system would not have allowed a Democratic Presidential administration and a Republican Congress to achieve such a significant policy change for agriculture.

"They put farmers first and partisan politics second," Flinchbaugh said. "They took the geography and economy of the district and knowledge of the political system and put the two together."

Expanding the Big First Legacy

Following the success of the 1996 farm bill, Congressman Roberts was elected Senator Roberts. He was succeeded as the Big First representative by now Senator Jerry Moran in 1997.

Flinchbaugh described Moran as a "really deep thinker" who always studies the alternatives of any action. Rackaway noted Moran continued the focus on constituent services through the county listening tours started by Sebelius–for whom Moran had worked as an intern.

"At every opportunity when Congress is not in session, this has become an important part of what I do," Senator Moran said, placing particular emphasis on the ability to identify individual issues, like a farmer's dispute with a Farm Service Agency claim, that he can help address. "They tell you the story and you go to work on their behalf."

Senator Moran explained how he has expanded the practice now that he serves in the Senate to include all 105 counties.

"Washington, D.C., is a place you can get caught up in," he said. "The opportunity to have conversations with Kansans in a coffee shop or a city office or a senior center–those are reminders of what is important in life and for me to represent in Washington."

Through these conversations, Moran noted the essential issues have remained the same, even as the dynamics of the Big First have shifted over time. For example, following the 1990 U.S. Census, Kansas's congressional districts were reduced from five to four, shifting the boundaries further east.

When Moran served as the Big First representative, the district did include both Salina and Hutchinson. He explained while these populations were not solely farmers, residents were raised primarily on farms and in small towns and still understood the value of agriculture.

The Big First's geography changed more dramatically after Moran was elected to the U.S. Senate in 2010 and was succeeded by current Congressman Tim Huelskamp in 2011. The Big First's current boundaries were set the following year in 2012 when redistricting took place after the 2010 U.S. Census. The Big First once again shifted east.

Today's Big First is less rural than before, now containing cities like Manhattan and Emporia. The increased geographic area also added more constituents. Rackaway explained the Big First historically represented 300,000 to 500,000 individuals. Today, that number is almost 800,000.

"I thought it was big when I had it," Senator Dole joked.

With the increased constituency and geography, Rackaway said agriculture is still the top issue in the Big First, but agricultural interests now compete with higher education, military and other urban interests.

"Agriculture has the attention and the imagination of the district, but it no longer overwhelms the other issues," Rackaway said.

Congressman Huelskamp said the urban constituents within the District can sometimes fail to recognize the importance of agriculture as well as how agricultural policy, like the flexibility of Freedom to Farm, has allowed farmer-entrepreneurs to capitalize on new technologies and opportunities.

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#1 GOODWELL, OK

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"Most of our city cousins do not understand the technology we have and what we can do with hybrids and limited irrigation," Huelskamp said, adding that opportunities like the designation of sorghum as an advanced biofuel have created even more symbiotic relationships within the Big First.

According to Josh Roe, Kansas assistant secretary of agriculture, the counties represented in the First District account for more than 58 percent of agriculture, food and food processing contributions to the Kansas economy. In 2015, the industries provided $62.8 billion in total economic contributions, including the support of nearly 230,000 jobs.

Grain farming, including sorghum, represented the second largest agricultural job creator with more than 15,000 workers producing nearly $5.23 million in total output.

And make no mistake–the Big First still wields substantial political influence. Senator Roberts now serves as chairman of the Senate Committee on Agriculture, Nutrition and Forestry–the first in modern history to chair the agriculture committee in both chambers. Senator Moran currently chairs the Senate Appropriations Subcommittee on Agriculture, Rural Development, Food and Drug Administration and Related Agencies in addition to his leadership on the National Republican Senatorial Committee from 2013 to 2015. For Kansans in the Big First, agricultural policy definitely is still top of mind and worth exerting influence over.

As Alan LaPolice, Republican political candidate running for the Big First seat in 2016, said, "working in Congress is not about what you will fight against. For the Kansas farmer, it is about what you will fight for."

The political future of the Big First, like any of the other congressional districts in Kansas, is unknown. The next round of redistricting following the 2020 U.S. Census could combine the Big First with either the 2nd Congressional District, which includes the Kansas state capital city of Topeka, or the 4th Congressional District, which includes the largest metropolitan area surrounding Wichita. Either option would once again add more geographic territory and urban residents to the district's county listening tour.

But no matter what the future holds for the Big First, one fact is certain. The district's political legacy and ties to sorghum policy are as strong as the constituents who reside there.

"Agriculture is the life blood of Kansas," Marshall said. "That is what we are leaving our children; we are leaving the land to tend."

The 2016 Race for the Big First

The Big First primary election is Aug. 2, 2016.

Congressman Tim Huelskamp – Congressman Tim Huelskamp was elected to represent the Big First in 2010 and was removed from the House Agriculture Committee in 2012. He noted sorghum is important to his family's farm in Fowler and the crop's status as an advanced biofuel has benefited farmers, ethanol plants and feed yards.

Dr. Roger Marshall – Dr. Roger Marshall is an OB-GYN, but he was raised working on his grandparents' farms. Marshall noted the role of the entrepreneurial spirit of the Big First in developing innovative solutions to agricultural challenges, including limited water availability and new markets.

Alan LaPolice – Alan LaPolice helped harvest sorghum on the family's dairy farm near Clyde. He touted the versatility of sorghum as used in livestock feed, ethanol production, exports and human food.

Commodity Classic 2016 Packed with Sorghum Discussions

By Julia Debes

National Sorghum Producers cohosted America's largest farmer-led, farmer-focused convention and trade show with grower organization partners National Corn Growers Association, American Soybean Association and National Association of Wheat Growers along with a new sponsor–the Association of Equipment Manufacturers.

The 2016 Commodity Classic featured a sorghum agenda full of crop improvement sessions, industry updates and policy discussions. More sorghum, soybean, corn and wheat farmers than ever, 4,596 in all, attended the convention and trade show in New Orleans, Louisiana, March 2-5, 2016. Total attendance also set a record at 9,770, nearly a quarter more attendees than in 2015.

Sorghum General Session

The Sorghum General Session, sponsored by the Sorghum Checkoff, is the organization's opportunity to discuss what the association is doing to help sorghum farmers meet unprecedented challenges from the decline in commodity prices, increasing pressure from new pests like the sugarcane aphid and evermore restrictive environmental regulations. Attendees at this year's session heard from speakers on the sorghum pipeline, managing the sugarcane aphid, price outlooks, farm and food policy communications trends and more.

Phillip Hayes, cofounder of North Bridge Communications, spoke on understanding the challenges of communication amidst generational shifts, media changes and the rise of pathological science. Hayes called on agriculture to join together to address industry critics, complementing the industry on efforts like the pushback against proposed cuts to crop insurance in 2015.

"Let's be unified in agriculture," Hayes said. "We need to invest more in social media. We need to lead with common sense when we are responding to these types of attacks as opposed to always leading with peer-reviewed science."

Randy Allen, founder and CEO of RWA Financial Services, spoke on how producers should manage money, not the grain, providing insight into how farmers can position themselves for the future in an era of low farm prices. He emphasized the importance of making a marketing plan for farm operations, particularly in the era of declining commodity prices and farm income.

Wayne Schumacher, commercialization manager for North America at DuPont Crop Protection, provided specific information on the benefits and restrictions of using ALS herbicides, including nicosulfuron, the active ingredient in DuPont Zest™ herbicide. He discussed how DuPont is working with farmers to educate them on the grain sorghum system integrating Zest™ herbicide with Inzen™ sorghum hybrids, which will provide sorghum farmers over-the-top grass control for the first time ever.

Classic General Session

Secretary of Agriculture Tom Vilsack gave a heartfelt farewell during his likely last keynote address during the Commodity Classic General Session as a new political administration will be in place by the 2017 event. He spoke about his optimism for the future of agriculture and thanked the farmers in attendance for their hard work.

"It is farmers who are at the heart and soul of the value system of this country," he said. "It is farmers who instill in their young people, giving something back to this country through military service, back to the community through volunteering. It is farmers who are the linchpin, the heart and soul of this great country."

Following Vilsack's keynote, James Born, NSP chairman and sorghum farmer from Booker, Texas, joined grower leadership from the national *(Continued page 34)*

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Farmer CEO Series
Frische Family
Sunray, Texas

Myles Frische and his brothers are the Sorghum Belt's quintessential farmer CEOs. They started with one section in 1978, but today they operate on more than 50,000 acres in four counties across the upper Texas Panhandle. The sophisticated operation includes both irrigated and non-irrigated ground on which the Frisches produce sorghum, corn, cotton and wheat with the help of 15 employees. The family also operates a cattle grow yard as well as fertilizer and trucking businesses.

One important aspect of farm management has not changed–farmer CEOs emphasize record-keeping as an essential tool. Today, good records go beyond the hand-written ledgers of generations before and include meticulous accounting systems, access to a good farm accountant and field-level tracking. The Frisches use Land.db, a software platform integrating regulatory compliance management, profitability tracking, reporting, mapping and analysis. The platform enables the Frisches to see financial progress on a field in real time, allowing them to make decisions for both the current year and the next.

Knowing exactly where their financial situation stands in real time means the Frisches can make tough decisions faster and squeeze an extra nickel or dime out of the market. Because producers live on the margins, that nickel here or dime there could mean the difference between a profitable operation or a threatened future. To maximize their data for decision-making, the Frisches use a combination of strategies, including basic options positions, complex options positions such as straddles and strangles as well as outright futures positions.

The Frisches maintain discipline—another common farmer CEO characteristic—to take advantage of opportunities to lock a favorable basis. They also forward contract with multiple elevators and augment their sales strategy using 350,000-400,000 bushels of on-farm storage. With real-time information and detailed historical records, the Frisches can—and often do—roll contracts forward more confidently.

And the Frisches keep a close eye on political risk and federal regulations, especially with regard to confined animal feeding and proper use of chemicals (Land.db is also helpful in this area). The Frisches have even found themselves reading up on the Endangered Species Act. With an ever-increasing regulatory burden on agriculture, farmer CEOs must engage politically and make their voices heard as the Frisches do frequently to ensure they keep their freedom to operate.

With increasing acreage, advanced technology and complex marketing amidst volatility, today's farmers are more like CEOs. The most successful farmer CEOs dedicate their time not only to raising the crops that feed, fuel and clothe the world, but also to investing in the tools needed to maximize both agronomics and economics to boost yields and secure profits. This series examines the best practices of these top producers.

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This season, put a smarter approach to work on your sorghum. Huskie from Bayer CropScience.

Farmer CEO Series

Jay Hardwick

Newellton, Louisiana

Tensas Parish, Louisiana, is home to Hardwick Planting Company. Farmer CEO Jay Hardwick, Ph.D., along with his wife Mary and sons Mead and Marshall and their wives, operate family land along the lower Mississippi River. Mead holds a degree in finance from Southern Methodist University and Marshall holds a degree in agronomy from Louisiana State University, adding significant intellectual capital to the 20,000-acre contiguous farm. Hardwick produces irrigated and non-irrigated sorghum, corn, cotton, soybeans and wheat as well as hardwood timber.

This diverse crop mix—with only slight annual adjustments based on market and environmental signals—simplifies cost tracking and analysis for Hardwick. The family uses a combination of propriety systems and commercial software like MapShots and MyJohnDeere. These systems enable the family to use up to 30 years of actual production data to analyze financial trends and monitor crops and machinery in real time. Bellwether cost items such as direct inputs, seed and fertilizer as well as common overhead expenses are constantly compared to LSU AgCenter data and other area benchmarks to further analyze net profitability. Hardwick also consults daily with a private adviser fully dedicated to the operation as well as commodity marketer Brock Associates.

Like many fellow farmer CEOs, Hardwick revisits his marketing plans daily. Known inside the family as a low, medium and high strategy, this plan involves comparing costs of production to anticipated yields for individual farms and the area as a whole. To take advantage of profitable marketing opportunities, Hardwick forward contracts up to 70 percent of anticipated production at planting time. This aggressive strategy helps the family manage downside growing season price risk and leaves at least 30 percent of production open to market upside. Hardwick also maintains solid relationships with local handlers.

Crop diversification is the most effective tool the family has to manage risk. Profitability before government payments is their goal, and basis, as well as interest-rate risk, is examined daily along with their marketing plan. However, lack of (or too much) rainfall negatively impacting production is still the ultimate risk. Even the best farmer CEO cannot manage weather risk perfectly, so Hardwick relies on proactive risk management in other areas to protect him when weather damages his crops.

Knowing he can no more afford to ignore policy and regulatory risk than he can to neglect his marketing plan, Hardwick watches political dynamics and their potential effects on farm policy very closely. He also takes an active role in promoting conservation and stewardship, and this has earned the family national honors like the National Wetlands Award for Land Stewardship by the Environmental Law Institute. The Hardwick family restored 450 acres back to wetlands and preserved 3,000 acres of wetlands. The hardwood timber the Hardwicks produce also supports habitat for the recently recovered Louisiana black bear, which was listed as an Endangered Species by the U.S. Fish and Wildlife Service until March 10, 2016.

With increasing acreage, advanced technology and complex marketing amidst volatility, today's farmers are more like CEOs. The most successful farmer CEOs dedicate their time not only to raising the crops that feed, fuel and clothe the world, but also to investing in the tools needed to maximize both agronomics and economics to boost yields and secure profits. This series examines the best practices of these top producers.

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SORGHUM: THE SMART CHOICE®

INVESTING IN THE SOIL

By Jennifer Blackburn

Farming is changing. Producers are looking at ways to stay viable. And, investment in soil health is the latest initiative that is all the craze these days. But, for the Schindler family, soil health is a way of life. It is something they have focused on for the last 30 years, and it is something putting them ahead of the curve, ensuring their South Dakota farm remains operable for many more generations to come.

Variable Rating

Aaron Schindler, who is in the fifth generation of farmers for the Schindler family, said one way they have focused on sustaining their soil is through variable rate fertilizing—a labor intensive but valuable strategy—since 2011.

A zone rating system using a 30-year overlay of satellite imagery and reflectivity maps help identify the best and worst producing zones in each field.

Typically, the Schindlers use five zones per quarter with dark green representing the best zone and red representing the worst with light green, yellow and orange in between.

Aaron said utilizing data and knowledge about these zones is beneficial but can also feel like throwing darts at a dartboard.

"Sometimes we can do something if we know what is different about [the zone]," he said, "but that is not always the case that we can fix it."

At first, Aaron said they analyzed soil samples from

> “It has definitely raised [yield] averages probably with a more efficient dollar. We’re making our fertility dollar go a lot further.”

zones and counter intuitively found the best zones always had the lowest amount of pre-season fertility while the poorer zones accumulated nutrients.

"Based on these results, we initially began cutting out fertility on the poorer [zones] and putting it on the better [zones]," Aaron said. "We did see a big bump there, especially on the dollar side."

As the Schindlers have gained more knowledge about their zones, Aaron said profit opportunity pencils out when investment is made into pushing their better zones.

"It has definitely raised [yield] averages probably with a more efficient dollar," Aaron said. "We're making our fertility dollar go a lot further."

Aaron said their sorghum quality has also improved as a result with average test weights of 58-60 pounds at shipping in a normal year and 62 pounds in some cases.

Currently, the Schindlers use variable rating on 75-80 percent of their farm ground, starting with wheat and corn and incorporating more sorghum in the last several years.

> "We are putting more money into sorghum with more guarantee we are going to get our money back."

"We do not like planting corn or wheat without using variable rating now," Aaron said. "The milo seems to work out alright, as well."

"Our top zones, we are looking to shoot for 200 bushel milo and pour the coals to it," Aaron said. "In addition to nitrogen and phosphorous, sulfur has been a big deal for us and seems to be one of the keys to unlocking higher yields."

Aaron said even in their moderate zones, they are still averaging 130 bushels per acre and will push closer to a 165 bushel per acre field average with variable rating.

While the Schindlers do not map yields, Aaron said mathematically they have identified the good zones, which are later affirmed by yield results, but yield mapping is another tool his family may be soon looking at more seriously.

"It is tough to get good quality yield data," he said, "but if you do it year-in and year-out and start compiling that data, you can maximize on that information and normalize it across crops."

Aaron also emphasized the importance of being forward-thinking in their operation, illustrating that data was useful for projections rather than telling them information they already knew.

"We would show the map to dad, and he would say, 'well yeah, that has always been the good spot,'" Aaron said. "Dad has farmed his whole life and knows but did not have the ability to do anything different."

Aaron said setting their yield goals is still a lot of trial and error, but now they know they can push their top zones further.

"It is mixing science with art," he said. "At the end of the day we still have to go to church and pray for rain because we still need moisture."

Water

Aaron said because sorghum is their least water-consuming crop, they are able to push it harder.

"We are putting more money into [sorghum] with more guarantee we are going to get our money back," he said, "because if we go two weeks without a rain, it is not going to be a disaster."

The Schindlers' typically receive 22 inches of annual rainfall, and their soils have high clay content, which typically have a higher percentage of water-holding capacity.

"We do not think milo actually takes that much moisture," Aaron said. "We are just not always using it right, and if we keep and utilize that moisture more effectively, it does not take that much to make a good crop."

The Schindlers are also 100 percent no-till, a method Aaron said will hold moisture in the soil more effectively, keeping the sun from taking it off the top.

No-Till

In fact, the Schindlers have used no-till practices for almost 30 years. Aaron said their philosophy is to leave the soil absolutely undisturbed—a move that has tremendously improved their soil quality and paid off in terms of yield and fertilizer use.

"Something that has always stuck with me is we do not go out in winter without a jacket or a coat," Aaron said. "Why should we expect soils to lay unprotected all the time either?"

The Schindler's topsoil depth averages approximately three feet and leaving stubble lessens soil moisture loss. A game changer in their operation has been broadcasting phosphorus—a practice that is not typically industry accepted, Aaron said, adding it has allowed them to build fertility levels.

"We have enough stubble we are guaranteeing we will not have wind or water erosion," he said, "so we are not moving any of that phosphorus offsite."

"We are also not tilling so much, our roots come back up to the surface where there is a lot more fertility and water and oxygen exchange."

Aaron said their fertilizer is only moving into the soil one quarter inch each year, which typically is not considered enough to tap into the root zone, but with no-till they are observing crop root systems pushing back up to the surface and tapping into those nutrients.

Cover Crops

Another value-added component crucial to the Schindlers' success with no-till is planting cover crops following wheat harvest, which add nutrients, break up soil compaction and help retain soil moisture.

"On the cover crop deal, it is very counterintuitive," Aaron said. "Some people do not feel they have enough moisture for cover crops, but it saves way more than it uses and will pay you back big time."

The Schindlers use a variety of cover crops, including legumes, grasses, brassicas and broadleaves. Aaron said while it is important to diversify plant groups and root structures, the two most critical cover crops for their operation are turnips and radishes.

"Turnips are more of a deep-rooted cover crop that help break up compaction in deeper soils," he said, "and the radishes help cycle nutrients, pulling them back up to the top."

As an added bonus, Aaron said cows love to graze cover crops, generally starting with the nutrient-rich turnips then moving to the other planted cover crops. He said they turn out their cows for grazing in the fall after weaning calves.

"This is a whole systems approach for us, and all of it has to piece together and still have a profit," Aaron said. "In order to make cover crops pay, they must benefit the next crop. We do not have direct revenue from [cover crops], but that is when cattle come in and can dollar and cents that out; that revenue ends up going toward the cattle enterprise."

Cover crops also help the Schindlers feed nitrogen to their sorghum—a nutrient often under utilized in sorghum production.

"Milo is not just a crop to throw in and see what you can get with little to no expense," Aaron said. "If you feed it and treat it well, it will pay."

In the end, Aaron said these practices are about sustainability, and soil health is a term applied to the practices his family has been utilizing for a long time.

"It is about doing what is right for the land and being profitable for the next generation," Aaron said. "If we do not care for our soil with that goal in mind, we cannot remain viable."

NATIONAL SORGHUM PRODUCERS

2015 Yield Contest Winners

No-Till Non-Irrigated

239.85 bu/ac

Concep safener
100,000 seeds/ac
15-inch row spacing
Previous Crop: Sorghum
33 in. of rainfall

DEKALB DKS38-88

Planted June 15
Harvested November 9
Lumax 2.7 qts./ac preplant
Atrazine 1 qt./ac preplant

Rigdon Farms - Harford County, Maryland

Harrison Rigdon is an 11th generation Maryland farmer who has grown sorghum for the past 10 years and has entered the sorghum yield contest since 2001. This year he earned the national title in the no-till non-irrigated division and set a new world record with a yield of 239.85 bushels per acre. Harrison said he appreciates the value of sorghum as a livestock feed and uses it as a substitute for corn in feeding his Angus cattle. He attributes his success in this year's contest to near-perfect growing conditions. "We planted our sorghum and got off to a great start without any disease or insect pressure, and the growing conditions were ideal for high yields," he said.

Reduced-Till Irrigated

233.39 bu/ac

Concep safener
70,000 seeds/ac
30-inch row spacing
Previous Crop: Soybeans
30 in. of rainfall

Pioneer 84G62

Planted June 1
Harvested November 10
Dual II Magnum 1.33 pts./acre pre-emerge
Milo Pro 1 pt./acre pre-emerge

Ki Gamble - Kiowa County, Kansas

Ki Gamble is no stranger to success when it comes to winning the NSP Yield Contest. While growing sorghum for more than 30 years, Ki has won multiple national yield contest titles and is pleased with how it fits into his operation. "Sorghum is a great fit into our rotation," he said. "It also allows us to conserve irrigation water and it is a great fodder crop to my cow-calf operation in the winter time." Ki attributed his success in winning the reduced-till irrigated category to good soils, cooperative weather and implementing best management practices.

NATIONAL SORGHUM PRODUCERS

2015 Yield Contest Winners

Mulch-Till Non-Irrigated

198.08 bu/ac

No safener
120,000 seeds/ac
15-inch row spacing
Previous Crop: Sorghum
40 in. of rainfall

Pioneer 84G62

Planted June 8
Harvested November 4
Drexel Trizmet II 2 qts./acre pre-emerge

Robert Santini, Jr. - Warren County, New Jersey

Robert Santini, Jr. has been growing sorghum on his family's operation in New Jersey for the past five years, finding it fits nicely into their crop rotation behind soybeans. Robert earned the national title for his mulch-till non-irrigated sorghum this year, and he attributed his success to closely monitoring the crop and applying inputs in a timely manner. "This year, we changed our fertilizer up a little as a well as our chemical program, which we have found to help quite a bit," he said. Robert said he enjoys growing sorghum because it requires less fertilizer, the seed costs are lower and it requires less input overall while still achieving top yields.

Conventional-Till Irrigated

237.93 bu/ac

Concep III safener
104,500 seeds/ac
30-inch row spacing
Previous Crop: Soybeans
10 in. of rainfall

Pioneer 85Y40

Planted May 26
Harvested November 4
Outlook 12 oz/ac preplant
Peak .75 oz/ac postemerge

Jim Boehlke - Canyon County, Idaho

Jim Boehlke attributed his successful yields this year to terrific weather and ideal growing conditions. Jim has grown sorghum since 2009 and is excited to be the national title winner this year for his conventional-till irrigated sorghum. Coming from an area where very little sorghum is grown, Jim said he is proud to have yielded a competitive crop. "Sorghum is a miracle crop," he said. "It is very low input, and it works especially great if you are in an area that does not receive much water."

NATIONAL SORGHUM PRODUCERS

2015 Yield Contest Winners

Conventional-Till Non-Irrigated

188.73 bu/ac

Concep III safener
130,000 seeds/ac
15-inch row spacing
Previous Crop: Corn
40 in. of rainfall

Pioneer 84P72

Planted June 5
Harvested October 30
Lumax 2 qts./acre preplant

Sam Santini - Warren County, New Jersey

Sorghum is still fairly new to Sam Santini's New Jersey farming operation, but through good management practices he has earned multiple NSP Yield Contest titles. While still trying to figure out how sorghum fits best in his rotation, Sam won the 2015 conventional-till non-irrigated category. Sam encouraged others to enter in the NSP Yield Contest because it allows producers to learn more about their crop and how to manage it. "If you are going to go after high yields, it requires a lot of maintenance and attention," he said. "I will be doing a lot of experimenting in the future because I want to hit the 250 [bushel] mark."

Double Crop Irrigated

188.73 bu/ac

Concep III safener
130,000 seeds/ac
15-inch row spacing
Previous Crop: Rye
40 in. of rainfall

DEKALB DKS37-07

Planted June 2
Harvested October 27
Lumax 2 qts./ac preplant

Chris Santini - Warren County, New Jersey

Chris and her husband operate their third generation farm in New Jersey where they grow sorghum, corn, soybeans and wheat. She said sorghum fits great into their operation as a double crop because they are able to plant it later in the season with rye, and it does just as well as their earlier crops. She attributed their success this year in the double crop irrigated category to good weather conditions and great attention to detail. "When you enter a contest, you have to do everything right," she said. "From the depth you are planting the sorghum to sampling the soil and experimenting with fertilizers, the entire process requires good management."

NATIONAL SORGHUM PRODUCERS

2015 Yield Contest Winners

Double Crop Non-Irrigated

172.13 bu/ac

No safener
252,000 seeds/ac
15-inch row spacing
Previous Crop: Rye
35 in. of rainfall

Pioneer 85Y40

Planted May 30
Harvested October 31
Lumax 2.5 qts./acre preplant
Atrazine 1 pt./acre preplant
Helmquat 1 qt./acre preplant

Robert Hoffines - Lancaster County, Pennsylvania

Robert Hoffines has farmed all his life and implemented sorghum into his 200-acre farming operation nearly five years ago. Robert also owns and operates a cattle feedlot and uses his sorghum as silage for his feeder steers. "Sorghum yields just as good as corn for silage and it makes fat steers," he said. This year, he decided to plant grain sorghum and enter the NSP Yield Contest for the first time, earning the national title for his double crop non-irrigated sorghum. "Sorghum is less of a gamble to grow and can handle more adversity," Robert said. "I am going to experiment more with it in the future."

CONGRATULATIONS

The Commodity Complex

Factors that Weigh on U.S. Grain Markets

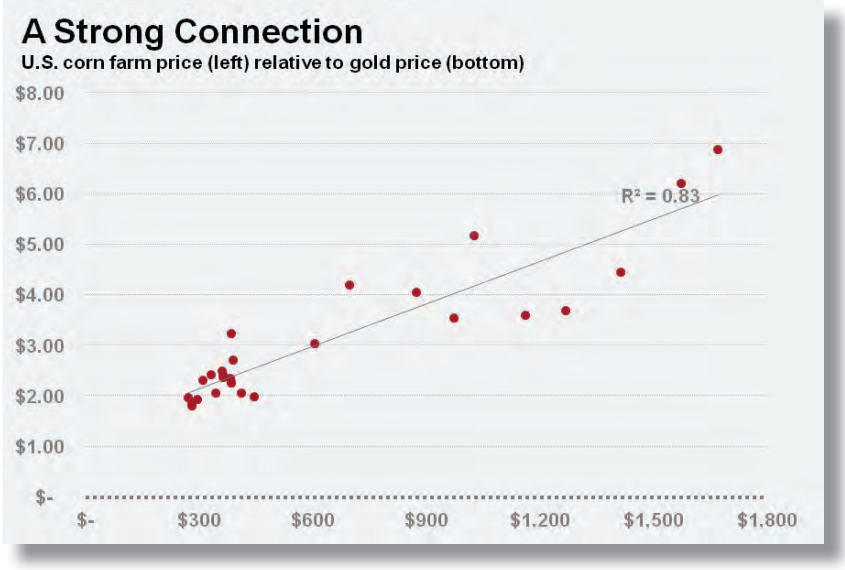
By John Duff

Market analysts often comment commodities move together. What does this mean—practically—for producers in the 2016/2017 marketing year? While the answer varies based on several factors, this year it appears U.S. grain markets will be weighed down by the global commodity complex. Still, a bullish global event could defy current expectations, rendering analysis incorrect in a matter of weeks. However, statistically speaking, the fundamental indicators point toward a bearish year for corn and sorghum.

More than 83 percent of the variance in the farm price of corn can be explained by the price of gold. Why? First, commodities move together. Managed funds enter and exit commodity markets to manage risk in equity and other markets. Picking one commodity would be risky, so funds rely on a basket that often includes agricultural commodities like corn and precious metals like gold. Second, gold acts as a proxy for global activity. Since the global economy includes a lot of consumers with grain-based diets and grain-fueled cars, global activity always influences corn and ultimately the farm price for all grains.

Chart 1 illustrates the relationship between the U.S. farm price of corn and the price of gold. Focus on the R^2, essentially a measure of correlation. This value of 0.83 indicates a strong connection between corn and gold. Chart 2 depicts the herd-like movements of the major commodities corn, crude oil and gold.

Chart 1.



What explains the other 17 percent of the variance in the farm price of corn? While a full list would be impossible to include here, two of the most important factors are the available supply of U.S. corn and the net CBOT corn contract position (a proxy for managed fund behavior). With this in mind, these two factors and the price of gold were used to develop a regression-based model for the U.S farm price of corn. The model's performance relative to history is depicted in Chart 3. The model performs very well compared to the actual farm price of corn, and the R^2 is 0.94, indicating a solid correlation between the model and reality.

This model can be used to work through a few what-if scenarios. First, calculate a baseline price. Assume gold stays close to its current forward curve-projected price of approximately $1,200 per ounce, and the net CBOT corn position stays the same as in 2015. Using the February U.S. Department of Agriculture baseline supply projection of 15.7 billion bushels, the model's forecast U.S. corn farm price for the 2016/2017 marketing year is $4.03 per bushel. Compare this to the USDA baseline projection of $3.60 and the Food

and Agricultural Policy Research Institute (FAPRI) baseline projection of $3.75. The model's output is reasonable based on these comparisons.

Second, calculate the affect of a large harvest this fall. Assume growing season conditions are excellent across the country. A record 180-bushel per acre national corn yield is cut—up from USDA projections by almost 12 bushels per acre—and the managed funds start preparing for a big carryout. The modeled price in this case is $3.72, a little high for a national crop of 15 billion bushels. Adjusting the USDA projected price to reflect the percent decline from $4.03 to $3.72 results in a more realistic forecasted price of $3.32. Consider this an approximate floor price.

Finally, calculate a price ceiling. This projection is more difficult as an unforeseen global event could push prices to record highs and completely reset current thinking and assumptions about the U.S. farm economy. This scenario would be a perfect example of a black swan, or an event nearly impossible to predict (particularly with regard to timing). As a result, take a softer approach. Assume the national corn yield falls to 150 bushels per acre and money managers take positions resembling those they held in similar years. The modeled corn price using these assumptions is $4.33. This is an approximate ceiling, resulting in a corn farm price range for this fall of $3.32-$4.33. These projections line up nicely with the USDA projection of $3.60 and the FAPRI projection of $3.75.

USDA and FAPRI are far from infallible, so another approach to projecting farm price is comparing historical baseline projections to historical actual farm prices. The expected error of the USDA projection over the last two decades was -1.35 percent while the expected error of the FAPRI projection was 1.65 percent. Furthermore, USDA projections were low 62.8 percent of the time, and FAPRI projections were high 51.9 percent of the time. Applying the expected error to the current USDA baseline projection results in a farm price projection of $3.65, and applying it to the current FAPRI baseline projection results in a farm price projection of $3.69.

Chart 2.

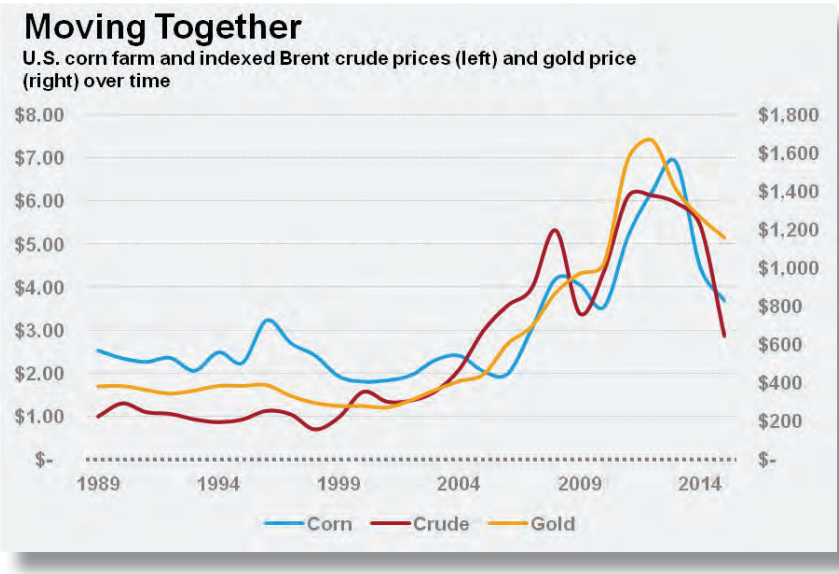
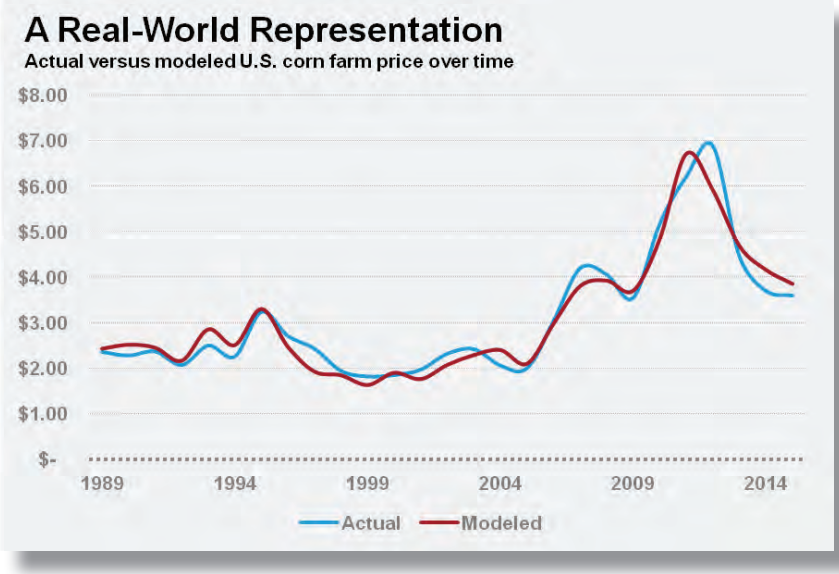


Chart 3.



Applying the largest USDA and FAPRI high and low errors results in high corn farm price projections of $5.47 and $5.43 and low projections of $2.69 and $3.23. These are likely a pretty safe bet for the outer bands of this fall's corn farm price.

The above analysis crunches a lot of numbers, but here is the takeaway: The U.S. farm price of corn probably will not go far below $2.69 or far above $5.47, and it is most likely to settle between $3.32 and $4.33. As for the U.S. farm price of sorghum, the USDA baseline projects a price 94 percent that of corn, or $3.40. The expected error of the baseline relative to history points to a price ratio of 0.97, and the 15-year average of this value is 0.95. Applying an average of these ratios to the analysis above implies the farm price of sorghum probably will not go far below $2.56 or far above $5.21, and it is most likely to settle between $3.17 and $4.13.

Why such a bearish outlook where even the projected highs do not leave as much room for profit as many producers would like? The answer lies in Chart 1. Beginning in the early 2000s, crude oil and gold began an upward march

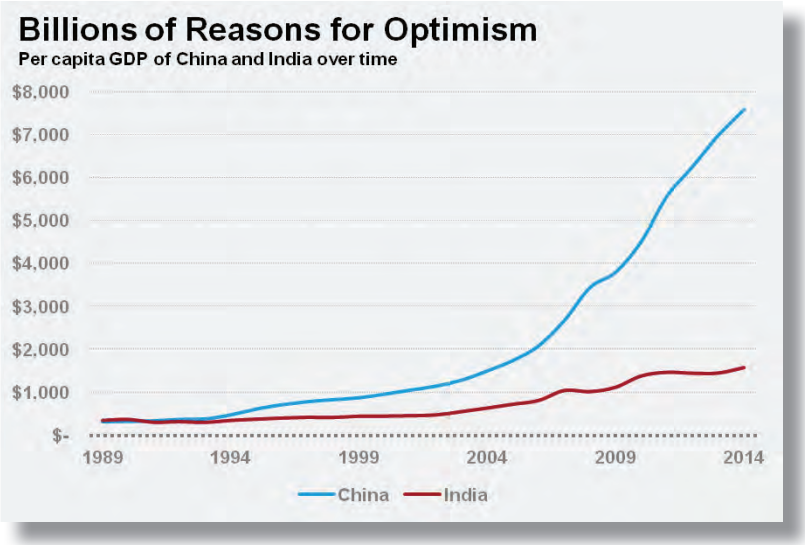
that peaked for both commodities around 2012. The 2012 drought had a significant impact on price through basis, but the 2012 global corn crop was still one of the largest on record. The prices of other commodities acted as the real market drivers.

Crude oil is also a strong predictor of the farm price of corn, explaining 74 percent of its variance (although, including crude oil and gold in the same corn farm price model does not improve the forecast much). With the prices of crude oil and gold both stagnant with respect to their forward curves, there is little to suggest grains will catch fire anytime soon, even in the event of a drought. Using 2012-style assumptions on corn supply and CBOT corn positions only results in a modeled corn price of $4.90 when the price of gold stays close to current levels. This does not mean the market cannot or will not go higher, but it illustrates the drag the global commodity picture is having on U.S. grain markets right now.

What will it take to change the global commodity picture? Again, another price run would likely be driven by a black swan, making predictions difficult. However, the conditions that could precipitate this are pretty clear. The most obvious is an increase in economic growth in India. Explosion of growth in China was a key factor in the bull commodity market that started in the early 2000s, and conventional wisdom holds Indian growth will follow the Chinese pattern upward at some point. China's per capita gross domestic product (GDP) is currently 4.8 times that of India, leaving plenty of room for growth as illustrated by Chart 4.

International monetary policy could also exert some upward pressure in the near term. If global commodities start moving higher because of an event in this area (sooner rather than later—as will be the case with a rally driven by Indian growth), producers could be in for a pleasant surprise as early as this fall. But do not bet the farm on it. The most important thing producers can do is track costs and be vigilant about taking profitable opportunities when they present themselves. The grain complex has a lot working against it right now and U.S. corn and sorghum farm prices do not appear to have much upside potential, but this does not mean lucrative opportunities are not lurking in short-lived rallies. Ample opportunities exist, and producers have the power to—and should—take advantage of them.

Chart 4.



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NEWSLETTER

WHAT'S INSIDE

INDUSTRY ESTABLISHES INVESTMENT PROGRAM

From increasing the national yield average to developing new uses for sorghum, the Collaborative Sorghum Investment Program at Kansas State University will aim to increase grain sorghum productivity and expand markets by 2025.

After more than a year of planning, the Sorghum Checkoff, Kansas Grain Sorghum Commission and Kansas State University developed this program in an effort to encourage active participation within sorghum research.

"This program will serve as a platform geared toward achieving the Sorghum Checkoff's mission of investing checkoff dollars to increase producer profitability and enhance the sorghum industry," said Florentino Lopez, Sorghum Checkoff executive director. "This program helps by aligning many resources to meet the needs of sorghum farmers throughout the U.S."

The program will aim to increase the average national yield from 61.95 bushels per acre to 100 bushels per acre by 2025 by funding research in beneficial areas. These areas include over-the-top grass control and yield improvements involving breeding program developments and field-level management techniques. Long-term research areas such as seed innovation and information management will also be addressed, including the development of new and novel genetic traits as well as the development of research and genomics databases.

The program will work to develop marketplaces, attributes, qualities and other factors capable of increasing demand to 1.25 billion bushels of sorghum per year by 2025. This will include the expansion of international markets, domestic food use, livestock feeding, ethanol production, specialty products and more. In addition, tools, information and other factors will be developed in an effort to decrease the trading discount of sorghum to corn from 4.6 percent to 2 percent by 2025.

"This agreement will provide a valuable investment in long-term sorghum research," said Stephen Bigge, Kansas Grain Sorghum Commission chairman. "Sorghum producers will benefit from the advancement of sorghum technology for many years to come."

Support for this program totals $4.8 million, consisting of a $2 million investment from the Kansas Grain Sorghum Commission and $2 million from the Sorghum Checkoff, both made in annual payments of $200,000 for 10 years, as well as an $800,000 investment from K-State.

The resources will be used to hire a managing director of the program in Manhattan, Kansas, provide capital for center activities and research funding, and build the Center for Sorghum Improvement Excellence Fund for long-term support of sorghum initiatives. Overseen by an advisory committee made up of representatives from each of the participating organizations, the managing director will actively seek additional funding for projects that serve the objectives of this program and to extend the life of the program beyond 2025.

"This program was created to help establish opportunities for increased involvement in sorghum research," Lopez said. "We must expect and encourage continued investments in the collaborative program to help maximize the benefits for our producers," Lopez said.

SORGHUM MARKETS GAIN MOMENTUM

Compared to traditional demand, 2015 was an irregular year for the sorghum marketplace. While U.S. sorghum exports more than doubled, small but significant rises in the consumer and pet food industries are creating unique marketing opportunities for growers in 2016.

With 597 million bushels harvested from 7.9 million acres, the 2015 sorghum crop was the largest since 1997. With a farm-gate price valued at $1.97 billion, the 2015 sorghum crop was the highest valued in the last 20 years. With farmers producing almost 38 percent more sorghum than the previous year, where did it all go?

The 2014/2015 marketing year set the stage for record-breaking U.S. sorghum exports. With 352 million bushels of grain sorghum crossing international boundaries, this year represented the largest sorghum export total in history. Adding tremendous value to sorghum farmers and the American economy, U.S. sorghum exports were valued at more than $2.1 billion.

China led the charge with 328 million bushels, representing 93 percent of the sorghum export market. While China has remained an active buyer of U.S. grain sorghum in 2016, other countries are stepping up. Ten countries have committed to sorghum exports thus far. Only half way into the marketing year, commitments have reached 72 percent of last year's export totals.

"Better price opportunities, availability and increased knowledge of use have made it attractive to non-traditional markets," said Florentino Lopez, Sorghum Checkoff executive director.

Traditionally dominated by China, Mexico, Japan and Korea, the sorghum export market has seen commitments from Pakistan, Columbia, Venezuela, South Africa, Indonesia and Haiti this year. In fact, this year marks the first time in 10 years sorghum has been exported to Pakistan. From February to March, Pakistan committed to 6.3 million bushels, almost four times larger than their previous annual record.

Ethanol only accounted for 3 percent of the sorghum market in 2015, but despite the reduced use among ethanol plants, 2015 was significant for sorghum due to large investments in the crop's future. With the creation of the U.S. Department of Energy Transportation Energy Resources from Renewable Agriculture program, the U.S. Department of Energy has committed $70 million for sorghum to be researched as a model feedstock.

In addition, the Biofuels Infrastructure Partnership was established in 2015 to fund the installation of blender pumps and other infrastructure necessary to move higher blends of ethanol into the marketplace. This initiative has the potential to impact more than 300 stations across the Sorghum Belt with approximately 940 new pumps and 40 new tanks installed. More ethanol moving into the marketplace means more demand for ethanol feedstocks, leading to more demand for sorghum.

"Things are looking up for sorghum's future in renewables. It is estimated 120-150 million bushels of sorghum will go toward ethanol this year," said John Duff, Sorghum Checkoff renewables director. "These gallons need to make it into gas tanks. The establishment of these pumps can create the demand we need to see that happen."

Sorghum food consumption increased by nearly 40 percent compared to 2014 and secured a three percent overall market share. More than 350 products on grocery store shelves contain sorghum, and mainstream brands are adding sorghum to new product formulations every year.

"Based on all the product testing that is currently ongoing for sorghum within key market segments, especially in the snack industry, we expect 2017 to be a breakout year for sorghum in various food sectors," said Doug Bice, Sorghum Checkoff market development program director. "It wouldn't be surprising if the number of sorghum-based foods exceeds 500 product lines by late 2017 or early 2018."

Similarly, the companion animal industry is demanding high-quality ingredients to incorporate into their formulations. Thirteen brands are currently using sorghum as a primary ingredient in more than 60 product lines, which consumed nearly 12 million bushels in 2015. Presently, the pet food industry comprises 2 percent of the sorghum industry with room to grow.

Consuming nearly 90 million bushels of grain sorghum, the livestock industry represented 15 percent of the sorghum demand portfolio in 2015. Sorghum continues to be utilized in swine, poultry, dairy and beef cattle feed.

"2015 was a great year for sorghum producers. We know our efforts can make a difference in continued market development and offer options for producers," Lopez said.

Though market prices adjust regularly, the Sorghum Checkoff will continue working to secure market options that will offer sales opportunities. While ethanol, exports and livestock have traditionally dominated the sorghum market, new opportunities in the consumer market continue to present themselves.

"Without question, market opportunities for sorghum have increased in number and strength," Lopez said. "Efforts remain to encourage market growth at all levels. Not only will the checkoff work to add new opportunities, but we will also work to enhance sorghum's position in existing markets."

RESEARCH RESULTS TO EMERGE IN 2016

Ten years in the making, over-the-top grass control is now a reality for sorghum growers across the country. But the Sorghum Checkoff won't stop there.

Among other research projects, growers should expect to see developments within the double haploid project as well as new information and technology regarding the sugarcane aphid this year.

The recently approved, active ingredient nicosulfuron in DuPont™ Zest™ herbicide will complement the non-GM DuPont™ Inzen™ herbicide-tolerance sorghum trait. The approval came after a 10-year partnership between Kansas State University and DuPont Crop Protection, with support from the Kansas Grain Sorghum Commission, National Sorghum Producers and the Sorghum Checkoff.

It is anticipated farmer trials of one Inzen™ grain sorghum hybrid will be grown throughout the Sorghum Belt in 2016. Under its Alta Seeds brand, Advanta US will demonstrate the technology in moderately-sized plots, illustrating the effectiveness on grassy weeds and the yield potential of Inzen™ sorghum. It is expected additional hybrids will be tested or made commercially available in 2017 and 2018 with genetics from both Advanta and Pioneer.

"There are a lot of areas in the U.S. where grass is a severe problem, making it challenging to grow sorghum," said Brent Bean, Ph.D., Sorghum Checkoff agronomist. "This technology will help producers to control grass while reaping the benefits of the crop, and it should open up a lot of acres for the use of sorghum."

In 2015, the Sorghum Checkoff invested $350,000 in a collaborative project with Dow AgroSciences to meet the challenge of the sugarcane aphid. Twenty-three scientists from 12 states were involved in this effort, and results were shared at a research exchange meeting in early 2016, allowing for more information to be relayed to growers regarding best management practices.

In an effort to further build upon knowledge gained in 2015, the Sorghum Checkoff is reinvesting in sugarcane aphid research this year. The Sorghum Checkoff is slated to invest up to $300,000 in a similar research platform in 2016, working with both Dow AgroSciences and Bayer CropScience as well as researchers and entomologists across the U.S. This time around, the research will focus on treatment of late-season infestations, thresholds relating to both susceptible hybrids and hybrids that offer some tolerance to the sugarcane aphid, and treating for the sugarcane aphid in the presence of other insects such as sorghum midge and head worms.

"I think the positive outlook is even in the presence of the sugarcane aphid last year, we still set a national yield record of 77 bushels per acre," Bean said. "We learned a lot about how to control the aphid last year, so if we end up with a sugarcane aphid issue in 2016, we will be a lot better prepared to control it and prevent yield loss while making a profit."

Positive results are also emerging from the three-year project with DuPont Pioneer in double haploid development. The project, which is approximately 50 percent complete at this time, has seen significant strides in bringing double haploid technology to sorghum.

Two preliminary lines have been identified as possible inducers, which is a major first step in developing double haploids. Several thousand more candidates are currently being evaluated. This year, it is expected the early findings will be confirmed while additional haploid inducers are sought out in the world collection.

"Double haploid technology will greatly accelerate the breeding process," said Cleve Franks, Ph.D., sorghum research scientist at DuPont Pioneer. "It allows you to strongly leverage a number of other technologies, such as genomic predictions, marker-assisted breeding, and precision phenotyping."

NEW, IMPROVED WEBSITE COMING SOON

The 2012 USDA Census of Agriculture indicated nearly 70 percent of American farms have Internet access. With an even larger worldwide audience, it is important now more than ever that organizational websites remain innovative to foster global knowledge and enterprise.

To embrace the growing digital world, the Sorghum Checkoff's central website – sorghumcheckoff.com – is undergoing an online renovation.

"Technologies we implement on our farms are forever evolving," said Sorghum Checkoff Chairman David Fremark. "Our website needs to evolve if it is to remain beneficial and relevant for farmers and end-users."

Serving as a premiere resource for the sorghum industry, the refreshed Sorghum Checkoff website will host the latest user-friendly technology and provide accurate, current sorghum information, communication and education for various audiences.

Jennifer Blackburn, Sorghum Checkoff external affairs director, said through the website, the Sorghum Checkoff strives to be a hub for resources that will improve field-level results and marketing opportunities. Key features of the site will include a revamped connections directory, enhanced usability and a clean, fresh design to support the expansion of the industry's brand.

"Probably the most important consideration for the new website was ensuring it is mobile friendly," Blackburn said. "As the go-to source for information as it relates to sorghum agronomics, marketing information and more, we felt it was extremely important to give growers and others a resource they can easily use across devices wherever they go."

As interest in sorghum as a healthy, versatile food option for meals and ready-to-eat foods magnifies, Blackburn said the Sorghum Checkoff has also invested in the development of a consumer-focused website. The website's goal is to enhance awareness of the super grain, how to cook it, nutritional information and more.

Going forward, Blackburn said ongoing maintenance and innovation of both websites will remain priorities to provide resources to farmers, end-users, consumers and others when needed.

"As sorghum growers and a collective board, we believe sharing information and educational tools is vital to helping increase producer profitability," Fremark said. "Investing in modern web technology is an important endeavor toward achieving that goal."

Be on the lookout for a newly designed sorghumcheckoff.com late April 2016, and the sorghum consumer site will launch early Summer 2016.

SORGHUM INDUSTRY EVENTS

July 16-19 - IFT Annual Meeting and Food Expo
Chicago, Illinois

July 23-26 - Texas Seed Trade Meeting
Frisco, Texas

July 24-27 - Ag Media Summit
St. Louis, Missouri

Aug. 2-4 - Super Zoo
Las Vegas, Nevada

For more events, visit sorghumcheckoff.com/calendar

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SORGHUM CHECKOFF MISSION

Investing your Sorghum Checkoff dollars to increase profitability for the sorghum industry.

(Continued from Commodity Classic page. 12)

corn, soybean, wheat and equipment manufacture associations on stage to discuss industry issues. Emcee Mark Mayfield specifically thanked Born for his work as an agriculture teacher.

Born addressed record research investments into the sorghum industry by the Department of Energy, an increasing number of export customers purchasing sorghum this marketing year and the benefits of the $3.95 reference price set for sorghum under the Price-Loss Coverage program during the last farm bill.

"I think all of us would rather have an extra $2 or $3 on the board right now and not trigger the farm safety net," Born said. "But it is doing what it was intended to do."

NSP Yield Contest Dinner

NSP recognized the winners in the seven different categories of the 2015 NSP Yield Contest during a dinner event at Commodity Classic, sponsored by DuPont Pioneer. This year's contest had entries from 29 states, including a 239.85 bushels per acre entry from Rigdon Farms of Maryland that set a new world record for non-irrigated sorghum yield (see winners on page 22).

Stoller Shootout

During Commodity Classic, NSP announced a new collaboration with StollerUSA–the Sorghum Shootout. The program will provide a forum for sorghum growers to learn about management practices needed to reach higher yields as NSP strives for a 250 bushel yield in its annual yield contest.

Beginning in May, the Sorghum Shootout will track the intensive management styles of award-winning growers, including Steven Albracht (Hart, Texas) and Tim Fisher (Wynee, Arkansas). StollerUSA will provide participants with expert guidance from field agronomists as well as products needed throughout the season (learn more on page 37).

Trade Show

The Commodity Classic Trade Show also set records in 2016 with 433 participating companies filling 253,300 square feet of booth space, 49 percent more than in 2015. The trade show also welcomed 128 first-time exhibitors.

Visitors to the NSP booth spoke with fellow growers, NSP staff and other industry leaders about planting prospects, best management practices and exports. NSP encouraged booth attendees to capture and share sorghum harvest pictures and stories as part of the #GoFor250 campaign.

Join NSP in San Antonio

Mark the calendar for the 22nd annual Commodity Classic March 2-4, 2017, in San Antonio, Texas. The NSP Sorghum PAC Casino Night will return as well as the continuation of the Sorghum General Session, NSP Yield Contest dinner and more.


"I'M NOT LOOKING TO FARM MORE ACRES. I'M LOOKING TO MAKE MORE ON WHAT I'VE GOT."
TIM FISHER | WYNNE, ARKANSAS
Five-time state sorghum yield champion
Champion growers like Tim Fisher know that adding more acres isn't always the best way to make more money. It's about achieving better yields with better methods—the kind of science you can only get with solutions from StollerUSA.
Learn how Tim uses Stoller solutions to Farm Different™ at stollerusa.com/farmdifferent.
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NSP Announces Sorghum Shootout

National Sorghum Producers (NSP) announced at Commodity Classic a new program, the Sorghum Shootout, to provide a forum for sorghum growers across the country to be exposed to some of the best management practices needed to reach the highest yields in sorghum production year after year. StollerUSA, NSP's newest gold partner, will serve as the program sponsor of the Sorghum Shootout.

Beginning in May, the Sorghum Shootout will chronicle the intense management styles of award-winning growers such as Steven Albracht (Hart, Texas) and Tim Fisher (Wynne, Arkansas) on their journey to hit milestone records while using ROI-driven techniques and inputs. Followers will get a sneak peek into the intense management styles each grower utilizes throughout the year as they identify their goals, face real-time challenges, develop strategies to overcome those challenges and make in-season adjustments to maximize yield potential.

StollerUSA will provide participants with expert guidance from its team of field agronomists along with the products needed throughout the season. They will also help the growers as they adjust and adapt to weather and input patterns throughout the growing season.

"National Sorghum Producers is excited to partner with StollerUSA. This collaboration will provide our growers additional resources as they strive for higher-yielding sorghum that breaches the 250 bushels per acre mark," said Tim Lust, NSP CEO. "StollerUSA's inputs and knowledge of those products are exactly what our industry needs to reach this yield goal in sorghum, and we appreciate industry support toward the Go for 250 endeavor."

"StollerUSA is honored to team up with National Sorghum Producers not only as an industry partner of NSP, but also the sponsor of the Sorghum Shootout," said Jeff Morgan, marketing director for StollerUSA. "We want to ensure key events of the growing season are chronicled for each grower, from their planting conditions and early-emergence stand counts to mid-season weather and environmental stresses and, ultimately, a high-yield harvest."

To follow the Sorghum Shootout participants and their progression throughout the 2016 growing season, learn more about the program and sign up for regular updates please visit sorghumshootout.com.

▶ NSP CEO Tim Lust, sorghum growers Tim Fisher (Arkansas) and Steven Albracht (Texas), farm broadcaster Ken Root and Stoller Corporate Marketing Director Jeff Morgan *(right to left)* announced the Sorghum Shootout at the NSP booth at Commodity Classic in March.

government regulation:

the GOOD *the* BAD & *the* UGLY

By Julia Debes

"The nine most terrifying words in the English language are: 'I'm from the government and I'm here to help.'" President Ronald Reagan delivered that phrase in 1986, but the thought accurately summarizes many farmer attitudes toward the current administration. In the last year alone, the reexamination of pesticide registrations, expansion of regulatory authority and prospect of more government oversight of crop breeding have left farmers wondering what is left to over-regulate.

J.B. Stewart, National Sorghum Producers past chairman and sorghum farmer from Keyes, Oklahoma, said the increase in regulation is not a coincidence. Instead, he explained the outgoing administration of President Barack Obama is working to finish up a regulatory bucket list before the President leaves office. That list has big implications for agriculture–from the crop protection tools available to the breeding techniques used to develop improved varieties.

First Over-the-Top Grass Control

Not all news is bad news. In February 2016, the U.S. Environmental Protection Agency announced the registration approval of nicroulfuron, the active ingredient in DuPont™ Zest™ herbicide. Zest™ can be applied to sorghum hybrids with the non-GM trait, called Inzen™ hybrids. The combination will provide sorghum growers with over-the-top grass control for the first time ever.

NSP Legislative Committee Chairman Don Bloss said grass control is a large frustration on his farm much like it is for many producers. He and his family have grown sorghum as part of their row crop operation near Pawnee City, Nebraska, since the 1980s. As a NSP board member, he helped keep the pressure on both industry and government officials to bring this new technology to fruition to address an old problem to the farm.

Now, Advanta is conducting moderate-scale trials of Inzen™ hybrids in 2016 with limited supplies expected by 2017 from Advanta, followed by DuPont Pioneer in the next few years.

"The work has gone slow, but the technology has finally come," Bloss said. "This adds a definite draw toward sorghum, and NSP appreciates EPA's work to get it to our fields."

Announcements like this one are welcome news for sorghum farmers. But, Bloss said he recognizes too often the lag time between a product's development and government approval is disheartening at the least.

"My frustration is not being able to update my crop protection tools because the regulation takes forever to make chemicals available," he said.

Crop Protection Under Review

James Kamas, sorghum farmer from central Texas in Academy, echoed Bloss's concerns with unclear regulatory processes. Kamas has rare perspective on regulating crop protection products as he worked as a chemical engineer at an environmental consulting firm before transitioning to farming full-time. In that position, he worked to help clients apply for and utilize permits for disposing and burning of both hazardous and non-hazardous waste. Home on the farm, he applies the same due diligence to following the legal requirements for the chemicals he uses to grow sorghum, corn, cotton, wheat and oats.

"We pay attention to the regulations imposed on us and we make sure to comply with them," Kamas said.

For Kamas, crop protection tools help protect his profit. Roughly half of his sorghum acreage is contracted as a rawmaterial feedstock in the manufacturing of loose fill packing. But, because only two or three sorghum varieties work well for the manufacturing process, Kamas cannot easily switch varieties on these acres year-to-year, making chemical protection vital.

That protection includes Transform, one of the two most effective insecticides for combatting the sugarcane aphid. Kamas said he used Transform, a DowAgro Sciences product, successfully the past two seasons but is awaiting word from the EPA on whether or not he will be able to use it during the 2016 season. The EPA opened a brief comment period in February on a Section 18 emergency use application by the Texas Department of Agriculture for the use of sulfoxaflor, the active ingredient in Transform, on up to three million acres of sorghum this growing season.

"We wish we did not have to spray for the sugarcane

aphid, but fortunately we have an control effective option in Transform," Kamas said. "We need sugarcane aphid control to successfully grow grain sorghum in this part of the country."

Revising the Regulatory Rulebook

Unfortunately, Transform is far from the only crop protection tool currently under attack. Flubendiamide (Belt), imidacloprid (Gaucho), chlorpyrifos (Lorsban) and atrazine are just a few of the chemicals used by sorghum farmers up for discussion at the EPA.

The EPA is examining different aspects of these chemicals, but Joe Bischoff, vice president on the agriculture and natural resources team at Cornerstone Government Affairs, explained the underlying theme.

"You end up playing whack-a-mole with these individual issues," Bischoff said. "But when you take a step back, it is all about risk assessment."

According to the the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), every pesticide distributed or sold in the United States must be registered by the EPA. More specifically, each product must undergo a determination that its use "will not generally cause unreasonable adverse effects on the environment," according to FIFRA language. In addition, the regulation states the analysis must also include "taking into account the economic, social and environmental costs and benefits of the use of any pesticide."

To do so, the EPA follows a four step risk assessment process: hazard identification, dose-response assessment, exposure assessment and risk characterization, according to the agency's website. An important part of the product registration and review process from agriculture's view is a requirement to also evaluate the benefits of the product's use.

This process, in statute, has not changed. But, the EPA has fundamentally altered how they conduct the risk assessment portion of product evaluation in the last 2-3 years. The new process intensifies the focus on the hazard identification step, with particular emphasis on pollinators and honeybees, and reduces the weight of the required benefits analysis.

The result is a re-examination of products that have already been registered under opposition pressure for increased risk assessment for specific and often exaggerated environmental protection factors. Bischoff compared the change to the perceived difficulty of a field goal. A 40-yard field goal seems possible, but if the goal posts are moved back to 60 yards, those three points are increasingly difficult to achieve.

Kamas agreed, adding one of his biggest concerns is tighter and more complex pesticide application laws.

"It is troublesome and burdensome enough as it is," he said. "It is only going to be more difficult, requiring more time, money and effort."

And that shift, Stewart added, will only further put U.S. farmers at a disadvantage.

"This more risk-averse regulatory approach will slow down the approval process of new technologies and significantly increase the cost of new chemistries to farmers," Stewart said. "Losing trusted and proven crop protection tools, giving farmers more limited and often more expensive choices, also decreases our ability to compete with the rest of the world."

Changing the Crop Improvement Framework

Beyond product registrations, one of the largest proposed changes to the agricultural regulatory framework originates not from the EPA but from the U.S. Department of Agriculture. In February 2016, the USDA Animal and Plant Health Inspection Service, in conjunction with the EPA and the U.S. Food and Drug Administration, published a Notice of Intent to update Section 340 of the Plant Protection Act. Specifically, this action could change how the agencies regulate new breeding techniques and genetic material.

These changes could vastly expand regulatory authority, giving APHIS the ability to more intensively regulate all but the most traditional of breeding techniques–both cutting edge techniques as well as generally accepted technologies used for decades.

While these new regulations could impact all of agriculture, sorghum research would be disproportionally affected due to APHIS-expressed concerns about the transfer of traits from sorghum to weedy relatives like shattercane and Johnson grass. In reality, however,

Transform Timeline

The cancellation of sulfoxaflor, the active ingredient in Transform, was the result of a court decision. When Transform was registered, the EPA was not using the current assessment for pollinator risk, leading to a challenge of the registration in court. There, the Department of Justice failed to adequately defend the benefits of Transform that led to EPA approval, and the Ninth Circuit Court of Appeals ruled there was not enough evidence of benefits compared to risk for Transform. EPA then issued a cancellation order for sulfoxaflor in November 2015.

The Texas Department of Agriculture filed for a Section 18 application for the use of sulfoxaflor to control the sugarcane aphid this growing season. At time of writing, the EPA is still reviewing this application. Sorghum growers can also utilize Sivanto, a Bayer CropScience product, to control the pest.

other crops are conducting research specifically into integrating genes from wild relatives into commercial varieties to boost traits like drought tolerance and disease resistance. Under the proposed framework, sorghum breeders could be penalized for taking this same approach.

One unclear aspect is how the agency proposes to distinguish between a new variety produced from different breeding techniques with the same end result. For example, traditional cross breeding and newer breeding techniques like gene editing can achieve identical results for disease resistance, drought tolerance, etc. The resulting new varieties from each process could be indistinguishable from one another with no possible test to identify which variety was produced using which process, requiring regulatory authorities to rely instead on breeder disclosure. Yet, under the proposed framework, one of these breeding techniques–gene editing–would be regulated while the other–traditional cross breeding–would not.

These proposed changes would slow down the delivery of improved varieties to farmers' fields, despite the great promise in new traits in the sorghum breeding pipeline. Kamas said the resulting frustration trickles down, for him, into an inability to experiment with the best technologies and varieties available in test plots, which he said he relies on heavily to select new varieties for sorghum acres not under contract for specialty processing.

To resolve the disconnect between federal agencies and farms, Bloss called for producers to work together with associations like NSP to make sure federal regulations are indeed helpful to both farmers and their land.

"What looks good on paper in Washington looks a whole lot different here in the country," Bloss said. "If there is a period where you can voice your concerns, you need to take full advantage of it."

The Regulatory Countdown

Federal agencies do not have until the President's last day in office to finish their bucket lists. The Office of Information and Regulatory Affairs issued guidance on Dec. 17, 2015, directing federal agencies to "accomplish their regulatory goals" by summer 2016 "to the extent feasible consistent with your priorities, statutory obligations, and judicial deadlines." Regulations passed after this timeframe may also be subject to review by the following Congress, making their passage earlier rather than later in 2016 more desirable from an Adminstrative perspective.

KANSAS GRAIN SORGHUM
Growers Working Together

Sorghum *Update*

Brought to you by the Kansas Grain Sorghum Commission

Sorghum Industry Establishes Coordinated Research & Marketing Program

The sorghum industry established the Collaborative Sorghum Investment Program to increase grain sorghum productivity and expand markets by 2025. The coordinated efforts will operate through the Center for Sorghum Improvement at Kansas State University but will impact sorghum producers across the country.

Funding for this new national program will initially be provided by the United Sorghum Checkoff Program Board, the Kansas Grain Sorghum Commission and Kansas State University. The resources will be used to hire a managing director for the Center for Sorghum Improvement, provide operating capital for Center activities and research funding as well as build the Center for Sorghum Improvement Excellence Fund for long-term support of sorghum initiatives.

Objectives of the program

The overall objectives of the program will include productivity improvements and market expansion. Productivity is defined by this project as a direct increase in national sorghum yields. The aim is to increase the average national yield from 62 bushels per acre in 2000-2015 to 100 bushels per acre by 2025. Specifically, the program will fund research into beneficial topics such as over-the-top grass control and yield improvements through breeding programs and field-level management practices. Longer-term areas of research will address seed innovation, including the development of new and novel genetic traits; and information management, including the development of research and genomics databases.

Market expansion efforts will focus on increasing demand and value of sorghum. In direct terms, the program will strive to decrease ending stocks of sorghum while increasing total production. The ultimate goal is to establish a 1.25 billion bushel demand for sorghum per year by 2025. This will include expansion of international markets, domestic food use, livestock feeding, ethanol production, specialty products and more. Value will be improved by increasing the price relationship of sorghum with corn and other coarse grains. The specific goal is to decrease the trading discount of sorghum to corn from the current (2000-2015) 4.6 percent to 2 percent by 2025.

Management of the program

The program will not use funds to influence governmental action, policy or legislation.

The managing director will be familiar with current sorghum research and marketing. An advisory committee with representation from the Sorghum Checkoff Program Board, the Kansas Grain Sorghum Commission and Kansas State University will oversee program activities. The managing director will actively seek additional funding for projects that serve the objectives of this program and to extend the life of the program beyond 2025.

"We look forward to implementing this agreement to the benefit of the entire sorghum industry. We are pleased to leverage our resources with this new program," said John Floros, dean of the Kansas State University College of Agriculture and director of K-State Research and Extension.

Kansas Grain Sorghum Commission, 795 22nd Rd. NW, Lebo, KS 66856
(785) 477-9474, www.ksgrainsorghum.org

Sorghum Shortcuts

Rule Changes for 2016 National Sorghum Producers Yield Contest

The 2016 National Sorghum Producers Yield Contest includes updated divisions as well as other rule changes. All divisions previously listed as non-irrigated will now be labeled as dryland. Prior mulch-till division entries will now fall under the reduced-till divisions.

Additionally, contestants must still be a certified FSA owner/operator of the entry plot, but the FSA Form 578 is no longer required to enter the 2016 NSP Yield Contest. Finally, producers can now submit harvest reports, aerial map, weigh tickets and management information by email to yieldcontest@sorghumgrowers.com, by fax to 806-749-9002 or by mail.

Find the 2016 NSP Yield Contest entry form and extended version of the rule changes at http://sorghumgrowers.com/yield-contest/.

Membership Up to Date?

National Sorghum Producers wants to say thank you to the heart and soul of our association–our members. We appreciate your membership and the ability to serve as your voice for the sorghum industry. Now is the perfect time to check if your membership is up-to-date; call the NSP office at 806-749-3478 or email nationalsorghumproducers@sorghumgrowers.com to check your membership status or retrieve your membership ID. Not a member? Join today at www.sorghumgrowers.com/producer-membership.

Benefits of NSP membership include a weekly Sorghum Notes subscription, subscription to Sorghum Grower magazine, the opportunity to enter the NSP Yield Contest and discount rates at various businesses in addition to first-class representation on legislative and regulatory issues and access to firsthand information on how such issues will affect your farm.

Corrections

In the Winter 2016 edition of Sorghum Grower magazine, Shane Beckman's location was incorrectly identified as Seldon, Kansas. Beckman farms near Selden, Kansas.

In the same magazine issue, the variety for the 2015 yield contest entry for David Justice, third place winner in the conventional-till non-irrigated category, was incorrectly listed as DeKalb KDS36-06. The correct variety is Pioneer 84P80.

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