

Comments from Max Tjaden, Commissioner, Kansas Grain Sorghum Commission Annual Report to the Legislature January 21, 2021

I want to thank the Committee for the opportunity to present today. My name is Max Tjaden and I am the District 6 Commissioner for the Kansas Grain Sorghum Commission. I farm in Clearwater and represent sorghum farmers in South Central Kansas, from Harvey to Sumner to Commanche and Pawnee counties, and everyone in between..

Joining me from the Commission is Jesse McCurry, our Executive Director, Adam York, our Program Director, and Sanders Barbee, our Conservation and Sustainability Fellow and a sophomore at Kansas State University where she studies Agricultural Economics.

To start, let me say sorghum in Kansas is on solid ground. In 2020, our Kansas grain sorghum farmers produced 237 million bushels, up 16 percent from last year. Area for harvest, at 2.7 million acres, was up 15 percent from 2019. The yield was 86 bushels per acre, up 1 bushel from last year. As these numbers represent, 2020 was a considerably better production year than 2019, which was a difficult year for growers across the state due to extreme weather and moisture conditions.

This year remained challenging from a budgetary standpoint, however, but we turned the corner on key investments and optimism for the year ahead is on the rise. We also brought on-board several new farmer-leaders to help us move forward. We continue to see basis at extraordinary levels driven by international demand, namely from our trading partners in China. In fact, noting sorghum's strength, the USDA has increased its export projections multiple times throughout the year to 290 million bushels nationally for marketing year 2020/21. Bringing these numbers home, the value of sorghum exported from Kansas totals 466 million dollars into our state's economy. Fortunately, for a second year in a row, the sugarcane aphid posed little threat to sorghum production in Kansas. Weed control as well as maintaining strong export markets remain focus areas of our work.

Kansas continues to lead as the largest sorghum producing state in the nation. Our budget for FY21 is \$\$749,560.29. Kansas growers pay \$3.4 million dollars into the United Sorghum Checkoff Program and routinely contribute for over half of the national budget. There is no state checkoff for sorghum--it was voluntarily suspended to help create the United Sorghum Checkoff Program. This national checkoff is non-refundable.



However, we enjoy great local representation as these Kansans serve on the Sorghum Checkoff board, appointed by the U.S. Secretary of Agriculture Sonny Perdue:

- Craig Poore, Past Chairman, Alton
- Boyd Funk, Treasurer, Garden City
- Kendall Hodgson, Little River
- Shayne Suppes, Scott City
- Jeff Zortman, Fowler

The Kansas Grain Sorghum Commission continues to have several primary investments in Kansas State University. K-State, which is home to the Center for Sorghum Improvement, leverages key investments in sorghum with our state and federal partners and builds on component strengths through public research and collaboration with key private industry stakeholders.

I also want to acknowledge your continued investment in sorghum research as it has bolstered projects in the state related to water and sorghum. Sorghum can be a tremendous resource in state water conservation and the State of Kansas has helped realize this through Water Technology Farms, crop research, and continued leadership on Ogallala issues.

Additionally, our market development program includes key resources in the U.S. Grains Council, an international cooperator to the United Sorghum Checkoff Program, as well as the International Grains Program Institute at K-State. Typically, our Commission would host international trade delegations prior to fall harvest, including dozens of buyers from our key markets, such as Mexico, Peru, Japan, the Philippines, and China. They would travel with our teams across the state for hands-on exposure. But while international travel came to a standstill due to the pandemic, the Checkoff innovated to pivot virtually and bring Kansas farm tours to our foreign buyers through virtual reality crop showcases. Using only a smartphone and the Youtube app, foreign buyers can get a 360 degree guided tour of sorghum fields throughout the state as well as friendly views of our farmers who grow the crop. Our Commission continues to facilitate trade relations virtually but we are eager and stand ready to host foreign buyers in person again as soon as reasonably possible.



Domestically, the Commission also promotes ethanol, a clean-burning renewable fuel at the heart of many rural communities in Kansas. Sorghum as a feed grain can compete with corn and provide processors an interchangeable option to fuel vehicles and lower carbon emissions within our state and across our nation. Drivers can now use E15 annually in many markets and we expect the popular mid-grade blend to have full year-round access to the highly concentrated Kansas City fuel market by this summer's driving season, an effort only made possible through a collaboration with our friends at Kansas Corn and our state's ethanol plants.

Included in our packet is an Annual Report document, our FY20 audit and other informational materials. It is our pleasure to provide this report and we look forward to your questions.



January 19, 2021

Kansas Grain Sorghum Commission PO Box 618 Colwich, KS 67030

We have audited the financial statements of Kansas Grain Sorghum Commission (the Commission), as of and for the year ended September 30, 2020, and have issued our report thereon dated January 19, 2021. Professional standards require that we advise you of the following matters relating to our audit.

Our Responsibility in Relation to the Financial Statement Audit

As communicated in our engagement letter dated November 11, 2020, our responsibility, as described by professional standards, is to form and express an opinion about whether the financial statements that have been prepared by management with your oversight are presented fairly, in all material respects, in accordance with accounting principles generally accepted in the United States of America. Our audit of the financial statements does not relieve you or management of its respective responsibilities.

Our responsibility, as prescribed by professional standards, is to plan and perform our audit to obtain reasonable, rather than absolute, assurance about whether the financial statements are free of material misstatement. An audit of financial statements includes consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Commission's internal control over financial reporting. Accordingly, as part of our audit, we considered the internal control of the Commission solely for the purpose of determining our audit procedures and not to provide any assurance concerning such internal control.

We are also responsible for communicating significant matters related to the audit that are, in our professional judgment, relevant to your responsibilities in overseeing the financial reporting process. However, we are not required to design procedures for the purpose of identifying other matters to communicate to you.

Planned Scope and Timing of the Audit

We conducted our audit consistent with the planned scope and timing we previously communicated to you.

Compliance with All Ethics Requirements Regarding Independence

The engagement team, others in our firm, as appropriate, and our firm, have complied with all relevant ethical requirements regarding independence.

Qualitative Aspects of the Entity's Significant Accounting Practices

Significant Accounting Policies

Management has the responsibility to select and use appropriate accounting policies. A summary of the significant accounting policies adopted by the Commission is included in Note 1 to the financial statements. There has been no initial selection of accounting policies and no changes in significant accounting policies or their application during the year ended September 30, 2020. No matters have come to our attention that would require us, under professional standards, to inform you about (1) the methods used to account for significant unusual transactions and (2) the effect of significant accounting policies in controversial or emerging areas for which there is a lack of authoritative guidance or consensus.

January 19, 2021 Kansas Grain Sorghum Commission Page two

Qualitative Aspects of the Entity's Significant Accounting Practices (Continued)

Significant Accounting Estimates

Accounting estimates are an integral part of the financial statements prepared by management and are based on management's current judgments. Those judgments are normally based on knowledge and experience about past and current events and assumptions about future events. Certain accounting estimates are particularly sensitive because of their significance to the financial statements and because of the possibility that future events affecting them may differ markedly from management's current judgments.

We did not identify any such estimates.

Financial Statement Disclosures

Certain financial statement disclosures involve significant judgment and are particularly sensitive because of their significance to financial statement users. We did not identify any such disclosures.

Identified or Suspected Fraud

We have not identified or obtained information that indicates fraud may have occurred.

Significant Difficulties Encountered during the Audit

We encountered no significant difficulties in dealing with management relating to the performance of the audit.

Uncorrected and Corrected Misstatements

For purposes of this communication, professional standards require us to accumulate all known and likely misstatements identified during the audit, other than those that we believe are trivial, and communicate them to the appropriate level of management. Further, professional standards require us to also communicate the effect of uncorrected misstatements related to prior periods on the relevant classes of transactions, account balances or disclosures, and the financial statements as a whole. There were no uncorrected misstatements.

In addition, professional standards require us to communicate to you all material, corrected misstatements that were brought to the attention of management as a result of our audit procedures. There we no such corrected misstatements in the financial misstatements.

Disagreements with Management

For purposes of this letter, professional standards define a disagreement with management as a matter, whether or not resolved to our satisfaction, concerning a financial accounting, reporting, or auditing matter, which could be significant to the Commission's financial statements or the auditor's report. No such disagreements arose during the course of the audit.

Representations Requested from Management

We have requested certain written representations from management, which are included in a letter dated January 19, 2021.

Management's Consultations with Other Accountants

In some cases, management may decide to consult with other accountants about auditing and accounting matters. Management informed us that, and to our knowledge, there were no consultations with other accountants regarding auditing and accounting matters.

Other Significant Matters, Findings or Issues

In the normal course of our professional association with the Commission, we generally discuss a variety of matters, including the application of accounting principles and auditing standards, operating conditions affecting the Commission, and operating plans and strategies that may affect the risks of material misstatement. None of the matters discussed resulted in a condition to our retention as the Commission's auditors.

January 19, 2021 Kansas Grain Sorghum Commission Page three

This report is intended solely for the information and use of the Board of Directors and management of the Commission and is not intended to be and should not be used by anyone other than these specified parties.

Sincerely,

Varney & Associates, CPAs, VVC Certified Public Accountants

Manhattan, Kansas

Colwich, Kansas

FINANCIAL STATEMENTS

WITH

INDEPENDENT AUDITOR'S REPORT

September 30, 2020 and 2019



January 19, 2021

To the Commissioners Kansas Grain Sorghum Commission Colwich, Kansas

Independent Auditor's Report

Report on the Financial Statements

We have audited the accompanying financial statements of the Kansas Grain Sorghum Commission (the Commission), a commission of the State of Kansas, which comprise the statements of financial position as of September 30, 2020 and 2019, and the related statements of activities, functional expenses and cash flows for the years then ended, and the related notes to the financial statements.

Management's Responsibility for the Financial Statements

The Commission's management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express opinions on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Opinions

In our opinion, the financial statements referred to above present fairly, in all material respects, the net assets of the Commission, as of September 30, 2020 and 2019, and the changes in net assets and cash flows for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Varney & Associates, CPAs, LLC

Certified Public Accountants Manhattan, Kansas

Colwich, Kansas

STATEMENTS OF FINANCIAL POSITION

September 30,

ASSETS	2020	2019						
Current Assets Cash in checking	\$ 399,464	\$ 484,218						
TOTAL ASSETS	\$ 399,464	\$ 484,218						
LIABILITIES AND NET ASSETS								
Liabilities Accrued liabilities Escrow Total Liabilities	\$ 3,446 3,500 \$ 6,946	\$ 4,785 3,500 \$ 8,285						
Net Assets - Without Donor Restrictions	\$ 392,518	\$ 475,933						
TOTAL LIABILITIES AND NET ASSETS	\$ 399,464	\$ 484,218						

Colwich, Kansas

STATEMENTS OF ACTIVITIES

For the Years Ended September 30,

	2020		2019	
CHANGES IN NET ASSETS				
REVENUE	Φ.	054 000	Φ.	000 055
United Sorghum Check-off Program	\$	851,226	\$	866,255
Salary for Association Business		49,680		38,007
Miscellaneous income		5,570		9,246
Interest income		-		14
Total Revenues	\$	906,476	\$	913,522
EXPENSES				
Program	\$	928,106	\$	934,065
Administrative		61,785		52,965
Total Expenses	\$	989,891	\$	987,030
INCREASE (DECREASE) IN NET ASSETS	\$	(83,415)	\$	(73,508)
NET ASSETS - BEGINNING OF FISCAL YEAR		475,933		549,441
NET ASSETS - END OF FISCAL YEAR	\$	392,518	\$	475,933

Colwich, Kansas

STATEMENT OF FUNCTIONAL EXPENSES

For the Year Ended September 30, 2020

	Program Services		Management Services		Total	
Foreign market development	\$	45,655	\$	-	\$	45,655
KSU research		384,336		-		384,336
KSU Sorghum Improvement Center		201,000		-		201,000
Domestic Market Developments		1,530		-		1,530
Heartland Plant Innovation		49,500		-		49,500
Education		16,650		-		16,650
USDA		31,950		-		31,950
Promotion		41,411		-		41,411
Payroll expense *	•	136,868		45,622		182,490
Administration		-		7,714		7,714
Executive Director *	•	4,934		2,115		7,049
Commissioner travel	•	3,959		440		4,399
Field staff *		3,471		386		3,857
Legal and accounting fees		-		4,535		4,535
Meeting expense *	•	6,180		687		6,867
Postage and delivery *		662		284		946
Bank fees		-		2		2
	\$	928,106	\$	61,785	\$	989,891

^{*} Each of these expense lines contains costs that are attributed to more than one program or support function and these joint costs have been allocated on the basis of estimates of time and effort.

Colwich, Kansas

STATEMENT OF FUNCTIONAL EXPENSES

For the Year Ended September 30, 2019

	Program Services		Management Services		Total	
Foreign market development	\$	47,116	\$	-	\$	47,116
KSU research		392,416		-		392,416
KSU Sorghum Improvement Center		202,875		-		202,875
Domestic Market Developments		27,700		-		27,700
Heartland Plant Innovation		37,750		-		37,750
Education		15,735		-		15,735
USDA		38,200		-		38,200
Promotion		34,678		-		34,678
Payroll expense *		106,837		35,612		142,449
Administration		-		4,551		4,551
Executive Director *		13,245		5,677		18,922
Commissioner travel *		4,806		534		5,340
Field staff *		7,614		846		8,460
Legal and accounting fees		-		4,879		4,879
Meeting expense *		4,562		507		5,069
Postage and delivery *		531		227		758
Bank fees				132		132
	\$	934,065	\$	52,965	\$	987,030

^{*} Each of these expense lines contains costs that are attributed to more than one program or support function and these joint costs have been allocated on the basis of estimates of time and effort.

Colwich, Kansas

STATEMENTS OF CASH FLOWS

For the Years Ended September 30,

	2020		2019		
CASH FLOWS FROM OPERATING ACTIVITIES Change in net assets	\$	(83,415)	\$	(73,508)	
Adjustments to reconcile change in net assets to net cash provided by operating activities					
Increase (decrease) in accrued liabilities	\$	(1,339)	\$	4,702	
Increase (decrease) in escrow account Total Adjustments	\$	(1,339)	\$	(4,054) 648	
NET CASH PROVIDED BY (USED IN) OPERATING ACTIVITIES	\$	(84,754)	\$	(72,860)	
NET INCREASE (DECREASE) IN CASH	\$	(84,754)	\$	(72,860)	
CASH BALANCE - BEGINNING OF FISCAL YEAR		484,218		557,078	
CASH BALANCE - END OF FISCAL YEAR	\$	399,464	\$	484,218	
SUPPLEMENTAL DISCLOSURES OF CASH FLOW INFORMATION Interest paid	\$		\$		
Taxes paid	<u>\$</u>			-	

Colwich, Kansas

NOTES TO FINANCIAL STATEMENTS

September 30, 2020 and 2019

Note 1: Summary of Significant Accounting Policies Organization

The Kansas Grain Sorghum Commission (the Commission) is organized as a commission of the State of Kansas to conduct a campaign of grain sorghum promotion and market development through research, education and information.

Method of Accounting

The financial statements are prepared using the accrual basis of accounting in accordance with accounting principles generally accepted in the United States of America as promulgated by the Financial Accounting Standards Board.

During 2019, the Commission adopted part of the financial reporting provisions of FASB ASU 2016-14. The primary change includes the reclassification of net assets according to donor restrictions. FASB ASU 2016-14 also requires an analysis of expenses by their functional nature, which the Commission includes as a statement of functional expense.

Cash and Cash Equivalents

Cash includes all deposits in the bank and highly liquid investments with original maturities of three months or less. The carrying value of cash approximates fair value because of the short maturities of those financial instruments.

Net Assets

The Commission reports the changes in its financial position according to one class of net assets as follows:

Net Assets Without Donor Restrictions – Net assets available for use in general operations and not subject to donor (or certain grantor) restrictions.

Functional Allocation of Expense

The costs of program and supporting services activities have been summarized on a functional basis in the statements of activities. The statements of functional expenses present the natural classification detail of expenses by function. Accordingly, certain costs have been allocated among the programs and supporting services benefited.

Income Taxes

The Commission is an entity created by the State of Kansas, action of which is codified in K.S.A. 2-3002. The Commission is not subject to income tax and, accordingly, no provision has been made for income taxes.

Use of Estimates

The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Advertising

The Commission's advertising costs are expensed as incurred and are separately reported on the statement of activities as promotion expense.

Subsequent Events

Subsequent events were evaluated through January 19, 2021, which is the date the financial statements were available to be issued.

Colwich, Kansas

NOTES TO FINANCIAL STATEMENTS (CONTINUED)

September 30, 2020 and 2019

Note 2: Cash

At September 30, 2020, the carrying amount of the Commission's cash accounts was \$399,464 and the bank balance was \$410,243. Of the bank balance, \$250,000 was secured by FDIC insurance and the remaining \$160,243 was secured by the bank's pledge of marketable securities having a fair market value of \$583,756.

At September 30, 2019, the carrying amount of the Commission's cash accounts was \$484,218 and the bank balance was \$494,976. Of the bank balance, \$250,000 was secured by FDIC insurance and the remaining \$244,976 was secured by the bank's pledge of marketable securities having a fair market value of \$747,153.

Note 3: Research Contracts

The Commission contracts with Kansas State University (KSU) for research activities each fiscal year. The final payment on these contracts is due upon the Commission's receipt of KSU's final activity report and final expenditure report. Because the reports had not been received as of September 30, 2020 and 2019, no liabilities have been accrued on these dates.

As of the date of this report, the Commission had not yet paid their final payment for open research contracts related to fiscal year 2020.

On November 21, 2019, the Commission paid \$112,923 as final payment for open research contracts related to fiscal year 2019.

Note 4: Concentration of Support

For each of the years ended September 30, 2020 and 2019, the Commission received substantially all of its support from passback revenues from the United Sorghum Check-off Program.

The amount of passback revenues received by the Commission is dependent upon the amount of grain sorghum produced and sold in Kansas. The Commission may be adversely affected if the production and sale of grain sorghum drops significantly. The Commission's management feels that the likelihood of this occurring is remote.

Note 5: Stewardship, Compliance, and Accountability Budget

In accordance with K.S.A. 2-3005, the Commission approved and maintained an operating budget for each of the years ended September 30, 2020 and 2019.

Reserve

In accordance with K.S.A. 2-3005, the Commission maintains a reserve of cash which does not exceed 125% of the previous five-year average for annual disbursements.

As of September 30, 2020, the cash balance was \$399,464 or 38% of the five year average disbursements of \$1,053,449. As of September 30, 2019, the cash balance was \$484,218 or 46% of the five year average disbursements of \$1,058,695.

Depository Security Coverage

In accordance with K.S.A. 2-3008(b), the Commission maintains depository security coverage for its banking deposits as explained in detail in Note 2 of these financial statements.

Colwich, Kansas

NOTES TO FINANCIAL STATEMENTS (CONTINUED)

September 30, 2020 and 2019

Note 6: Liquidity and Availability

Financial assets available for general expenditure, that is, without donor or other restrictions limiting their use, within one year of the balance sheet date is comprised of cash of \$399,484 at September 30, 2020.

As part of the Commission's liquidity management plan, cash in excess of daily requirements is maintained in interest bearing accounts.





Kansas Grain Sorghum Annual Report

Contents

03

2020 Kansas Sorghum at a Glance

04

Kansas Sorghum Leadership

05

A Good Year for Exports

05

Fueled by Ethanol

06

Investing in the future of Kansas sorghum

06

DropXL Sorghum

07

STRAIT Delivers Sugarcane Aphid Markers



2020 Kansas Sorghum at a Glance



Farmers planted 3 million acres of sorghum in Kansas



2.8 million acres of sorghum were harvested



238 million bushels of grain sorghum were produced



Farmers harvested an average of **85 bushels** per acre

Kansas Sorghum Market Outlook



- 160 MBU Exports
- 44 MBU Feed & Residual

31 MBU Food, Seed & Industrial

\$4.26

Farmers received an average farm price of **\$4.26 per bushel**

"This year was still challenging from a budget standpoint, but we turned the corner on key investments and saw basis at extraordinary levels driven by demand. We also brought on board several new farmer leaders to help us move forward. Sorghum in Kansas is on solid ground."



Stephen Bigge Chairman and Farmer Stockton, Kansas



Sorghum Checkoff Board

Five Kansas currently serve on the Sorghum Checkoff Board of Directors:

- Craig Poore, Alton, Chairman
- Boyd Funk, Garden City, Treasurer
- Kendall Hodgson, Little River, Director
- Shayne Suppes, Scott City, Director
- Jeff Zortman, Fowler, Director

Leadership Sorghum

Six Kansans are members of the Sorghum Checkoff Leadership Sorghum Class V:

- Daniel Hopper, Leonardville
- Deanna Lanier, Valley Center
- Matt McCune, Plainville
- Brant Peterson, Johnson
- Brian Younker, Spearville
- Kirk Zerr, Quinter

Kansas Grain Sorghum Commission Board



Left to right: Clark Bibb, Coldwater; Max Tjaden, Clearwater; Stephen Bigge, Stockton, Chair; Mike Rosebrook, Beverly; Lonnie Wilson, Colby, Vice Chair; Kevin Harris, Abilene; Nathan Larson, Riley, Sec/Treas. Not pictured: Greg Graff, Leoti; Kevin Kniebel, White City; Mike O'Brate, Ingalls

Investing in Kansas

Kansas growers **gave \$3.41 million** in assessments to the Sorghum Checkoff in 2020.

Kansas **received \$866,194.69** in passback dollars to invest in additional research, market development and education.

A Good Year for Exports

Nearly five million metric tons of U.S. sorghum, or 204 million bushels, were exported during the 2019-2020 marketing year. The top five exporters of U.S. sorghum were China, Mexico, Japan, Ethiopia and New Zealand, respectively. U.S. exports of sorghum to China from January to August 2020 totaled \$617 million, up from \$561 million for the same period in 2017-2018. The value of Kansas sorghum exports reached \$466,300.000. a tremendous win for Kansas farmers.



Virtual Grain Exchange

The U.S. Grains Council's 2020 Virtual Grain Exchange brought foreign customers to the table in lieu of in-person trade teams. Chairman Bigge was part of the welcome address. The event tallied over 1,200 attendees, including 989 international

participants from dozens of countries, interested in coarse grains and ethanol products. According to the U.S. Grains Council, this participation is two to three times more people than would have attended in person at Grain Exchange and field visits.



*Graphic credit: Fueled by Kansas

Fueled by Ethanol

Kansas Grain Sorghum partnered with Kansas Corn in their Higher Blends Infrastructure Improvement Program (HBIIP) grants for three Kansas companies, which represents five locations. The Renewable Fuel Association also submitted for one Kansas company, representing four locations. All nine of these locations were selected for funding with locations across the state — from Moscow to Goodland to Horton. One location in Wichita has already completed installation and is now offering E15, E30, E50 and E85 blends. USDA will be making an additional \$20 million available yet again this calendar year, and Kansas Grain Sorghum has identified at least one additional station to apply for these funds. As of now, more than 70 stations in Kansas are offering E15 and above ethanol blends.

Investing in the Future of Kansas Sorghum

In 2020, the Kansas Grain Sorghum Commission board invested in the following research and projects to help Kansas farmers gain more value.

- DropXL Sorghum: A trait technology package to deliver water-optimized sorghum varieties
- Breeding Sorghum for Improved Dryland Productivity and Utilization: \$100,000
- Improving Chilling Tolerance in Grain Sorghum with Genomics-assisted Breeding: \$94,300
- U.S. Grains Council: \$35,000
- IGP Institute Market Development Grant: **\$20,000**
- Kansas Water Technology Farm Partnership: \$8,000
- HBIIP Ethanol Project: \$20,000





DropXL Sorghum

In 2020, DropXL Sorghum, a trait technology package for water-optimized sorghum in Kansas, continued to advance the trait of limited transpiration. A trait modeled to increase productivity of sorghum in Kansas environments by five bushels per acre while using less water.

Key findings and milestones of 2020:

- DropXL identified sorghums with low water demand (2-5%).
- DropXL initiated new breeding populations with 350 crosses of elite parent lines and non-elite donor lines.



FarmUS

The Kansas Department of Agriculture and Kansas State University were awarded a Federal State Market Improvement Grant by the USDA AMS. The project, FarmUs, farm to campus collaboration to access consumer markets on Kansas college campuses, leverages workforce development and student innovation to create new applications and market opportunities for sorghum and wheat. Ultimately, successful prototypes will debut in the food service programs for college campuses in Kansas.

A class taught by project team member, Dr. Kelly Getty, engages students in the research and

development process for new and novel consumer products. In the case of this project, the consumers of interest happen to be college students just like themselves. The fall of 2020 was the first semester for incorporation of the FarmUs innovation experience into a senior level food science class. The project team, which included Kelly Whitehair with food service at K-State, are impressed with the concepts that students developed. In parallel to the class experience, the lab of. Dr. Yonghui Li is exploring innovative approaches to functionality and sensory with uses of sorghum and wheat.



Sorghum State Podcast

Listen to full episodes of the Sorghum State Podcast from Kansas Grain Sorghum at ksgrainsorghum.org.



STRAIT Delivers Sugarcane Aphid Markers

The sorghum industry faces many challenges and opportunities, such as stress tolerance, grain quality and herbicide resistance, that could be addressed most rapidly and cost-effectively by using markerassisted selection (MAS) in breeding programs for targeted traits. The Collaborative Sorghum Investment Program in collaboration with the research programs of Drs. **Geoffrey Morris and Terry** Felderhoff, launched the Sorghum Trait (STRAIT) effort. STRAIT aims to provide traits to bridge the gap in availability of crop technologies for grain sorghum. The first delivery of trait technology is a marker for use in the selection of tolerant sugarcane aphid sorghums. The markers have been tested by seven breeding programs, both public and private. The research of Morris and Felderhoff is supported by the Kansas Grain Sorghum Commission.





P.O. BOX 618 COLWICH, KANSAS 67030 785.477.9474 KSGRAINSORGHUM.ORG







