



# WHEAT

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## EXECUTIVE SUMMARY

Kansas is the nation's leading wheat producer with records of wheat production actually predating statehood. Currently, Kansas is the world's best source for hard red wheat and is identifying new hard white varieties. Increasing demand for whole grain white bread and other whole grain products by the American consumer is conducive for growth of this wheat class. Kansas' natural resources such as climate, soil and rainfall along with its central location make Kansas ideal to grow wheat that can be distributed to the nation. Kansas is home to world-renowned leaders in the wheat industry, both in public education entities and in private innovative enterprises. Some of these organizations have been integral to the development of new wheat genetics and advocacy initiatives.

Although the wheat industry has experienced great success, it does still face some challenges which can prevent continued growth. Ever-depleting sources of groundwater for irrigation continues to be a threat to farmers, particularly in some regions of the state. A number of policies, both local and federal, could threaten the financial stability of longtime wheat farmers. Expansion of the wheat sector will depend upon a skilled workforce, particularly in seed technology, irrigation research and technology and flour milling. Growth in wheat production will require improvements to storage and transportation, especially to accommodate export around the world. Access and adaptation to international markets will open up additional global opportunities and increase demand for Kansas wheat. Finally, consumer shifts away from gluten and carbohydrates has potential to decrease demand for wheat products.

Great potential exists in the Kansas wheat industry, and a strategic growth plan developed by key partners from throughout the sector can be a valuable step. Coordinated efforts by private and public stakeholders to fund research and outreach can keep Kansas wheat at the forefront of the industry. Continued focus on state and federal policies that encourage effective use of resources and protect grain development is critical. Adaptation to new markets, like frozen dough, and to new opportunities, like big data, will keep the wheat industry a thriving part of the future of Kansas agriculture.

## STATUS

Kansas has long been known as the Wheat State, and with good reason: Kansas is the nation's leading wheat producer with records of wheat production actually predating statehood. There are indications that wheat was produced in the region as early as 1839. In 2016, 8.5 million acres of wheat were planted and 8.2 million acres were harvested with an average yield of 57 bushels per acre. This accounts for 9.1 percent of the state's total agricultural production and 14.9 percent of the nation's total crop. The state also ranks first in flour milling capacity.

According to estimates prepared by the Kansas Department of Agriculture and based on the Implan economic data model, the wheat industry in Kansas has a direct output of over \$1.46 billion and creates 2,979.3 jobs in the state. Through indirect and induced impacts, the industry supports a total of 9,057.1 jobs and creates a total economic contribution of approximately \$2.51 billion.

Currently, Kansas is the world's best source for hard red wheat and is identifying new hard white varieties. The hard white (HW) varieties account for more than two percent of the wheat grown in the state. The overall HW market appears to be ending its consolidation phase and is now entering a steady growth phase. Increasing demand for whole grain white bread and other whole grain products by the American consumer is conducive for growth of this wheat class. The largest increases are likely to be in contracted acres as domestic millers look to guarantee supplies.

## OPPORTUNITIES

In order to develop a strategic growth plan for the wheat industry, it is important to understand the areas where Kansas has a comparative advantage and the best opportunities for growth or expansion.

Factor	Implications for Growth and Development Opportunities
<b>Big Data</b>	As more and more data becomes available related to cropping systems, there are increased opportunities to use the data to improve profit margins for wheat, thereby increasing its economic impact and the number of farmers interested in growing wheat.
<b>Breeding</b>	Wheat breeders are learning more about wheat genetics every day and working to use that information to build better varieties.  The Kansas infrastructure is very attractive for growth. Kansas is home to the best research and positioned well for the future, with potential marketing channels for high-yield bread wheat, hard white wheat, durum and historical attributes (heritage) which are starting to pique consumer interest.
<b>Central Location</b>	Kansas is a great central hub location for enterprises looking to serve the whole United States.
<b>Consumer Demand</b>	There exist possibilities to expand the frozen dough market based on convenience products and consumer demand.

# OPPORTUNITIES

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<b>Feed Stuffs</b>	Combining the natural attributes of Kansas that make it a good place to grow wheat such as climate, soil and rainfall with the well-established cattle feeding sector creates potential for increased use of feed wheat. Feed wheat is a potential alternative to corn or sorghum in areas or farming operations where wheat is a better fit.
<b>Hard White Wheat</b>	New varieties of hard white wheat are being released and offer an opportunity to expand Kansas' production diversity in the state.
<b>Leadership</b>	Kansas is home to world-renowned leaders in the wheat industry, including leaders at the Kansas State University Department of Agronomy, the Wheat Genetics Resource Center, Kansas Wheat, etc., with many active grower leaders across the state serving or having served nationally.
<b>Policy Environment</b>	<p>Kansas tax law allows sales tax exemption for farm machinery and equipment and various ag-based inputs. These state tax code provisions make Kansas a more attractive state for growth or expansion.</p> <p>At the federal level, Kansas is fortunate to have elected members of Congress who strongly support the wheat industry. The Kansas congressional delegation will play an important role in influencing positive changes related to federal regulations or legislation, international trade, federal taxes, transportation rules, natural resources and more.</p>
<b>Reputation</b>	Kansas is known around the world for high quality hard red winter wheat.
<b>Supporting Institutional Infrastructure</b>	Kansas has a solid foundation throughout the entire wheat production community. Long known as the Wheat State, Kansas has the infrastructure to go along with it including a strong road and rail network, more than 1 billion bushels of commercial grain storage, and the largest flour milling capacity of any state in the nation.

## SUCCESS STORIES

Key successes in this industry:

- The Kansas Wheat Innovation Center is a farmer-owned center that brings together all facets of wheat production and uses on the K-State campus. The facility is a great testament to the importance that Kansas places on the wheat industry.
- The Wheat Genetic Resource Center provides a world renowned gene bank and does cutting edge foundational research regarding wheat genetics. The center is now being privately funded as part of a National Science Foundation Center in which industry has come together to supply funds and provide direction for the work of WGRC.
- A Federal State Marketing Improvement Program grant was awarded to KDA and the Kansas Wheat Commission for the hard white wheat initiative. The initiative seeks to develop improved branding for Kansas hard white wheat.
- K-State has developed nine new varieties targeted specifically for success in Kansas within the last six years.
- Private investments in unit train facilities in central Kansas have improved the ability to take advantage of lower freight rates for unit trains and move Kansas wheat efficiently across the country.

## CHALLENGES

While Kansas is poised for major expansion in the wheat sector, the following factors represent challenges serving as barriers to achieving the objective of the strategic growth plan.

Challenge	Details of Challenge
<p><b>Consumer Demand</b></p>	<p>Global usage is over 700 million metric tonnes. U.S. diets have reduced wheat consumption by approximately nine percent since 2000 as people have shifted away from consuming carbohydrates.</p>
<p><b>Critical Infrastructure</b></p>	<p>There is a need for more unit train loading facilities as the cost of freight continues to rise; being able to take advantage of price discounting for the use of unit trains would be advantageous for moving Kansas wheat to end users around the country as well as to ports for export.</p> <p>In order to see significant growth in the hard white wheat sector in Kansas, the ability to segregate wheat types (red versus white) in commercial storage needs to exist and handlers must understand its importance.</p> <p>A great way to add value to Kansas wheat is turning it into Kansas flour. Additional flour milling in Kansas would increase demand as well. Flour mill location is most influenced by the cost of transportation to the customer and the cost of wheat transportation.</p> <p>As the demand for Kansas wheat around the world grows, having access to a port is critical. Currently much of the wheat leaving Kansas, particularly southeast Kansas, travels to the Port of Catoosa in Oklahoma to be transloaded onto barges. Keeping the port in good repair, and maintaining and increasing its grain handling capacity, is important to Kansas wheat producers.</p>

# CHALLENGES

Challenge	Details of Challenge
<b>Dietary Trends</b>	<p>Recent increase in demand for gluten-free products by consumers has the potential to decrease demand for wheat products at retail. Gluten-free has moved beyond health needs for a small percentage of the population into a dietary fad resulting in much misunderstanding about gluten, where it comes from and what advantages it brings to food.</p> <p>Standardized marketing claims for advertised characteristics such as gluten-free, natural, organic, local, etc. could help consumers better understand the products they are buying.</p>
<b>Education of the Scope of the Industry</b>	<p>The wheat industry must work to increase the knowledge of farmers and consumers about different uses for the grain and use of different varieties to achieve desired characteristics. The challenge today is a belief that all wheat, particularly hard red winter, is equal and its single use is flour for baked goods.</p>
<b>Global Opportunities</b>	<p>Maintaining more agronomic traits and building them into varieties that are good for milling and baking will create desire for Kansas wheat around the world, and increased production will make it more widely known and available.</p> <p>Regulatory approval of new seed technology around the world is important as Kansas farmers look to take advantage of the latest advancements to improve yield and meet worldwide demand.</p> <p>Access to international markets for wheat products is key to growing the industry. Resistance to free trade agreements at the federal level can hinder this access.</p> <p>The overriding export problem is the lack of a champion to sell Kansas wheat. Kansas needs a better relationship with the people selling wheat from the U.S. and Kansas shippers need to be able to make sales to foreign buyers. Russia is our biggest competition and often wins on pure price decisions around the world, so Kansas has to supply superior quality that buyers are willing to pay more in order to get.</p>
<b>Identity Preservation</b>	<p>Farmers and grain handling firms need the ability to keep classes separate such as hard red winter and hard white, but also keep GMO and non-GMO separate in the future.</p> <p>Kansas has a strong hard red winter brand reputation around the world that can be built upon, but export blending makes it difficult to truly source 100 percent Kansas wheat for shipment to other countries.</p>

# CHALLENGES

Challenge	Details of Challenge
<b>Policy</b>	<p>Maintaining the flexibility farmers have in how they depreciate capital purchases as it relates to federal income taxes is critical for management and planning. Any changes that reduce that flexibility or threaten to reduce it compromise farmers' ability to plan expenses.</p> <p>Farm families work their whole lives to build and maintain the family farming operation including the acquisition of land. Being forced to sell hard-earned assets to satisfy estate taxes is a devastating blow to family farmers particularly beginning farmers. The estate tax is the number one cause of the breakup of multigenerational family farms and ranches.</p> <p>Though not unique to Kansas, there exist significant challenges due to federal laws and regulations, including: Waters of the U.S., the Endangered Species Act, burdensome Occupational Safety and Health Administration regulations and more.</p> <p>U.S. Department of Agriculture Animal and Plant Health Inspection Service is currently working on a biotech policy which may include double haploids as biotech versus traditional breeding. This type of process regulation is ineffective and unjust. Attention should be paid to the end product and whether genetic modification has actually occurred or not.</p>
<b>Water</b>	Wheat farmers rely on ever-depleting sources of groundwater for irrigation.
<b>Workforce Development</b>	Growth in the wheat sector, particularly in seed technology, irrigation research and technology and flour milling, will require a skilled workforce, which continues to be a significant challenge through the entire agricultural industry.
<b>Yield vs. Quality</b>	The balance between yield and quality is an old struggle for wheat breeders insofar as determining how much yield to sacrifice to incorporate good milling and baking quality traits or how much quality to sacrifice in order to boost yield. The marketplace is not currently signaling much value for quality in terms of price.

## NEXT STEPS IN STRATEGIC DEVELOPMENT

Leaders from throughout the Kansas wheat industry will continue to collaborate in the development and implementation of a long-term strategic growth strategy with input and discussion among key partners. Industry-identified desired growth outcomes, initially developed in 2016, will be implemented by industry and key partners and updated annually at the Kansas Governor's Summit on Agricultural Growth.

# WHEAT INDUSTRY OUTCOMES



## **Growth Objective:**

*Increase demand for Kansas wheat both domestically and around the world to help ensure profitability for the Kansas wheat industry. Expand on the world-renowned Kansas reputation for hard red winter wheat by offering identity preserved hard red winter while also expanding into hard white and durum varieties.*

**The following outcomes will be the result of industry collaboration and effort to grow the Kansas wheat industry:**

### **Phase 1 (Begin within two years)**

- Sustained public/private partnerships which support research, particularly in wheat variety development. These partnerships would include Kansas State University, Wheat Genetics Resource Center, U.S. Department of Agriculture Center for Grain and Animal Health Research and others which have the public and private support necessary to advance this research.
- Regulations which are based on sound science and are supportive of business success, particularly in regard to genetically modified organisms (GMO) regulation. The double haploid process employed in wheat breeding to reduce the time required for new variety development is not genetic modification and should be defined accurately.
- Identity preserved wheat for customers around the world. This can be achieved by capitalizing on the availability of shipping containers to ship identity preserved wheat from the point of filling the container to the point of delivery.
- Increased quantity of Kansas wheat that is processed and has value added in Kansas. Incentives are attractive to agriculture enterprises looking to grow in Kansas.
- A grain grading standard by USDA Federal Grain Inspection Service that allows for the presence of hard red winter wheat in hard white wheat or white wheat in red wheat.
- National reputation as a home for agriculture technology that fosters the next Green Revolution with a focus on converting research discoveries into marketable products.
- A durum wheat variety for farmers in Kansas, to offer an alternative to hard red winter and to create a new production region and growing season for durum that can compete with the northern plains region of the United States.
- Significant tools available and in use by farmers to demonstrate the sustainability of wheat farming in Kansas.
- Increased truck weights on state highways, specifically going to 90,000 pounds on six axles, to maximize efficient movement of wheat and reduce environmental impact.
- Military veterans looking for a foothold in farming matched with established farms looking for new owners and/or operators.
- Commercial grain storage in Kansas using current technology and with adequate capacity for increased production from Kansas farms.

### **Phase 2 (Begin within 2-4 years)**

- A pasta company located in Kansas which utilizes durum wheat grown in Kansas. This will be dependent on the development of a durum wheat variety for Kansas.