

LESSON 3: THE IMPACT OF ARKANSAS RICE

TOPICS IN THIS LESSON:

- Rice Locally
- Rice Globally
- Arkansas Rice Farmers

HAND-OUTS:

- Top 10 Reasons to Eat Arkansas Rice Fact Sheet
- Quiz Questions
- Recipe Card



LESSON 3: THE IMPACT OF ARKANSAS RICE

ARKANSAS RICE AT A GLANCE

Arkansas ranks first among the six major rice-producing states, accounting for over 50 percent of U.S. rice production in 2014.

In 2014, the state's rice industry donated 110,000 pounds of rice to fight food insecurity in Arkansas.

Arkansas is home to 2,500 rice farms, 96% of which are family owned and operated.

Arkansas grows rice on approximately 1.2 million acres each year.

Arkansas rice contributes over \$4 billion annually to the state's economy and employs more than 25,000 Arkansans.

Over the past 20 years, rice farmers have decreased land use by 35%, energy use by 38% and water use by 53%.

POTENTIAL CHALLENGES FACING ARKANSAS RICE

Water quantity is a critical issue for rice producers in Arkansas. Leaders in the Rice industry proactively began engaging in responsible water stewardship practices long before the recent revelations about the depleting resource. Challenges regarding the availability, conservation and regulation of water are prominent in the minds of growers and continue to be a priority for the rice industry. In addition to more efficient irrigation practices, leaders within the industry encourage strategic partnerships with entities such as the Natural Resources Conservation Service, The Nature Conservancy and the Arkansas Department of Environmental Quality.

In addition to these water issues, the agriculture industry is also facing a decrease in farmers. As the average age of a farmer continues to rise, the number of beginning farmers continues to decrease. These factors contribute to the long-term trend of fewer farms. Although growers continue to become more efficient producing more food with fewer resources, the world population and essentially the need for food is also growing.

ACTIVITY: HAVE STUDENTS DO ONLINE SEARCHES TO SEE HOW MANY ARKANSAS-BASED RICE FARMS THEY CAN FIND! ARE ANY FARMS NEAR YOUR CLASSROOM?

ARKANSAS, RICE, AND THE GLOBAL IMPACT

More than 50 percent of the world's population is dependent upon rice for 80 percent of its diet. This is good news for the state since Arkansas rice production tops that of any other state in the nation. Arkansas has a unique blend of soil type, environment, and water availability. The soils in eastern Arkansas (the Grand Prairie and Delta regions) have good water-holding capacity, making them ideal for maintaining the flooded conditions that rice prefers. Two of the largest Arkansas rice production companies include Producers Rice Mill and Riceland Foods, both of which have corporate headquarters in Stuttgart. Stuttgart is known as the "duck and rice capital of the world."

Approximately 60 percent of the rice grown in the United States is consumed here, and rice grown in the U.S. accounts for 12 percent of the global export market, making the U.S. the fourth-largest rice exporting country.

Arkansas exports an estimated \$1 billion in rice annually to markets in Canada, Mexico, Central America, Haiti and Saudi Arabia.

FORTIFIED RICE IS SAVING LIVES AROUND THE GLOBE

Throughout the last year, the global food supply chain has faced unprecedented pressure from challenging weather conditions due to El Nino, the continued outpouring of refugees from Syria and the Middle East, and a steep decline in oil and commodity prices. The demand for not just food, but proper nutrition, continues to grow exponentially.

The U.S. is responding to that demand with its agricultural bounty combined with new investment in nutritional science to combat global micronutrient deficiencies, a condition called hidden hunger.

The U.S. rice industry in particular has always played a lead role in feeding the world, providing hundreds of thousands of metric tons of rice to vulnerable populations. Through a long term partnership with both the U.S. Department of Agriculture (USDA) and the U.S. Agency for International Development (USAID), U.S. rice has fed millions around the world through school feeding, agricultural value chain development, and emergency relief programs. The new addition of a fortified rice product to U.S. government feeding programs will feed more people around the world, but more importantly, will also help eradicate some of the most persistent micronutrient deficiencies that hold millions back from proper development and growth.



Children in Myanmar are eating fortified rice to help break the cycle of malnutrition. Photo Source: www.path.org

WHAT IS FORTIFIED RICE?

Fortified rice is either a coated or extruded kernel that contains eight critical micronutrients, including Vitamin B, Vitamin A, and Iron.

The kernel is then blended back in with regular long grain rice in a way that provides optimal levels of nutrition.

Preliminary reports from U.S. Government field tests acknowledge the effectiveness of fortified rice: it is accepted by those consuming it because it tastes and looks like regular rice, and it is absorbed in sufficient quantities to improve health and conquer hidden hunger.



In Burundi, children are flocking to school in order to receive their only meal of the day: beans and micronutrient-fortified rice. Here, 9 year old student Daniel shares his portion of fortified rice with his sister. Photo Source: worldvision.org

ARKANSAS FARMER SPOTLIGHT

MEET SOME ARKANSAS FARMERS WHO GROW OUR FOOD!



Jennifer James is a fourth generation farmer, and owner of H and J Land Company in Newport, Arkansas. Jennifer joined the operation in 1994 after graduating college, and produces rice, soybeans, corn, grain sorghum and wheat on approximately 6,000 acres.

She graduated from the University of Arkansas at Fayetteville with a Bachelor of Science in Agricultural Business. Jennifer and her husband, Greg, have one son, Dylan (15).

Jennifer invests her time in multiple conservation-focused initiatives. She has had extensive involvement with the Field to Market program, which allows farmers to benchmark themselves with other growers on measurements including water quality, water quantity, greenhouse gas emissions, soil loss and energy use. The program also allows a farmer to understand how making certain changes in their field practices can affect overall sustainability. This partnership also enables Jennifer to sit at the table with groups like Kellogg's, Mars and Anheuser Busch to better understand rice-end users and act as a liaison to local agriculture. She identifies as a grower and portrays where food originates in the field to fork process.

She is active in the USA Rice Federation where she served as the Communications Committee Chairman helping to craft and mold the perception consumers have of the rice industry across the nation. She was also chairman of the USA Rice national outlook conference for six consecutive years where she coordinated the networking of 600+ agriculture representatives annually. She was appointed by the USA Rice Federation chairman to lead the national rice sustainability task force. Jennifer is an active board member for the Arkansas Rice Farmers where she advocates on behalf of growers across the state on local and federal levels. She is also active on the Jackson County Farm Bureau Board and was appointed by the Secretary of Agriculture as the Young and Beginning Farmer representative for the Arkansas Agriculture Board.

In addition to her extensive service, Jennifer works diligently to implement sustainable farming practices throughout her operation. She utilizes polypipe irrigation methods, which decrease water and energy use by 20%. She is involved with the H2O initiative and helps encourage other farmers to be proactive and apply responsible irrigation methods on their farms as well. Not only does Jennifer devote her time towards conservation efforts through service, she also leads by example on a local, regional and national level.



Dow Brantley of England is a third generation family farmer and managing member of Brantley Farming Company. He joined the family operation in 2000, producing rice, corn, cotton and soybeans. Brantley is a 1998 graduate of the University of Arkansas at Fayetteville where he received a bachelor of science in agricultural, food and life sciences. After graduation, he worked at the United States Department of Agriculture in Washington, D.C., before returning to the family farm.

Dow currently serves as Chairman of the Arkansas Rice Farmers as well as Arkansas Rice Federation, the advocate for all segments of the state's rice industry. He has held these positions since July of 2011. In July 2014, he was elected to serve as Chairman of the USA Rice Federation.

Brantley is active in the USA Rice Federation, Agricultural Council of Arkansas and Arkansas Farm Bureau. He currently serves on the Agricultural Policy Advisory Committee (APAC) for trade, which is appointed by the United States Trade Representative and the Secretary of Agriculture, and represents the University of Arkansas Division of Agriculture on the Council for Agricultural Research, Extension and Teaching (CARET), a national grassroots organization which works to enhance national support and understanding of the land-grant university system's food and agricultural research, extension and teaching programs. He was recently named to the Arkansas Business "40 Under 40 Class" of 2014 and has been recognized by the Arkansas Democrat-Gazette High Profile section. Additionally, he and his wife, Amy, participate in several state hunger relief organizations including the Arkansas Rice Depot and Arkansas Hunger Relief Alliance. Brantley and his wife have three daughters, Caroline, Virginia and Ruth.

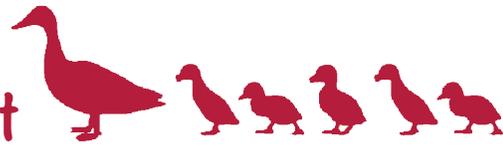
10 REASONS TO EAT RICE GROWN IN ARKANSAS

1 Locally Grown

96% of farms are family owned and operated. Consuming Arkansas-grown rice helps support our neighbors who continue to produce a quality food supply.

3 Love for the Environment

Arkansas rice farmers have a commitment to protect and preserve natural resources. Today, Arkansas rice farmers produce more rice using less land, energy and water than they did 20 years ago. Working rice fields provide critical wildlife habitat for many species of birds, mammals and reptiles.



4 Nutrient Rich

Rice provides more than 15 vitamins and minerals, and beneficial antioxidants.



5 Energy Boost

Keep your engine revved throughout the day with rice! It's a good source of complex carbohydrates, providing the fuel your body and brain need to function.



6 Happiness

Rice makes you happy! Eating rice triggers your brain to produce serotonin, which boosts mood and keeps appetite in check.

7 Heart Health

Whole grains, such as brown rice, help reduce the risk of heart disease, diabetes and certain cancers. Rice eaters have a lower risk of high blood pressure.

8 Healthy Weight Management

Research shows that eating rice makes you feel full longer and people who eat rice are less likely to be overweight.

**1 CUP COOKED BROWN RICE
= 2 SERVINGS OF WHOLE GRAINS.**

9 Sustainability

When you choose Arkansas grown rice, you are reducing your food miles. Over 50% of the rice we grow in the US is produced by Arkansas farmers.

10 Gluten Free

Rice is one of the least allergenic grains, making it a healthy option for those that are gluten-intolerant or have food sensitivities.

LESSON 3: THE IMPACT OF ARKANSAS RICE REVIEW QUIZ

1. Arkansas ranks _____ among the six major rice-producing states.
a) First b) Third c) Last
2. The Arkansas rice industry donated over 110,000 pounds of rice to fight food insecurity in the state in 2015.
TRUE FALSE
3. How much money does Arkansas rice contribute to the state's economy annually?
4. Name one of the largest rice millers in rice in Arkansas:
5. Arkansas rice farmers have committed to _____ and _____ natural resources.
a) protect, utilize b) protect, preserve c) use, destroy
6. Over _____% of rice grown in the U.S. is produced by Arkansas rice farmers.
a) 20% b) 30% c) 50%
7. More than 50% of the world's population is dependent on rice for _____% of their diet.
a) 50% b) 80% c) 10%
8. Which areas of eastern Arkansas provide perfect soil conditions to grow rice?
9. What is fortified rice?
10. Fortified rice is essential in fighting _____ around the globe.
a) Poverty b) Malaria c) Malnutrition

LESSON 3: THE IMPACT OF ARKANSAS RICE

- Arkansas ranks _____ among the six major rice-producing states.
a) **First** b) Third c) Last
- The Arkansas rice industry donated over 110,000 pounds of rice to fight food insecurity in the state in 2015.
TRUE FALSE
- How much money does Arkansas rice contribute to the state's economy annually?
Over \$4 billion
- Name one of the largest rice millers in Arkansas:
Riceland Foods
- Arkansas rice farmers have committed to _____ and _____ natural resources.
a) protect, utilize **b) protect, preserve** c) use, destroy
- Over _____% of rice grown in the U.S. is produced by Arkansas rice farmers.
a) 20% b) 30% c) **50%**
- More than 50% of the world's population is dependent on rice for _____% of their diet.
a) 50% b) **80%** c) 10%
- Which areas of eastern Arkansas provide perfect soil conditions to grow rice?
Grand Prarie and the Delta
- What is fortified rice?
Fortified rice is either a coated or extruded kernel that contains eight critical micronutrients, including Vitamin B, Vitamin A, and Iron.
- Fortified rice is essential in fighting _____ around the globe.
a) Poverty b) Malaria c) **Malnutrition**



BLACK BEAN & BROWN RICE CAKES

Yield: 50/100 servings

**Serving Size:
2 x 1/8-cup cakes**



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Visit www.menurice.com**

APPROXIMATE NUTRIENTS PER SERVING:** Calories 243, Protein 10 g, Carbohydrate 45 g, Total Fat 3 g, Saturated Fat 1 g, Cholesterol 27 mg, Vitamin A 155 IU, Vitamin C 6 mg, Iron 3 mg, Calcium 90 mg, Sodium 294 mg, Dietary Fiber 10 g

BLACK BEAN & BROWN RICE CAKES

Prep Time: 30 minutes
Cook Time: 30-35 minutes



INGREDIENTS	50 SERVINGS		100 SERVINGS		DIRECTIONS
	WEIGHT	MEASURE	WEIGHT	MEASURE	
Black beans, low-sodium, canned drained, rinsed	8 lb 3 oz	1 gal 1 qt	16 lb 6 oz	2 gal 2 qt	1. In the bowl of a food processor, pulse black beans slightly until chopped. Add eggs and pulse several times. Add in cilantro and pulse until combined. Hold. Critical Control Point: Refrigerate below 41°F.
Pasteurized egg product		1 1/2 cups		3 cups	
Cilantro, fresh, coarsely chopped	3 oz	3 cups	6 oz	1 1/2 qt	
Vegetable oil		3 tbsp		1/4 cup	2. In a large, heavy skillet, heat oil over medium-high heat; stir in onion and sauté 3-4 minutes, or until onions start to caramelize. Stir in garlic, cumin, chili powder and red pepper and continue cooking 1-2 minutes. Critical Control Point: Cook to an internal temperature of 145°F or higher for at least 15 seconds. Remove from heat.
Sweet onion, minced	4 lb 12 oz	3 qt	9 lb 8 oz	1 1/2 gal	
Garlic, chopped		1/2 cup		1 cup	
Cumin, ground		1/4 cup		1/2 cup	
Chili powder, toasted		2 tbsp		1/4 cup	
Red pepper, ground		1/2 tsp		1 tsp	
Brown rice, cooked*	10 lb 12 oz	1 1/2 gal 1 cup	21 lb 8 oz	3 gal 2 cups	3. Place reserved black bean mixture into a large bowl, fold in rice and onion-garlic mixture and mix well. Add salt and pepper and mix. Chill mixture. Critical Control Point: Refrigerate below 41°F.
Salt		1 tbsp		2 tbsp	
Black pepper, ground		1 tsp		2 tsp	
Paprika or smoked paprika, for dusting					4. Scoop 100 x 1/8-cup scoops (No. 12 scoop) of rice and bean mixture onto parchment-covered, full-size sheet pans, evenly spaced. Flatten slightly with a spatula. Sprinkle tops with paprika or smoked paprika and bake. Convection oven: 350°F or conventional oven: 400°F for 30-35 minutes or until slightly golden and heated to 165 F or higher for 15 seconds. Outsides of the cakes will be slightly crisp. Remove from pan. Critical Control Point: Hold hot at 135°F or higher for service.
Prepared low-fat ranch dressing, optional		4 3/4 cups		2 qt 1 1/2 cups	5. To Serve: Serve 2 cakes with 1 1/2 tbsp ranch dressing (optional). Critical Control Point: Hold hot at 135°F or higher for service.

ONE SERVING PROVIDES: 1 oz eq G, 3/8 cup beans/peas (legumes) V, 1/8 cup other V

COOLING: Critical Control Point: Cool from 135°F to 70°F or lower within 2 hours and from 70°F to 41°F within 4 more hours. Place in shallow pans with a product depth of 2 inches or less and refrigerate or place shallow pans of product into ice bath, immerse pans in ice up to product level and stir frequently. Cover and label product.

REHEATING: Critical Control Point: Reheat to 165°F or higher for 15 seconds, within 2 hours.

*Follow package cooking instructions or visit MenuRice.com for suggested rice preparation methods. Recipe may utilize fresh cooked rice or rice prepared in advance and chilled. When cooking and chilling rice for use in recipes, follow proper Critical Control Points for chilling procedures and hold cold at 41°F or lower until ready to use as directed.

**Nutritional information does not include optional low-fat ranch dressing.

GET SOCIAL

Everyone can be an advocate for Arkansas rice by engaging on social media.

Give students a few minutes to Follow, Like, Retweet or Share each day to spread the word about the benefits of agriculture in our state.

Don't forget...social media involvement can make teachers eligible for rice prizes and gear, too!

 **@ARKANSASRICE**

 **@RICEARKANSAS**

 **@ARKANSASRICE**