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Brigette Crowe wins 2018 Arkansas Soybean Science Challenge Award at Ouachita Mountains Regional Science and Engineering Fair

HOT SPRINGS, Ark. -- Brigette Crowe, age 18, a senior at Poyen High School won the Soybean Science Challenge at the 2018 Ouachita Mountains Regional Science and Engineering Fair at Mid-American Museum in Hot Springs on March 2.

Crowe received a \$300 cash award provided by the Arkansas Soybean Promotion Board at the Awards Ceremony. Her science project titled "Homemade Plastic" is eligible to compete for the \$1,000 Soybean Science Challenge award at the state level.

Amanda Jones, Crowe's teacher, won the Soybean Science Challenge Teacher Mentor Award. "Brigette learned a wealth of information about Soybeans and how they affect our state's economy by taking the online course as part of this challenge," Jones said. Brigette enjoys acquiring new information. This valuable experience showed Brigette the importance of research, product development and the scientific process throughout this challenge. Her cash award will be a great benefit for her as she enters college this fall.

Crowe was very excited about winning the Soybean Science Challenge and said she had "a ton of fun at the science fair even though she had to throw away her Mocha Frappe and missed the Tesla Coil demonstration." This was the first time Crowe participated in a science fair; she was thrilled to win such a prestigious award.

Jones had students participate in the Soybean Science Challenge because the program provided an excellent opportunity for all students across the state to learn more about soy products and their impact on the Arkansas economy. "It is a great learning experience for students to develop their own research project and learn more about a valuable product of our state as well," Jones said. She appreciates the fact that the Soybean Science Challenge offers monetary awards for students that can be used to help them further their own education and reward them for research efforts.

Crowe said that what appealed most to her about the project was being able to use soy milk rather than cow's milk to make a non-toxic biodegradable plastic.

The topic that interested her the most in the online course was the plethora of soybean uses.

Prior to completing the online course and conducting the research, Crowe said she knew very little about soybeans. She was aware that soybeans were an Arkansas crop and that they were used in food products. She now knows that there are many more uses for soybeans than food.

Jones also shared her amazement at the enormous list of applications for soy product development in the world and her excitement about learning soybean facts along with her students.

Jerry Crowe, Brigette's father, was extremely proud of his daughter's accomplishment in the Soybean Science Challenge. "As a toddler she was more concerned with hands-on activities, being outdoors and figuring out how things work," he said. "She has always loved science; especially working outdoors with plants and wildlife. Brigette is never late, works hard, and respects others."

According to Jones, Brigette loves science and engineering and is extremely creative. She finds learning fun and even volunteers as a student teacher for the weekly afterschool science program for third- to sixth-graders. Brigette develops lessons and her after-school class conducts experiments weekly, encouraging their love of STEM projects.

"The Soybean Science Challenge allows Arkansas senior high students to participate in scientific discovery that can make a difference to our state and the world. Soybean farmers help feed the world, and Soybean Science Challenge students not only learn about this important commodity crop, they also develop an understanding of the challenges and complexity of modern farming," said Karen Ballard, professor at the University of Arkansas System Division of Agriculture's Cooperative Extension Service. She is the developer and director of the program.

"The goal of the Arkansas Soybean Science Challenge is to engage students in 'real world' education to support soybean production and agricultural sustainability," said Gary Sitzer, chairman of the Arkansas Soybean Promotion Board. "The program also rewards scientific inquiry and discovery that supports the Arkansas soybean industry."

The Arkansas Soybean Science Challenge was launched in January 2014 to 9-12 grade science students. Students who successfully completed the online course were eligible to have their original soybean-related research projects judged at the 2017 ISEF affiliated Arkansas science and engineering fairs.

Information on the 2018-19 Arkansas Soybean Science Challenge will be available in summer 2018. For more information, contact Dr. Karen Ballard at kballard@uaex.edu or Dr. Julie Robinson at jrobinson@uaex.edu.

About the Division of Agriculture

The University of Arkansas System Division of Agriculture's mission is to strengthen agriculture, communities, and families by connecting trusted research to the adoption of best practices. Through the Agricultural Experiment Station and the Cooperative Extension Service, the Division of Agriculture conducts research and extension work within the nation's historic land grant education system.

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Brigette Crowe: Completed course 2018, Poyen High School – Amanda Jones, Teacher

Category: Materials Science

Project Title: Homemade Plastic

Abstract:

The purpose of this project is to determine if different acidic substances from around the household could be used in place of vinegar for making homemade plastic and if soy milk will work as well as cow's milk in the making of this plastic. The hypothesis is that lemon juice will produce a comparable plastic to vinegar with other acids causing various different properties in plastic and that soy milk will be as good as cow's milk in making plastic. Milk was heated and various acids were added, one acid per batch. The clumps were strained out, allowed to dry and then tested for their properties. Soy milk plastic was made and its properties were compared to cow's milk plastic; both using vinegar as the acid. Lemon juice made the best comparable plastic to using vinegar and soy milk plastic was similar to cow's milk plastic in properties. The various acids did cause property differences in their product. This project demonstrated that soy milk can be a possible ingredient in making a plastic that is plant based and more likely biodegradable than petroleum-based plastic.