Sarah Millikan wins 2018 Arkansas Soybean Science Challenge Award at Northeast Regional Science Fair

JONESBORO, Ark. -- Sarah Millikan, 16, a sophomore at Osceola High School is the winner of the Soybean Science Challenge at the 2018 Northeast Arkansas Regional Science Fair held at Arkansas State University-Jonesboro on March 1.

Millikan received a $300 cash award provided by the Arkansas Soybean Promotion Board at the Awards Ceremony. Her science project titled "Uncovering Dirt on Biofuels" also placed second in Plant Sciences; Millikan will be competing at the Southwestern Energy Arkansas State Science and Engineering Fair, March 30.

Andrea Street, Millikan's teacher, won the Soybean Science Challenge Teacher Mentor Award. "Sarah learned a great deal about soybeans and the far-reaching impact that soybean farming has locally, nationally and ultimately globally." She understands the significance of the economic impact of soybeans and how other fields of science affect soybean production.

Millikan said she liked the set-up of the course; it was easy for her to understand and allowed her to retain more knowledge about soybeans and its impact on Arkansas economy.

Millikan was surprised that she won and said, "I thought the other Soybean Science Challenge projects were well put together and felt the judges would have a tough time picking a winner."

The Soybean Science Challenge was brought to Street's attention at the 2017 regional fair when several of her students received pamphlets during the judging process. When Street attended the State Science Fair, she and her colleagues had the opportunity to meet with The Challenge representatives to discuss the program further. Street received a copy of the Arkansas High School Science Project Development Guide, published by the Soybean Science Challenge.

The school staff decided to implement the use of the guide in science fair preparation for every science student at Osceola High School. The Arkansas Soybean Science Challenge subsequently provided 300 copies of the guide to Osceola High School.

Street said the guide proved to be an exceptional resource for the students. Street suggested to the students who were interested in doing a plant science project that they use soybeans as the basis of their inquiry. Street also recommended that her students participate in the Soybean Science Challenge to help drive home the point of how important soybeans are to the area, the state and ultimately the world.

Millikan enjoyed learning about soybeans through the challenge and their impact on our economy. When she took the Soybean Science Challenge online course, the topics that interested her most were sustainability issues and how soybeans can be used to solve them. She also enjoyed learning about the effect of soybeans on animal agriculture, the making of biodiesel and the effect of soybeans on the agricultural economy.

Prior to completing the online course and conducting the research, Millikan shared that she didn't know a lot about soybeans. She added that 85 percent of what she now knows about soybeans is due to what she learned from the online course.

 "I am very proud of Sarah for the hard work she put into her science fair project. She was incredibly dedicated to the project; it was awesome to watch her inquisitiveness grow as the project developed," Street said. As a teacher, she said she increased her knowledge about soybean production and its connection with other research fields. She learned there are many available resources for educators through the Soybean Science Challenge and the University of Arkansas System Division of Agriculture.

"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," 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. "Soybean farmers help feed the world, and Soybean Science Challenge students not only learn about this important commodity crop, but they also develop an understanding of the challenges and complexity of modern farming."

"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."

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.

The Division of Agriculture is one of 20 entities within the University of Arkansas System. It has offices in all 75 counties in Arkansas and faculty on five system campuses.

Sarah Millikan – Osceola High School – Teacher, Andrea Street

Category: Plant Sciences

Project Title: Uncovering Dirt on Biofuels

Abstract:

As more and more commercials and news channels broadcast the amount of nonrenewable energy consumption America has, we should be looking for more renewable sources available in the world. Plants can be used as a renewable energy source to replace gasoline, diesel fuel, and coal. Saying that, we must know which plant is the most beneficial to that cause. We can determine which plant is more efficient by testing three different biofuel producers with two different growing methods and only allowing the plants to grow for a short period of time. I chose the three plants for a particular reason. Soybeans is a well-known biofuel plant. It can be made by mass production. I chose sunflowers because they are seen as a family plant. They are used to decorate and aren't regularly grown in hundreds. Mustard seeds can be mistaken for weeds and are grown wild. It's not a widely known biofuel producer but can be used as one.

My experiment consisted of just that. It conducted of me planting soybeans, mustard seeds, and sunflowers in pots and in a hydroponic bed. Doing so, allows me to check growth throughout the next six weeks and determine which plant and method of growing is the best. I planted two sets of each plant, both in pots and in the hydroponic bed for more accurate results. My hypothesis stated that if the three plants: soybeans, mustard seeds, and sunflowers are grown in soil and hydroponically for six weeks, then soybeans will be the most efficient biofuel producer. My results were that soybeans grew the best in both hydroponics and in soil throughout six weeks by a few centimeters compared to the sunflowers and mustard seeds. Therefore, my hypothesis was correct.