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Josh Tolbert wins 2021 Arkansas Soybean Science Challenge Award for Southeast Arkansas

Josh Tolbert, 16, a junior at Monticello High School in Monticello won the Soybean Science Challenge award for Southeast Arkansas on March 12.

Tolbert received a \$300 cash award provided by the Arkansas Soybean Promotion Board. His science project is titled "Relative thermal conductive and dissipative properties of commonly available soy products to distilled water." Tolbert also participated the Arkansas State Science Fair on March 30.

Whitney Maggard, Joshua's teacher, won the \$200 Soybean Science Challenge Teacher-Mentor award. Maggard thought it was a great idea for Josh to participate in the Soybean Science Challenge. "Josh had expressed interest in the Soybean Science Challenge, and I encouraged him to participate because I knew he would do great," she said.

Josh says winning the regional Soybean Science Challenge was unexpected and he was thrilled just to be able to participate. "I did not expect to win, and I am thankful for the educational opportunity and rewards," he replied.

Mandy Tolbert, Josh's parent, was excited that Joshua won the regional Soybean Science Challenge Award. "A few years ago, he started taking an interest in my work at Extension; it's exciting to see him now being recognized for his own," she said.

Maggard, Josh's teacher, discussed what Josh gained by competing in the Soybean Science Challenge. "I was proud of the fact that Joshua put in the work that so many others are not willing to do and was successful in this Challenge. That makes me so proud of him. He is very deserving of winning this challenge," she explained.

Josh learned a lot while working on his project. "I gained knowledge of soybeans and their importance to our economy as well as an eagerness to learn more," he replied.

"The Soybean Science Challenge provides an opportunity for Arkansas Junior High and High School students to participate in scientific research that can impact the State of Arkansas as well as the world. Soybean Science Challenge student researchers learn about this

important commodity crop and its many uses including feeding the world, development of biofuels and sustainable products. The Soybean Science Challenge helps students develop an understanding of the challenges and complexities of modern farming,” said Dr. Julie Robinson, Associate Professor 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, a former member 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 9-12th grade science students and in 2021, a Junior level award was added for grades 6-8. Students who successfully completed the online course were eligible to have their original soybean-related research projects judged at the 2021 ISEF-affiliated Arkansas Science and Engineering Fairs.

Information on the 2021-2022 Arkansas Soybean Science Challenge will be available in summer 2020. For more information, contact Dr. Julie Robinson at jrobinson@uada.edu or Diedre Young at dyoung@uada.edu.

The Cooperative Extension Service is part of the University of Arkansas System Division of Agriculture.

Josh Tolbert, Monticello High School, Monticello, Arkansas; Teacher, Whitney Maggard

Category: Chemistry

Project Title: Relative thermal conductive and dissipative properties of commonly available soy products to distilled water

Abstract:

Since Arkansas is a major producer of soybeans and soy products, it was questioned whether soy products could be better than water for water cooling in some fashion. The goal of this experiment was to compare the relative thermal conductive and dissipative properties of soy products to distilled water by placing the tested products in heated water and measuring them periodically as they heated and cooled when removed. Soy oil, two types of soy sauce, and soy milk were compared to distilled water. It was found that all the products were nearly identical in thermal conduction and dissipation for all practical purposes. Soy sauce was found to be superior in absorption of heat. Soy oil was found to be superior in dissipation of heat.