Genetically improving sorghum for production of biofuel

July 13 2016

The bioenergy crop sorghum holds great promise as a raw material for making environmentally friendly fuels and chemicals that offer alternatives to petroleum-based products. Sorghum can potentially yield more energy per area of land than other crops while requiring much less input in terms of fertilizer or chemicals. New research examines how genetic improvement of specific sorghum traits, with an eye toward sustainability, could help maximize the usefulness of sorghum as a bioenergy crop.

The work was conducted by researchers from the University of Florida in Gainesville, Washington State University in Pullman, the USDA-ARS in Lincoln, Nebraska, and the University of Missouri, Columbia. They highlight disease resistance, flooding tolerance and cell wall composition as key targets for genetically improving sorghum for sustainable production of renewable fuels and chemicals.

Improving disease resistance, especially to the fungal disease anthracnose, would help expand sorghum to low-productivity land in the southeastern United States. By making the crop more flood resistant, it could be grown on land prone to seasonal flooding that is not typically used for food crops. Finally, making changes in sorghum's cell wall composition could greatly increase the yield of fermentable sugars that can then be converted to fuels such as ethanol. The researchers are using multidisciplinary approaches to make genetic modifications linked with all three traits, with the aim of improving sorghum for renewable energy and chemical production.

Wilfred Vermerris will present this research from 9:00-9:15 p.m. during the PEQG Keynote 2 in Crystal Ballroom J1, K-L as part of The Allied Genetics Conference, Orlando World Center Marriott, Orlando, Florida.

Provided by Genetics Society of America