Soils Science Graduate Students Earns National Research Award

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Idowu Atoloye, a student in Utah State University's Department of Plants, Soils and Climate, was awarded the Nelson Yield-Limiting Factors Graduate Student Scholarship by the American Society of Agronomy at its annual conference in Nov. Honorees are selected for their research on aspects of soil and climate that limit crop production, as well as their long-term personal goals.

"My background in agriculture began during my undergraduate days, when I had the opportunity to own a farm of my own," Atoloye said. "I had the challenge of inputs back then, and that is a challenge that every smallholder farmer in Africa faces. That actually sparked my interest in looking for ways how to help the farmers to be more economical."

After graduating from Obafemi Awolowo University in Osun, Nigeria, Atoloye began his graduate studies at USU. His long-term goal is to help farmers in Sub-Saharan Africa to adopt sustainable practices that conserve or improve soil health, increase farm productivity, and share technical expertise and training.

Atoloye's ongoing research involves dryland organic wheat farming, with principal research sites at Utah Agricultural Experiment Station research farms in Snowville and Blue Creek. Growing wheat in these marginal conditions has long-term impacts for the soil health, so Atoloye as geared his research questions to investigating the effect of a one-time compost application on these soils.

"The effect of compost is actually dependent on soil composition," Atoloye said. "We've seen that compost does have an effect on both phosphorus cycling and carbon in dryland soils. It does affect water availability by increasing the amount of moisture content in the topsoil."

Applying compost can potentially increase the rate of nutrient cycling, and boost enzyme activity and nutrient availability, according to Atoloye. In the dryland systems observed in the course of his research, this effect was particularly potent due to widespread soil nutrient deficiencies that previously limited crop yields

As one of the five honorees chosen in 2019, Atoloye received $3,000. He plans on continuing his research as he works to complete his doctoral degree. Atoloye regularly engages in service and leadership outside of his studies, including volunteering for a number of undergraduate research organizations at USU and serving as the vice president of education for the Cache Valley Toastmasters Club.

Atoloye's work includes understanding the ways that compost and water impact organic wheat production.

Among Atoloye's goals is to help farmers in Sub-Saharan Africa to adopt more sustainable and productive practices.