

Microbes from Native Plants Show Drought Tolerance Potential

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Plants, Soils and Climate Research

Ty Wilson, Department of Plants, Soils and Climate
Mentor, Assistant Professor Amita Kaundal

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USU junior Ty Wilson, has long been fascinated by how plants grow in extreme environments such as mountains and high deserts.

"I had never done research before working in Dr. Amita Kaundal's lab," Wilson said. "The extent of my science/lab experience was the home experiments that I performed with my mom and a science camp I went to for a week when I was a teenager."

Fascinated by the ability of plants in challenging environments to grow and thrive, Wilson joined Kaundal's exploration of the symbiotic relationship between these plants and microbes in the soil surrounding a plant's root zone. His research focuses on isolating microbes from a drought-tolerant native plant, *Shepherdia x utahensis* 'Torrey,' a hybrid buffaloberry.

"The dangers posed by the increasingly unpredictable and unstable environment, coupled with a growing population and demands for land and food, make it crucial to protect soils and grow food sustainably," says Wilson. "Innumerable symbiotic microbes in soils play a vital role in helping plants grow in poor conditions, such as high salinity and low nutrient levels."

Wilson emphasizes the importance of plant-growth promoting microbes that enhance nutrient uptake and support drought and disease resistance. Native plants, adapted to arid and semiarid climates, serve as a rich source of these beneficial microbes.

Wilson plans to pursue a master's and/or a doctorate. "I would love to learn more about the mechanisms for life and the beautiful patterns that make our world work," he said.

He will, no doubt, have the support of his mentor who said, "Ty is a brilliant, meticulous student with a great sense of teamwork. He is also independent and very resourceful."

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