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# Physiological mechanisms of drought resistance in seashore paspalum

February 17, 2021

*Ph.D. student Krishna Katuwal taking gas exchange measurements on turfgrass plants. Photo by Viktor Tishchenko.*

The irrigation of landscapes, including turf areas, can use significant amounts of water resources; this can be a problem, particularly in urban areas where these resources may be in high demand. The development of drought-resistant turfgrasses is an important strategy to reduce water use for more sustainable landscapes.

Seashore paspalum is an important warm-season turfgrass that has many desirable traits, including exceptional salt tolerance, but relatively little is known about its response to drought. Understanding the underlying physiological mechanisms in seashore paspalum responsible for drought resistance is essential for the development of improved grasses with reduced water requirements.

A new *Crop Science* article explores drought resistance mechanisms in a collection of seashore paspalum genotypes, including commercial cultivars and wild accessions. There was a range of performance in physiological and morphological traits across the diverse group of germplasm, with root length density, membrane stability, and greater water use efficiency all associated with improved drought resistance.

The trait of early accumulation of compatible solutes as part of osmotic adjustment was greatest in several wild accessions and may be a valuable trait to incorporate into future cultivars for improved drought resistance. Combining multiple physiological traits provides the best opportunity to mitigate drought stress.

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Katuwal, K.B., Tishchenko, V., & Jespersen, D. (2021). Assessing drought resistance in seashore paspalum genotypes using leaf gas exchange, osmotic adjustment, and rooting characteristics. *Crop Science*. **https://doi.org/10.1002/csc2.20420** (in press)

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