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25. © Improved protocol for micropropagation of saltbush (*Atriplex*) species. Reyes-Vera, I., Lucero, M., and Barrow, J. *Native Plants Journal* 11(1):52-56. 2010.

AN IMPROVED PROTOCOL FOR

Micropropagation of Saltbush

(*ATRIPLEX*) SPECIES

| Isaac Reyes-Vera, Mary Lucero, and Jerry Barrow



Photo by Ruth Sedillo

ABSTRACT

Atriplex species (Chenopodiaceae) include a diverse genera of saltbushes found worldwide and valued for forage, arid land restoration, remediation, and halotolerance. Within the genus, the species *A. canescens* (Pursh) Nutt. (fourwing saltbush) is distributed throughout arid western regions of North America where it is a popular restoration and forage species. *Atriplex torreyi* (S. Watson) S. Watson var. *griffithsii* (Standl.) G.D. Br. (Griffiths' saltbush) is a threatened subspecies found only in southern regions of New Mexico and Arizona. Micropropagation of either species may result in formation of *hyperhydricity*, or vitrification, which is an induced physiological disorder and a common problem of *in vitro* cultured plants. Leaves and stems of hyperhydric plants are thick, distorted, and brittle with a glassy (vitrified) appearance. This physiological disorder may be induced by culture conditions that provide excess inorganic nitrogen or high humidity. The protocol described herein uses commercially available, low nitrogen nutrient medium and uses vented lids to reduce humidity within culture vessels. Shoot multiplication can be initiated from either apical shoots or seeds. This protocol has been successfully applied to micropropagation of both species, offering an improved alternative for *Atriplex* propagation.

Reyes-Vera I, Lucero M, Barrow J. 2010. An improved protocol for micropropagation of saltbush (*Atriplex*) species. *Native Plants Journal* 11(1):53–56.

KEY WORDS

Atriplex canescens, fourwing saltbush, *Atriplex torreyi*, Griffiths' saltbush, hyperhydricity

NOMENCLATURE

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