

Cloning of Northern Mexico cactus proves useful in conservation

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Endangerment of certain cacti species is caused by multiple factors, most notably illicit extraction. In an effort to curb this endangerment and plan for repopulation of threatened species, scientists have been researching the most efficient methods of cloning. Recently, tests on *Turbincarpus valdezianus* (Möller) Glass & Foster (Cactaceae), a species of cactus endemic to Northern Mexico suffering from habitat loss, proved very successful at inducing shoot proliferation and roots through in vitro cloning. Raúl Cárdenas Navarro, in an article published in *HortScience* (January 2016), says that the successful tests prove to be a good option for rescuing wild populations of the species that are suffering from habitat loss.

Over the past few decades, many successful [cloning](#) tests have been documented for threatened [species](#) of wild cactus, and the same methods were applied to the *T. valdezianus* experiments. Clones of *T. valdezianus* seedlings were germinated in vitro in a Murashige and Skoog (MS) basal medium, and after 20 weeks of incubation, the medium was supplemented with varying amounts of 6-furfurylaminopurine (KIN) and α -naphthalenacetic (NAA).

Tests showed that *T. valdezianus* proved especially reactive to KIN supplementation in the basal medium, resulting in a relatively higher shoot proliferation than the seedling supplemented with NAA. "A contrariwise effect was registered for NAA," said Navarro. "The average number of shoots decreased." While the shoots treated with KIN were slow to root compared to the control seedlings with no supplementation,

they soon caught up, with both controlled and KIN treated seedlings showing 98% root development.

The authors said that preservation of endangered plant species is important, and with this propagation system, *T. valdezianus* can be cloned and extinction can be prevented. "It has great potential for cloning genotypes of threatened populations," Navarro added, "and can be used to alleviate illicit extraction of wild individuals from their natural habitat." The authors said that the results of this study, and other studies from the past few decades, will greatly impact the ability to preserve endangered cacti species.

More information: *HortScience*, hortsci.ashspublications.org/content/51/1/94.abstract

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