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## **UTILIZING DOUBLED HAPLOID (DH) TECHNOLOGY FOR IN VITRO DROUGHT TOLERANCE SCREENING**

### **ABSTRACT**

Drought is one of the main abiotic stresses that delimit the sugar beet growth and productivity. The cultivation of varieties which will be able to withstand low water supplies while maintaining high productivity will become even more important due to global climate change. The aim of this study was to find and evaluate morphological, physiological and biochemical parameters that are the most relevant in evaluating tolerance to progressive drought in plants under controlled environment. The non-ionic water soluble polymer polyethylene glycol (PEG) of molecular weight 6000 was used as osmoticum to simulate water stress. Sterile shoots of in vitro regenerated Doubled Haploid genotypes were multiplied on standard nutrient medium for micro-propagation and then placed on media with different PEG concentration (0-5%). Significant differences were observed among genotypes and treatments for the evaluated plant traits suggesting a great amount of variability in relation to low water supplies. Homozygous lines derived from ovule culture of F1 hybrids of drought tolerant parents in combination with tissue culture selection allowed to shorten the time necessary for screening and created new valuable in vitro germplasm.

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