

# Propagation and growth parameters of preselected pomegranate (*Punica granatum*) cuttings from the USDA-ARS National Clonal Germplasm Repository<sup>©</sup>

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## **Abstract**

Pomegranate (*Punica granatum*) cultivars from the USDA-ARS National Clonal Germplasm Repository, Davis, California were evaluated for propagation success and early plant growth. Twelve cultivars: 'Ki Zakuro', 'Phoenecia', 'Nochi Shibori', 'Golden Globe', 'Green Globe', 'Loffani', 'Wonderful', 'Eversweet', 'Haku Botan', 'Parfianka', 'Desertnyi', and 'Ambrosia' were included in the trial. Stem cuttings were harvested from basal suckers, cut to a length of 10.5±1.0 cm long and treated with 3 g L<sup>-1</sup> of indolebutyric acid and planted in a Sunshine potting mix and perlite (1:1, v/v) medium in 2.5×2.5-cm potting containers, separated by block in plastic flats irrigated with deionized water. A randomized-complete-block design was used with eight blocks and four pseudoreplicates per block, totaling 32 trees for each accession. 'Green Globe' was found to root the poorest compared to the other cultivars, with 'Ambrosia' having the second poorest success rate. All other accessions had rooting success rates above 80%. 'Parfianka' had greater branching than 'Eversweet', 'Nochi Shibori', 'Haku Botan', 'Desertnyi', 'Loffani', 'Ki Zakuro', and 'Golden Globe'. Apical shoot length was also different between two groups, with 'Golden Globe', 'Phoenecia', and 'Wonderful' with greater apical shoot growth and 'Ki Zakuro', and 'Haku Botan' growing slower. 'Golden Globe' and 'Phoenecia' were taller than 'Eversweet' and 'Haku Botan'. Leaf chlorophyll was measured with a SPAD-502 chlorophyll meter and 'Haku Botan' and 'Loffani' had greener leaves than 'Eversweet', 'Ambrosia' and 'Desertnyi'. The results of this study indicate that pomegranate cultivars vary significantly in a range of pomegranate propagation parameters and that not all pomegranate cultivars are readily propagated by vegetative cuttings treated with exogenous rooting hormone.

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