

The response of kamanomano (*Cenchrus agrimonioides* var. *agrimonioides*) root and shoot growth to pre-plant hormone soaking and simulated hydromulch establishment procedure[©]

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Abstract

Kamanomano (*Cenchrus agrimonioides* var. *agrimonioides*) is a federally endangered, stoloniferous, perennial grass endemic to the islands of Oahu, Lanai, and Maui. Its low-growing habit and drought tolerance make it a recognized species for restoration and a potential species for roadside revegetation. Large scale revegetation with kamanomano requires an efficient means of propagation and planting. Hydrocapping of vegetative propagules is a commonly utilized method for establishing turf, but very few studies have looked at its use with native Hawaiian plants. In this study, the feasibility of hydromulch capping of stem cuttings as a means of large-scale planting and pre-plant hormone soaks as a means to improve rooting were evaluated for kamanomano. Apical stem cuttings (20 cm long with leaves intact) were collected from nursery-grown stock plants and soaked for 24 h in either: 1) tap water; 2) 1:20 dilution of Dip 'N Grow [500 ppm indolebutyric acid, 250 ppm naphthalene acetic acid]; or 3) 1:10 dilution of Dip 'N Grow [1000 ppm indolebutyric acid, 500 ppm naphthalene acetic acid]. Treated and untreated (unsoaked control) cuttings were spread in seedling trays filled with potting medium. The cut stems were covered with hydromulch at a rate of 3,300 kg ha⁻¹. Percent rooting and number of shoots were recorded 45 days after planting. Results indicate that soaking in Dip'N Grow increased rooting percentage and shoot number. Field establishment protocols should include a 24-h preplant soak in a 1:10 dilution of Dip'N Grow to enhance rooting and shoot growth.

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