RESTORATION STRATEGIES FOR IMPROVING SURVIVAL AND COMPOSITION OF PLANT SPECIES NATIVE TO COASTAL DUNES IN THE FLORIDA PANHANDLE

By
NATALIE N. HOOTON

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The following text is an excerpt from Natilie's M.S. Thesis where she describes a seed germination trial conducted on three different Chrysopsis (Goldenaster) species. Your data represents only one of the three species from this trial.

Germination Trials

Seed preparation: Seeds were collected from 33 individuals that represented the three phenotypes/ species of interest. All collected seeds were graded and counted. Class 1 seeds were defined as fully developed, light to dark tan in color, and no signs of herbivory. Class 2 seeds were defined as underdeveloped or had evidence of herbivory. Those seeds likely to germinate (class 1) were used for the germination trials.

Four replications per treatment of 50 seeds (n=1600) of *Chrysopsis godfreyi* f. *viridis*, *C. godfreyi* f. *godfreyi*, and *C. gossypina* spp. *cruiseana* were soaked in a Physan 20 (Marlin Products, Inc., Tustin, California) solution (1.0 mL Physan 20 per 500 mL of deionized water) for five minutes to reduce the amount of surface contaminants. Physan was tested prior and was determined to have no effect on germination rates. Seeds were placed in 32, 10.9 x 10.9-cm transparent polystyrene germination boxes (Hoffman Manufacturing, Inc., Albany, OR) containing two sheets of germination paper (Hoffman Manufacturing, Inc.) that were saturated with 15 mL of nanopure water. An additional 5 to 10 mL of deionized water was added to germination boxes as needed.

Temperature and photoperiod: The prepared germination boxes were placed in temperature and light-controlled chambers equipped with cool-white fluorescent lamps (Model818; Precision Scientific, Winchester, VA). The seeds were exposed to four, 12-hour alternating temperatures- 20/10°C , 25/15ºC, 30/20°C, and 35/25°C to simulate day and night temperatures that are similar to mean temperatures common to Florida's winter, fall, spring, and summer, respectively. Four replicates of each phenotype experienced a 12 hour daily photoperiod for each temperature treatment (photosynthetic photonflux was 22 to 30 mmol m–2 s–1 at shelf level). Aluminum foil was placed around each of the remaining four replicates for each phenotype to allow for continuous darkness within those petri dishes throughout the trial. These were not opened until the end of the experiment. Germination counts for seeds in the light treatment were taken every other day for 8 weeks and at 3, 6, and 8 weeks (27, 41, and 55 days) for those in the dark treatment.