

Effect of desiccation, burial duration, and daylength on ramet sprouting of crested floatingheart (*Nymphoides cristata*)

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ABSTRACT

Crested floatingheart is a state-listed noxious weed in Florida that reproduces primarily via *ramets*, rhizome clusters produced at leaf-petiole junctions. Little is known regarding the effect of desiccation, burial duration, and daylength on ramet viability. Fresh ramets were collected and placed on paper towels on a lab bench for 1 to 10 d (to mimic desiccation) or buried for 4 to 24 d under submersed conditions and then unearthed (burial duration). Daylength effects were evaluated by culturing fresh ramets under daylengths ranging from 9 to 15 h. All ramets were planted under submersed conditions after treatment and scored for sprouting for 12 wk after planting (WAP). A single day or more of desiccation greatly reduced ramet viability; the vast majority (97.5%) of fresh ramets had sprouted 4 WAP, whereas only one of the 480 ramets subjected to any desiccation had sprouted by 12 WAP. Burial also inhibited ramet sprouting; 98% of unburied ramets had sprouted 4 WAP, but no ramets buried for any duration sprouted by 12 WAP. Daylength had no effect on ramet sprouting; the vast majority (96.6%) of ramets had sprouted 4 WAP, and only two of the 560 ramets failed to sprout over the 12-wk evaluation period. These results suggest that sprouting of crested floatingheart ramets is unaffected by daylength but is negatively affected by desiccation and burial. These findings provide insight into reproductive strategies in this species and may be useful to resource managers. For example, because desiccation greatly hinders sprouting, resource users should be encouraged to adopt a clean-drain-dry protocol to reduce the spread of this noxious weed.

Key words: water garden plant, ornamental aquatic plant, aquatic weed, invasive plant, noxious weed, desiccation.

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