

Evaluation of three grass-specific herbicides on torpedograss (*Panicum repens*) and seven non-target, native aquatic plants

Stephen F. Enloe and Michael D. Netherland*

pp. 65-70

Invasive aquatic grasses are generally managed with the nonselective herbicides glyphosate and imazapyr. Although these herbicides are generally highly efficacious, this results in a limited ability to enhance or conserve on-site native vegetation because of their lack of selectivity. The problem is compounded over time as posttreatment reinvasion by invasive grasses commonly occurs, resulting in the need for additional herbicide treatment. To address this lack of selectivity, we evaluated three grass-specific herbicides (clethodim, fluazifop-P-butyl, and sethoxydim) and compared outcomes to the standard operational treatments of glyphosate or imazapyr. Seven native aquatic plants were tested, which included California bulrush [*Schoenoplectus californicus* (C.A. Mey.) Palla], knotted spikerush [*Eleocharis interstincta* (Vahl) Roem. & Schult.], gulfcoast spikerush (*Eleocharis cellulosa* Torr.), common cattail (*Typha latifolia* L.), pickerelweed (*Pontederia cordata* L.), common arrowhead (*Sagittaria latifolia* Willd.), and Egyptian panicgrass [*Paspalidium geminatum* (Forssk.) Stapf]. Torpedograss (*Panicum repens* L.), which is one of the most invasive aquatic grasses in Florida, was also included. Following summer or fall treatments at recommended label rates, both glyphosate and imazapyr provided 64 to 100% biomass reduction of all nongrass species evaluated at 8 wk after treatment (WAT). That was in contrast to the grass herbicides, which did not affect any nongrass species after treatment. The grass herbicides, however, did result in a 69 to 85% shoot biomass reduction of both native grasses and torpedograss at 8 WAT and were generally similar to glyphosate and imazapyr. Results suggest a high level of selectivity exists for the grass-specific herbicides on many non-target emergent aquatic plants. These data were used to support approval of a Florida Experimental Use Permit for the aquatic use of sethoxydim and fluazifop-P-butyl to further evaluate the concept of using grass-specific herbicides for selective control of invasive aquatic grasses.