EFFICACY OF THREE AQUATIC HERBICIDES FOR THE CONTROL OF SWAMP SMARTWEED. J.C.
Cheshier, R.M. Wersal, and J.D. Madsen; Department of Plant and Soil Sciences, Mississippi State University,
Mississippi State, MS 39762.

ABSTRACT

Native aquatic and riparian plants are essential to a healthy ecosystem, however when left unchecked can cause
significant damage. They outcompete other beneficial natives, decrease the dissolved oxygen in the water, and
lower the overall biodiversity of an ecosystem. Swamp smartweed (*Polygonum hydropiperoides* Michx.) is a native
perennial dicot found throughout North America. Swamp smartweed reproduces by seed and by vegetative growth;
and it is the vegetative growth that allows it to be a nuisance species around North America. An evaluation of three
common aquatic herbicides is necessary to identify an effective control of swamp smartweed. This study was
conducted at a small lake near Starkville, MS. A randomized complete block design with three replications was
used. The herbicides used were Rodeo, Habitat, and Garlon 3A. Two rates for each herbicide were used; maximum
label rate (MLR) and one-half-maximum label rate (0.5 MLR). A non-ionic surfactant (Dyne-amic) was added to
each treatment at a 1% v/v ratio. The herbicide was delivered from a two-gallon backpack sprayer at 26 GPA.
Rodeo was applied at 10.3 oz/gal (MLR) and 5.13 oz/gal (0.5 MLR). Habitat was applied at 6.5 oz/gal (MLR) and
3.25 oz/gal (0.5 MLR). Garlon 3A was applied at 64 oz/gal (MLR) and 32 oz/gal (0.5 MLR). A total of twenty-one
1m-quadrats were laid out with 1 m spacing around each quadrat to minimize drift. Each plot was rated for percent
control on a scale of 0 to 100%, 0 being no control and 100% being all plants dead. Greater than or equal to 90%
control was considered acceptable control. Percent control measurements were taken every week after treatment up
to 5 weeks starting on August 26, 2005 and ending on September 22, 2005. The data was analyzed using an
ANOVA within SAS, with the means tested by a Fisher's protected LSD (p-value = 0.05). Swamp smartweed is
best controlled with the Habitat and Rodeo. The 0.5 MLR of Habitat and the MLR of Rodeo were similar in
efficacy (≥ 90% control) throughout the five-week study. Garlon 3A was the least effective herbicide for controlling
swamp smartweed.