

PURPLE LOOSESTRIFE CONTROL WITH HERBICIDES: SINGLE YEAR APPLICATION . Stevan Z. Knezevic, Assistant Professor, Haskell Ag. Lab., University of Nebraska, Concord, NE, 68728-2828

The introduction and spread of exotic plant species is one of the most serious threats to biodiversity. Purple loosestrife (*Lythrum salicaria*) is one such species that is currently invading wetlands and waterways in mid-Western states including an estimated 12,000 acres in Nebraska. Once a wetland is taken over by loosestrife, the natural habitat is lost and the productivity of native plant and animal communities is severely reduced. Field studies were conducted in 2000 and 2001 at two locations in each year with the objective to evaluate performance of a single application of 14 herbicide treatments. Evaluation at 70 days after treatment (DAT) suggested that excellent season-long control (>90%) of purple loosestrife was achieved with glyphosate at 3.36 kg ae/ha; 2,4-D at 2.8kg ae/ha; triclopyr at 2.1kg ae/ha; imazapyr 1.68 kg ai/ha; and with the two mixtures of 2,4D+triclopyr at 1.4+1.26 kg ae/ha and 2,4-D+metsulfuron at 1.4ae/ha+0.044kg ai/ha. Evaluation at 365 DAT suggested excellent control (>90%) that can last more than one season was achieved only with imazapyr at 1.12 and 1.68 kg ai/ha and metsulfuron at 0.070 and 0.175kg ai/ha. The two imazapyr treatments however caused detrimental effects on the native vegetation indicating limited use of those treatments. Therefore, results of this study suggest that a single application of most of the tested herbicides did not provide satisfactory control of loosestrife that can last more than one season, indicating the need for multi-year applications.