

PURPLE LOOSESTRIFE CONTROL WITH HERBICIDES: MULTI YEAR APPLICATIONS. Stevan Z. Knezevic, 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 5,000 hectares in Nebraska. Our 10-year long studies were initiated in 2000 at four locations in NE with the objective to evaluate performance of the multi-year applications of 14 herbicide treatments. Treatments were applied on as needed basis one time per year during purple loosestrife flowering. Evaluations suggested that 3 years of yearly spraying of aquatic glyphosate at 1.8 and 3.36 kg ae/ha provided excellent purple loosestrife control (>90%) for three following years. Two years of spraying imazapyr at 1.12 and 1.68 kg ai/ha and metsulfuron at 0.070 and 0.175kg ai/ha provided excellent purple loosestrife control (>90%) for three following years. The two imazapyr treatments however caused detrimental effects on the native vegetation, especially grassy species, indicating limited use of those treatments. The 2,4-D at 1.4 and 2.8kg ae/ha; and triclopyr at 1.1 and 2.1kg ae/ha were the treatments that needed to be applied every year. Herbicides can be viable tool for loosestrife control as part of the integrated management package. Applying herbicides for two or three continuous years combined with other weed control methods may prove to be the long term strategy for purple loosestrife control (sknezevic2@unl.edu).