INTEGRATED MANAGEMENT STRATEGIES TO REDUCE WEED POPULATIONS IN PASTURES. Josh Tolson, J.D. Green, and William W. Witt, Research Assistant, Extension Professor, and Professor, Department of Plant & Soil Sciences, University of Kentucky, Lexington, Ky 40506.

Field studies were conducted on two grazed pastures on farms near Lawrenceburg and Richmond Kentucky during 2008-2009 to evaluate whether the management practices mowing, herbicide, and added fertility can reduce weed populations and improve pasture productivity. Each individual strategy plus combinations of mowing, herbicide, and fertility were evaluated using a three-way factorial experimental design. Initial weed populations were determined at each site in 2008 at time studies were established. Mowing was performed in July, followed by herbicide treatments in mid-August, and added fertility in September. Weed populations were measured the following summer and fall using 1 m^2 quadrants. Forage yields were also measured during 2009 for both desirable forage species and weed biomass. Harvested samples were separated into desirable forage grasses and clover, tall ironweed and other weeds present. Weed species evaluated were tall ironweed (*Vernonia altissima*), goldenrod (*Solidago* spp.), marshelder (*Iva ciliata*), and Philadelphia fleabane (*Erigeron philadelphicus*) in Lawrenceburg and tall ironweed, clammy groundcherry (*Physalis heterophylla*), and horsenettle (*Solanum carolinense*) in Richmond. Herbicide treatments at both locations provided 85 to 94 % reduction of tall ironweed 1 year after treatment. Goldenrod and marshelder populations were reduced approximately 100% and horsenettle was reduced 60% by treatments that included herbicides. All other treatments decreased weed populations with exception of the fertility treatment in Madison County. In general mowing alone and in combination with herbicide treatment and fertility had little effect on weed populations and forage yield at both locations. Although clover stands were reduced by herbicide treatments, overall forage yield was unchanged and weed biomass reduced. Added fertility increased yield of desirable forage species and had no effect on weed biomass.

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