

ACCELERATING REED CANARYGRASS CONTROL WITH INTEGRATED VEGETATION MANAGEMENT

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Abstract: Reed canarygrass (*Phalaris arundinacea* L.) is a widely distributed perennial grass that invades and dominates disturbed wet prairies and sedge meadows. An integrated vegetation management approach is usually required to suppress reed canarygrass and restore plant species diversity to an invaded site. Although herbicide treatments are the method most commonly employed to control this species, coupling accessory treatments to herbicide application can improve suppression and reduce rhizome resurgence capacity. Accessory treatments, such as tillage or pretreatment with growth regulators, enhance herbicide performance by making reed canarygrass rhizomes more susceptible to herbicide action. I tested the effects of coupling grass-specific herbicide applications to either pretreatment tillage (light disking to a depth of 15 cm) or pretreatment kinetin (a growth regulator) application in a replicated field experiment. I also tested the relative performance of two grass-selective herbicides, sethoxydim and fluazifop. All treatments suppressed reed canarygrass aboveground biomass and increased non-reed canarygrass biomass greater than the non-treated control. Fluazifop and sethoxydim both suppressed reed canarygrass biomass to a similar extent, ca. 200 g/m² compared to the non-treated control. Coupling accessory treatments to herbicide application enhanced reed canarygrass suppression greater than solitary herbicide application. Pretreatment with kinetin provided up to 30 g/m² additional biomass suppression and preapplication disking up to 40 g/m² additional suppression. Moreover, these accessory treatments added fewer than ten dollars per acre to control costs. Results of this study demonstrate that treatment combinations that enhance herbicide performance can accelerate reed canarygrass control compared to treatment strategies employing solitary use of herbicide.