

EMERGENCE AND CONTROL OF POISON HEMLOCK. Carl A. Woodard and Reid J. Smeda, Graduate Research Assistant and Associate Professor, Division of Plant Sciences University of Missouri. Columbia, MO. 65211.

Poison hemlock (*Conium maculatum* L.) is an invasive, biennial plant that has become a significant problem weed in roadside and right of way areas across the central U.S. Poison hemlock is considered noxious in eight states, yet little information is available on the biology, reproduction and control of this plant. Glyphosate, glyphosate plus S-metolachlor, rimsulfuron plus thifensulfuron-methyl, metsulfuron-methyl, sulfometuron-methyl plus metsulfuron-methyl, chlorsulfuron, 2,4-D, 2,4-D plus picloram and dicamba are the herbicides currently labeled for control. The objectives of this research were to determine the emergence patterns of poison hemlock and to identify herbicides that result in optimum post emergence-control. Emergence studies were initiated at three locations in Missouri, with seed placed in five, 1 m² plots at each location. Seedling emergence was recorded at bi-monthly to monthly intervals. Across all three locations, mean percent spring emergence was approximately 9% of the total seed sown; 6% occurred in April alone. Mean percent fall emergence was approximately 4.5% of the total seed sown; 3.4% occurred in September alone. The latest date emergence was record was November 1, 2006. No emergence was recorded throughout the summer months. Field studies to evaluate herbicide efficacy were conducted at two locations. Studies at both locations consisted of 14 treatments arranged in an RCB design. Visual control was assessed at 2, 4, 8 and 12 weeks after treatment (WAT). At 4 WAT, no herbicide resulted in >90% visual control, cool conditions slowed herbicidal activity. At both locations 8 WAT, imazapic plus glyphosate, chlorsulfuron, metsulfuron-methyl, and metsulfuron-methyl plus 2,4-D plus dicamba, resulted in >90% visual control. Treatments resulting in <30% visual control at 8 WAT were diflufenzopyr plus dicamba and aminopyralid. Emergence patterns of poison hemlock indicate that spring herbicide applications are needed for initial control and residual control of later-emerging seedlings. This data suggests that the duration between spring and fall emergence precludes application of a single residual herbicide.