

GLYPHOSATE AND TRICLOPYR COMBINATIONS SUPPRESS BOTH AUTUMN OLIVE AND MORROW'S HONEYSUCKLE. A.E. Gover, Penn State Univ., Univ. Park.

ABSTRACT

Foliar herbicide treatments including glyphosate, triclopyr, or the combination were applied to autumn olive (*Elaeagnus umbellata* Thunb., ELGUM) and Morrow's honeysuckle (*Lonicera morrowii* Gray, LONMO) August 31, 2010, at Canoe Creek State Park, Hollidaysburg, PA. Treatments included a glyphosate:triclopyr combination sequence totaling 3.4 kg ae/ha at ratios of 3.4:0, 0:3.4, 1.7:1.7; 2.2:1.1, and 2.7:0.7. Treatments intended to be safe to grasses included triclopyr at 3.4 kg ae/ha plus 2,4-D at 1.1, 2,4-D plus dichlorprop-p at 0.96 plus 0.49, or metsulfuron at 0.021 kg/ha; and triclopyr plus 2,4-D plus dichlorprop-p at 1.7 plus 0.96 plus 0.49 kg/ha, respectively. All herbicide combinations included a non-ionic surfactant at 0.25 percent, v/v. Treatments were applied to five plants each at 935 L/ha, based on shrub canopy basal area, using a CO₂-powered, hand-held sprayer equipped with a TeeJet #5500 Adjustable ConeJet nozzle with an X-12 tip. Canopy diameters for both species ranged from 1.3 to 2.1 m. Canopy reduction was visually estimated August 2, 2010, 50 weeks after treatment. Data were subjected to analysis of variance by species, and means compared using Fisher's Protected L.S.D. when treatment effect was significant.

Glyphosate alone provided 100 and 22 percent reduction of LONMO and ELGUM, respectively, while triclopyr alone provided 56 and 100 percent, respectively. The only combination that provided acceptable control of both species was glyphosate plus triclopyr at 1.7 plus 1.7 lb ae/ac, which was rated at 100 and 90 percent canopy reduction of LONMO and ELGUM, respectively. All glyphosate-containing treatments provided at least 96 percent canopy reduction of LONMO, while no glyphosate-free combinations exceeded 82 percent canopy reduction. Triclopyr combinations containing at least 1.7 kg ae/ha provided 90 to 100 percent canopy reduction of ELGUM. Triclopyr combinations resulted in basal regrowth in LONMO that was free of symptoms and will likely recover. Glyphosate-injured LONMO showed severe growth malformations in the remaining foliage and it seems unlikely these plants would recover.