

FURTHER INVESTIGATIONS INTO HERBICIDE SELECTION AND APPLICATION TIMING TO SUPPRESS JAPANESE STILTGRASS. A.E. Gover, J.M. Johnson, D.A. Despot, and J.C. Sellmer, Pennsylvania State University, University Park.

ABSTRACT

Current operational herbicide regimens to suppress the exotic, annual Japanese stiltgrass (*Microstegium vimineum* (Trin.) A. Camus var. *imberbe* (Nees) Honda, MCGVM) include preemergents, postemergent graminicides, and spot applications of non-selective herbicides. This experiment evaluated the selective broadleaf herbicides aminocyclopyrachlor and aminopyralid, and evaluated application timing impact on suppression from aminocyclopyrachlor, quizalofop, or a low rate of glyphosate. The June 11, 2013 application included aminocyclopyrachlor at 0.075, 0.10, or 0.13 kg/ha, alone or as a pre-mix in combination with chlorsulfuron at the corresponding rates of 0.032, 0.039, or 0.053 kg/ha, respectively; aminopyralid at 0.12 kg/ha, quizalofop at 0.031 kg/ha, and glyphosate at 0.21 kg/ha. Application timing was evaluated with a July 10 treatment of aminocyclopyrachlor at 0.075 kg/ha, quizalofop or glyphosate, in addition to aminocyclopyrachlor plus triclopyr at 0.075 plus 1.7 kg/ha to determine if triclopyr, a likely tank-mix partner, antagonized aminocyclopyrachlor activity. All treatments were applied to 1.8 by 4.6 m plots arranged in a randomized complete block with four replications along a highly disturbed, forested roadside in Bald Eagle State Park, Howard, PA. Data collected on June 11, July 10, August 16, and September 17 included percent total vegetative cover and percent MCGVM cover. A floristic census for each plot was taken at the June, July, and August ratings. Percent values and species counts were subjected to analysis of variance, and means compared using Fisher's Protected L.S.D. Pre-treatment total vegetative cover and MCGVM cover were not different between treatments. Total vegetative and MCGVM cover in the untreated plots averaged 44 and 33 percent in June, and 56 and 50 percent in September, respectively. All herbicide treatments significantly reduced MCGVM cover by September (0 to 5 percent), and there was not a significant timing effect or herbicide by timing interaction on MCGVM reduction for the low rate of aminocyclopyrachlor, quizalofop, or glyphosate. Pre-treatment, 40 species (excluding MCGVM) were recorded, averaging 4.0 to 6.8 per assigned treatment. In August, there were 44 species (excluding MCGVM), ranging from 1.8 to 4.5 per treatment, with 3.8 in the untreated plots. Treatment effect was significant for species number in September, and change in species number from pre-treatment to September, but there was no apparent trend related to active ingredient or application rate.