

EFFECT OF COHORT EMERGENCE ON SOYBEAN YIELD. Thomas J. Ross and Christy L. Sprague, Undergraduate Student and Assistant Professor, Department of Crop and Soil Sciences, Michigan State University, East Lansing, MI 48824.

Research was conducted at East Lansing, MI in 2004 to examine the interference potential of a multi-species weed community that emerged at soybean growth stages VE, VC, V1 and V3. Plots were planted with glyphosate-resistant soybean (Asgrow 2107) at 494 000 seeds ha⁻¹ in 19-cm rows spacing in a conventionally tilled field. Treatments included plots that were weed-free and four cohort emergence timings that were kept weed-free until soybean growth stages VE (untreated), VC, V1, and V3 with glyphosate applications. The glyphosate rate was 0.84 kg a.e./ha for all applications. Quadrats were established in each plot two weeks after final glyphosate application. At peak weed biomass, weed density, height, biomass, and seed production were recorded. Weeds emerging with the crop produced a biomass of 461 g m² and reduced soybean yield by 58%. Wild mustard, giant foxtail, common ragweed, and eastern black nightshade were the main species competing with the crop in cohort 1. Weeds emerging at the soybean VC stage produced a biomass of 93 g m² and reduced soybean yield by 14%. Giant foxtail and eastern black nightshade were the main weeds competing with the crop in cohort 2. Weeds emerging at the soybean V1 stage produced a biomass of 21 g m² and reduced soybean yield by 11%. Pennsylvania smartweed was the main weed competing with the crop in cohort 3. Weeds that emerged with cohort 4, V3 soybean, did not survive throughout the season to produce biomass and did not significantly reduce soybean yield compared with the weed-free control. Therefore, weeds that emerged at or after V3 soybean were not competitive with the crop in 19-cm rows.