

INFLUENCE OF ADJUVANT SYSTEM ON RAINFASTNESS OF GLYPHOSATE. Scott A. Nolte and Bryan G. Young, Graduate Research Assistant and Assistant Professor, Southern Illinois University, Carbondale, IL 62901.

Glyphosate is commonly applied with activator or utility adjuvants to increase glyphosate efficacy or improve spray droplet deposition. Previous research has shown that certain adjuvants do improve herbicide efficacy and rainfastness of previous glyphosate formulations. Research was conducted to determine the influence of selected adjuvants on herbicide efficacy and rainfastness of a recent glyphosate formulation (Roundup WeatherMax).

Glyphosate was applied at 840g ae/ha alone and in combination with ammonium sulfate (AMS), hydroxypropyl guar (HPG), and vegetable oil concentrate (VOC). At 30 minutes after application, rainfall was applied at three volumes (0, 3.2, and 6.4 mm) at a velocity of 12.8 mm/hr with an experimental track sprayer. Under no rainfall, giant foxtail was completely controlled by all treatments. However, control of velvetleaf was the greatest when glyphosate was combined with AMS and no rainfall. In the absence of rainfall, control of common lambsquarters was greatest with no adjuvant while VOC provided less control than all other adjuvants. Compared with the no rainfall treatment, control of all weeds was reduced by up to 60% when simulated rainfall was applied 30 minutes after glyphosate application. When simulated rainfall treatments were applied following herbicide application, little to no difference in adjuvant system was observed for control of giant foxtail, velvetleaf, or common lambsquarters.