



Proceedings of the 74th Annual Meeting of the North Central Weed Science Society

**December 10-13, 2019
Columbus, OH**

The program and abstracts of posters and papers presented at the annual meeting of the North Central Weed Science Society are included in this proceedings document. Titles are listed in the program by subject matter with the abstract number listed in parenthesis. Abstracts are listed in numerical order followed by the author and keyword listing.

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Yield and Yield Loss of Glufosinate-Tolerant Soybean as Influenced by 2,4-D. Jon Scott*, Stevan Z. Knezevic, Darko Jovanovic, Ivan B. Cuvaca; University of Nebraska-Lincoln, Lincoln, NE (41)

ABSTRACT

2,4-D applied to 2,4-D-resistant crops may drift and injure 2,4-D susceptible crops. A field study examined the influence of 2,4-D drift on yield and yield loss of glufosinate-tolerant soybean. 2,4-D drift was simulated by applying six micro-doses of 2,4-D (1/5; 1/10; 1/50; 1/100; 1/500; and 1/1000 of the label recommended dose of 1,120 g ae ha⁻¹) and a check with no herbicide to glufosinate-tolerant (GT) soybean at three contrasting growth stages [second trifoliolate (V2); beginning of flowering (V7/R1); and full flowering (R2)]. Visual evaluation of GT soybean injury was conducted at 7, 14 and 21 days after treatment (DAT). GT soybean yield was also collected. Increase in 2,4-D micro-doses significantly increased GT soybean injury and reduced yield regardless of growth stage at time of 2,4-D application. 2,4-D doses between 1/100 to 1/50 of the label recommended rate caused 5-20% injury to GT soybean. GT soybean was more sensitive to 2,4-D injury at R2 than the V2 and R1 stages. 34.79 g ae ha⁻¹ of 2,4-D caused 5% injury to GT soybean at R2 compared with a 1.4- and 1.8-fold higher dose required to cause the same level of injury at the V2 and R1 stage, respectively. With respect to yield reduction, the R2 stage was also the most sensitive. Preliminary data analysis showed that 2,4-D dose of 0.33 g ae ha⁻¹ reduced GT soybean yield at R2 by 5% (0.2 Mg ha⁻¹) compared with a 10.3- and 26.3-fold higher dose at the V2 and R1 stage, respectively. These results clearly show that GT soybean is sensitive to 2,4-D especially at reproductive stages and therefore 2,4-D drift should be prevented in order to prevent yield losses.