



# Proceedings of the 74<sup>th</sup> Annual Meeting of the North Central Weed Science Society

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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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**Sensitivity of Glufosinate-Tolerant Soybean to Micro-Rates of 2,4-D.** Jon Scott\*, Stevan Z. Knezevic, Darko Jovanovic, Ivan B. Cuvaca; University of Nebraska-Lincoln, Lincoln, NE (39)

### ABSTRACT

2,4-D is one of the most widely used herbicides; however, there is a concern associated with its propensity to drift onto non-2,4-D tolerant crops. A study was conducted in 2019 near Concord, NE to investigate sensitivity of glufosinate-tolerant (GT) soybean to micro-rates of 2,4-D applied at contrasting growth stages. The study used a randomized complete block design (RCBD) with eight replications and a split-plot arrangement. Main plots consisted of three 2,4-D application times [second trifoliolate (V2); beginning of flowering (V7/R1); and full flowering (R2)] and subplots consisted of six micro rates 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<sup>-1</sup>) and a check with no herbicide applied. Soybean injury and plant height measurements were collected at 7, 14 and 21 days after treatment (DAT). Number of days to canopy closure was also recorded. Increase in 2,4-D dose significantly increased GT soybean injury and reduced plant height. Less than 1/100 of the label recommended dose of 2,4-D caused 5% injury to GT soybean irrespective of application time. GT soybean was more sensitive to 2,4-D injury at R2 than the V2 and R1 stages. 34.79 g ae ha<sup>-1</sup> 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 plant height reduction, GT soybean was more sensitive to 2,4-D at V2 than the R1 and R2 stages. A 2,4-D dose of 3.9 g ae ha<sup>-1</sup> reduced plant height at V2 stage by 5% (3.7 cm) compared with a 2.1- and 1.7-fold higher dose at the R1 and R2 stage, respectively. Increase in 2,4-D dose not only increased GT soybean injury and reduced plant height but also delayed canopy closure. 0.35 g ae ha<sup>-1</sup> of 2,4-D delayed canopy closure of GT soybean at R2 stage by 5 days compared with a 11.9- and 8.4-fold higher dose at the V2 and R1 stage, respectively. These results show that GT soybean is sensitive to micro-rates of 2,4-D especially at the R2 stage; therefore, 2,4-D drift should be avoided especially at the reproductive stage.