



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 of Dicamba-Tolerant Soybean as Influenced by Micro-Rates of 2,4-D. Stevan Z. Knezevic*, Jon Scott, Darko Jovanovic, Ivan B. Cuvaca; University of Nebraska-Lincoln, Lincoln, NE (24)

ABSTRACT

Like other auxin herbicides, 2,4-D is typically associated with increased risk for drift-related damage to non-target crops. A study was conducted in 2019 near Concord, NE to investigate the impact of 2,4-D micro-rates on dicamba-tolerant (DT) soybean yield. The experiment used a randomized complete block design (RCBD) with four 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⁻¹) and a check with no herbicide applied. Crop injury was visually assessed at 7, 14 and 21 days after treatment (DAT). Grain yield was also collected. Increase in 2,4-D dose increased soybean injury and reduced yield. Less than 1/10 of the label recommended dose of 2,4-D caused 5-20% injury regardless of application time. V2 and R2 were 1.9- and 2.6-fold, respectively, more sensitive to 2,4-D injury than the R1 stage at 21 DAT. The effective dose of 2,4-D required to cause 5% soybean injury at 21 DAT at V2, R1 and R2 was 49.27, 94.26 and 36.59 g ae ha⁻¹, respectively. In regards to yield reduction, the V2 and R1 stages were 4.2- and 3.5-fold, respectively, more sensitive to 2,4-D than the R2 stage. Preliminary data analysis showed that dose of 2,4-D of 7.17-8.72 g ae ha⁻¹ reduced soybean yield by 5% (0.2 Mg ha⁻¹) at the V2 and R1 stages. These results show that off-target movement of 2,4-D can significantly reduce soybean yield and therefore should be avoided.