



Effects of Dicamba on Non-Resistant Soybeans

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Leaf cupping and crinkling two weeks after soybean exposure to 1/100th of a field-use rate of dicamba at V3, R1, and R3 growth stages. Photo by Tyler Meyeres.

Rapid adoption of dicamba-resistant (DR) soybean resulted in an increase of post-emergent applications of the herbicide during the growing season. But when some dicamba drifted onto non-dicamba-resistant soybean, it resulted in injury to those crops. Despite numerous studies quantifying soybean response to dicamba, research gaps remained regarding response of non-DR soybean to multiple dicamba exposures.

A team from Kansas State University set out to determine the response of non-DR soybean to single and multiple post-emergent applications of dicamba at 0.56, 1.12, and 5.6 g acid equivalent ha⁻¹ at three growth stages—V3, R1, and R3. Non-DR soybean exposed to dicamba at R1 had greater injury and yield loss than when exposed at V3 or R3. Soybean exposed to dicamba multiple times had persistent injury that was correlated with yield loss. Yield loss increased as the number of applications and rates of dicamba increased.

These results indicate it may be important for non-DR soybean growers to consider using soybean varieties with longer maturities to shift the flowering date to after the dicamba application cutoff date to avoid yield loss. It is critical that applicators follow dicamba application guidelines to avoid damage to non-DR soybean and to preserve the DR technology, which has proven effective in controlling herbicide-resistant weeds.

Adapted from Meyeres, T., Lancaster, S., Kumar, V., Roozeboom, K., & Peterson, D. (2022). Non-dicamba-resistant soybean response to multiple dicamba applications. *Agronomy Journal*, 115, 147–160. <https://doi.org/10.1002/agj2.21201>

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