

# DICAMBA RESIDUES IN SPRAY EQUIPMENT REDUCES SOYBEAN (*GLYCINE MAX*) GROWTH AND YIELD

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## Abstract

Introduction of dicamba-tolerant soybeans (*Glycine max* L. Merr.) will improve management of increasing populations of herbicide-resistant weeds. However, increased use will lead to risks for damage to susceptible crops such as adjacent soybeans. Research on cleaning commercial spray equipment used to apply dicamba on tolerant soybeans followed by application of other herbicides on sensitive soybeans is needed. Soybean injury and yield following application of spray tank rinsates containing dicamba was studied in 2015 and 2016. Dicamba was applied through two commercial sprayers and spray equipment was subsequently treated with water or one of four cleaning agents (water alone, ammonia, Cleanse® or Erase®). This initial treatment was considered a first rinsate, and was followed by two rinses of water (second and third rinsate). Rinsate solutions were applied on V3 or R1 soybeans. Visible damage was observed at 7 days after treatment (DAT), especially for first rinsates (6 to 16% for V3 treated plants and up to 22% for R1 plants). At 14 DAT, plant height was reduced up to 48 and 33% on V3 and R1 treated soybeans, respectively. Stunting on R1 treated soybeans persisted until the end of the season. First rinsates reduced yields up to 11 and 46% for V3 and R1 soybeans respectively, compared to the untreated control. For third rinsates, yields for R1 plants were reduced up to 6%, with no effect on V3 plants. Cleaning agents can reduce residues of dicamba in contaminated equipment, but dilution of residues by a triple rinse procedure is most important.