Dicamba Off-Target Movement Limits Soybean Yield Components

Recent use of dicamba-resistant crops has allowed for control of herbicide-resistant broadleaf weeds but has also resulted in off-target injury to sensitive crops.

In an article recently published in Agrosystems, Geosciences & Environment, researchers report on a two-year study from south Louisiana evaluating the effects of dicamba on soybean yield components.

The team found that soybean exposed to dicamba during the vegetative growth stage at the lowest rate evaluated (0.6 g ha$^{-1}$) had minimal yield loss due to an increase in lateral branching. In contrast, dicamba exposure during the reproductive growth stage of soybean development did not lead to observed lateral branching. At the higher dicamba rates evaluated, soybean yield components limited the most were pods and seed produced per plant.

Given the high sensitivity of soybean to dicamba, producers using dicamba-resistant crop technology should follow all label restrictions to prevent off-target movement of dicamba. However, if an off-target movement event occurs, exposing soybean during its vegetative growth stage, this study suggests soybean has the ability to recover from exposure to low dicamba rates.


Soybean exhibiting upper-canopy leaf cupping after exposure to dicamba.

doi:10.2134/csa2019.64.S049

Novel Design Facilitates Measurement of Belowground Biomass Accumulation

Grasslands occupy approximately 40% of earth’s ice-free land area. Soils under grasslands store large quantities of carbon, benefitting society by reducing carbon dioxide in the atmosphere and slowing the pace of climate change.

Accumulation of soil carbon occurs gradually and is nearly impossible to measure accurately during the two- to three-year time span of many field research studies. This is a substantial barrier to rapid progress in identifying management practices favoring soil carbon accumulation. A technique capable of indirectly assessing the impact of management practices through shorter-term measurements of soil carbon accumulation would be valuable.

In a newly published Agronomy Journal article, researchers describe the design of an ingrowth core device that can be used to measure root-rhizome accumulation rate in perennial grasslands. The design accommodates coarse roots and rhizomes and can achieve meaningful results in 100-day deployment periods.

The ingrowth core device can be used to assess root-rhizome mass accumulation in a wide range of perennial grassland species and under numerous management practices, facilitating short-term measurement of a factor that is likely related to long-term accumulation of soil C.


Design and use of a modified root-rhizome ingrowth core.

doi:10.2134/csa2019.64.S050