Soybean cupping prevalent in Iowa

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Abstract
Once again, we are getting many questions about soybean fields that have abruptly demonstrated symptoms resembling those attributable to a plant growth regulator (PGR) herbicide such as 2,4-D, dicamba, or clopyralid. Given this spring’s windy conditions, there is no question that some drift occurred. Furthermore, with the limited "field time" available, it is surprising that sprayer contamination calls were not more prevalent.

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However, the recent samples and calls likely can be ascribed to the rather cool conditions that occurred during last week. It has been suggested in a number of past ICM Newsletter articles that this mysterious cupping may be correlated with the genotype of the soybeans currently planted. Garren Benson, emeritus crop production specialist, has reported that this yearly phenomenon did not occur until approximately 8 to 10 years ago. Furthermore, the occurrence of the pseudo-growth regulator symptoms appears to closely follow unseasonably cool weather. Given the current degree-day accumulation and the rainfall of the recent past, it is suggested that the soybeans were predisposed (under stress) to the recent occurrence of the "injury."

There are several things to consider when attempting to differentiate the "stress injury cupping" from the injury attributable to a PGR herbicide: (1) Are there patterns that correlate with applications or drift? (2) Are the symptoms severe? (3) Do the symptoms continue on the new developing trifoliates? (4) Do the symptoms occur over the entire field? (5) Are there only one or two trifoliates that demonstrate the injury? If the answers to 1-3 are "yes," it is likely that a PGR herbicide is the problem. If the answers to 4 and 5 are "yes," it is likely the weather. In either case, it is unlikely that there will be a significant effect on yield.

The University of Wisconsin recently published an excellent document that describes PGR (dicamba) injury to soybeans. The authors (Richard Proost, Chris Boerboom, and Roger Schmidt) also discuss factors that influence spray drift and provide excellent pictures of PGR injury and mimics. The publication can be accessed here [2].

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