Callisto injury to corn

Micheal D. Owen
Iowa State University, mdowen@iastate.edu

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Callisto injury to corn

Abstract
Weed management faculty and staff at Iowa State University have received several calls concerning Callisto injury to corn. Many field visits have been made, and numerous samples have been assessed. Some of the situations involved insecticides applied previously to corn, some involved tank mix combinations with other herbicides (e.g., Steadfast), and some involved preemergence-applied herbicides (e.g., Balance) followed by a postemergence application of Callisto. In addition, numerous calls about injury from other herbicides have been received.

Keywords
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Disciplines
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Weed management faculty and staff at Iowa State University have received several calls concerning Callisto injury to corn. Many field visits have been made, and numerous samples have been assessed. Some of the situations involved insecticides applied previously to corn, some involved tank mix combinations with other herbicides (e.g., Steadfast), and some involved preemergence-applied herbicides (e.g., Balance) followed by a postemergence application of Callisto. In addition, numerous calls about injury from other herbicides have been received.

Generally, the injury was observed on scattered plants in the field, or there was evidence of overlap, resulting in higher-than-labeled rates of Callisto. Injury also has been observed on headlands or near terraces where the likelihood of high rates is elevated due to slow equipment speeds. However, there have been some fields where the injury symptoms were consistent across the field, and the common factor often was the use of an insecticide. However, no direct comparison was possible to assess an interaction between the insecticide and the herbicide.

Many of the applications were made during weather conditions that likely resulted in stressed corn. Corn that is stressed by weather or other factors is unable to metabolize herbicides as rapidly as vigorous corn, thus the herbicide accumulates at relatively high concentrations. When weather turned favorable, the corn began to grow rapidly and because of the relatively high dose of Callisto in the plant, injury developed. Other stresses attributable to other herbicides (such as ALS inhibitors or plant growth regulators), diseases, or compaction would enhance the injury from Callisto by further limiting herbicide metabolism. The photographs illustrate the condition of plants from affected cornfields.

The injury appeared within a couple of days of Callisto application. Although striking in
appearance, the overall impact of the Callisto injury on corn is minimal. New growth does not
demonstrate injury and the affected fields appear to be recovering. My sense is that the
primary factor that has affected the injury was the cold temperatures in May, which stressed
the corn and slowed plant development. Interactions with other pesticides may have
occurred, but nothing definitive can be claimed from the anecdotal observations. Research at
ISU has not consistently defined these pesticide interactions, thus the impact of these
interactions on corn is inconclusive. However, research specifically with Callisto has not
shown the injury to be a consistent problem. If Callisto injury is the only concern, corn should
recover without a significant impact on yield.

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