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Abstract
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Weed Control in Weather-Stressed Corn

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Whether or not corn was damaged by frost, it will be under stress following the recent period of cool, wet weather. Whenever possible, it is best to avoid applying herbicides to stressed corn since the crop is less efficient at metabolizing the herbicide to non-toxic compounds.

It is important to note that all herbicides place stress on the crop, regardless of whether a hybrid is resistant to the particular active ingredient (e.g. glyphosate, Ignite) or the herbicide contains a safener (e.g. Corvus, Status). Corn that lost significant leaf area to frost will be particularly prone to injury since it will deplete much of its energy reserves replacing the lost foliage.

There are no clear cut criteria to determine how long one should wait before resuming herbicide applications. At minimum it probably takes three to four days of favorable growing conditions for the crop to approach normal levels of tolerance to herbicides. Factors to consider when deciding how soon to spray a struggling corn field include the severity of the weed infestation and the margin of crop safety to the specific herbicide.

A light weed infestation probably poses less risk to yield potential due to early-season competition than herbicide injury, thus the application could be delayed until the crop regains much of its vigor. This assumes that delaying application will not allow weeds to reach a size that diminishes the likelihood of effective control (i.e. giant ragweed, horseweed/marestail). On the other hand, if a field has a heavy weed infestation, the weeds may pose a bigger threat to the yield potential than herbicide injury, so applications made before the crop has fully recovered from the weather-induced stress may be warranted.

Another reason to delay applications when possible is that weeds under stress are often less likely to be killed by herbicides than healthy plants. Applicators are frequently forced to make compromises due to limited application windows, but be sure to weigh the benefits and risks of herbicide applications to crops that are struggling due to weather or other factors.

Bob Hartzler is a professor of agronomy with extension, teaching and research responsibilities.