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Emerged Corn, Herbicides and Nitrogen

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EmergEd Corn, Herbicides and Nitrogen

Abstract

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Emerging Corn, Herbicides and Nitrogen

By Bob Hartzler and John Sawyer, Department of Agronomy

The rapid pace of planting in late April followed by rain has resulted in many fields having emerged corn before preemergence herbicides and nitrogen applications have been completed. Of particular concern are no-till fields where planting was completed prior to killing emerged weeds.

These fields should be priority for action since weeds that have a head start on the crop can begin to impact crop yields very early in the season.

- Researchers evaluating how long weeds can compete with corn before impacting yields (the critical period) often report that corn can tolerate weeds until the V3-V4 stage. However, these findings are based on corn being planted into a clean seedbed. When corn is planted into a weedy seedbed, yields can be impacted much sooner.
- Another reason for quick action in these fields is that several of the early-emerging weed species are some of the most difficult to control once they get a little size to them. These tough to control weeds include horseweed/marestail, giant ragweed and lambsquarters.

Most preemergence herbicides also are registered for application after corn has emerged, however, their activity on emerged weeds varies. If weeds are present, determine whether the postemergence activity of the residual herbicides is sufficient to control the weeds present in the field or if an additional herbicide with better postemergence activity is needed.

Another issue is the need to apply nitrogen and the desire to minimize trips across the field. Urea-ammonium nitrate (UAN) alone can be applied to emerged corn, and the risk of injury to the corn is dependent upon UAN rate, corn stage and weather conditions. Conservative suggestions are to limit postemergence applications of UAN to 90 lb N/acre when corn is at the V3 to V4 stage and to 60 lb N/acre at the V7 stage. Applications beyond the V7 stage are not recommended, and the risk of injury increases during hot, dry conditions.

While many preemergence herbicides are applied using UAN as a carrier, this practice is only recommended prior to crop emergence.

- The combination of herbicides with UAN greatly enhances the foliar activity of these products and poses a real threat of killing all emerged tissue contacted by the spray.
- Almost all herbicides prohibit application in nitrogen solutions after the crop has emerged due to the risk of severe crop injury.
- Some might try to rationalize this combination if the corn is at the VE-V1 stage since the growing point is still underground. While corn often can recover quickly from loss of the shoot at this growth stage, the herbicide may influence the plants ability to recover and therefore result in yield loss.

Bob Hartzler is a professor of agronomy with extension, teaching and research responsibilities. John Sawyer is professor with research and extension responsibilities in soil fertility and nutrient management.

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