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Watch for damage from broadcast postemerge UAN applications

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Abstract
Broadcast postemerge application of urea-ammonium nitrate solution (28 and 32 percent UAN) to corn has the potential to cause phytotoxic symptoms of leaf burn, necrosis, loss of leaves, and plant stunting. Burn symptoms will be visible within 24 to 48 hours after application. With hot-dry conditions, appearance of darkened leaf tissue can begin within a few hours. Depending upon the severity of damage, reduced plant growth may be visible for several weeks after application.

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Research conducted by Dr. Gyles Randall in Minnesota indicated that when corn plants are at the V3 growth stage (vegetative leaf stage defined according to the uppermost leaf whose leaf collar is visible; in this case three leaf collars are visible), phytotoxic effects were worse at nitrogen (N) rates greater than 60 lb N/acre (rates applied were 0, 60, 90, and 120 lb N/acre), but damage was not permanent and did not adversely affect stand or yield. When plants were larger than the V3 stage, plant damage was worse and some yield depression occurred with the 120 lb N/acre UAN rate. When atrazine was applied with the UAN (only rate studied was 2 lb active ingredient/acre), plant stunting and leaf damage increased. Grain yields were reduced when atrazine was combined with UAN at rates greater than 60 lb N/acre.

Conservative suggestions to avoid yield loss are to not exceed postemerge UAN rates of 90 lb N/acre when corn is at the V3 to V4 stage, 60 lb N/acre at the V7 stage, and to not apply UAN to foliage if plants are larger than the V7 stage. Hot-dry weather will increase leaf burn and plant growth reduction.
Foliar damage from 28 percent UAN broadcast at 100 lb N/acre to corn at the V6 growth stage.

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