

Should you Apply UAN and Residual Herbicides in a Tank Mix?

[<< Back](#)
 [Print](#)

Nitrogen

With the recent cold weather and varying degrees of injury growers are looking for ways to help their young corn recover. One potential concern is the application of urea ammonium nitrate (UAN) and residual herbicides in a tank mix.

UAN is a combination of urea and ammonium nitrate and has an N content of 28% to 32%. Under normal growing conditions, young corn can withstand some UAN without significant long-term damage. However, when corn is recovering from cold stress, it is probably better to find an alternative method of applying UAN.

The safest application method is to knife or band the UAN between the rows, but broadcast application is possible if the total nitrogen rate is kept to around 60 lb N per acre. An exact "safe" level of nitrogen is difficult to predict since environmental and corn plant conditions at application affect crop response. As described below, the amount of UAN needed to improve herbicide performance is much less than what is needed as a nitrogen source. Early leaf burn on corn usually is not a lasting problem since the growing point is still underground and a very small amount of total leaf area is exposed (*Figures 1 and 2*).

Herbicides

Early season weed control is imperative to maximize corn yield. Due to wet soil conditions, many corn growers were not able to apply residual, pre-emergence herbicides after corn planting but before corn emerged; however, several residual herbicides labeled in corn can be applied after corn emergence ([See this CropWatch article](#)).

Two important factors to consider when addressing weed control with residual herbicides applied after corn emergence are:

1. tank mix partner and
2. carrier options.

Applying herbicides and UAN at the same time in a tank mix for corn may seem like a good way to save time and a trip across the field; however, this enhances the foliar activity of herbicides and may result in significant foliar damage to young corn plants.

Several residual herbicides such as Degree Extra, Harness Extra, Keystone, and TripleFlex are labeled for preemergence application in corn with 28% UAN as a carrier option. However, it is not recommended that UAN be used as a carrier when Keystone and TripleFlex are being applied postemergence due to the potential corn injury.

Several other residual herbicides (Balance Flexx, Bicep II Magnum, Keystone, Lexar, Lumax, and TripleFlex) are labeled for early postemergence application in corn where UAN is NOT recommended. Postemergence application of these herbicides with UAN as a carrier will result in corn injury.



Figure 1. Corn at this stage has a limited exposed leaf area and the growing point will remain underground for the next few days or until reaching the V6 growth stage.



Figure 2. Corn in many areas is delayed or damaged due to storms, soil crusting, and late frosts.

Degree Xtra is one of the few residual herbicides labeled for postemergence applications with UAN as a carrier; however, you should be aware of these aspects:

- Temperature should not exceed 85°F within 24 hours of application.
- Some leaf burn may occur.
- Surfactants, crop oil, or other additives are not recommended unless specified.
- See label for specific tank mix restrictions.

Some fertilizer salts, including UAN, can be used as herbicide additives in a small quantity to increase herbicide efficacy; however, this use would not supply much nitrogen relative to the total nitrogen requirement of the crop. A few herbicides, such as Python and Resolve DF, allow mixing UAN as a carrier at 2 quarts UAN per acre when applied after corn emergence; however, they cannot be applied with UAN as the total carrier because excessive corn injury may occur.

For more information, see the [2014 Guide for Weed Management in Nebraska](#)  (EC 130) published by the University of Nebraska-Lincoln Extension.

Always check herbicide labels for restrictions on use of UAN as a carrier. If a field needs significant nitrogen application, it is best to apply the nitrogen in a separate application or if possible, through the pivot.

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