

# RESCUE NITROGEN APPLICATIONS FOR CORN

**Kelly A. Nelson**

Research Agronomist

**Gene Stevens**

Professor

**Peter C. Scharf**

Professor

**Bruce A. Burdick**

Research Associate/Superintendent

Rescue nitrogen (N) applications to corn (*Zea mays* L.) may be needed when wet conditions prevent N applications or when loss of applied N is suspected due to wet conditions. Crop injury when N is broadcast applied may counteract the yield benefits of a rescue N application. The objective of this research was to determine the effect of corn height, N placement, and source on injury and yield response. Five site-years of research evaluated the impact of broadcast and between-row placement of ammonium nitrate (AN), urea ammonium nitrate (UAN), urea, and urea plus NBPT (n-(n-butyl) thiophosphoric triamide) at 150 lbs N acre<sup>-1</sup> either preplant or when corn was 1-, 2-, 3-, or 4-ft tall. Visual injury for broadcast applied N sources was ranked urea = urea plus NBPT < AN ≤ UAN 7 d after treatment. Injury was dependent on plant height. Leaf injury resulted in reduced yield when UAN or AN was broadcast on corn that was 2-, 3-, or 4-ft tall. Broadcast urea or urea plus NBPT caused minimal crop injury and effectively supplied N to the corn crop. Application of NBPT-treated urea increased yield 25 bu acre<sup>-1</sup> averaged across timings when compared to urea alone. Application of N when corn was 1-ft tall produced the highest yields, but excellent yield response to rescue N was obtained at all application heights. Placement and source of N should be considered when rescue N applications are made to corn greater than 1-ft tall. Recommended placement and N sources for corn 1-4ft tall are summarized in Figure 1.

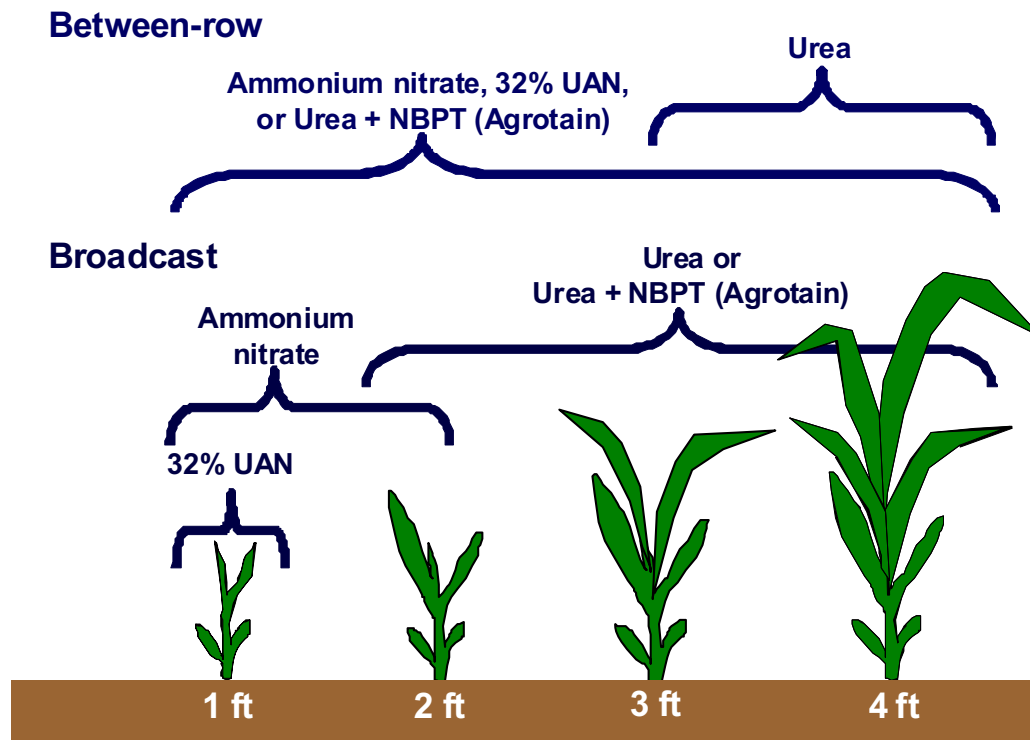


Figure 1. Rescue N application recommendations for N sources applied to 1 to 4 ft tall corn between the row or broadcast.