



# Nitrogen Method of Application Comparison on Corn ( 16-1101 )

## Experiment Info:

Planted:	5/23/2016
Harvest:	10/31/2016
Yield Goal:	150 bu/A
Target Fert.:	165-106-72
Variety:	DKC 46-36 RIB
Population:	32,500
Row Width:	30"
Prev. Crop:	Soybeans
Plot Size:	15 x 1200
Replications:	4
PRE	5/10/2016
LBC	5/25/2016
V5	6/22/2016
V10	7/14/2016

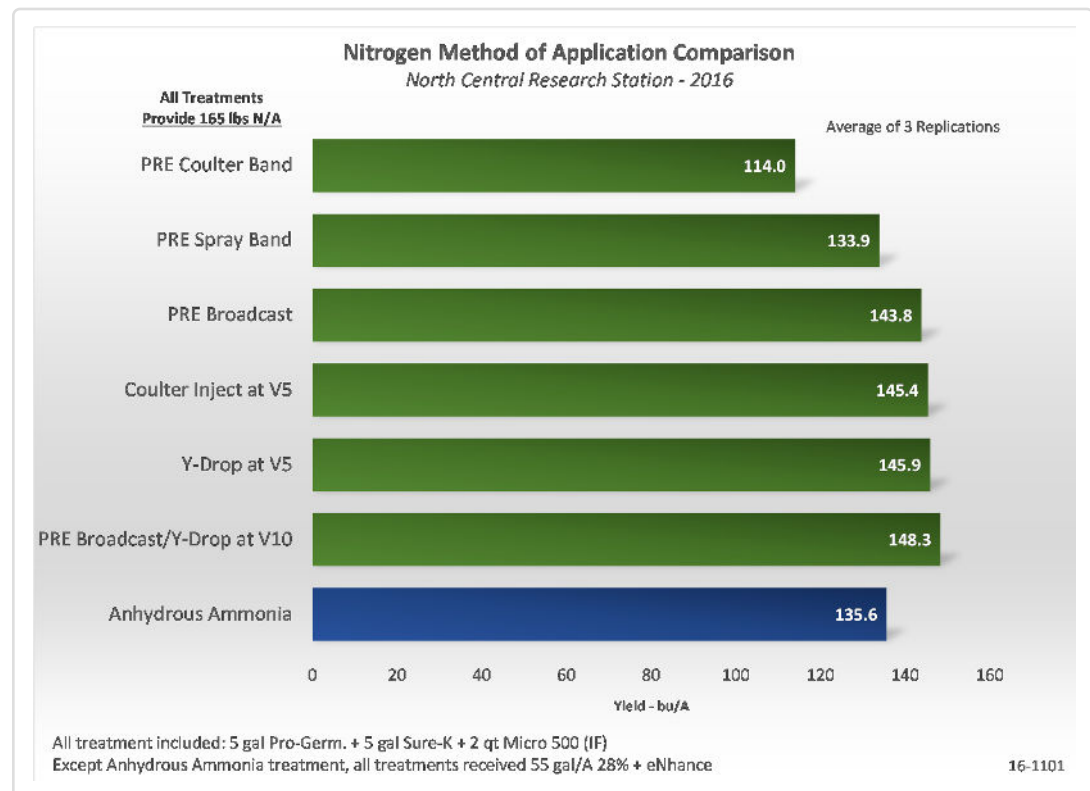
## Soil Test Values (ppm):

pH:	6.8
CEC:	6.9
%OM:	1.5
Bray P1:	5
Bicarb P:	
K:	84
S:	22
%K:	3.1
%Mg:	22.3
%Ca:	73.3
%H:	
Zn:	1.5
Mn:	9
B:	.5

## Objective:

Evaluation of different nitrogen methods of application options in corn.

There are many choices when it comes to ways to apply nitrogen to a corn crop. Nitrogen by nature, is susceptible to many forms of environmental loss such as leaching and volatility. Because of these, it is important to understand the soil and environmental conditions apply nitrogen accordingly. In this experiment 165 lbs of nitrogen as 28% + eNhanse was applied in six different ways. 1) coultter injected in the ground 13 days before planting 2) 5-6" spray band on the corn row also 13 days before planting (*with our GPS and RTK correction corn for both of these treatments were planted directly over the fertilizer band*) 3) pre emerge broadcast 4) coultter inject at V5 5)Y-DROP at V5 and 6) a split application of 1/3 pre emergence broadcast followed by the remaining 2/3 applied with Y-DROP at V10. The conventional nitrogen comparison for this experiment was 165 lb/A Anhydrous Ammonia injected at V5. Late planted corn combined with a dry June and July, reduced yield potential.



LSD(0.2) 9.5, CV:12.2%

## Conclusions:

- The preplant band applications, both coultter injected and sprayed, caused some injury to stand which ultimately influenced final yield. Future testing will look at offsetting the band to improve seed safety.
- Numerically, the preplant broadcast application was the next lowest yielding, however not significantly different than the others. This demonstrates the risks of loss that can occur with surface and broadcast applications.
- Both in-season applications at V5, yielded similar to one another. In other studies at the North Central Research Station, there has been a benefit to YDROP over coultter injection.
- The highest numerical yield was achieved with the split application. This offers greatest protection from loss.
- Anhydrous ammonia yielded nearly 10 bu/A less than the 28% + eNhanse applied at a similar time.