Additives to Sidedress Applications in Corn (18-716)

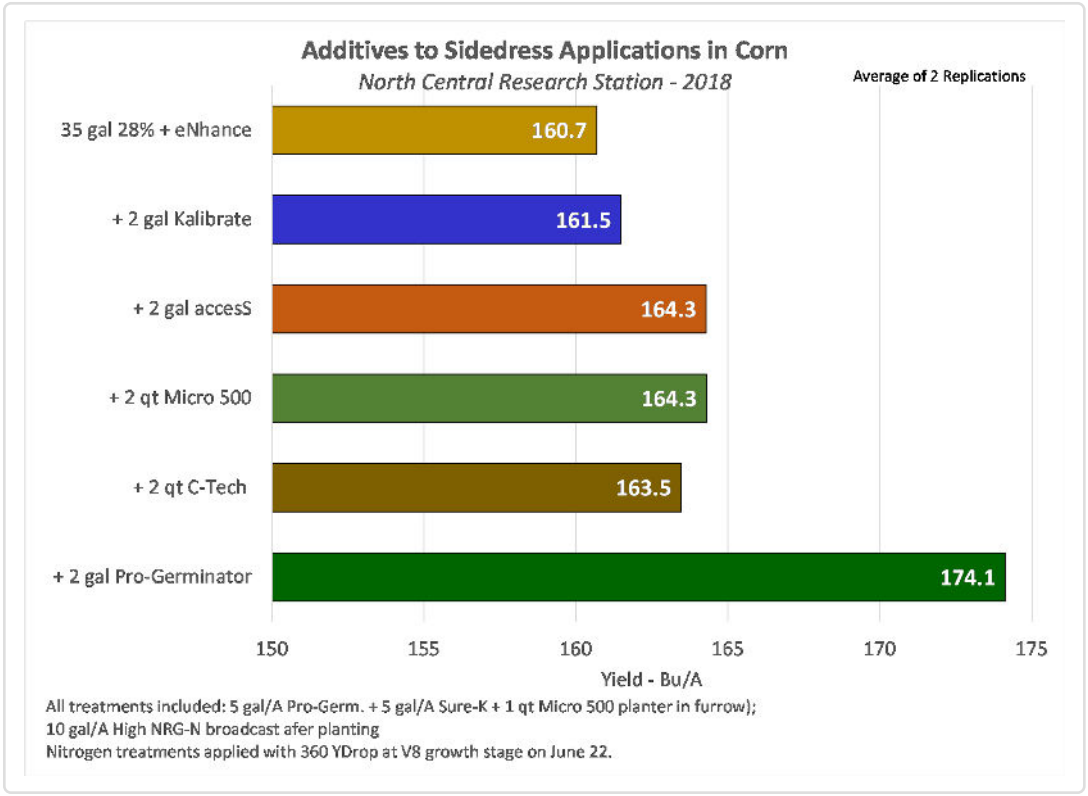
Experiment Info:	
Planted:	5/5/2018
Harvest:	9/28/2018
Yield Goal:	175 bu/A
Target Fert.:	175-105-120
Variety:	P9998AM
Population:	33,000
Row Width:	30"
Prev. Crop:	Soybeans
Plot Size:	15x210
Replications:	2

Soil Test Values (ppm):	
pH:	7.2
CEC:	12.7
%OM:	3.2
Bray P1:	7
Bicarb P:	6
K:	72
S:	4
%K:	1.5
%Mg:	22.6
%Ca:	75.7
%H:	
Zn:	1
Mn:	2
B:	0.6

Objective:

To evaluate the effect of nutrient additives to a sidedress application of nitrogen in corn.

Planter application of nutrients is proven to be very efficient and effective, and can take the place of the need for additional trips through the field for nutrient application. However, there are times when the nutrient needs of a particular field may exceed the ability of the planter to safely apply all that is needed, particularly if the fertilizer is placed in the seed furrow. With AgroLiquid fertlizers in corn, the maximum product rate (other than N) for in-furrow application is 10 gallons per acre. This is a general figure, as it is likely higher in heavier soils with adequate soil moisture. But the recommendation maximum is 10 gal/A. Additional amounts could be placed away from the seed as in 2x2 placement, but if the planter is not so equipped another plan must be made. Applications of nutrients in addition to nitrogen can be made at sidedress. This is still early enough for the nutrients to be effective, but in agriculture, things don't always turn out the way one would think. In this experiment, all nutrient levels were low, and several treatments were made to apply additional nutrients at sidedress through Y-Drop equipment. The resulting yields are in the chart.



LSD(0.1): 12; LSD(0.2): 8.8; CV: 4.1%

Conclusions:

• All nutrient additives resulted in a numerical yield increase over the nitrogen application alone. But the addition of Pro-Germinator at 2 gal/A resulted in a large and statistically significant yield increase. This is to be expected as the low soil test P level would suggest more Pro-Germinator than the 5 gal/A that was applied.

• The Y-Drop places the solution fertilizer in a band at the base of the corn. This are is often moist, particularly in the morning from dew on the plant. The phosphorus will move into the soil along with the nitrogen and reach the expanding root system. Research has shown a better developed root system with in-furrow application.

• It is not clear why greater increases were not seen with the other treatments, but the in-furrow was sufficient.