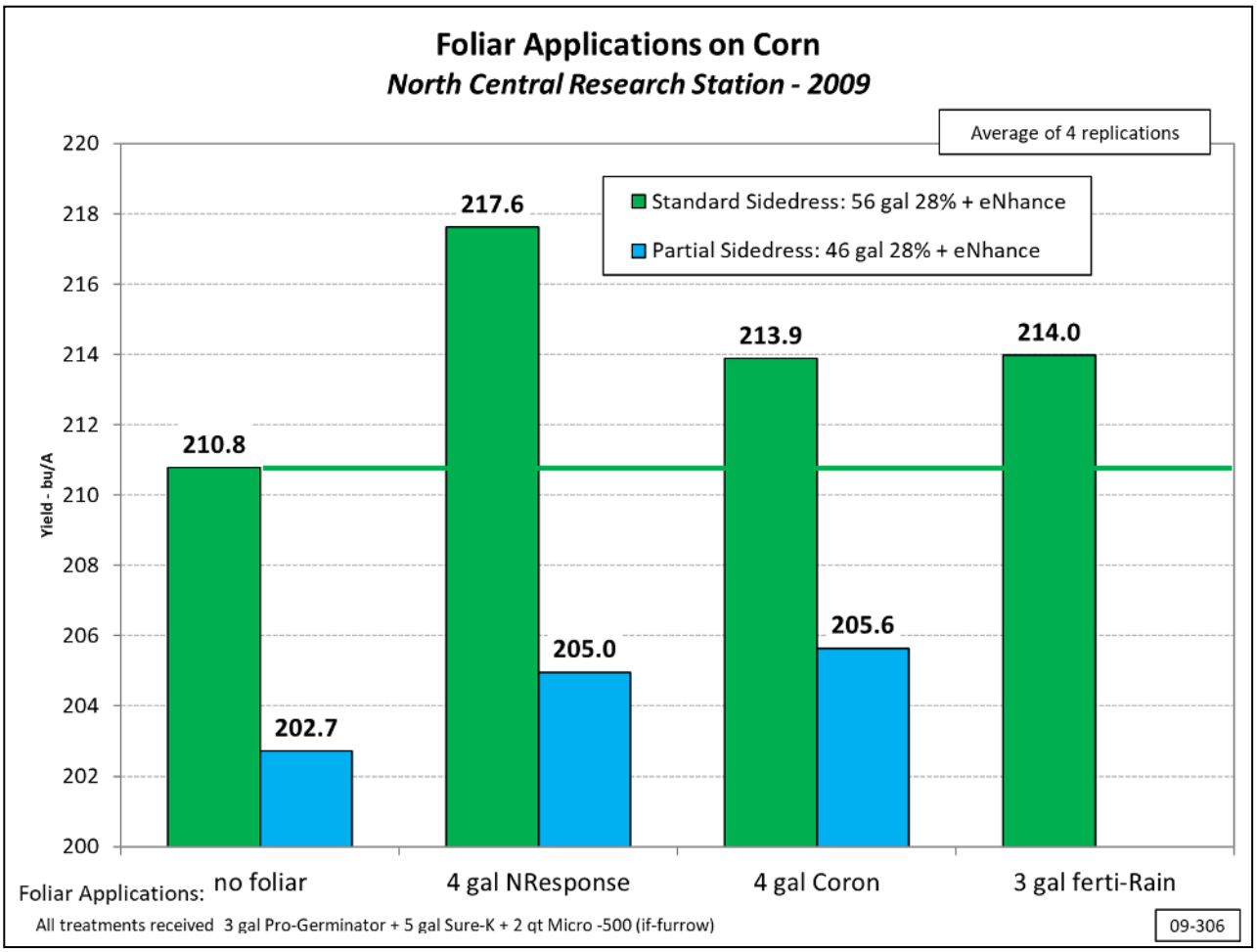
Experiment: Foliar Applications on Corn (09-306)

Planted:	5/4/09	**Hybrid:**	DKC52-59	**Population:**	33,000
Plot Size:	15' x 210'/130'	**Replications:**	5	**Harvested:**	10/28/09
Sidedress:	6/4/09	**Foliar (V7):**	6/22/09	**Foliar (V14):**	7/17/09

Soil Test Values *(ppm)*:

pH	CEC	% OM	Bicarb	K	S	% K	% Mg	% Ca	% H	% Na	Zn	Mn	B
7.2	5.8	1.2	12	53	6	2.3	16.5	80.2	0	1.0	0.6	2	0.4

Objectives: Nitrogen fertilizer plays a large role in overall corn yield. With increasing prices and new products on the market, managing nitrogen has become more complex. One nitrogen strategy promoted by some nutrient manufacturers other than Agro-Culture Liquid fertilizers is lowering the standard sidedress nitrogen application while trying to make up the difference in yield with a foliar application. Agro-Culture Liquid Fertilizers *NResponse* and *ferti-Rain* along with Coron (a Helena product) were used for the foliar applications. The standard sidedress rate was 56 gal/A 28% + eNhance, providing 210 equivalent pounds of nitrogen. A reduced rate of 46 gal/A 28% + eNhance was used as a comparison, providing 160 equivalent pounds of nitrogen.



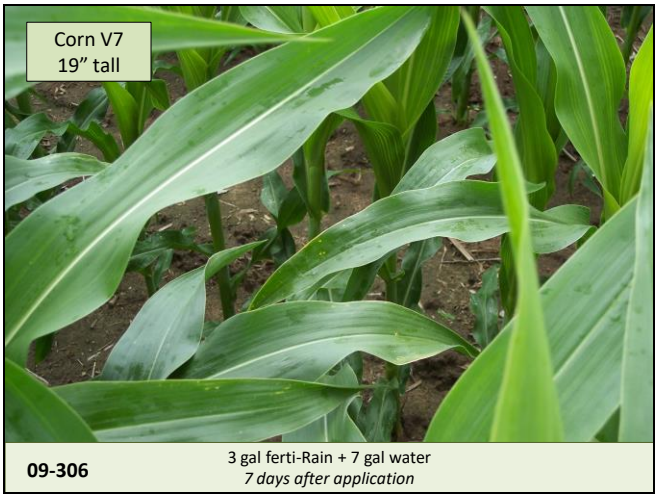
LSD(0.1): 8.8, CV:3.8%

*See *Product Descriptions* in the introduction for more information on ACLF products used.

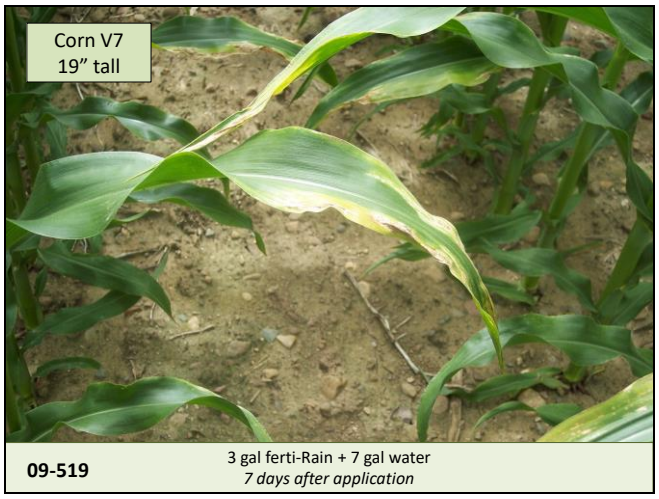
SMZ101210NRG

09-306 4 gal High NRG-NR + 6 gal water *7 days after application*

As we have seen in the past and is shown in the picture on the left, a foliar application of *NResponse* does result in some slight burning of the upper leaves at the time of application. However, as shown in the above yields, this injury does not reduce yield. The later emerging leaves showed now injury.



09-306 3 gal ferti-Rain + 7 gal water *7 days after application*



09-519 3 gal ferti-Rain + 7 gal water *7 days after application*

This is the first year of observing ferti-*Rain* burn when applied as a foliar on corn. As shown in the pictures above, burn varied for minor to severe, but again later leaves were unaffected. More work will be done next year.

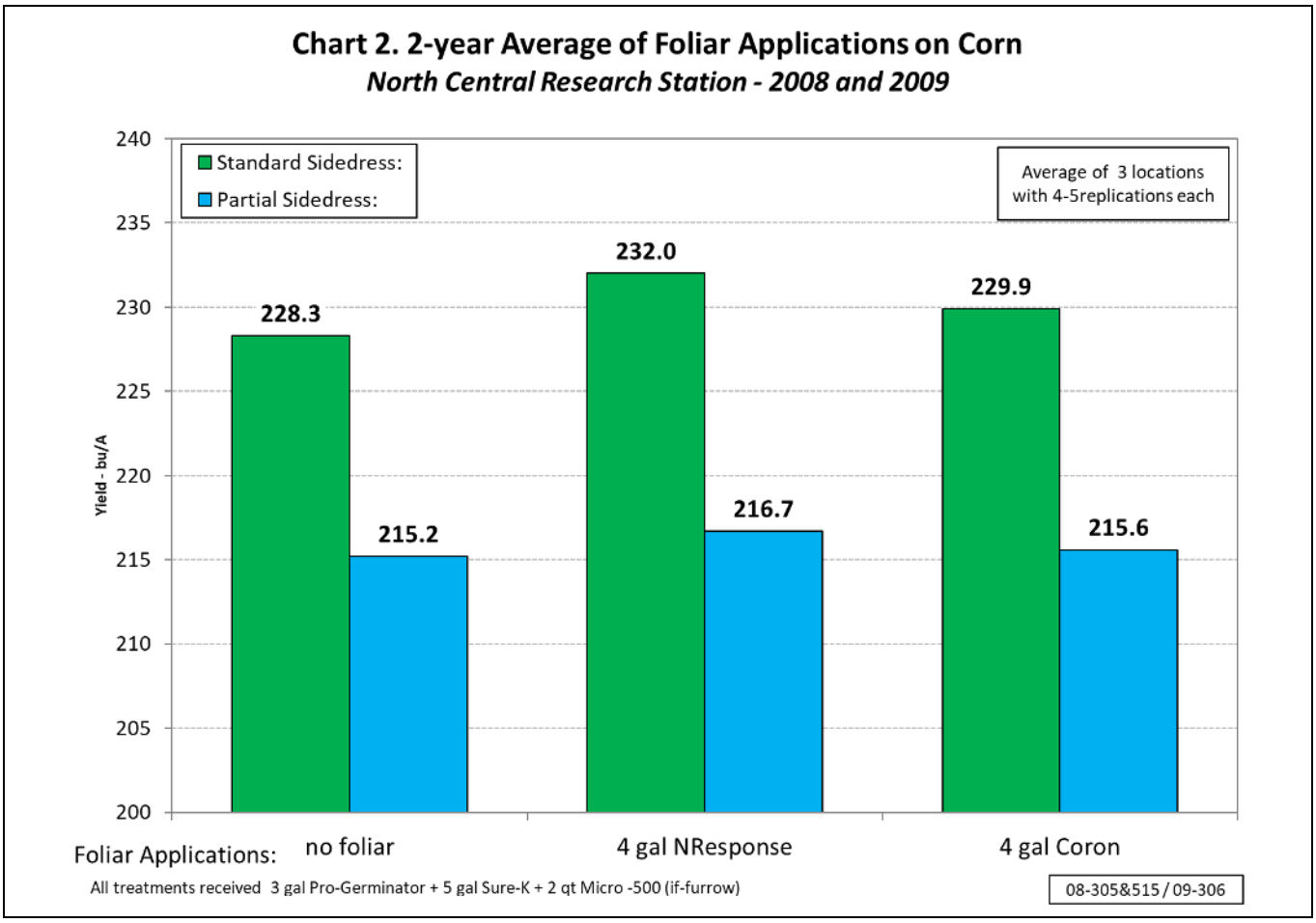
Conclusions:

- Highest yields were achieved with the standard rate of sidedress nitrogen.
- Additional foliar applications to the standard sidedress nitrogen increased yield 7 bu with *NResponse*, 3 bu with *ferti-Rain*, and 4 bu with Coron.
- Although yield was increased with foliar applications with the partial sidedress nitrogen rate, yields were not as high as the full sidedress rate. As shown on the chart, the blue bars needed to reach the green line in order to yield as well as the full sidedress program, however each treatment was at least 5 bu short of this goal.

*See *Product Descriptions* in the introduction for more information on ACLF products used.

2 Year Average:

This experiment was also completed in two locations in 2008. The averages of all three experiments are shown on chart 2 below.



Conclusions:

- Foliar applications, no matter which product, with a reduced nitrogen sidedress rate, have not increased yield to the same level as the standard sidedress nitrogen rate.
- Over three experiments in two years, the standard rate of sidedress nitrogen with foliar applications did not consistently show a yield increase. Foliar applications may prove to be beneficial in growing conditions with limited nitrogen uptake or as a rescue treatment.

*See *Product Descriptions* in the introduction for more information on ACLF products used.