

**SOIL/WATER RESEARCH**  
*South Dakota State University*  
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**Influence of rescue foliar UAN application on severely N deficient corn yield near Aurora SD in 2008. (43008)**

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**Introduction**

Foliar N application on corn is rare. Because corn usually requires large N rates, it is extremely difficult to get the full N rate applied foliarly because of possible leaf burn. Therefore, most N rescue treatments would strip the N between the rows. A research project was conducted to evaluate the influence of foliar UAN application on corn leaf burn and grain yield.

**Materials and Methods**

<b>Item:</b>	<b>Description:</b>
Location	Crop Improvement farm, Aurora
Corn Hybrid and seeding rate	DKC 46-60 (30,100 seeds/a)
Planting date	May 15
Soil Samples (N,P,K,Zn and pH)	0-6 and 6-24 inch
Foliar N source	UAN (28-0-0) mixed 50/50 with water
N rates	0, 30 and 60 lbs/a
Foliar N timing	V9 growth stage
Parameters measured	grain yield
Harvest Date	Nov. 3
Statistics (4 replications)	RBCD

**Results and Discussion**

Soil test results and V9 growth stage had 26 lbs N/a (0-2ft), 22 ppm Olsen P, 145 ppm K, 0.55 ppm Zn and 5.5 pH. At the V9 growth stage, the corn plants were severely stunted from N deficiency. On foliar N application day (July 14) air temperatures were warm. No rain was received until July 17 and 18 (0.60 inches). Visual leaf burn showed moderate and severe burn with the 30 and 60 lb. N/a rates, respectively. The effect of leaf burn on grain yield reduction was not determined because broadcast rates of dry fertilizer were not made. Despite the leaf burn, this foliar N application increased

grain yield (Table 1). We suspect the N response was made possible by the rain received 3 days after application which moved the N into the soil. However, an adjacent N study produced yield of 135 bu/a with 60 lbs N/a applied at planting. Therefore, the leaf burn and/or the late N application limited yields with this study.

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Table 1. Influence of foliar UAN application on severely N deficient corn yield near Aurora SD in 2008. (43008)

Foliar N rate as UAN mixed with water at a 50/50 blend.	Grain Yield
	bu / a
0	96.9 b
30	109.6 ab
60	118.0 a
LSD <sub>(.05)</sub>	17.6
Pr>F	0.01