AGRO-CULTURE LIQUID FERTILIZERS

Liquid Nitrogen Comparisons in DNS Wheat
Hubbard Ag Science. Moscow, ID

Experiment Info:

Planted:	5/2
Variety:	Bullseye
Population:	85 lbs
Row Spacing:	7.5"
Plot Size:	8' x 35'
Replications:	4
PPI.:	5/1
Harvest:	9/18

Soil Test Values (ppm):

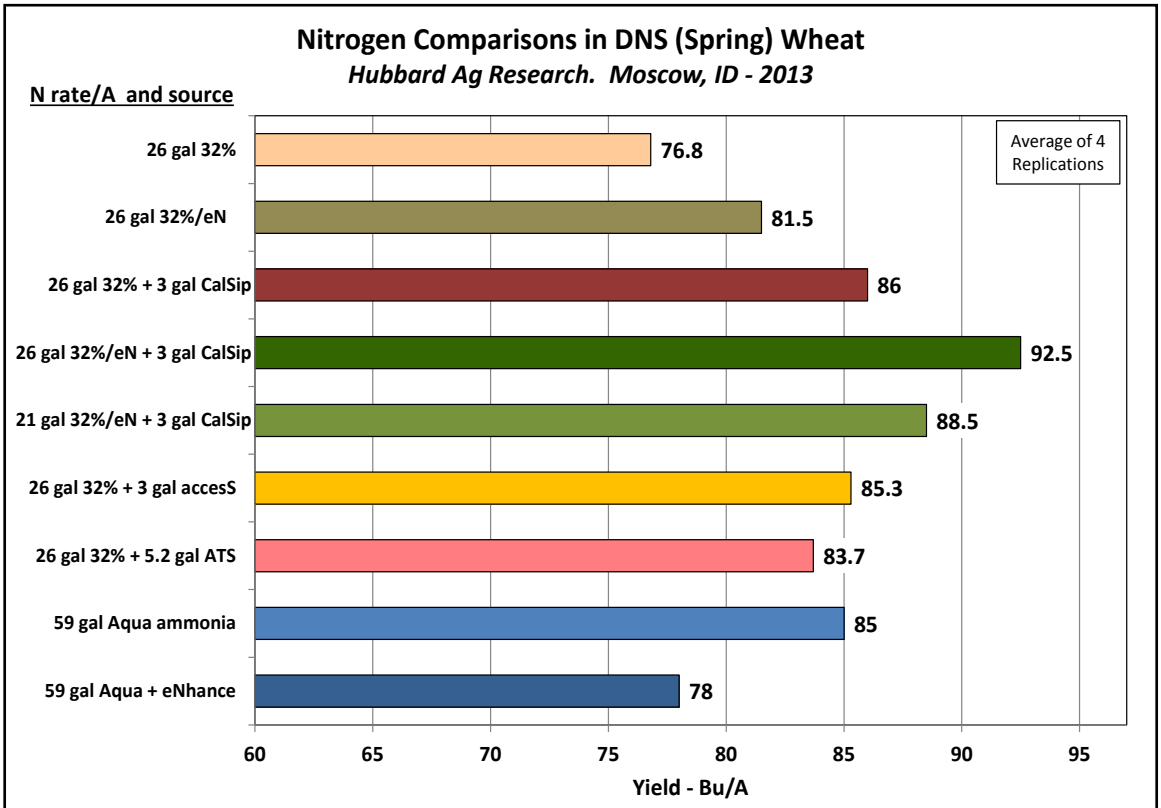
pH:	5.6
CEC:	16.9
% OM:	3.1
Bray P1:	20
K:	676
S:	8
% K:	10.2
Zn:	0.8
Mn:	26

Yield Goal:	90 bu
Target Fertilizer Rate:	90-0-0

Objective:

Compare different nitrogen sources and sulfur additives for effects on yield of DNS spring wheat.

One option for nitrogen application to spring wheat is to "shank" it in with a tillage tool. Such was the case for treatment application in this experiment evaluating several different solution N sources and some sulfur additives for effect on yield. Treatments were applied through tubes on the shanks of a field cultivator such that final band spacing was six inches apart and approximately six inches deep. The N sources were 32% UAN, 32% UAN with eNhance, and aqua ammonia (20-0-0, 1.5 lb-N/gal). Additives tested for sulfur were CalSip (14% S and 1% Ca), accesS (17% S plus iron, manganese, zinc), eNhance (8.75% S plus manganese and zinc) and ammonium thio-sulfate (or ATS: 12-0-0-26S). The target N rate was 90 lb/A. Yield results appear in the following chart.



Nitrogen fertilizer treatments applied with tubes attached to shanks of a field cultivator. The N bands were spaced 6 inches apart and were 6 inches deep. Abbreviation key: 32%=32% UAN; eN= eNhance at 2.25 gal/Ton; SCal= SCalate; ATS=ammonium thio-sulfate.

LSD(0.05): 12.7. LSD(0.1): 10.5. LSD(0.2): 8.1. CV: 14.5% (There was higher than desired variability here.)

Conclusions:

- There was a step-wise increase in yield over straight 32% UAN with the additions of eNhance, CalSip, and then both eNhance and S-Calate, which resulted in the highest yield in the experiment.
- Reducing the rate of 32% UAN from 26 to 21 gal/A with additives eNhance and
- CalSip still resulted in a significantly higher yield than the higher rate of 32% UAN with no additives (88.5 Bu/A vs. 76.8 Bu/A).
- Addition of accesS to straight 32% UAN resulted in a significant yield increase, where ATS increased yield, but not statistically higher.
- The addition of eNhance (37 fluid oz/A) to aqua ammonia resulted in an unexplained yield reduction. Have not had much success with addition of eNhance to aqua in the past.