



Foliar Applications of NResponse on Spring Wheat

Fehringer Agricultural Consulting. Billings, MT - 2018

Experiment Info:

Planted:	05/07/2018
Harvest:	09/12/2018
Yield Goal:	70 Bu/A
Target Fert.:	80-35-0
Variety:	Vida
Population:	1,000,000
Row Width:	7.5"
Prev. Crop:	spr wheat
Plot Size:	4 x 70'
Replications:	4

Soil Test Values (ppm):

pH:	7.6
CEC:	29.5
%OM:	2.1
Bray P1:	
Bicarb P:	14
K:	416
S:	6
%K:	3.6
%Mg:	
%Ca:	
%H:	
Zn:	1.1
Mn:	1.8
B:	

Objective:

Evaluate foliar applications of NResponse at two spring wheat growth stages for effects on spring wheat yield and grain protein.

Spring wheat grain protein is an important aspect of payment to the grower. In addition to yield, grain protein will result in reward or penalty. There is a threshold of 14% where protein levels in excess of this level result in premium but levels under this level result in reduced payment. In fact, the penalty is greater than the reward. But grain protein is often difficult to manage and predict, but is mainly a function of nitrogen supply. Lower yields (as from drought) will often have higher protein while the opposite is also true, suggesting a nitrogen and dilution effect. Foliar application of nitrogen, such as NResponse, has been attributed to increased protein, but is difficult to predict. Often flag leaf (lf) nitrogen levels can be used as a gauge for predicting whether additional nitrogen is needed in order to make protein. An experiment was established to measure inputs for protein.

Effect of Foliar Application of NResponse on Yield and Protein of Spring Wheat

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<u>Preplant stream (16 + 3.5 + 0.25 + 1 gal)</u>	<u>flag lf N</u>	<u>Bu/A</u>	<u>% prot.</u>
High NRG-N + Pro-Germ + Micro 500 + accesS	4.91%	77.7	14.4
" + 2 gal NResponse (anthesis)	4.93%	77.4	14.2
" + 2 gal NResponse (soft dough)	4.92%	76.1	14.5

Tt F for yield: 0.83; so no significant treatment differences.

Conclusions:

- Research by others has suggested that a flag-leaf nitrogen level of 4.2% is the threshold for nitrogen sufficiency to produce 14% grain protein.
- The flag leaf nitrogen levels here were all in excess of the proposed threshold level, and apparently sufficient nitrogen was available to produce desirable grain protein. So the foliar applications had no additive effect on protein or yield.
- It would be beneficial to continue to test flag leaf N levels and apply treatment when the level is below 4.2%.