Fertilizer Program Evaluations in Spring Wheat

Larson Grain Co. - Wishek, ND

Experiment Info:	
Planted:	4/30/2016
Harvest:	8/17/2016
Yield Goal:	60
Target Fert.:	
Variety:	Soren
Population:	1.8 M
Row Width:	7.5"
Prev. Crop:	wheat
Plot Size:	7.5 x 45 ft
Replications:	4

Soil Test Values (ppm):	
pH:	7.2
CEC:	15.5
%OM:	3.8
Bray P1:	
Bicarb P:	4
K:	137
S:	7
%K:	2.3
%Mg:	22.4
%Ca:	74.8
%H:	
Zn:	1
Mn:	4.9
B:	0.4

Objective:

Evaluate effects of different fertilizer program components on yield and grain protein of spring wheat.

Spring wheat is an important crop in the production of spring wheat. Spring wheat is a crop where it is not only important to produce good yields for the conditions, but also to have a particular grain quality for grain protein. Growers will receive a bonus for higher grain protein, and 14% is typically the target level. One production dilemma is where lower yielding wheat produces higher protein, and the inverse is also true. An experiment was established in some dryland spring wheat to test the effects of some program components for the ability to produce high yields as well as high grain protein. Additionally, there is also an evaluation for the effects of addition of chloride for yield enhancement. Chloride has been part of wheat research for some time with no real strong correlations. However a soil test analyzed by Agvise found 4 lb/A of chloride and recommended 36 lb/A. A tissue test of 0.18% Cl which was interpreted as low. So applications of NC-14 (22-0-0-9Cl) were made.

Fertilizer Effects on Spring Wheat Yield and Grain Protein

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Rates In Gallons or Pounds per Acre

trt	Pre-plant Broadcast				Drill			Foliar*	Bu/A	% protein
1	High NRG-N	Pro-Germ	Micro 500						40.9	16.2
	20	6	0.25							
3	High NRG-N	Pro-Germ	Micro 500	accesS					42.8	15.9
	20	6	0.25	1						
4	High NRG-N	Pro-Germ	Micro 500					NC-14	41.3	16.3
	20	6	0.25					2		
5	High NRG-N	Pro-Germ	Micro 500	accesS					41.7	16.3
	20	4	0.25	1						
6	High NRG-N	Pro-Germ	Micro 500	NC-14					42.2	16.1
	20	6	0.25	2						
7	High NRG-N	accesS			High NRG-N	Pro-Germ	Micro 500		42.5	15.8
	15	1			5	6	0.25			
10	urea	MAP							40.2	16.7
	180	150								

AOV no statistical differences in treatments

Conclusions:

- There were no treatment differences due to reduced yield from dry conditions during the summer. This was included in the report so as to show that we are working on the issue of spring wheat yield and fertilizer inputs. Plus these experiments aren't done for free.
- With low yields, the grain protein was very high.
- There was no measured effect from the addition of the experimental chloride product NC-14 either as a additive to the pre-plant spray or as a foliar application.
- It is difficult to predict the weather, as this is certainly not the first experiment to suffer from adverse weather.