

Project Title: Effects of Sulfur Fertilizer Sources on Spring Wheat Yield and Quality – 2013

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Objective: To evaluate the effects of sulfur fertilizer sources on spring wheat yield and quality.

Materials and Methods:

Sulfur based fertilizer formulations were compared to evaluate their impact on spring wheat yield and quality. Six different sulfur treatments were applied on April 3 with sulfur applied at a rate of 30 lb/A. Hank hard red spring wheat was seeded at a rate of 80 lbs/A on April 16. The experimental design was a randomized complete block with four replications. Warrior II was applied at 1.5 oz/A on June 27 to control orange wheat blossom midge. Plots were harvested on August 19 to measure grain yield and quality (Table 1).

Results:

Sulfur based fertilizer formulation had no effect on spring wheat yield. Likewise, sulfur treatments had minimal effect on grain quality, except for test weight. Test weights were low and averaged 55 lb/bu (Table 2). The lowest test weight was observed with carbon ammonium sulfate plus ammonium sulfate, while the combination of PKS without N produced the highest test weight. In general, sulfur had no significant impact on spring wheat yield or grain quality.

Table 1. Material and Methods - Effects of sulfur fertilizer sources on spring wheat - 2013

Seeding Date:	4/16/13	Fertilizer:	300-60-60-30
Julian Date:	106	Herbicide:	5/20/13
Seeding Rate:	80 lb/A		Affinity TankMix 0.6 OZ/A, MCPE
Previous Crop:	Barley		0.5 PT/A, Axial 16.4 FL OZ/A
Tillage:	Conventional	Insecticide:	6/27/13
Irrigation:	None		Warrior II 1.5 FL OZ/A
Soil Type:	Creston Sil	Harvest Date:	8/19/13
Soil Test:	151-10-278-58	Julian Date:	231

Table 2. Effects of sulfur fertilizer sources on spring wheat - 2013

Treatment	YLD bu/A	PRO %	TWT lb/bu	MC %
Vitasul (90% S)	83.2	13.9	54.6	9.7
Tiger 90 CR (90% S)	84.1	13.7	54.9	9.7
Ammonium Sulphate (AS)	91.5	13.7	55.0	9.5
Carbon Ammonium Sulphate (CAS)	86.0	13.9	54.6	9.6
Vitasul + AS*	90.0	13.8	54.7	9.6
CAS + AS*	83.4	13.8	54.3	9.8
NPK no S with micronutrients (check)	85.6	13.7	55.1	9.7
PKS no N with micronutrients	87.9	12.8	56.0	9.9
Grand Mean	86.5	13.7	54.9	9.7
CV	8.8	2.4	1.7	1.8
LSD (P=.05)	11.1	0.5	1.4	0.3
Pr>F	0.2254	0.3235	0.0018	0.6963

\*equal amounts of S supplied from the two sources

YLD: yield, PRO: Protein, TWT: test weight, MC: moisture