

On-Farm Fertilizer Comparison 2006-07  
Odberg Farm—Genesee, Idaho

Cooperator: Eric Odberg, Genesee, Idaho  
with: Larry J. Smith, UI/Nez Perce County Extension  
Guy Swanson  
Bob Brown

Planting and fertilize date: October 18, 2006

Treatment size: 510 feet wide x 278 feet long (each treatment 30' wide X 278' long)

Variety wheat: Declo hard red winter wheat at 85 pounds per acre

Harvest date: August 16, 2007

		Yield Average	T.W.	Protein
		bushels/acre	lb/bu	%
<b>Treatment 1</b>	NH <sub>3</sub> only in the deep band (total = <b>116 pounds N as NH<sub>3</sub></b> )			
	Rep 1	60	62.3	10.7
	Rep 2	81	63.0	10.3
	Rep 3	81	63.1	11.2
	<b>Average</b>	<b>74</b>	<b>62.8</b>	<b>10.73</b>
<b>Treatment 2</b>	NH <sub>3</sub> and ATS at standard rate in deep band (total = <b>125 pounds N plus 21 pounds S</b> )			
	Rep 1	70	62.7	10.7
	Rep 2	79	62.8	10.0
	Rep 3	81	63.3	10.6
	<b>Average</b>	<b>77</b>	<b>62.93</b>	<b>10.43</b>
<b>Treatment 3</b>	NH <sub>3</sub> and ATS at 1.5 times standard rate in the deep band (total = <b>129.8 pounds N plus 31.5 pounds S</b> )			
	Rep 1	65	62.5	10.6
	Rep 2	76	62.7	10.5
	Rep 3	81	61.6	10.8
	<b>Average</b>	<b>74</b>	<b>62.27</b>	<b>10.63</b>
<b>Treatment 4</b>	NH <sub>3</sub> at 20% less rate and ATS at standard rate (total = <b>93 pounds N plus 21.5 pounds S</b> )			
	Rep 1	70	63.1	10.0
	Rep 2	76	63.0	9.8
	Rep 3	78	62.8	10.1
	<b>Average</b>	<b>75</b>	<b>62.97</b>	<b>9.97</b>
<b>Treatment 5</b>	NH <sub>3</sub> at 50% less rate and ATS at standard rate (total = <b>58 pounds N plus 21 pounds S possible side dressing in spring</b> )			
	Rep 1	69	63.0	9.6
	Rep 2	73	63.0	9.5
	Rep 3	78	62.7	9.8
	<b>Average</b>	<b>73</b>	<b>62.9</b>	<b>9.63</b>
<b>Treatment 6</b> SIDE DRESS	NH <sub>3</sub> at 50% less rate and ATS at standard rate (total = <b>58 pounds N plus 21 pounds S plus spring top dressing of 50 lbs. N and 10 lbs. S</b> [spring top dressing made with drill application])			
	Rep 1	56	62.4	11.2
	Rep 2	65	62.8	10.4
	Rep 3	82	62.0	11.0
	<b>Average</b>	<b>68</b>	<b>62.4</b>	<b>10.87</b>

Treatments yielded a high of 82 bushels per acre on the west end of the plot and steadily decreased to a low of 56 bushels per acre on the east end. Yield decrease possibly reflected by soil moisture as harvest generally moved up hill from east to west, thus, possibly reflecting a soil moisture gradient impact upon yield.

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**Treatment 1:** NH<sub>3</sub> only in the deep band  
(total = 116 pounds N as NH<sub>3</sub>)

**Treatment 2:** NH<sub>3</sub> and ATS at standard rate in deep band  
116 pounds N as NH<sub>3</sub>—plus—9.2 pounds N—plus—21 pounds sulfur as Thiosul  
(total = 125 pounds N plus 21 pounds S)

**Treatment 3:** NH<sub>3</sub> and ATS at 1.5 times standard rate in the deep band  
116 pounds N as NH<sub>3</sub>—plus—13.8 pounds N—plus—31.5 pounds of S as Thiosul  
(total = 129.8 pounds N plus 31.5 pounds S)

**Treatment 4:** NH<sub>3</sub> at 20% less rate and ATS at standard rate  
93 pounds N as NH<sub>3</sub>—plus—21 pounds S as Thiosul  
(total = 93 pounds N plus 21.5 pounds S)

**Treatment 5:** NH<sub>3</sub> at 50% less rate and ATS at standard rate  
58 pounds NH<sub>3</sub>—plus—21 pounds S as Thiosul  
(total = 58 pounds N plus 21 pounds S)

**Treatment 6:** NH<sub>3</sub> at 50% less rate and ATS at standard rate  
SIDE DRESS (total = 58 pounds N plus 21 pounds S as Thiosul plus spring top dressing of 50 lbs. N and 10 lbs. S [spring top dressing made with drill application])

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East – (higher end of lot area)

T.W. lb/bu	Protein %	Yield bu/a	Treatment		
			Rep 1	278 feet	
62.4	11.2	56	Treatment 6 SIDE DRESS	NH <sub>3</sub> at 50% less rate and ATS at standard rate (total = 58 pounds N plus 21 pounds S plus spring top dressing of 50 lbs. N and 10 lbs. S [spring top dressing made with drill application])	1
62.8	10.4	65	Treatment 6 SIDE DRESS	NH <sub>3</sub> at 50% less rate and ATS at standard rate (total = 58 pounds N plus 21 pounds S plus spring top dressing of 50 lbs. N and 10 lbs. S [spring top dressing made with drill application])	2
62.3	10.7	60	Treatment 1:	NH <sub>3</sub> only in the deep band (total = <b>116 pounds N as NH<sub>3</sub></b> )	3
62.7	10.7	70	Treatment 2:	NH <sub>3</sub> and ATS at standard rate in deep band (total = <b>125 pounds N plus 21 pounds S</b> )	4
62.5	10.6	65	Treatment 3	NH <sub>3</sub> and ATS at 1.5 times standard rate in the deep band (total = <b>129.8 pounds N plus 31.5 pounds S</b> )	5
63.1	10.0	70	Treatment 4	NH <sub>3</sub> at 20% less rate and ATS at standard rate (total = <b>93 pounds N plus 21.5 pounds S</b> )	6
63.0	9.6	69	Treatment 5	NH <sub>3</sub> at 50% less rate and ATS at standard rate (total = <b>58 pounds N plus 21 pounds S possible side dressing in spring</b> )	7
			Rep 2		
62.7	10.5	76	Treatment 3	NH <sub>3</sub> and ATS at 1.5 times standard rate in the deep band (total = <b>129.8 pounds N plus 31.5 pounds S</b> )	8
63.0	9.8	76	Treatment 4	NH <sub>3</sub> at 20% less rate and ATS at standard rate (total = <b>93 pounds N plus 21.5 pounds S</b> )	9
63.0	9.5	73	Treatment 5	NH <sub>3</sub> at 50% less rate and ATS at standard rate (total = <b>58 pounds N plus 21 pounds S possible side dressing in spring</b> )	10
62.8	10.0	79	Treatment 2:	NH <sub>3</sub> and ATS at standard rate in deep band (total = <b>125 pounds N plus 21 pounds S</b> )	11
63.0	10.3	81	Treatment 1:	NH <sub>3</sub> only in the deep band (total = <b>116 pounds N as NH<sub>3</sub></b> )	12
			Rep 3		
62.8	10.1	78	Treatment 4	NH <sub>3</sub> at 20% less rate and ATS at standard rate (total = <b>93 pounds N plus 21.5 pounds S</b> )	13
62.7	9.8	78	Treatment 5	NH <sub>3</sub> at 50% less rate and ATS at standard rate (total = <b>58 pounds N plus 21 pounds S possible side dressing in spring</b> )	14
63.3	10.6	81	Treatment 2:	NH <sub>3</sub> and ATS at standard rate in deep band (total = <b>125 pounds N plus 21 pounds S</b> )	15
61.6	10.8	81	Treatment 3	NH <sub>3</sub> and ATS at 1.5 times standard rate in the deep band (total = <b>129.8 pounds N plus 31.5 pounds S</b> )	16
63.1	11.2	81	Treatment 1:	NH <sub>3</sub> only in the deep band (total = <b>116 pounds N as NH<sub>3</sub></b> )	17
62.0	11.0	82	Treatment 6: SIDE DRESS	NH <sub>3</sub> at 50% less rate and ATS at standard rate (total = 58 pounds N plus 21 pounds S plus spring top dressing of 50 lbs. N and 10 lbs. S [spring top dressing made with drill application])	18

West – (lower end of plot treatment)

Treatments yielded a high of 82 bushels per acre on the west end of the plot and steadily decreased to a low of 56 bushels per acre on the east end. Yield decrease possibly reflected by soil moisture as harvest generally moved up hill from east to west, thus, possibly reflecting a soil moisture gradient impact upon yield.