

February 2008

2007 FIELD PLOT SUMMARIES: Plant Disease & Fungicide Trials

Seed Treatments: Spring Wheat, Corn and Soybeans

Foliar Fungicides: Winter Wheat, Spring Wheat, Barley, Soybeans and Sunflower

Integrated Management: Spring Wheat and Barley

Cultural Management: Soybeans

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GROWTH STAGE GUIDES

Feekes Scale	Small Grains Description
1	First leaf through coleoptile
2	Main shoot and 1 tiller
3	Main shoot and 6 tillers
4-5	Pseudo stem erection
6	1st node detectable
7	2nd node detectable
8	Flag leaf just visible
9	Flag leaf collar just visible
10	Boots just swollen
10.1	First awns visible
10.2	1/4 of inflorescence emerged
10.3	1/2 of inflorescence emerged
10.4	3/4 of inflorescence emerged
10.5	Emergence of inflorescence completed
10.51	Beginning of anthesis
10.54	Kernel is watery ripe
11.1	Medium milk
11.2	Soft dough
11.3	Kernel is hard (difficult to divide by thumbnail)
11.4	Kernel is hard (can no longer be dented by thumbnail)

Growth Stage	Soybeans Description
VE	Emergence of young plants through the soil surface.
VC	The cotyledons are fully unfolded.
V1	The first node appears and the unifoliate leaves are fully developed.
V2	Two nodes on the main stem with fully developed leaves.
V3	Three nodes on the main stem
V4	Four nodes on the main stem
V5	Five nodes on the main stem
V6	Six nodes on the main stem
V7	Seven nodes on the main stem
R1	Beginning flower
R2	Full flower (bloom)
R3	Beginning pod
R4	Full pod
R5	Beginning seed
R6	Full seed
R7	Beginning maturity
R8	Full maturity

Corn	
Growth Stage	Description
VE	Emergence
V1	One leaf with collar visible
V2	Two leaves with collar visible
V(n)	(n) leaves with collar visible
VT	Tasseling
R1	Silking
R2	Blister
R3	Milk
R4	Dough
R5	Dent
R6	Maturity

2007 Field Plot Summaries: Plant Disease and Fungicide Trials

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Data contained in these pages are summarized from ongoing field trials aimed at evaluating and demonstrating the effects of fungicide seed treatments and foliar fungicides or cultural controls to inhibit plant diseases on various field crops. These data reflect variability due to site, weather and other factors and should be interpreted within the context of the particular study. Any questions about the studies or data should be directed to the authors.

Special thanks are extended to several projects at SDSU who were primarily responsible for the planting, maintenance and harvest of these plots. These individuals and projects include: Karl Glover and Jon Kleinjan (Spring Wheat Breeding), Amir Ibrahim and Steve Kalsbeck (Winter Wheat Breeding), Bruce Bleakley (Soil Microbiology and Biological Control), Michael Moechnig, Darrell Deneke, Dave Vos, and Jill Alms (Extension Weeds), Bob Hall and Kevin Kirby (Crop Performance Testing), and Jim Wilson (Extension Pesticide Education Coordinator). Additionally, we would like to thank Roger Rix (Groton, SD), Jared Bossly (Mansfield, SD), and Gary Erickson, County Extension Educator in N1 Field Extension Unit for their cooperation on various on-farm studies.

Most products in these trials are currently labeled for the particular use listed. However, some experimental compounds were used, as well as some applications not currently labeled on a particular crop where the timing or rate is different from that given on the label. The experimental uses included in these studies should not be considered as recommendations. Users should consult product labels with regards to information on intended uses, method of application, handling procedures, safety, preharvest and reentry intervals, and other important information.

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HARD RED WINTER WHEAT

HRWW Ducks Unlimited Foliar & FHB (Scab) Fungicide Trial

Andover, SD

Planted: September 21, 2006

Previous Crop: Spring Wheat

Sprayed: Feekes 10.5: May 31, 2007; Feekes 10.51: June 8, 2007

Results: The average untreated yield as compared to the average yield by variety across treatments suggests that fungicides were very useful in raising yield, even if specific pathogen ratings were inconsistent. Leaf rust and scab levels were low. Leaf rust occurred relatively late in the season, and fungicide applications timed for targeting either leaf rust or scab resulted in significant yield and economic gain, especially given high wheat prices.

Table of Variety Means

	Whole Plot Disease 0-9 6/29/2007	Total Leaf Disease % Leaf Area 6/29/2007	Leaf Rust % Leaf Area 6/29/2007	FHB Incidence % 6/29/2007	FHB Severity % 6/29/2007	FHB Severity Index 6/29/2007	Yield bu/ac 7/24/2007	Test Weight lb/bu	Protein %
Wesley	6.11	73.48	0.68	2.76	10.60	0.42	59.88	54.62	14.67
CDC Falcon	5.13	44.36	4.16	1.67	15.06	0.45	65.84	55.78	12.09
Jagalene	7.13	86.45	1.19	2.67	21.62	0.76	54.70	50.86	14.54
Expedition	6.14	61.43	0.98	1.13	7.38	0.17	65.57	58.47	12.35
F-LSD (P=0.05)	0.39	9.76	1.19	0.91	9.36	0.35	2.93	0.88	0.28

Table of Fungicide Means Across Varieties

Treatment Name	Rate	Unit	Growth Stage Feekes	Whole Plot Disease 0-9 6/29/2007	Total Leaf Disease % Leaf Area 6/29/2007	Leaf Rust % Leaf Area 6/29/2007	FHB Incidence % 6/29/2007	FHB Severity % 6/29/2007	FHB Severity Index 6/29/2007	Yield bu/ac 7/24/2007	Test Weight lb/bu	Protein %
Untreated				6.91	90.08	2.71	2.77	20.46	0.66	51.60	51.93	13.16
Headline	6	fl oz/A	10.5	6.17	67.75	2.27	2.33	13.81	0.56	65.07	54.31	13.90
Induce NIS	0.125	% V/V	10.5									
Quilt	10.5	fl oz/A	10.5	6.56	78.53	3.83	3.63	21.42	0.88	58.26	54.22	13.31
Prosaro	6.5	fl oz/A	10.51	5.94	56.06	1.20	1.63	15.53	0.39	60.67	54.86	13.33
Induce NIS	0.125	% V/V	10.51									
Headline	6	fl oz/A	10.5	5.50	61.48	0.27	1.67	8.79	0.23	68.58	55.16	14.18
Induce NIS	0.125	% V/V	10.5									
Prosaro	6.5	fl oz/A	10.51									
Induce NIS	0.125	% V/V	10.51									
Quilt	10.5	fl oz/A	10.5	5.52	46.26	0.39	0.75	3.94	0.09	65.44	57.27	13.43
Prosaro	6.5	fl oz/A	10.51									
Induce NIS	0.125	% V/V	10.51									
F-LSD (P=0.05)				0.48	11.95	1.46	1.12	11.46	0.43	3.59	1.08	0.34

HARD RED SPRING WHEAT

HRSW Seed Treatment Fungicide Trial I

Brookings, SD

Variety: Oxen HRS Wheat

Previous Crop: Spring Wheat

Planted: April 27, 2007

Results: The environment did not favor root diseases in 2007 at Brookings and no responses from treatments were noted.

Treatment Name	Rate	Rate Unit	Yield bu/A 8/13/2007	Test Weight lb/bu 8/13/2007	Protein %	Subcrown
						Internode 0-3
Untreated			42.16	51.73	14.40	1.78
Experimental A	3.07	fl oz/cwt	42.29	51.27	14.68	1.83
Thiram 42-S	1.92	fl oz/cwt				
Experimental A	3.07	fl oz/cwt	42.37	51.41	14.75	1.93
Thiram 42-S	3.30	fl oz/cwt				
Vincit F	3.07	fl oz/cwt	42.10	51.24	14.73	1.88
Vincit FS	3.07	fl oz/cwt	37.78	51.56	14.73	1.90
Raxil MD	5.00	fl oz/cwt	41.32	50.83	14.70	1.78
Experimental B	5.00	fl oz/cwt	43.79	52.13	14.33	1.93
Raxil MD	5.00	fl oz/cwt	44.04	51.56	14.53	2.00
Poncho 600	0.80	fl oz/cwt				
LSD (P=0.05)			3.35	NS	NS	NS

HRSW Seed Treatment Fungicide Trial I

NE Farm, South Shore, SD

Variety: Oxen

Previous Crop: Corn

Planted: April 27, 2007

Results: The environment did not favor root disease in 2007 at South Shore and no responses from the treatments were noted.

Treatment Name	Rate	Rate Unit	Yield bu/A 8/2/2007	Test Weight lb/bu 8/2/2007	Protein %	Subcrown
						Internode 0-3
Untreated			41.38	57.70	13.20	1.98
Experimental A	3.07	fl oz/cwt	45.79	56.91	13.50	1.74
Thiram 42-S	1.92	fl oz/cwt				
Experimental A	3.07	fl oz/cwt	44.28	58.00	13.08	1.80
Thiram 42-S	3.30	fl oz/cwt				
Vincit F	3.07	fl oz/cwt	45.46	58.23	13.13	1.62
Vincit FS	3.07	fl oz/cwt	44.17	57.93	13.03	1.53
Raxil MD	5.00	fl oz/cwt	46.56	57.97	13.40	1.70
Experimental B	5.00	fl oz/cwt	43.87	57.18	13.43	1.72
Raxil MD	5.00	fl oz/cwt	45.14	57.36	13.43	1.82
Poncho 600	0.80	fl oz/cwt				
LSD (P=0.05)			NS	NS	NS	NS

HRSW Seed Treatment Fungicide Trial II

Brookings, SD

Variety: Oxen HRS Wheat

Previous Crop: Spring Wheat

Planted: May 10, 2007

Results: The environment did not favor root disease in 2007 at Brookings and no responses from the treatments were noted.

Treatment Name	Rate	Rate Unit	Yield bu/A 8/13/2007	Test Weight lb/bu 8/13/2007	Protein %	Subcrown Internode 0-3
Untreated			38.00	51.48	13.79	2.29
AG 07005	5	fl oz/CWT	41.71	51.60	14.18	2.25
AG 07006	5	fl oz/CWT	45.13	52.88	13.95	2.15
AG 07007	5	fl oz/CWT	42.27	51.32	14.38	2.21
Incentive RTA	5	fl oz/CWT	42.92	50.87	14.65	2.00
Raxil MD	5	fl oz/CWT	41.64	52.31	13.83	2.13
LSD (P=0.05)			NS	NS	NS	NS

Varieties: Briggs and Forge

Previous Crop: Spring Wheat

Planted: May 10, 2007

Sprayed: Feekes 2: June 8, 2007; Feekes 8-9: June 19, 2007

Results: Briggs and Forge are paired for many spring wheat trials because of their differing disease resistance characteristics. Forge is more susceptible to leaf diseases such as tan spot and leaf rust than the more resistant Briggs. Those differences are apparent in the ratings below.

(See data on this and the following page)

Table of Variety Means

	Whole Plot Disease 0-9 7/20/2007	Total Leaf Disease % Leaf Area 7/20/2007	Leaf Rust % Leaf Area 7/20/2007	Yield bu/A 8/15/2007	Test Weight lb/bu	Protein %
Briggs	5.93	86.53	1.22	56.83	55.29	15.10
Forge	5.99	89.09	10.44	52.75	54.89	14.17
F-LSD (P=0.05)	NS	NS	1.83	1.98	NS	0.23

Results: On the facing page, many fungicides reduced total leaf diseases. However, reductions in leaf disease and increase in yield was maximized most often with later fungicide applications. Generally, this indicates late season disease development. Loss of leaf area after flowering has a smaller effect on yield than earlier onset leaf disease. A drought effect is also contributing to leaf dieback. This location also experienced heavy weed pressure in portions of the field which increased the plot to plot variability.

Table of Fungicide Means Across Varieties

Treatment Name	Rate		Growth Stage Feekes	Whole Plot Disease	Total Leaf Disease	Leaf Rust	Yield	Test Weight	Protein
	Rate	Unit		0-9 7/20/2007	% Leaf Area 7/20/2007	% Leaf Area 7/20/2007	bu/A 8/15/2007	lb/bu	%
Untreated				6.00	94.45	6.98	47.86	52.75	13.98
Stratego	5	fl oz/A	2	5.94	96.53	9.13	53.83	53.93	14.36
Stratego	10	fl oz/A	8-9	6.19	88.68	2.75	50.78	56.20	14.38
Experimental A	1.5	fl oz/A	2	6.06	93.88	8.33	54.41	54.53	14.80
Experimental A	2	fl oz/A	2	6.19	93.18	9.45	52.70	54.21	14.46
Experimental A	4	fl oz/A	8-9	6.13	75.65	0.38	57.29	56.37	14.89
Experimental A	5	fl oz/A	8-9	5.88	76.95	0.40	58.14	54.71	14.98
Prosaro 421 SC	6.5	fl oz/A	8-9	5.63	78.83	0.60	55.48	54.96	14.68
Induce NIS	0.125	% V/V	8-9						
Headline	3	fl oz/A	2	6.31	91.93	8.45	52.27	56.50	15.34
Induce NIS	0.125	% V/V	2						
Tilt	2	fl oz/A	2	6.06	95.85	10.85	50.94	54.15	14.60
Headline	6	fl oz/A	8-9	5.75	76.90	1.38	56.06	55.02	14.78
Induce NIS	0.125	% V/V	8-9						
Quilt	7	fl oz/A	2	6.13	98.58	7.28	55.51	51.49	14.90
Warrior	2.56	fl oz/A	2	5.81	96.60	10.83	63.88	56.95	14.61
Quilt	7	fl oz/A	2						
Warrior	2.56	fl oz/A	2	5.69	96.63	11.75	59.21	56.93	14.03
Tilt	2	fl oz/A	2						
Quilt	14	fl oz/A	8-9	5.69	64.10	1.68	53.85	56.88	14.91
Warrior	2.56	fl oz/A	8-9	6.13	91.58	8.40	50.98	56.00	14.55
Warrior	2.56	fl oz/A	8-9	5.81	82.45	0.58	58.28	54.96	14.64
Quilt	14	fl oz/A	8-9						
F-LSD (P=0.05)				0.39	15.27	5.34	5.76	2.95	0.67

Varieties: Briggs and Forge

Previous Crop: Corn

Planted: April 27, 2007

Sprayed: Feekes 2: June 7, 2007; Feekes 10.5: June 20,2007

Results: Briggs and Forge are paired for many spring wheat trials because of their differing disease resistance characteristics. Forge is more susceptible to leaf diseases such as tan spot and leaf rust than the more resistant Briggs. Those differences are apparent in the ratings below.

(See data on this and the following page)

Table of Variety Means

	Whole Plot Disease 0-9 7/19/2007	Total Leaf Disease % Leaf Area 7/19/2007	Leaf Rust % Leaf Area 7/19/2007	Yield bu/A 8/2/2007	Test Weight lb/bu	Protein %
Briggs	5.59	86.47	0.65	56.2	61.77	14.77
Forge	5.69	83.42	6.95	53.8	61.94	13.28
F-LSD (P=0.05)	NS	NS	1.07	1.46	NS	0.18

Results: On the facing page, while nearly all fungicides applied at varying crop stages reduced total leaf diseases, yield was increased most often with later fungicide applications. Generally, this indicates late season disease development. Loss of leaf area after flowering has a smaller effect on yield than earlier onset leaf disease. Treatments applied late in early development reduced disease best. A drought effect is also contributing to leaf dieback.

Table of Fungicide Means Across Varieties

Treatment Name	Rate	Rate Unit	Growth Stage Feekes	Whole Plot	Total	Leaf Rust % Leaf Area 7/19/2007	Yield bu/A 8/2/2007	Test Weight lb/bu	Protein %
				Disease 0-9 7/19/2007	Leaf Disease % Leaf Area 7/19/2007				
Untreated				5.75	96.78	4.88	48.84	61.14	13.15
Stratego	5	fl oz/A	2	5.75	92.05	5.83	50.94	61.90	14.04
Stratego	10	fl oz/A	8-9	5.50	80.90	2.78	53.00	61.87	13.95
Experimental A	1.5	fl oz/A	2	5.50	93.20	4.63	54.19	61.55	14.35
Experimental A	2	fl oz/A	2	5.69	93.85	5.58	56.58	61.87	14.08
Experimental A	4	fl oz/A	8-9	5.63	65.65	0.50	57.15	62.30	14.08
Experimental A	5	fl oz/A	8-9	5.81	64.90	0.18	55.90	62.13	14.41
Prosaro 421 SC	6.5	fl oz/A	8-9	5.50	83.78	3.03	55.18	62.42	13.93
Induce NIS	0.125	% V/V	8-9						
Headline	3	fl oz/A	2	6.19	98.85	3.15	54.35	61.05	14.03
Induce NIS	0.125	% V/V	2						
Tilt	2	fl oz/A	2	5.56	90.20	6.30	53.88	61.85	13.98
Headline	6	fl oz/A	8-9	5.69	75.00	2.28	53.84	61.90	13.91
Induce NIS	0.125	% V/V	8-9						
Quilt	7	fl oz/A	2	5.88	97.48	8.28	52.99	61.65	13.80
Warrior	2.56	fl oz/A	2	5.44	89.80	4.28	61.48	62.21	13.68
Quilt	7	fl oz/A	2						
Warrior	2.56	fl oz/A	2	5.25	91.83	6.90	62.00	62.40	14.16
Tilt	2	fl oz/A	2						
Quilt	14	fl oz/A	8-9	5.50	68.28	0.45	54.22	62.20	14.69
Warrior	2.56	fl oz/A	8-9	5.69	87.45	5.13	52.43	60.81	13.90
Warrior	2.56	fl oz/A	8-9	5.56	74.08	0.43	58.12	62.35	14.34
Quilt	14	fl oz/A	8-9						
F-LSD (P=0.05)				NS	13.90	3.12	4.27	0.75	0.53

Varieties: Briggs and Forge

Previous Crop: Corn

Planted: April 30, 2007

Sprayed: Feekes 2: June 15, 2007; Feekes 8-9: June 20, 2007

Results: Briggs and Forge are paired for SD spring wheat trials because of their differing disease resistance characteristics. Forge is more susceptible to leaf diseases such as tan spot and leaf rust than the more resistant Briggs. Those differences are apparent in the ratings below.

(See data on this and the following page)

Table of Variety Means

Treatment Name	Whole Plot Disease	Total Leaf Disease	Leaf Rust	Yield	Test Weight	Protein
	0-9 7/18/2007	% Leaf Area 7/18/2007	% Leaf Area 7/18/2007	bu/A 8/8/2007	lb/bu	%
Briggs	5.43	45.56	1.93	38.12	58.97	15.28
Forge	5.74	51.68	14.97	30.92	59.06	14.13
F-LSD (P=0.05)	0.23	NS	2.08	2.92	NS	0.3

Results: On the facing page, while nearly all fungicides applied at varying crop stages reduced total leaf diseases, yield was increased most often with later fungicide applications. Generally, this indicates late season disease development. Loss of leaf area after flowering has a smaller effect on yield than earlier onset leaf disease. In this test, the later applications corresponded most closely with development of significant fungal leaf disease. This plot was flooded shortly after planting and was exposed to moderate drought interspersed with infrequent, but heavy rainfalls. The rainfall events led to significant rain splash which resulted in severe bacterial leaf disease infections. These bacterial infections are not controlled by fungicide applications and resulted in significant loss of flag leaf area. Flooding reduced stand uniformity and added to plot to plot variability.

Table of Fungicide Means Across Varieties

Treatment	Rate	Unit	Growth Stage	Whole Plot Disease	Total Leaf Disease	Leaf Rust	Yield	Test Weight	Protein
Name	Rate	Unit	Feekes	0-9 7/18/2007	% Leaf Area 7/18/2007	% Leaf Area 7/18/2007	bu/A 8/8/2007	lb/bu	%
Untreated				6.13	73.90	12.25	28.65	58.00	14.06
Stratego	5	fl oz/A	2	6.00	56.35	12.63	28.27	59.12	14.09
Stratego	10	fl oz/A	9	6.00	50.95	8.50	29.23	59.71	14.51
Experimental A	1.5	fl oz/A	2	5.38	37.70	10.33	34.05	58.72	14.38
Experimental A	2	fl oz/A	2	5.75	40.65	11.80	30.52	58.73	14.99
Experimental A	4	fl oz/A	9	5.38	43.90	6.38	33.47	59.53	14.43
Experimental A	5	fl oz/A	9	5.25	36.78	1.98	36.41	60.07	15.00
Prosaro 421 SC	6.5	fl oz/A	9	5.63	26.03	4.65	29.85	57.96	15.61
Induce NIS	0.125	% V/V	9						
Headline	3	fl oz/A	2	6.00	74.03	10.30	34.44	59.31	14.58
Induce NIS	0.125	% V/V	2						
Tilt	2	fl oz/A	2	6.25	64.88	11.20	36.10	57.52	14.95
Headline	6	fl oz/A	8	4.63	27.83	5.20	44.03	59.33	15.11
Induce NIS	0.125	% V/V	8						
Quilt	7	fl oz/A	2	5.38	45.70	9.83	31.59	59.94	14.95
Warrior	2.56	fl oz/A	2	5.75	46.10	11.45	32.84	58.35	14.75
Quilt	7	fl oz/A	2						
Warrior	2.56	fl oz/A	2	5.75	68.83	10.25	40.96	59.83	14.63
Tilt	2	fl oz/A	2						
Quilt	14	fl oz/A	8	4.75	24.00	1.28	42.40	58.95	14.93
Warrior	2.56	fl oz/A	8	6.00	78.88	11.45	35.82	58.75	14.13
Warrior	2.56	fl oz/A	8	4.88	30.08	4.15	38.25	59.43	14.89
Quilt	14	fl oz/A	8						
F-LSD (P=0.05)				0.66	23.96	6.07	8.52	1.36	0.86

HRSW FHB (Scab) Fungicide Trial

Brookings, SD

Varieties: Briggs and Forge

Previous Crop: Corn

Planted: May 10, 2007

Sprayed: Feekes 2: June 8, 2007; Feekes 10.5: June 22, 2007; Feekes 10.51: June 28, 2007

Results: Briggs and Forge are paired for many spring wheat trials because of their differing disease resistance characteristics. Forge is more susceptible to leaf diseases such as tan spot and leaf rust, while Briggs is more susceptible to Fusarium head blight (scab) than Forge. Unfavorable environmental conditions for disease development this year (drought) reduced or nearly eliminated varietal differences in FHB ratings.

(See data on this and the following page)

Table of Variety Means

	Whole Plot	Total Leaf		FHB	FHB	FHB		Test			
	Disease	Disease	Leaf Rust	Incidence	Severity	Severity	Yield	Weight	Protein	FDK	DON
	0-9	% Leaf	% Leaf	%	%	%	bu/A	lb/bu	%	%	PPM
	7/23/2007	% Leaf	% Leaf	7/23/2007	7/23/2007	7/23/2007	8/13/2007				
	7/23/2007	Area	Area	7/23/2007	7/23/2007	7/23/2007	8/13/2007				
Briggs	8.17	55.12	0.41	1.62	13.43	0.39	39.25	58.82	13.79	0.74	0.00
Forge	8.08	65.25	6.39	1.07	11.38	0.34	39.76	58.76	13.08	0.87	0.00
F-LSD (P=0.10)	NS	5.58	0.81	0.49	NS	NS	NS	NS	0.34	0.12	NS

Results: On the facing page, nearly all fungicides applied at varying crop stages reduced total leaf diseases and increased yield. Generally, this indicates late season disease development. Loss of leaf area after flowering has a smaller effect on yield than earlier onset leaf disease. A drought effect is also contributing to leaf dieback. Yield effects are clearly tied to suppression of leaf disease. FHB levels were very low due to severe drought and statistical differences among treatments were only seen for FHB severity, while incidence and disease index ratings were non-significant.

Table of Fungicide Means Across Varieties

Treatment Name	Rate	Rate Unit	Growth Stage Feekees	Whole Plot	Total	Leaf	FHB	FHB	FHB	Yield bu/A	Test			
				Disease 0-9 7/23/2007	Leaf Disease % Leaf Area 7/23/2007	Rust % Leaf Area 7/23/2007	Incidence % 7/23/2007	Severity % 7/23/2007	Severity Index % 7/23/2007		Weight lb/bu	Protein %	FDK %	DON PPM
Untreated				8.42	91.02	6.38	1.67	26.82	0.72	28.73	56.61	13.38	1.17	0.00
Folicur	4	fl oz/A	10.51	8.67	68.78	0.62	2.17	16.24	0.48	34.97	57.13	13.60	0.92	0.00
Induce NIS	0.125	% V/V	10.51											
Prosaro	6.5	fl oz/A	10.51	8.33	56.42	1.18	0.33	1.96	0.08	39.88	58.96	13.38	0.67	0.00
Induce NIS	0.125	% V/V	10.51											
Caramba	13.5	fl oz/A	10.51	8.13	51.60	0.40	0.50	4.71	0.18	39.97	59.01	13.61	0.58	0.00
Induce NIS	0.125	% V/V	10.51											
Topguard	14	fl oz/A	10.51	8.13	69.92	5.45	1.17	21.21	0.50	40.99	59.44	12.97	1.00	0.00
Induce NIS			10.51											
Proline	5	fl oz/A	10.51	8.00	47.38	4.58	0.50	1.46	0.05	40.95	59.58	12.57	0.67	0.00
Induce NIS	0.125	% V/V	10.51											
Tilt	4	fl oz/A	10.51	8.00	58.58	5.13	1.33	11.63	0.35	39.05	59.07	13.40	0.75	0.00
Induce NIS	0.125	% V/V	10.51											
Laredo	7	fl oz/A	10.51	8.08	81.58	7.37	1.67	22.19	0.56	37.37	58.29	13.51	0.67	0.00
Induce NIS	0.125	% V/V	10.51											
Headline	3	fl oz/A	2	7.92	39.82	0.45	1.50	19.04	0.58	45.85	59.92	13.84	0.83	0.00
Induce NIS	0.125	% V/V	2											
Caramba	13.5	fl oz/A	10.51											
Induce NIS	0.125	% V/V	10.51											
Headline	3	fl oz/A	2	7.75	35.85	0.84	2.17	6.71	0.22	43.57	59.32	14.43	0.92	0.00
Induce NIS	0.125	% V/V	2											
Folicur	4	fl oz/A	10.51											
Induce NIS	0.125	% V/V	10.51											
Stratego	4	fl oz/A	2	8.00	44.35	1.15	1.00	9.33	0.35	43.87	59.62	13.38	0.58	0.00
Prosaro	6.5	fl oz/A	10.51											
Induce NIS	0.125	% V/V	10.51											
Experimental A	1.5	fl oz/A	2	8.08	49.88	0.80	1.17	12.29	0.35	42.26	59.31	13.70	0.67	0.00
Prosaro	6.5	fl oz/A	10.51											
Induce NIS	0.125	% V/V	10.51											
Warrior	2.56	fl oz/A	10.5	8.00	87.87	10.72	2.33	9.78	0.40	34.48	57.41	13.45	1.09	0.00
Punch	6	fl oz/A	10.51	8.29	59.50	2.57	1.33	10.29	0.29	41.18	59.44	12.89	0.75	0.00
Induce NIS	0.125	% V/V	10.51											
F-LSD (P=0.10)				0.26	14.76	2.15	NS	14.00	NS	5.61	1.02	NS	0.31	NS

HRSW FHB (Scab) Fungicide Trial

NE Farm, South Shore, SD

Varieties: Briggs and Forge

Previous Crop: Corn

Planted: April 27, 2007

Sprayed: Feekes 2: June 7, 2007; Feekes 10.5: June 22, 2007; Feekes 10.51: June 27, 2007

(See data on this and the following page)

Results: Briggs and Forge are paired for many spring wheat trials because of their differing disease resistance characteristics. Forge is more susceptible to leaf diseases such as tan spot and leaf rust, while Briggs is more susceptible to Fusarium head blight (scab) than Forge. Those differences are apparent in the ratings below. Under unfavorable environments for Fusarium head blight, the varieties are similar for Fusarium head blight.

Table of Variety Means

	Whole Plot Disease 0-9 7/19/2007	Total Leaf Disease % Leaf Area 7/19/2007	Leaf Rust % Leaf Area 7/19/2007	Yield bu/A 8/3/2007	Test Weight lb/bu	Protein %	FDK %	DON PPM
Briggs	5.67	76.34	0.42	55.83	61.58	14.80	0.27	0.00
Forge	5.86	74.91	2.70	52.06	61.40	13.27	0.63	0.06
F-LSD (P=0.10)	0.12	NS	0.35	1.08	NS	0.1	0.11	0.02

Results: On the facing page, nearly all fungicides applied reduced total leaf diseases and leaf rust significantly, and increased yield. FHB was only minimally present as can be seen by FDK (Fusarium Damaged Kernels) ratings. However, FHB was not visually apparent in the plots when rated. Therefore, no field ratings are included in the data tables. Many FHB fungicides are effective at controlling leaf rust, and in this test, the late flowering application timing (Feekes 10.51) corresponded to development of leaf rust. These treatments provided a significant reduction in leaf rust.

Table of Fungicide Means Across Varieties

Treatment Name	Rate	Rate Unit	Growth Stage Feekees	Whole Plot	Total	Leaf Rust	Yield	Test	Protein %	FDK %	DON PPM
				Disease 0-9 7/19/2007	Leaf Disease % Leaf Area 7/19/2007	% Leaf Area 7/19/2007	bu/A 8/3/2007	Weight lb/bu			
Untreated				5.71	93.02	5.27	48.73	60.53	13.60	0.75	0.23
Folicur	4	fl oz/A	10.51	5.75	82.12	0.62	53.61	61.90	13.85	0.67	0.00
Induce NIS	0.125	% V/V	10.51								
Prosaro	6.5	fl oz/A	10.51	5.92	68.18	0.50	53.82	61.78	14.10	0.17	0.00
Induce NIS	0.125	% V/V	10.51								
Caramba	13.5	fl oz/A	10.51	5.54	78.08	0.47	53.45	61.20	14.10	0.42	0.00
Induce NIS	0.125	% V/V	10.51								
Topguard	14	fl oz/A	10.51	5.75	83.62	1.87	52.14	62.24	13.73	0.75	0.00
Induce NIS			10.51								
Proline	5	fl oz/A	10.51	5.71	70.60	1.53	54.86	61.75	14.03	0.50	0.05
Induce NIS	0.125	% V/V	10.51								
Tilt	4	fl oz/A	10.51	5.63	73.40	1.68	51.35	61.50	13.96	0.58	0.00
Induce NIS	0.125	% V/V	10.51								
Laredo	7	fl oz/A	10.51	5.88	76.08	3.25	51.81	61.03	13.88	0.58	0.04
Induce NIS	0.125	% V/V	10.51								
Headline	3	fl oz/A	2	5.88	67.30	0.38	57.59	61.50	14.41	0.08	0.00
Induce NIS	0.125	% V/V	2								
Caramba	13.5	fl oz/A	10.51								
Induce NIS	0.125	% V/V	10.51								
Headline	3	fl oz/A	2	5.71	69.18	0.22	57.67	61.82	14.30	0.33	0.00
Induce NIS	0.125	% V/V	2								
Folicur	4	fl oz/A	10.51								
Induce NIS	0.125	% V/V	10.51								
Stratego	4	fl oz/A	2	5.79	63.97	0.38	56.56	61.88	14.52	0.25	0.00
Prosaro	6.5	fl oz/A	10.51								
Induce NIS	0.125	% V/V	10.51								
Experimental A	1.5	fl oz/A	2	5.50	59.63	0.17	58.35	61.61	14.47	0.50	0.00
Prosaro	6.5	fl oz/A	10.51								
Induce NIS	0.125	% V/V	10.51								
Warrior	2.56	fl oz/A	10.5	5.71	96.53	4.77	51.17	60.38	13.63	0.50	0.09
Punch	6	fl oz/A	10.51	5.79	77.02	0.70	54.21	61.68	13.91	0.25	0.00
Induce NIS	0.125	% V/V	10.51								
F-LSD (P=0.10)				NS	13.29	0.94	2.87	0.59	0.27	0.29	0.06

Varieties: Briggs and Forge

Previous Crop: Corn

Planted: April 30, 2007

Sprayed: Feekes 3-4: June 15, 2007; Feekes 10.51: June 27, 2007

Results: Briggs and Forge are paired for SD spring wheat trials because of their differing disease resistance characteristics. Forge is more susceptible to leaf diseases such as tan spot and leaf rust than the more resistant Briggs, while Briggs is more susceptible to Fusarium head blight (scab) than Forge. Unfavorable environmental conditions for disease development this year (drought) reduced or nearly eliminated varietal differences in FHB ratings.

(See data on this and the following page)

Table of Variety Means

	Whole Plot Disease 0-9 7/18/2007	Total Leaf Disease % Leaf Area 7/18/2007	Leaf Rust % Leaf Area 7/18/2007	FHB Incidence % 7/18/2007	FHB Severity % 7/18/2007	FHB Severity Index % 7/18/2007	Yield bu/A 8/8/2007	Test Weight lb/bu	Protein %	FDK %	DON PPM
Briggs	4.73	48.68	0.33	0.18	3.68	0.07	41.76	59.76	13.95	0.42	0.01
Forge	4.67	36.04	3.81	0.54	3.38	0.07	33.63	59.96	12.99	0.30	0.01
F-LSD (P=0.10)	NS	5.47	0.58	0.21	NS	NS	1.82	NS	0.33	NS	NS

Results: On the facing page, while all fungicides applied reduced total leaf diseases and leaf rust significantly, yield data was inconsistent. FHB was only minimally present and no differences were found among trial treatments. Many FHB fungicides are effective at controlling leaf rust, and in this test, the early flowering application timing (Feekes 10.51) corresponded to development of leaf rust. These treatments provided a significant reduction in leaf rust. This plot was flooded shortly after planting and was exposed to moderate drought interspersed with infrequent, but heavy rainfalls. The rainfall events led to significant rain splash which resulted in severe bacterial leaf disease infections. These bacterial infections are not controlled by fungicide applications and resulted in significant loss of flag leaf area. Flooding reduced stand uniformity and added to plot to plot variability.

Table of Fungicide Means Across Varieties

Treatment Name	Rate	Rate Unit	Growth Stage	Whole Plot	Total	Leaf Rust	FHB	FHB	FHB	Yield	Test			
				Disease 0-9	Leaf Disease % Leaf Area	% Leaf Area	Incidence %	Severity %	Severity Index %		bu/A	Weight lb/bu	Protein %	FDK %
Name	Rate	Unit	Feekes	7/18/2007	7/18/2007	7/18/2007	7/18/2007	7/18/2007	7/18/2007	8/8/2007				
Untreated				5.42	90.18	8.68	0.50	7.13	0.14	35.53	58.90	13.36	0.42	0.00
Folicur	4	fl oz/A	10.51	4.67	31.90	0.23	0.25	12.50	0.25	39.53	60.25	13.72	0.42	0.00
Induce NIS	0.125	% V/V	10.51											
Prosaro	6.5	fl oz/A	10.51	4.75	33.85	0.03	0.50	0.88	0.04	37.56	60.10	13.92	0.17	0.00
Induce NIS	0.125	% V/V	10.51											
Caramba	13.5	fl oz/A	10.51	4.67	34.52	0.27	0.25	0.88	0.02	35.23	59.61	14.15	0.42	0.00
Induce NIS	0.125	% V/V	10.51											
Topguard	14	fl oz/A	10.51	4.42	41.60	1.22	0.00	0.00	0.00	33.93	59.99	13.93	0.50	0.00
Induce NIS			10.51											
Proline	5	fl oz/A	10.51	3.92	25.13	1.17	0.50	1.75	0.04	37.17	59.91	13.36	0.42	0.04
Induce NIS	0.125	% V/V	10.51											
Tilt	4	fl oz/A	10.51	4.50	19.77	0.58	1.00	13.25	0.27	33.74	59.85	13.82	0.36	0.06
Induce NIS	0.125	% V/V	10.51											
Laredo	7	fl oz/A	10.51	4.92	50.63	3.08	0.50	1.31	0.05	42.78	59.69	13.45	0.33	0.00
Induce NIS	0.125	% V/V	10.51											
Headline	3	fl oz/A	2	4.50	30.98	0.00	0.00	0.00	0.00	41.26	60.17	12.92	0.33	0.00
Induce NIS	0.125	% V/V	2											
Caramba	13.5	fl oz/A	10.51											
Induce NIS	0.125	% V/V	10.51											
Headline	3	fl oz/A	2	4.42	27.25	0.08	0.00	0.00	0.00	42.82	60.43	12.63	0.08	0.00
Induce NIS	0.125	% V/V	2											
Folicur	4	fl oz/A	10.51											
Induce NIS	0.125	% V/V	10.51											
Stratego	4	fl oz/A	2	4.42	34.82	0.13	0.00	0.00	0.00	36.50	60.36	13.80	0.58	0.00
Prosaro	6.5	fl oz/A	10.51											
Induce NIS	0.125	% V/V	10.51											
Experimental A	1.5	fl oz/A	2	4.67	37.30	0.10	0.25	0.88	0.02	43.03	59.98	13.68	0.25	0.00
Prosaro	6.5	fl oz/A	10.51											
Induce NIS	0.125	% V/V	10.51											
Warrior	2.56	fl oz/A	10.5	5.17	77.83	10.48	0.50	1.75	0.04	33.89	58.97	12.53	0.42	0.00
Punch	6	fl oz/A	10.51	5.33	57.30	2.90	0.75	9.13	0.18	34.79	59.85	13.35	0.33	0.00
Induce NIS	0.125	% V/V	10.51											
F-LSD (P=0.10)				0.48	14.48	1.54	NS	NS	NS	4.81	0.58	0.87	NS	NS

Varieties: Briggs, Freyr, Traverse, Oxen

Previous Crop: Spring Wheat

Planted: May 10, 2007

Sprayed: Feekes 10.51: June 28, 2007

Results: The goal in this study is to combine the effects of choosing the most FHB and leaf disease resistant variety and the best available FHB fungicide (Prosaro). Varietal differences in total leaf disease were very evident (Variety Means Table). Scab fungicides often provide significant suppression of foliar diseases especially if foliar diseases, such as leaf rust, develop late in the season. Late development of leaf rust was seen at this location in 2007 and the application of Prosaro provided marked improvement in leaf rust for all varieties. Numerically, the lowest increase in overall leaf health ratings was seen with the variety Briggs. Likewise, the greatest improvement in leaf health (total leaf disease and leaf rust) was seen with Oxen, which has the lowest leaf rust resistance among the varieties tested. FHB failed to develop in the plot due to the dry environmental conditions. Yield differences were significant among varieties (Variety Means Table), but not when comparing fungicide versus non fungicide treatments.

(See data on this and the following page)

Table of Variety Means

	Whole Plot Disease 0-9 7/20/2007	Total Leaf Disease % Leaf Area 7/20/2007	Leaf Rust % Leaf Area 7/20/2007	Yield bu/A 8/15/2007	Test Weight lb/bu	Protein %	FDK %	DON ppm
Briggs	5.50	42.20	0.15	61.05	57.24	14.76	0.00	0.00
Freyr	5.42	43.32	0.97	50.96	57.03	14.12	0.00	0.00
Traverse	5.63	57.55	2.07	59.66	55.12	13.60	0.08	0.00
Oxen	6.04	75.68	1.98	53.69	54.92	13.90	0.42	0.00
F-LSD (P=0.10)	0.28	9.75	0.90	2.13	0.81	0.49	0.21	NS

Table of Fungicide Means Across Varieties

Treatment Name	Rate	Unit	Whole Plot Disease 0-9 7/20/2007	Total Leaf Disease % Leaf Area 7/20/2007	Leaf Rust % Leaf Area 7/20/2007	Yield bu/A 8/15/2007	Test Weight lb/bu	Protein %	FDK %	DON ppm
Untreated			5.90	66.76	2.53	55.24	55.24	14.10	0.17	0.00
Prosaro	6.5	fl oz/A	5.40	42.62	0.06	57.44	56.91	14.08	0.08	0.00
Induce NIS	0.125	% V/V								
F-LSD (P=0.10)			0.20	6.90	0.64	1.51	0.57	NS	NS	NS

Table of Varieties and Fungicide Means

Varieties & Treatment			Whole Plot	Total Leaf Disease	Leaf Rust	Yield	Test Weight	Protein	FDK	DON
Name	Rate	Rate Unit	Disease 0-9 7/20/2007	% Leaf Area 7/20/2007	% Leaf Area 7/20/2007	bu/A 8/15/2007	lb/bu	%	%	ppm
Briggs Untreated			5.58	38.93	0.30	60.99	56.30	15.03	0.00	0.00
Freyr Untreated			5.67	52.27	1.77	49.44	56.84	13.85	0.00	0.00
Traverse Untreated			5.83	76.57	4.07	58.59	54.50	13.65	0.17	0.00
Oxen Untreated			6.50	99.27	3.97	51.92	53.32	13.88	0.50	0.00
Briggs Prosaro	6.5	fl oz/A	5.42	45.47	0.00	61.11	58.18	14.48	0.00	0.00
Induce NIS	0.125	% V/V								
Freyr Prosaro	6.5	fl oz/A	5.17	34.37	0.17	52.48	57.22	14.38	0.00	0.00
Induce NIS	0.125	% V/V								
Traverse Prosaro	6.5	fl oz/A	5.42	38.53	0.07	60.74	55.75	13.55	0.00	0.00
Induce NIS	0.125	% V/V								
Oxen Prosaro	6.5	fl oz/A	5.58	52.10	0.00	55.45	56.51	13.92	0.33	0.00
Induce NIS	0.125	% V/V								
F-LSD (P=0.10)			NS	13.79	1.28	NS	1.15	NS	NS	NS

HRSW FHB (Scab) Bio-Control Fungicide Trial

Brookings, SD

Variety: Briggs

Previous Crop: Spring Wheat

Planted: May 10, 2007

Sprayed: Feekes 10.51: June 28, 2007

Results: Disease pressure was very low at this site due to environmental factors even in the presence of additional inoculum.

Treatment Name	Rate	Rate Unit	FHB	FHB	FHB	Yield bu/A	Test			
			Incidence %	Severity %	Disease Index %		Weight lb/bu	Protein %	FDK %	DON ppm
			7/23/2007	7/23/2007	7/23/2007	8/13/2007				
Untreated			2.00	45.38	1.15	52.20	59.03	16.10	1.25	0.00
Prosaro	6.5	fl oz/A	1.00	16.63	0.67	48.98	59.07	15.67	0.50	0.00
Induce NIS	0.125	% V/V								
TrigoCor 1448			1.00	37.50	0.75	49.25	58.25	15.98	1.00	0.00
TrigoCor 1448			0.50	22.50	0.45	48.04	58.78	15.75	0.75	0.00
Prosaro	6.5	fl oz/A								
Induce NIS	0.125	% V/V								
1BA			2.50	12.42	0.61	45.49	58.40	15.85	0.75	0.00
1BA			1.50	11.75	0.31	52.91	58.16	15.95	0.50	0.00
Prosaro	6.5	fl oz/A								
Induce NIS	0.125	% V/V								
C3			1.00	26.75	0.54	52.27	58.27	15.75	0.75	0.00
C3			1.00	5.00	0.20	53.88	58.73	15.75	0.75	0.00
Prosaro	6.5	fl oz/A								
Induce NIS	0.125	% V/V								
F-LSD (P=0.10)			NS	NS	NS	NS	NS	NS	NS	NS

BARLEY

Variety: Robust

Previous Crop: Spring Wheat

Planted: May 10, 2007

Sprayed: Feekes 10.51: June 28, 2007

Results: In this trial, in 2007, leaf diseases were moderately significant. FHB incidence was fairly high, but at relatively low severities. The top fungicide products (Prosaro, Proline and Caramba) all reduced FHB incidence when compared to the untreated check. No biocontrol fungicide products provided significant control of FHB. Combining a biocontrol agent, such as TrigoCorr 1448 or 1BA with the best scab fungicide available (Prosaro) may hold promise for improved control of FHB. However, no treatment increased yield as compared to the untreated check.

Treatment Name	Rate	Rate Unit	Whole Plot	FHB	FHB	FHB	Yield	Test	Protein	DON
			Disease 0-9	Incidence %	Severity %	Disease Index %				
			7/20/2007	7/20/2007	7/20/2007	7/20/2007	8/3/2007	lb/bu	%	ppm
Untreated			5.50	79.50	6.06	4.88	70.36	37.63	13.98	0.00
Folicur	4	fl oz/A	5.50	71.00	6.00	4.36	73.57	38.37	13.10	0.00
Induce NIS	0.125	% V/V								
Prosaro	6.5	fl oz/A	5.25	64.00	7.03	4.63	76.26	38.94	13.23	0.15
Induce NIS	0.125	% V/V								
Caramba	13.5	fl oz/A	5.50	60.00	5.92	3.47	72.62	40.64	13.50	0.00
Induce NIS	0.125	% V/V								
Topguard	14	fl oz/A	5.75	72.50	6.48	4.64	70.42	39.65	13.33	0.00
Induce NIS										
ProLine	5	fl oz/A	5.50	58.50	4.83	2.88	73.80	38.98	13.33	0.00
Induce NIS	0.125	% V/V								
Tilt	4	fl oz/A	5.75	64.50	5.73	3.68	78.45	37.85	13.28	0.00
TrigoCor 1448			5.50	80.50	6.01	4.88	72.34	37.58	13.10	0.00
TrigoCor 1448			5.50	53.50	4.37	2.32	75.13	37.02	13.38	0.00
Prosaro	6.5	fl oz/A								
Induce NIS	0.125	% V/V								
1BA			5.25	67.50	5.42	3.77	74.51	41.65	13.43	0.15
1BA			5.50	61.00	4.65	2.85	75.72	38.91	12.78	0.00
Prosaro	6.5	fl oz/A								
Induce NIS	0.125	% V/V								
C3			5.75	75.50	6.89	5.19	71.19	40.37	13.58	0.00
C3			5.00	73.00	7.06	5.27	76.14	39.97	12.85	0.00
Prosaro	6.5	fl oz/A								
Induce NIS	0.125	% V/V								
F-LSD (P=0.10)			NS	14.46	NS	1.64	NS	NS	NS	NS

Barley FHB (Scab) Integrated Management Trial

Brookings, SD

Variety: Robust, M122

Previous Crop: Spring Wheat

Planted: May 10, 2007

Sprayed: Feekes 10.51: June 28, 2007

Results: The goal in this study is to combine the effects of choosing the most FHB and leaf disease resistant variety and the best available FHB fungicide (Prosaro). FHB incidence was moderate, but at relatively low severities. Yield differences were significant among varieties (Table of Variety Means), but not when comparing fungicide versus non fungicide treatments.

Table of Variety Means

	Whole Plot Disease 0-9 7/20/2007	Total Leaf Disease % Leaf Area 7/20/2007	Leaf Rust % Leaf Area 7/20/2007	FHB Incidence % 7/20/2007	FHB Severity % 7/20/2007	FHB Disease Index % 7/20/2007	Yield bu/A 8/3/2007	Test Weight lb/bu	Protein %	DON ppm
Robust	6.88	81.68	1.55	49.25	5.57	3.03	74.15	40.94	12.83	0.00
M122	7.13	84.78	0.38	26.25	4.09	1.20	81.02	41.62	12.33	0.00
F-LSD(P=0.10)	NS	NS	NS	11.26	1.14	0.88	5.19	NS	0.29	NS

Table of Fungicide Means

Treatment Name	Rate	Unit	Whole Plot Disease 0-9 7/20/2007	Total Leaf Disease % Leaf Area 7/20/2007	Leaf Rust % Leaf Area 7/20/2007	FHB Incidence % 7/20/2007	FHB Severity % 7/20/2007	FHB Disease Index % 7/20/2007	Yield bu/A 8/3/2007	Test Weight lb/bu	Protein %	DON ppm
Untreated			7.38	90.28	1.80	37.50	4.84	2.18	78.53	41.28	12.50	0.00
Prosaro	6.5	fl oz/A	6.63	76.18	0.13	38.00	4.81	2.05	76.64	41.28	12.65	0.00
Induce NIS	0.125	% V/V										
F-LSD(P=0.10)			0.53	NS	NS	NS	NS	NS	NS	NS	NS	NS

Table of Varieties and Fungicide Means

Variety & Treatment Name	Rate		Whole Plot Disease	Total Leaf Disease	Leaf Rust	FHB Incidence	FHB Severity	FHB Disease Index	Yield	Test Weight	Protein	DON
	Rate	Unit	0-9 7/20/2007	% Leaf Area 7/20/2007	% Leaf Area 7/20/2007	% 7/20/2007	% 7/20/2007	% 7/20/2007	bu/A 8/3/2007	lb/bu	%	ppm
Robust Untreated			7.25	85.85	3.00	52.00	5.32	3.19	75.32	40.84	12.75	0.00
M122 Untreated			7.50	94.70	0.60	23.00	4.36	1.16	81.75	41.72	12.25	0.00
Robust Prosaro	6.5	fl oz/A	6.50	77.50	0.10	46.50	5.82	2.87	72.99	41.04	12.90	0.00
Induce NIS	0.125	% V/V										
M122 Prosaro	6.5	fl oz/A	6.75	74.85	0.15	29.50	3.81	1.23	80.30	41.53	12.40	0.00
Induce NIS	0.125	% V/V										
F-LSD(P=0.10)			NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

CORN

Corn Seed Treatment Trial

Brookings, SD

Variety: 244RRx273Bt

Previous Crop: Spring Wheat

Planted: May 16, 2007

Results: Under the environment of 2007, conditions did not favor root diseases. No treatments showed significant differences as compared to the untreated seed planted in mid May.

Treatment Name	Rate	Rate Unit	Emergence	1 Leaf Stage	Harvest	1 Leaf Stage	Yield	Test	Moisture
			Stand Counts	Stand Counts	Stand Counts	Height		Weight	
			Plants/A	Plants/A	Plants/A	cm	bu/A	lb/bu	%
			6/19/2007	7/2/2007	9/27/2007	7/2/2007	10/31/2007	10/31/2007	10/31/2007
Untreated			28,024.00	27,878.40	25,700.40	93.25	159.61	59.75	21.05
Allegiance FL	9.43	ml/100kg	25,700.00	25,264.80	23,812.80	84.83	147.78	60.45	21.75
Experimental A	12.5	ml/100kg	27,588.00	27,588.00	23,812.80	91.33	161.65	60.66	21.15
Allegiance FL	9.43	ml/100kg							
Experimental A	25	ml/100kg	27,733.00	25,555.20	24,974.40	84.58	145.88	60.55	21.33
Allegiance FL	9.43	ml/100kg							
Experimental B	10	ml/100kg	33,686.00	30,056.40	28,749.60	94.17	173.64	60.50	20.88
Allegiance FL	9.43	ml/100kg							
Experimental A	25	ml/100kg	26,717.00	26,426.40	25,410.00	86.08	156.30	60.23	21.85
Maxim XL	10.8	ml/100kg							
Apron XL	2.78	ml/100kg							
Experimental A	25	ml/100kg	30,347.00	30,927.60	27,878.40	96.25	166.40	60.66	21.15
Experimental B	10	ml/100kg							
Allegiance FL	9.43	ml/100kg							
Maxim XL	10.8	ml/100kg	29,766.00	29,766.00	27,588.00	95.58	153.38	61.41	21.08
Dynasty	10	ml/100kg							
Apron XL	2.78	ml/100kg							
F-LSD (P=0.05)			4,398.00	3,953.89	NS	NS	NS	NS	NS

Corn Seed Treatment Trial

SE Farm, Beresford, SD

Variety: 244RRx273Bt

Previous Crop: Soybeans

Planted: May 17, 2007

Results: Under the environment of 2007, conditions did not favor root diseases. No treatments showed significant differences as compared to the untreated seed planted in mid May.

Treatment Name	Rate	Rate Unit	Emergence	1 Leaf Stage	Harvest	1 Leaf Stage	Yield	Test	
			Stand Counts Plants/A 6/21/2007	Stand Counts Plants/A 7/4/2007	Stand Counts Plants/A 10/10/2007	Height cm 7/4/2007		Weight lb/bu 10/30/2007	Moisture % 10/30/2007
Untreated			29,621.00	29,911.20	30,201.60	85.33	132.95	58.50	16.73
Allegiance FL	9.43	ml/100kg	27,152.00	27,878.40	27,878.40	85.92	126.67	58.62	16.68
Experimental A	12.5	ml/100kg	28,314.00	27,733.20	28,749.60	86.25	130.94	58.30	16.78
Allegiance FL	9.43	ml/100kg							
Experimental A	25	ml/100kg	30,347.00	29,911.20	29,620.80	88.42	129.25	58.79	16.55
Allegiance FL	9.43	ml/100kg							
Experimental B	10	ml/100kg	28,750.00	29,185.20	30,346.80	89.00	141.67	58.57	16.73
Allegiance FL	9.43	ml/100kg							
Experimental A	25	ml/100kg	29,330.00	29,475.60	29,475.60	83.08	135.60	58.67	16.70
Maxim XL	10.8	ml/100kg							
Apron XL	2.78	ml/100kg							
Experimental A	25	ml/100kg	29,185.00	30,056.40	29,766.00	85.83	145.08	58.63	16.70
Experimental B	10	ml/100kg							
Allegiance FL	9.43	ml/100kg							
Maxim XL	10.8	ml/100kg	29,621.00	29,475.60	29,185.20	85.92	128.37	58.43	16.75
Dynasty	10	ml/100kg							
Apron XL	2.78	ml/100kg							
F-LSD (P=0.05)			NS	NS	NS	NS	NS	NS	NS

SOYBEANS

Variety: SD1111RR

Previous Crop: Spring Wheat

Planted: May 24, 2007

Results: Under the environment of 2007, conditions did not favor root diseases. No treatments showed significant differences as compared to the untreated seed planted in late May.

Treatment Name	Rate	Unit	Early Stand Counts	Early Stand Counts	Late Stand Counts	Late Stand Counts	Yield	Test Weight
			/8 ft Row 7/3/2007	Plants/A 7/3/2007	/8 ft Row 9/27/2007	Plants/A 9/27/2007	bu/A 10/30/2007	lb/bu
Untreated			45.13	98,296.36	32.13	69,978.30	45.99	55.72
Trilex Flowable	0.32	oz/cwt	37.63	81,959.02	30.38	66,166.25	47.71	55.40
Allegiance FL	0.2	oz/cwt						
Pro-ized Red Colorant	0.3	oz/cwt						
Trilex Flowable	0.32	oz/cwt	41.63	90,672.27	33.13	72,156.61	48.87	56.63
Allegiance FL	0.2	oz/cwt						
Yield Shield	0.1	oz/cwt						
Pro-ized Red Colorant	0.3	oz/cwt						
Trilex Flowable	0.32	oz/cwt	33.13	72,156.61	29.00	63,171.07	44.11	55.84
Allegiance FL	0.2	oz/cwt						
Gaucho 600 FS	1.6	oz/cwt						
Pro-ized Red Colorant	0.3	oz/cwt						
Trilex Flowable	0.32	oz/cwt	34.38	74,879.50	26.88	58,542.15	46.33	56.06
Allegiance FL	0.2	oz/cwt						
Gaucho 600 FS	1.6	oz/cwt						
Yield Shield	0.1	oz/cwt						
Pro-ized Red Colorant	0.3	oz/cwt						
Trilex Flowable	0.32	oz/cwt	34.13	74,334.92	25.75	56,091.55	46.35	55.74
Allegiance FL	0.75	oz/cwt						
Pro-ized Red Colorant	0.3	oz/cwt						
Apron Maxx RFC	6.25	g Al/100kg	38.00	82,775.88	27.25	59,359.02	45.03	55.27
Apron Maxx RFC	6.25	g Al/100kg	33.13	72,156.61	29.25	63,715.65	44.25	56.19
Apron XL	3.75	g Al/100kg						
Dynasty	2	g Al/100kg						
Apron Maxx RFC	6.25	g Al/100kg	50.50	110,004.79	33.13	72,156.61	48.17	55.89
Cruiser	50	g Al/100kg						
Apron Maxx RFC	6.25	g Al/100kg	44.63	97,207.21	33.13	72,156.61	44.32	55.69
Apron XL	11.25	g Al/100kg						
Dynasty	2	g Al/100kg						
Cruiser	5	g Al/100kg						
F-LSD (P=0.05)			9.02	19,643.47	NS	NS	NS	NS

Variety: SD1111RR

Previous Crop: Corn

Planted: June 11, 2007

Results: Under the environment of 2007, conditions did not favor root diseases. No treatments showed significant differences as compared to the untreated seed planted in early June.

Treatment Name	Rate	Unit	Early Stand Counts	Early Stand Counts	Late Stand Counts	Late Stand Counts	Yield bu/A	Test Weight lb/bu
			/8 ft Row 7/4/2007	Plants/A 7/4/2007	/8 ft Row 10/10/2007	Plants/A 10/10/2007		
Untreated			66.38	144,585.51	48.00	104,559.01	42.93	54.46
Trilex Flowable	0.32	oz/cwt	63.13	137,505.98	50.25	109,460.21	42.52	55.01
Allegiance FL	0.2	oz/cwt						
Pro-ized Red Colorant	0.3	oz/cwt						
Trilex Flowable	0.32	oz/cwt	68.38	148,942.14	53.50	116,539.73	40.42	54.83
Allegiance FL	0.2	oz/cwt						
Yield Shield	0.1	oz/cwt						
Pro-ized Red Colorant	0.3	oz/cwt						
Trilex Flowable	0.32	oz/cwt	66.38	144,585.51	56.38	122,802.38	40.07	54.49
Allegiance FL	0.2	oz/cwt						
Gaucho 600 FS	1.6	oz/cwt						
Pro-ized Red Colorant	0.3	oz/cwt						
Trilex Flowable	0.32	oz/cwt	63.75	138,867.44	48.38	105,375.88	42.54	54.00
Allegiance FL	0.2	oz/cwt						
Gaucho 600 FS	1.6	oz/cwt						
Yield Shield	0.1	oz/cwt						
Pro-ized Red Colorant	0.3	oz/cwt						
Trilex Flowable	0.32	oz/cwt	66.75	145,402.37	49.75	108,371.06	40.44	54.62
Allegiance FL	0.75	oz/cwt						
Pro-ized Red Colorant	0.3	oz/cwt						
Apron Maxx RFC	6.25	g Al/100kg	62.25	135,599.97	50.63	110,277.08	43.50	55.50
Apron Maxx RFC	6.25	g Al/100kg	59.75	130,154.18	46.63	101,563.83	40.25	54.72
Apron XL	3.75	g Al/100kg						
Dynasty	2	g Al/100kg						
Apron Maxx RFC	6.25	g Al/100kg	75.25	163,918.03	53.13	115,722.86	37.52	54.66
Cruiser	50	g Al/100kg						
Apron Maxx RFC	6.25	g Al/100kg	66.50	144,857.80	50.38	109,732.50	38.54	54.11
Apron XL	11.25	g Al/100kg						
Dynasty	2	g Al/100kg						
Cruiser	5	g Al/100kg						

F-LSD (P=0.05)

NS

NS

NS

NS

NS

NS

Soybean Seed Treatment Trial II

Brookings, SD

Variety: SD1111RR

Previous Crop: Spring Wheat

Planted: May 24, 2007

Results: Under the environment of 2007, conditions did not favor root diseases. Although differences in the early stand count were observed with two treatments, these differences were not seen in later stand counts and did not improve yield.

Treatment Name	Rate	Rate Unit	Early	Early	Late	Late	Yield	Test Weight
			Stand Counts /8 ft Row 7/3/2007	Stand Counts Plants/A 7/3/2007	Stand Counts /8 ft Row 9/27/2007	Stand Counts Plants/A 9/27/2007		
Untreated			23.63	51,462.64	19.00	41,387.94	42.29	55.98
Warden RTA	5	fl oz/cwt	28.63	62,354.20	20.75	45,199.99	39.15	56.67
Experimental A	3.2	fl oz/cwt	38.13	83,048.17	23.13	50,373.48	44.28	56.54
Experimental B	5	fl oz/cwt	27.88	60,720.47	22.88	49,828.90	39.87	56.21
Experimental C	5	fl oz/cwt	28.25	61,537.33	23.00	50,101.19	43.49	56.26
Warden RTA	5	fl oz/cwt	30.63	66,710.83	21.38	46,561.43	45.53	56.00
Flo Cell Zin-Man	4	fl oz/cwt						
Apron Max RTA	5	fl oz/cwt	24.00	52,279.51	23.88	52,007.22	39.93	56.74
Trilex AL	5.7	fl oz/cwt	35.38	77,057.81	25.25	55,002.40	41.74	56.42
Warden RTA	5	fl oz/cwt	25.13	54,730.11	18.63	40,571.07	38.82	56.68
Cruiser	1.28	fl oz/cwt						
Warden RTA	5	fl oz/cwt	30.38	66,166.25	20.50	44,655.41	41.45	56.72
Nitro Shield	1.6	fl oz/cwt						
F-LSD (P=0.05)			9.03	19,673.75	NS	NS	4.05	NS

Soybean Seed Treatment Trial II

SE Farm, Beresford, SD

Variety: SD1111RR

Previous Crop: Corn

Planted: June 11, 2007

Results: Under the environment of 2007, conditions did not favor root diseases. No treatments showed significant differences as compared to the untreated seed planted in early June.

Treatment Name	Rate	Rate Unit	Early	Early	Late	Late	Yield bu/A	Test Weight lb/bu
			Stand Counts /8 ft Row 7/10/2007	Stand Counts Plants/A 7/10/2007	Stand Counts /8 ft Row 10/10/2007	Stand Counts Plants/A 10/10/2007		
Untreated			71.38	155,477.08	56.50	123,074.67	43.24	55.50
Warden RTA	5	fl oz/cwt	70.50	153,571.05	61.63	134,238.51	42.50	54.78
Experimental A	3.2	fl oz/cwt	71.13	154,932.48	60.88	132,604.79	47.10	55.22
Experimental B	5	fl oz/cwt	67.25	146,491.53	55.75	121,440.93	44.88	54.82
Experimental C	5	fl oz/cwt	73.88	160,922.86	56.63	123,346.96	41.16	54.86
Warden RTA	5	fl oz/cwt	71.50	155,749.36	63.13	137,505.98	42.65	54.77
Flo Cell Zin-Man	4	fl oz/cwt						
Apron Max RTA	5	fl oz/cwt	68.88	150,031.30	59.13	128,792.74	46.34	55.33
Trilex AL	5.7	fl oz/cwt	66.13	144,040.92	56.25	122,530.09	42.91	55.59
Warden RTA	5	fl oz/cwt	75.50	164,462.61	60.88	132,604.79	45.80	55.34
Cruiser	1.28	fl oz/cwt						
Warden RTA	5	fl oz/cwt	67.25	146,491.53	61.00	132,877.08	45.62	55.03
Nitro Shield	1.6	fl oz/cwt						
F-LSD (P=0.05)			5.81	12,647.83	NS	NS	NS	NS

Planted: June 6, 2007

Previous Crop: Corn

Results: In this trial during 2007, Phytophthora failed to develop. In the absence of disease, there was no advantage to using a Metalaxyl seed treatment. Similarly, no matter which specific resistance gene (Rps gene) was utilized or whether those resistance genes were paired with high or low general resistance (partial resistance) in the variety, no yield advantage was seen.

Table of Fungicide Means

	Yield bu/A	Test Weight lb/bu
	10/29/2007	
Untreated	22.81	58.20
Treated	26.79	58.05
	F-LSD (P=0.05)	NS

Table of Resistance Sources

Treatment Name	Partial Resistance	Relative Maturity	Yield bu/A	Test Weight lb/bu
			10/29/2007	
None	Low	1.7	30.58	58.42
None	High	1.5	22.54	57.56
Rps 1a	Low	0.8	17.39	57.37
Rps 1a	High	1.9	22.63	58.00
Rps 1c	Low	1.6	26.50	58.73
Rps 1c	High	1.6	25.19	58.55
Rps 1k	Low	1.9	31.70	58.40
Rps 1k	High	1.7	21.86	57.95
		F-LSD (P=0.05)	NS	0.76

Planted: June 11, 2007

Previous Crop: Corn

Results: In this trial during 2007, Phytophthora failed to develop. In the absence of disease, there was no advantage to using a Metalaxyl seed treatment. Similarly, no matter which specific resistance gene (Rps gene) was utilized or whether those resistance genes were paired with high or low general resistance (partial resistance) in the variety, no yield advantage was seen.

Table of Fungicide Means

	Yield bu/A 10/31/2007	Test Weight lb/bu
Untreated	42.82	55.86
Treated	41.74	55.56
	F-LSD (P=0.05)	NS

Table of Resistance Sources

Treatment Name	Partial Resistance	Relative Maturity	Yield bu/A 10/31/2007	Test Weight lb/bu
None	Low	1.7	45.11	56.52
None	High	1.5	46.28	54.49
Rps 1a	Low	0.8	38.97	55.85
Rps 1a	High	1.9	44.78	55.62
Rps 1c	Low	1.6	37.5	55.73
Rps 1c	High	1.6	41.51	55.85
Rps 1k	Low	1.9	44.5	56.59
Rps 1k	High	1.7	39.59	55.05
		F-LSD (P=0.05)	NS	0.89

Planted: June 6, 2007

Previous Crop: Corn

Results: In this trial during 2007, Phytophthora failed to develop. In the absence of disease, there was no yield advantage to any of the seed treatment products when averaged across varieties. Likewise, the seed treatment products did not provide an increase in test weight when averaged across varieties. Varietal differences were significant for yield and test weight when averaged across treatments, but these differences were not related to differential Phytophthora resistance, as Phytophthora was not identified in the plot.

Table of Fungicide Means Across Varieties

Treatment Name	Rate		Yield	Test Weight
	Rate	Unit	bu/A	lb/bu
Untreated			35.40	56.67
Apron Maxx RTA	5	fl oz/cwt	28.93	57.00
Warden	5	fl oz/cwt	37.00	56.55
Allegiance	0.2	fl oz/cwt	33.55	57.04
Allegiance	0.75	fl oz/cwt	33.18	56.63
Allegiance	1.5	fl oz/cwt	31.10	57.21
SoyGard	0.43	oz wt/cwt	34.43	56.64
F-LSD (P=0.05)			NS	NS

Table of Variety Means

	Yield	Test Weight
	bu/A	lb/bu
	10/29/2007	
Pioneer 91B33	28.10	57.35
Krueger 099+	28.20	56.48
Pioneer 91M40	43.81	56.63
F-LSD (P=0.05)		6.19 0.47

Phytophthora Disease Trial- Seed Treatment

SE Farm, Beresford, SD

Planted: June 11, 2007

Previous Crop: Corn

Results: In this trial during 2007, Phytophthora failed to develop. In the absence of disease, there was no yield advantage to any of the seed treatment products when averaged across varieties. Likewise, the seed treatment products did not provide an increase in test weight when averaged across varieties. Varietal differences were significant for yield and test weight when averaged across treatments, but these differences were not related to differential Phytophthora resistance, as Phytophthora was not identified in the plot.

Table of Fungicide Means Across Varieties

Treatment Name	Rate	Rate Unit	Yield bu/A 10/31/2007	Test Weight lb/bu
Untreated			39.57	53.81
Apron Maxx RTA	5	fl oz/cwt	41.04	52.97
Warden	5	fl oz/cwt	41.47	53.60
Allegiance	0.2	fl oz/cwt	41.65	53.13
Allegiance	0.75	fl oz/cwt	42.19	54.00
Allegiance	1.5	fl oz/cwt	41.90	52.86
SoyGard	0.43	oz wt/cwt	42.07	54.38
F-LSD (P=0.05)			NS	NS

Table of Variety Means

Treatment Name	Yield bu/A 10/31/2007	Test Weight lb/bu
Pioneer 91B33	40.90	53.31
Krueger 099+	40.59	53.76
Pioneer 91M40	42.75	53.54
F-LSD (P=0.05)		1.76
		NS

Variety: Asgrow 1903RR

Previous Crop: Spring wheat

Planted: May 24, 2007

Sprayed: R1: July 16, 2007; R3: August 6, 2007; 14-21 days after R3: August 22, 2007

Results: Among single applications, good efficacy is achieved with applications of a strobilurins (QOI) fungicide or combination products containing a strobilurin (QOI) plus a triazole (SBI). Performance of single applications of a triazole fungicide varied by product and growth stage when the fungicide was applied. Among all treatments, differences in leaf disease control did not result in yield increases, however leaf disease pressure was generally low at this site.

(See data on this and the following page)

Treatment Name	Rate	Rate Unit	Growth Stage	Brown Spot	Yield bu/A	Test Weight lb/bu
				Disease Rating % 9/14/2007		
Untreated				2.00	53.12	56.51
Folicur 3.6F	4	fl oz/A	R3+ 14-21 days after	0.38	55.66	56.81
Absolute 500 SC	5	fl oz/A	R3+ 14-21 days after	0.00	54.55	56.04
Stratego	10	fl oz/A	R3+ 14-21 days after	0.00	53.30	57.03
Induce NIS	0.125	% V/V	R3+ 14-21 days after			
Domark 230 ME	3	fl oz/A	R3	0.25	54.56	55.62
Domark 230 ME	4	fl oz/A	R3	0.13	53.33	55.98
Domark 230 ME	3	fl oz/A	R3	0.25	48.00	55.91
Orthene	0.75	lb/A	R3			
Domark 230 ME	4	fl oz/A	R3	0.25	53.55	55.91
Orthene	0.75	lb/A	R3			
Cobra	6	fl oz/A	R1	2.63	50.59	56.14
Induce NIS	0.25	% V/V	R1			
Folicur	4	fl oz/A	R3	1.38	55.62	56.09
Headline	4.7	fl oz/A	R3	0.00	52.94	56.81
Folicur	3.1	fl oz/A	R3			
Quadris Flowable	9.2	fl oz/A	R3	0.25	50.30	56.03
Topguard	7	fl oz/A	R1-R2	2.50	49.94	55.78
Topguard	7	fl oz/A	R1-R2	0.25	51.03	56.16
Topguard	7	fl oz/A	R3-R4			
Topguard	14	fl oz/A	R1-R2	1.75	54.11	54.29
F-LSD (P=0.05)				1.08	NS	NS

Table Continued

Treatment Name	Rate	Rate Unit	Growth Stage	Brown Spot	Yield bu/A	Test Weight lb/bu
				Disease Rating %		
				9/14/2007	10/30/2007	
Untreated				2.00	53.12	56.51
Folicur	4	fl oz/A	R1-R2	2.75	52.45	55.38
Headline	6	fl oz/A	R3	0.00	47.30	57.20
Induce NIS	0.25	% V/V	R3			
Alto	4	fl oz/A	R3	0.25	51.22	56.68
Induce NIS	0.25	% V/V	R3			
Quilt	14	fl oz/A	R3	0.38	52.85	56.43
Prime Crop Oil	1	% V/V	R3			
Tilt	4	fl oz/A	R3	0.50	54.50	56.03
Laredo	7	fl oz/A	R3	0.38	52.61	55.60
Induce NIS	0.25	% V/V	R3			
Punch	4	fl oz/A	R3	0.13	51.23	56.81
Induce NIS	0.25	% V/V	R3			
Caramba	8.2	fl oz/A	R3	0.75	53.50	56.26
Headline	3.6	fl oz/A	R3	0.13	54.49	55.25
Folicur	2.4	fl oz/A	R3			
F-LSD (P=0.05)				1.08	NS	NS

Soybean Foliar Fungicide Trial

SE Farm, Beresford, SD

Variety: Asgrow 1903RR

Previous Crop: Corn

Planted: June 11, 2007

Sprayed: R1: July 23, 2007; R3: August 9, 2007; 14-21 days after R3: August 27, 2007

Results: At this location, significant Septoria Brown Spot did not develop. No differences among treatments were observed.

(See data on this and the following page)

Treatment Name	Rate	Rate Unit	Growth Stage	Brown Spot Disease Rating % 9/12/2007	Yield bu/A 10/31/2007	Test Weight lb/bu
Untreated				0.75	48.01	56.29
Folicur 3.6F	4	fl oz/A	R3+ 14-21 days after	0.38	45.50	56.77
Absolute 500 SC	5	fl oz/A	R3+ 14-21 days after	0.00	44.54	57.14
Stratego	10	fl oz/A	R3+ 14-21 days after	0.00	44.14	57.16
Induce NIS	0.125	% V/V	R3+ 14-21 days after			
Domark 230 ME	3	fl oz/A	R3	1.00	41.65	57.25
Domark 230 ME	4	fl oz/A	R3	0.38	45.39	59.92
Domark 230 ME	3	fl oz/A	R3	1.25	46.69	56.38
Orthene	0.75	lb/A	R3			
Domark 230 ME	4	fl oz/A	R3	0.63	48.74	56.51
Orthene	0.75	lb/A	R3			
Cobra	6	fl oz/A	R1	2.00	44.55	56.52
Induce NIS	0.25	% V/V	R1			
Folicur	4	fl oz/A	R3	0.63	47.28	55.93
Headline	4.7	fl oz/A	R3	0.25	44.25	55.98
Folicur	3.1	fl oz/A	R3			
Quadris Flowable	9.2	fl oz/A	R3	0.63	45.87	56.78
Topguard	7	fl oz/A	R1-R2	1.38	42.03	56.78
Topguard	7	fl oz/A	R1-R2	0.50	42.67	56.30
Topguard	7	fl oz/A	R3-R4			
Topguard	14	fl oz/A	R1-R2	0.75	51.30	56.89
F-LSD (P=0.05)				NS	NS	NS

Table Continued

Treatment Name	Rate	Rate Unit	Growth Stage	Brown Spot	Yield bu/A	Test Weight lb/bu
				Disease Rating %		
				9/12/2007	10/31/2007	
Untreated				0.75	48.01	56.29
Folicur	4	fl oz/A	R1-R2	0.63	46.11	56.61
Headline	6	fl oz/A	R3	0.00	41.24	57.55
Induce NIS	0.25	% V/V	R3			
Alto	4	fl oz/A	R3	0.38	42.76	56.59
Induce NIS	0.25	% V/V	R3			
Quilt	14	fl oz/A	R3	0.13	42.81	56.23
Prime Crop						
Oil	1	% V/V	R3			
Tilt	4	fl oz/A	R3	0.50	46.54	56.21
Laredo	7	fl oz/A	R3	0.50	50.05	55.87
Induce NIS	0.25	% V/V	R3			
Punch	4	fl oz/A	R3	0.88	45.91	56.55
Induce NIS	0.25	% V/V	R3			
Caramba	8.2	fl oz/A	R3	0.50	48.06	56.72
Headline	3.6	fl oz/A	R3	0.13	47.36	56.74
Folicur	2.4	fl oz/A	R3			
F-LSD (P=0.05)				NS	NS	NS

SUNFLOWERS

Sunflower Head Rot Fungicide Trial

Brookings, SD

Variety: Agway 3733

Previous Crop: Winter Wheat

Planted: June 16, 2007

Sprayed: August 27, 2007

Results: Benlate has traditionally performed better than all other products in this trial and it has been retained as a standard even though it is no longer on the market. The sunflower head is susceptible to decay from flowering through harvest, a period that may extend from 30 to 60 days. No differences were seen among the treatments this year.

Treatment Name	Rate	Rate Unit	Disease Incidence	Disease Severity	Disease Severity Index	Disease Incidence	Disease Severity	Disease Severity Index
			% plants Infected 9/14/2007	% rot/head 9/14/2007	% total disease 9/14/2007	% plants Infected 9/27/2007	% rot/head 9/27/2007	% total disease 9/27/2007
Untreated			15.00	2.45	1.47	44.20	37.10	26.00
Prosaro 421 SC	6.5	fl oz/A	3.13	0.38	0.05	43.75	20.19	7.65
Induce Prosaro 421 SC	0.125	% V/V						
Induce Prosaro 421 SC	8.2	fl oz/A	13.39	1.61	0.43	32.83	26.34	12.15
Induce Folicur 3.6F	0.125	% V/V						
Induce Folicur 3.6F	6	fl oz/A	9.03	1.08	0.23	42.08	32.74	20.89
Induce Benlate	0.125	% V/V						
Benlate	2	lb/A	14.29	1.72	0.98	23.45	18.00	8.23
F-LSD (P=0.05)			NS	NS	NS	NS	NS	NS



South Dakota Cooperative Extension Service

South Dakota State University, South Dakota counties, and U. S. Department of Agriculture cooperating.

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