

Wheat (*Triticum aestivum* 'Glenn')

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Target diseases:

Fusarium crown rot; *Fusarium* spp.

Pythium; *Pythium* spp.

Common root rot; *Bipolaris sorokiniana*

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### **Chemtura HRSW seed treatment performance trial near Mott, ND, 2011.**

This experiment was conducted in a field located near Mott, ND (NW ¼, section 20, T136N, R93W - Hettinger County, ND) where the previous crop was wheat in 2010. A randomized complete block design with four replications was used. Plots were 10 ft wide by 50 ft long with a 2 ft wide spring wheat buffer between plots. A burndown application of 0.75 ae/a glyphosate + ammonium sulfate was applied on 1 Jun. Prior to seeding, a fusarium infected seed lot was treated with Rancona Pinnacle (ipconazole, 0.434% + metalaxyl, 0.579%), Dividend Extreme (difenoconazole, 7.73% + mefenoxam, 1.93%), UBI 9346, UBI 9350, UBI 9290, UBI 4336, UBI 4384, Rancona Crest (ipconazole, 0.421% + metalaxyl, 0.562%, imidacloprid, 14.1%), Rancona Dimension singularly or in combination. Untreated seed was used as a check. Plots were seeded with a drill equipped with Cross-slot openers on 10 Jun 2011 at the rate of 350 pls m<sup>-2</sup>. Urea at the rate of 220 lbs/a (101.2 lbs/a N) was applied through the drill in a separate band during the seeding operation. A post emergent herbicide, Wolverine at the rate of 1.7 pt/a was applied on 2 Jul. Plant counts and vigor were made on 22 Jun. Initial whole plant evaluation was done 8-15 Jul and root and crown evaluations at soft dough stage were made on 8-10 Aug. Harvest was with a Massy Ferguson 8 XP combine on 6 Sept. Grain yield and test weight were adjusted to a 12% moisture basis. All data was statistically analyzed using SAS Statistical Software.

Plant counts observed tended to be greater than the untreated check for most seed treatments. Significant vigor and tiller numbers were noted on a few seed treatments. Rainfall was above greater than normal for May and August and near normal for June, and July. Excessively wet conditions in the spring delayed seeding. No significant differences were detected for mature plant height, head density, and yield though head density and yield for most fungicide treatments tended to be higher than the untreated check.

Vigor and stand counts and soft dough root evaluation for Glenn HRSW at sixth-leaf stage with various seed treatments at Mott, ND, 2011.

Treatment	Rate	Initial whole plant evaluation						
		Plant density no m <sup>-2</sup>	Vigor	Plant length mm	Tillers no plant <sup>-1</sup>	SCI <sup>1</sup>	Seminal roots no plant <sup>-1</sup>	Crown root no plant <sup>-1</sup>
Untreated Check		160.3	5.0	406.7	4.1	0.6	4.5	10.4
Rancona Pinnacle	325 mL	146.8	6.0	431.1	4.3	0.8	4.6	9.6
Dividend Extreme	130 mL	160.3	5.8	510.2	3.5	0.6	4.6	9.0
Dividend Extreme, Rancona 3.8 FS	195 mL, 3.4 mL	187.5	5.3	428.0	3.2	0.8	4.5	10.1
Rancona Pinnacle, Confidential	325 mL, 65 mL	177.6	6.0	444.7	2.4	1.5	4.2	7.8
Rancona Pinnacle, UBI 9346	325 mL, 25 mL	199.8	5.3	439.5	3.7	0.7	4.4	10.0
UBI 9350	325 mL	144.3	5.3	409.9	4.6	0.5	4.3	11.6
Rancona Crest WR	325 mL	180.1	6.0	436.9	3.3	0.8	4.5	10.6
Rancona Crest	325 mL	155.4	5.8	451.5	3.2	0.7	4.5	10.0
UBI 9290, UBI 4336, UBI 9346	200 mL, 6.3 mL, 25 mL	187.5	7.0	469.1	2.7	1.2	4.3	8.6
Rancona Dimension	80 mL	172.7	5.3	439.2	3.3	0.6	3.8	9.5
UBI 4384	300 mL	187.5	5.3	456.4	4.1	0.8	4.7	10.4
Mean		171.6	5.6	443.6	3.5	0.8	4.4	9.8
CV		23	12.3	9.8	20.4	58.4	10.6	24.8
LDS 0.05		NS	1.0	NS	1.2	NS	NS	NS

<sup>1</sup>SCI = Subcrown internode rating, 1-4. 1 = less than 25% of the internode infected, 2 = 25-50% of the internode infected, 3 = 50 – 75% of the internode infected, multiple lesions, and 4 = 75-100% of the internode infected lesions coalesced.

Color, mass, and subcrown internode rating of Glenn HRSW with various seed treatments at soft dough stage at Mott, ND, 2011.

Treatment	Rate	Root evaluation at soft dough		
		Color <sup>1</sup>	Mass <sup>2</sup>	SCI <sup>3</sup>
Untreated Check		1.6	3.1	1.4
Rancona Pinnacle	325 mL	1.8	2.9	1.4
Dividend Extreme	130 mL	1.7	3.2	1.4
Dividend Extreme, Rancona 3.8 FS	195 mL, 3.4 mL	1.6	3.3	1.3
Rancona Pinnacle, Confidential	325 mL, 65 mL	1.7	2.8	1.4
Rancona Pinnacle, UBI 9346	325 mL, 25 mL	1.5	3.1	1.4
UBI 9350	325 mL	1.4	3.4	1.2
Rancona Crest WR	325 mL	1.5	3.3	1.3
Rancona Crest	325 mL	1.6	3.0	1.3
UBI 9290, UBI 4336, UBI 9346	200 mL, 6.3 mL, 25 mL	1.6	3.1	1.5
Rancona Dimension	80 mL	1.6	3.2	1.4
UBI 4384	300 mL	1.7	3.2	1.3
Mean		1.6	3.1	1.4
CV		15.9	11.7	20.3
LDS 0.05		NS	NS	NS

<sup>1</sup>Color 1-4, 1 = white, 4 = dark.

<sup>2</sup>Mass 1-4, 1 = few roots, 4 = many roots.

<sup>3</sup>SCI = Subcrown internode rating, 1-4. 1 = less than 25% of the internode infected, 2 = 25-50% of the internode infected, 3 = 50 – 75% of the internode infected, multiple lesions, and 4 = 75-100% of the internode infected lesions coalesced.

Grain yield, test weight, height, and head density of Glenn HRSW grown with various seed treatments at Mott, ND, 2011.

Treatment	Rate	Height mm	Plant density no m <sup>-2</sup>	Grain <sup>1</sup>	
				Yield bu a <sup>-1</sup>	Test weight lb bu <sup>-1</sup>
Untreated Check		753.0	163.5	24.8	51.8
Rancona Pinnacle	325 mL	736.8	223.3	24.8	51.2
Dividend Extreme	130 mL	783.8	205.4	23.2	50.1
Dividend Extreme, Rancona 3.8 FS	195 mL, 3.4 mL	771.3	206.0	24.9	51.4
Rancona Pinnacle, Confidential	325 mL, 65 mL	725.8	161.6	26.4	52.5
Rancona Pinnacle, UBI 9346	325 mL, 25 mL	793.8	222.1	23.8	51.6
UBI 9350	325 mL	782.0	204.8	23.1	50.4
Rancona Crest WR	325 mL	769.8	216.5	26.3	51.6
Rancona Crest	325 mL	791.3	215.3	26.4	50.8
UBI 9290, UBI 4336, UBI 9346	200 mL, 6.3 mL, 25 mL	749.8	198.0	27.5	51.5
Rancona Dimension	80 mL	717.5	173.9	22.2	51.3
UBI 4384	300 mL	753.8	222.1	25.1	51.7
Mean		760.7	201.0	24.9	51.3
CV		7.3	23.7	13.7	3.4
LDS 0.05		NS	NS	NS	NS

<sup>1</sup>Grain yield is reported on a 12% moisture basis.