Wheat (*Triticum aestivum* 'Parshall') Target diseases: *Fusarium* spp. *Pythium* spp. *Bipolaris sorokiniana*	R.O. Ashley, and G. Martin Dickinson Research Extension Center Dickinson, ND 58601

Bayer CropScience seed treatment performance trial near Taylor, ND, 2007.

This experiment was conducted in a field located near Taylor, ND (NW ¼, Section 1, T138N, R95W – Stark County, ND). The previous crop was wheat in 2006. Urea at the rate of 150 lbs/acre was broadcast applied on 16 Apr. Prior to seeding, seed was treated with Raxil MD, Charter PB, Raxil MD-W or an experimental compound. Untreated seed was used as a check. Plots were seeded with a drill equipped with Cross-slot openers on 2 May 2007 at the rate of 150 pls m^{-2}. A post emergent herbicide and foliar fungicide application of Harmony GT XP @ 0.5 oz/acre + Bronate Advance @ 16.0 fl oz/acre + Activator 90 NIS @ .25% v/vol. + Stratego @ 3.0 fl oz/acre was applied on 27 May. Plant counts were made on 16 May and 5 Jun. Initial plant evaluations were made on 15 - 19 Jun and soft dough plant evaluations were made on 27-28 Jul. Fusarium head blight was not observed probably because of the hot, dry growing conditions that occurred in Jul. Harvest was with a Massy Ferguson 8 XP combine on 21 Aug. Grain yield, test weight, and protein were adjusted to a 12% moisture basis. All data was statistically analyzed using SAS Statistical Software.

Plant density and early season vigor tended to improve with seed treatments but not significantly. Observations made during the initial plant evaluation tiller and crown root counts tended to show an increase and during the evaluations made during the soft dough stage root color, root mass, and the subcrown internode rating tended to improve with seed treatments but not significantly. Yield was significantly improved with two of four seed treatments in this trial compared to the Check.

Treatment	Application Rate		Plant height	Head density	Yield	Test weight	Protein
	gA/100Kg	oz/cwt	mm	no m-2	bu/a	lb/bu	%
Check	-	-	707.5	123.8	18.9	56.1	16.6
Raxil MD	3.65	5	715.0	119.0	20.9	56.4	16.6
EXP 10	NA	5	693.8	113.3	23.6	56.4	16.8
Charter PB	55	5.5	716.9	122.8	25.7	56.4	16.6
Raxil MD-W	3.65	5	730.0	118.8	21.1	56.4	16.7
Mean			712.6	119.5	22.1	56.3	16.7
CV			5.3	8.4	7.1	0.6	1.5
LSD .05			58.1	15.5	2.4	0.5	0.37
SE			18.85	5.04	0.78	0.16	0.12
Trt F Prob			0.7377	0.6231	0.0004	0.6373	0.852
Rep F Prob			0.8537	0.1944	0.6356	0.179	0.5932

Treatment	Application Rate		Plant length	Plant Dev	Tillers	Subcrown internode rating	Seminal roots	Crown roots
			---------- Initial plant evaluation ----------					
	gA/100Kg	oz/cwt	mm	Haun	no plant^{-1}		no plant^{-1}	no plant^{-1}
Check	-	-	345.5	6.1	1.9	1.1	4.6	8.2
Raxil MD	3.65	5	333.5	5.9	2.0	1.1	4.2	8.3
EXP 10	NA	5	351.0	5.9	1.7	1.0	4.2	8.3
Charter PB	55	5.5	341.3	6.2	2.1	1.1	4.1	8.8
Raxil MD-W	3.65	5	334.2	6.9	2.4	1.0	4.4	9.6
Mean			341.1	6.2	2.0	1.0	4.3	8.6
CV			6.7	11.3	18.3	8.1	5.1	9.2
LSD .05			35.4	1.1	0.6	0.1	0.3	1.2
SE			11.5	0.3	0.2	0.04	0.1	0.4
Trt F Prob			0.7895	0.2813	0.1706	0.5414	0.0814	0.1415
Rep F Prob			0.0153	0.3134	0.2141	0.4512	<.0001	0.5111

[1] Subcrown internode rating - 1 = < 25% lesions, 2 = 25 to 50% lesions, 3 = 50 to 75% lesions, 4 = >75% lesions.

Treatment	Application Rate		Color[1]	Root mass[2]	Subcrown internode rating[3]
			---Soft dough root evaluation ---		
	gA/100Kg	oz/cwt			
Check	-	-	2.1	2.3	1.5
Raxil MD	3.65	5	1.8	2.5	1.1
EXP 10	NA	5	1.8	2.5	1.1
Charter PB	55	5.5	1.7	2.5	1.3
Raxil MD-W	3.65	5	2.0	2.4	1.2
Mean			1.9	2.4	1.2
CV			18.1	10.7	17.3
LSD .05			0.5	0.4	0.3
SE			0.2	0.1	0.1
Trt F Prob			0.5612	0.5469	0.11
Rep F Prob			0.0326	<.0001	0.0545

[1] Color - Root color, 1 = white, 4 = dark

[2] Root mass - 1 = few roots, 4 = many roots

[3] Subcrown internode rating - 1 = < 25% lesions, 2 = 25 to 50% lesions, 3 = 50 to 75% lesions, 4 = >75% lesions.

Treatment	Application Rate		Initial count		Second count	
			Plant density	Vigor	Plant density	Vigor
	gA/100Kg	oz/cwt	no m^{-2}		no m^{-2}	
Untreated	-	-	94.7	4.5	104.5	4.5
Raxil MD	3.65	5	109.6	6.5	113.7	6.8
EXP 10	NA	5	117.0	6.5	121.3	7.3
Charter PB	55	5.5	116.8	7.0	116.5	8.3
Raxil MD-W	3.65	5	107.4	7.5	108.5	8.5
Mean			109.1	6.4	112.9	7.1
CV			9.6	15.6	9.8	18.7
LSD .05			16.2	1.5	17.0	2.0
SE			5.3	0.5	5.5	0.7
Trt F Prob			0.0614	0.0115	0.2844	0.0076
Rep F Prob			0.0413	0.0563	0.1159	0.4165