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

Performance of registered and unregistered fungicide seed treatments to a check and inoculated check near Mott, ND, 2007.

This experiment was conducted in a field located near Mott, ND (NE ¼, Section 27, T136N, R93W – Hettinger County, ND). The previous crop was wheat in 2006. Urea at the rate of 200 lbs/acre was broadcast applied on 1 Apr. Prior to seeding, seed was treated with Dividend Xtreme/Crusier, A15424/Apron, A15424/A14635/Apron, and Gaucho 480F/Raxil XT. Untreated seed was used as a check. Coarse ground wheat infected with *Fusarium* spp. was applied to the seed at seeding time at the rate of 1 g m^{-2} of row for all plots except the Check. Plots were seeded with a drill equipped with Cross-slot openers on 30 Apr 2007 at the rate of 280 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 15 May. Initial plant evaluations were made on 19 Jun and soft dough plant evaluations were made on 30 Jul. Precipitation at the North Dakota Agricultural Weather Network Mott, ND weather station in May, June, and July was 3.58, 3.76, and 0.50 inches respectively. The average maximum temperature for the same months was 66°, 77°, and 90°F respectively. 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 10 Aug. Grain yield, test weight, and protein were adjusted to a 12% moisture basis. All data was statistically analyzed using SAS Statistical Software.

Significant differences were observed in plant density and vigor in plant counts done at emergence. Significant differences in plant length, stage of crop development, tillers per plant, were observed in the initial plant evaluation and during the soft dough stage significant differences in the subcrown internode ratings were also noted. Significant differences were noted in yield among the Inoculated Check and most seed treatments except A15424/A14635(5.0)/Apron and Gaucho 480FS/Raxil XT.

Treatment	Plant height	Plant density	Yield	Test weight	Protein
	mm	no m^{-2}	bu/a	lb/bu	%
Check	899.4	96.5	40.7	58.5	16.1
Inoculated Check	883.1	87.5	36.0	58.0	16.2
Dividend Xtreme/Crusier (15g + 10 g/100kg)	901.3	99.5	42.2	57.7	15.9
A15424/Apron (24g + 1.0g/100kg)	921.9	106.0	42.7	57.5	16.2
A15424/A14635/Apron (24g + 2.5g + 1.0g/100kg)	898.1	104.5	41.0	58.3	16.0
A15424/A14635/Apron (24g + 5.0g + 1.0g/100kg)	890.6	103.6	39.5	58.5	16.2
A15424/A14635/Apron(24g + 10g + 1.0g/100kg)	931.3	103.9	40.4	58.1	16.0
Gaucho 480FS/Raxil XT (5.0g + 3.65g/100kg)	878.8	91.8	35.6	58.1	16.3
Mean	900.5	99.2	39.75	58.1	16.1
CV	4.23	14.4	5.86	0.94	1.21
LSD .05	55.97	21.0	3.43	0.80	0.29
SE	19.03	7.13	1.16	0.27	
Trt F Prob	0.5245	0.5331	0.0016	0.2253	0.2067
Rep F Prob	0.0891	0.2708	0.0209	0.0234	0.0001

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Treatment	Length	Haun Stage	Number of Tillers	Subcrown Internode	Seminal Roots	Crown Roots
	(mm)		no plant^{-1}		no plant^{-1}	no plant^{-1}
Check	353.88	6.05	2.1	1.1	5.65	8.00
Inoculated Check	319.28	6.15	1.9	1.2	5.60	7.60
Dividend Xtreme/Crusier (15g + 10 g/100kg)	336.40	6.05	2.3	1.2	5.75	7.43
A15424/Apron (24g + 1.0g/100kg)	340.45	6.05	2.2	1.1	5.68	7.10
A15424/A14635/Apron (24g + 2.5g + 1.0g/100kg)	355.63	6.17	2.3	1.1	6.30	7.80
A15424/A14635/Apron (24g + 5.0g + 1.0g/100kg)	353.10	6.45	2.6	1.0	5.90	8.13
A15424/A14635/Apron (24g + 10g + 1.0g/100kg)	361.63	6.42	2.5	1.1	6.25	7.90
Gaucho 480FS/Raxil XT (5.0g + 3.65g/100kg)	331.10	6.23	2.3	1.0	5.50	7.53
Mean	343.93	6.19	2.27	1.07	5.83	7.68
CV	4.54	3.26	8.88	10.48	8.77	10.33
LSD .05	22.98	0.30	0.30	0.16	0.75	1.17
SE	7.81	0.10	0.10	0.06	0.26	0.40
Trt F Prob	0.0129	0.0440	0.0081	0.5678	0.2685	0.6562
Rep F Prob	0.2939	0.3168	0.6467	0.8260	0.0001	0.0001

Treatment	Root color	Root Mass	Subcrown internode
Check	1.12	2.39	1.15
Inoculated Check	1.17	1.87	1.47
Dividend Xtreme/Crusier (15g + 10 g/100kg)	1.16	2.33	1.09
A15424/Apron (24g + 1.0g/100kg)	1.09	2.31	1.14
A15424/A14635/Apron (24g + 2.5g + 1.0g/100kg)	1.16	2.31	1.05
A15424/A14635/Apron (24g + 5.0g + 1.0g/100kg)	1.14	2.24	1.08
A15424/A14635/Apron (24g + 10g + 1.0g/100kg)	1.18	2.28	1.11
Gaucho 480FS/Raxil XT (5.0g + 3.65g/100kg)	1.11	2.31	1.13
Mean	1.14	2.25	1.15
CV	7.09	9.63	11.16
LSD .05	0.12	0.32	0.19
SE	0.04	0.11	0.06
Trt F Prob	0.7346	0.0761	0.0046
Rep F Prob	0.4857	0.5934	0.3032

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Treatment	Plant density	Vigor
	no m^{-2}	
Check	221.62	5.00
Inoculated Check	193.51	3.25
Dividend Xtreme/Crusier (15g + 10 g/100kg)	261.86	7.25
A15424/Apron (24g + 1.0g/100kg)	272.45	7.25
A15424/A14635/Apron (24g + 2.5g + 1.0g/100kg)	259.71	7.00
A15424/A14635/Apron (24g + 5.0g + 1.0g/100kg)	278.60	8.00
A15424/A14635/Apron (24g + 10g + 1.0g/100kg)	264.31	7.75
Gaucho 480FS/Raxil XT (5.0g + 3.65g/100kg)	213.17	6.00
Mean	245.65	6.43
CV	12.31	17.16
LSD .05	44.48	1.62
SE	15.12	0.55
Trt F Prob	0.0041	0.0001
Rep F Prob	0.0025	0.1427