Wheat (*Triticum aestivum* 'Parshall')
Target diseases: *Fusarium* spp.
Pythium spp.
Bipolaris sorokiniana

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Rancona HRSW seed treatment performance trial near Mott, ND, 2009.

This experiment was conducted in a field located near Mott, ND (NW ¼ Section 15, T136N, R93W, Hettinger County, ND). The previous crop was wheat in 2008. A soil sample was collected on April 21and analyzed by the North Dakota State University Soil Testing Laboratory. Nutrient levels reported were N=61 lb/a, P (Olsen) = 16 ppm, K= 110 ppm, pH=6.5, and OM = 2.2%. Roundup Original Max (Glyphosate) at the rate of 16 fl oz/a + Actimaster (AMS) at the rate of 32 fl oz/a was applied 5 May to control emerged volunteer wheat and weeds. Prior to seeding, seed was treated with Vitaflo 280, Rancona Pinnacle, Rancona Crest, UBI 9291-00 or UBI 9292-00. Untreated seed was used as a check. Plots were seeded with a drill equipped with Cross-slot openers on 7 May at the rate of 150 pls m^{-2}. Urea at the rate of 110 lbs/a (50.6 lbs/a N) was applied through the drill in a separate band during the seeding operation. A post emergent herbicide and foliar fungicide application of Harmony GT XP (Thifensulfuron-methyl) at 0.6 oz/acre, MCP Ester at 0.75 pt/acre, Puma (Fenoxaprop-P) at 0.66 pt/acre + Tilt (Propiconizole) at 2 oz/acre. Plant emergence estimates were made on 14 and 21 May with plant stand counts and vigor ratings made on 28 May. Soft dough root and crown evaluations were made on 20 Jul. Harvest was with a massy Ferguson 8 XP combine on 28 Aug. Grain yield and test weight were adjusted to a 12% moisture basis. All data was statistically analyzed using SAS Statistical Software.

No significant differences in emergence, plant stands, or vigor ratings were noted though treated seed tended to emerge faster, stand densities and vigor tended to be greater than the untreated check. Treated seed subcrown internodes exhibited significantly fewer lesions than the untreated check. Head density tended to be greater for treated seed compared to the untreated check but not significantly. No significant differences were detected in yield or test weight. Wheat stem sawfly injury was noted in this trial but did not appear to favor any particular treatment.

		Emergence[1]		Plant[2]	
		7 DAP	14 DAP	Stand density	Vigor
Treatment Name	Rate (ml/Kg)	---------- % ----------		m^{-2}	%
Untreated Check	-	0	55.0	184.0	100.0
Vitaflo 280	260	0	61.3	206.8	116.3
Rancona Pinnacle	325	0	58.8	203.5	118.8
Rancona Crest	325	0	60.0	210.7	116.3
UBI 9291-00	325	0	61.3	218.3	130.0
UBI 9292-00	325	0	61.3	192.0	112.5
Mean		0	59.6	202.5	115.6
CV%		-	12.7	18.2	21.9
LSD .05		-	NS	NS	NS

[1] Crop emergence and crop injury 7 days after plant = 14 May, 14 days after planting = 21 May.
[2] Plant stand and vigor ratings = 28 May

		Root Evaluation[1]				Grain[2]	
		Root color	Root mass	SCI	Head density	Yield	Test wt
Treatment Name	Rate (ml/Kg)				m^{-2}	bu/a	lb/bu
Untreated Check	-	1.98	2.58	1.17	537.5	69.5	65.8
Vitaflo 280	260	1.87	2.67	1.03	583.3	68.7	65.7
Rancona Pinnacle	325	2.02	2.50	1.04	545.8	67.2	66.0
Rancona Crest	325	1.93	2.39	1.04	585.4	66.3	64.7
UBI 9291-00	325	2.05	2.62	1.00	647.9	74.6	65.5
UBI 9292-00	325	2.10	2.70	1.04	612.5	73.7	65.6
Mean		2.0	2.6	1.1	585.4	70.0	65.5
CV%		19.3	10.1	6.1	13.8	7.3	1.7
LSD .05		NS	NS	0.0963	NS	NS	NS

[1] Root Evaluation: Color 1-4: 1= white, 4= dark; Mass 1-4: 1 = few roots, 4 = many roots; SCI Subcrown Internode Rating: 1 = 0 to 25% of root covered by lesions, 2 = 25 to 50% covered by lesions; 3 = 50 to 75% covered by lesions; 4 = 75 to 100% covered by lesions and or lesions coalesce

[2] Grain yield and test weight are adjusted and reported on a 12% moisture basis.