

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

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Vincit HRWW seed treatment performance trial near New Hradec, ND, 2009.

This experiment was conducted in a field located near New Hradec, ND (NE 1/4 Section 4, T141N, R96W-Dunn County, ND). The previous crop was spring wheat in 2008. Roundup Original Max (Glyphosate) at the rate of 32 fl oz/a + Actimaster (AMS) at the rate of 32 fl oz/a was applied 20 Sep to control emerged volunteer wheat and weeds. Prior to seeding, seed was treated with Vincit Minima, Vincit 5, Vincit Minima + Metalaxyl, Vincit 5 + Metalaxyl, or Raxil MD. Untreated seed was used as a check. Plots were seeded with a drill equipped with Cross-slot openers on 2 Oct 2008 at the rate of 150 pls m⁻². As plots were seeded 100 g of ground wheat seed known to be contaminated with *Tilletia tritici* was added at the rotary distribution unit of the planter for each plot seeded. Urea at the rate of 100 lbs/a (46 lbs/a N) + 60 lbs/a of 11-52-0 (6.6 lbs/a N, 31.2 lbs/a P₂O₅) + 20 lbs/a 0-0-60 (12 K₂O) was applied through the drill in a separate band during the seeding operation. An additional 30.7 lbs/a N and 3.6 lbs/a S was top dressed on 17 Apr in the form of liquid fertilizer (11 gal/a 26-0-0-3). A post emergent herbicide and foliar fungicide application of Buctril (bromoxynil) at 1 pt/a, Puma (Fenoxaprop-P) at 0.66 pt/a + Tilt (Propiconazole) at 2 oz/a was made on 21 May 2009. Plant emergence estimates were made on 9 and 16 Oct 2008 with vigor scores on 16 Oct 2008 and crop injury scores on 16 and 30 Oct 2008. Soft dough root and crown evaluations were made on 13-15 Jul 2009. Harvest was with a Massy Ferguson 8 XP combine on 13 Aug 2009. Grain yield and test weight were adjusted to a 12% moisture basis. Bunted kernels in a 50 g grain sample from each plot were counted after harvest. All data was statistically analyzed using SAS Statistical Software.

No significant differences were detected in any of the characteristics measured except for the number of bunted kernels. The number of bunted kernels found in treated seed was less than found in the untreated check. Seed treatments tended to improve root color, root mass and reduce root lesions compared to the untreated check. Head density and grain yields also tended to be greater for treated seed compared to the untreated check.

Treatment	Rate	Emergence ¹		Vigor ²		Crop Injury ³		
		7 DAP	14 DAP	14 DAP	14 DAP	14 DAP	28 DAP	
Name	Rate	----- % -----						
Untreated Check	fl oz/cwt	0	48.8	100.0	0	0	0	
Vincit Minima	3.07	0	55.0	98.8	0	0	0	
Vincit Minima	6.14	0	48.8	103.8	0	0	0	
Vincit 5	1.54	0	51.3	102.5	0	0	0	
Vincit 5	3.07	0	55.0	101.3	0	0	0	
Vincit Minima + Metalaxyl	3.07 + 0.3	0	52.5	107.5	0	0	0	
Vincit Minima + Metalaxyl	1.54	0	56.3	110.0	0	0	0	
Raxil MD	5.00	0	53.8	105.0	0	0	0	
Mean		0	52.7	103.6	0	0	0	
CV%		-	9	5.6	-	-	-	
LSD .05		NS	NS	NS	NS	NS	NS	

¹ Emergence, 7 days after planting = 9 Oct 2008, 14 days after planting = 16 Oct 2008.

² Vigor, 14 days after planting = 16 Oct 2008.

³ Crop injury, 14 days after planting = 16 Oct 2008, 28 days after planting = 30 Oct 2008.

Treatment	Rate	Root evaluation ¹			Plant height	Head density	Bunted kernels	Grain ²	
		Color	Mass	SCI				Test wt	Yield
Name					inches	#/yd ²	#/50g	lb/bu	bu/a
Untreated Check	fl oz/cwt	2.07	2.10	1.27	28	633	23.5	60.2	93.4
Vincit Minima	3.07	2.00	2.17	1.18	29.3	708	0.75	60.9	95.3
Vincit Minima	6.14	1.87	2.32	1.15	28.2	733	1.75	61.3	96.9
Vincit 5	1.54	2.05	2.43	1.04	29.6	782	1.00	60.9	98.6
Vincit 5	3.07	1.72	2.32	1.12	29.9	691	1.50	60.8	96.6
Vincit Minima + Metalaxyl	3.07 + 0.3	1.70	2.39	1.09	29.8	808	4.50	61.1	99.3
Vincit Minima + Metalaxyl	1.54	1.85	2.47	1.10	29.7	765	3.75	60.9	96.3
Raxil MD	5.00	1.97	2.55	1.17	29.1	784	4.50	60.6	94.9
Mean		1.9	2.33	1.14	29.2	738	5.2	60.8	96.4
CV%		14.9	15.7	10.2	6.01	14.3	71	1.3	4.1
LSD .05		NS	NS	NS	NS	NS	5.4	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.