

Wheat (*Triticum aestivum* L. 'Howard')

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Target diseases:

Fusarium foot rot; *Fusarium* spp.

Pythium; *Pythium* spp.

Common root rot; *Bipolaris sorokiniana*

Vincit HRSW seed treatment performance trial near Dickinson, ND, 2010.

This experiment was conducted in a field located near Dickinson, ND (NE ¼, Section 35, T141N, R95W – Dunn County, ND) where the previous crop was wheat in 2009. 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 plus 0.5 oz/a of Harmony GT XP (thifensulfuron) was applied on 27 Apr. Prior to seeding, seed was treated with Vincit 5 (flutriafol 0.42 lb/gal), Vincit Minima (flutriafol 0.21lb/gal), Vincit Minima + Met T (flutriafol 0.21lb/gal+ metalaxyl 2.65lb/gal), Vincit 5, + Met T (flutriafol 0.42lb/gal+ metalaxyl 2.65lb/gal), or Raxil MD (tebuconazole 0.039lb/gal + metalaxyl 0.051lb/gal). Untreated seed was used as a check. Plots were seeded with a drill equipped with Cross-slot openers on 20 May 2010 at the rate of 330 pls/m². 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 and foliar fungicide application of Unity (thifensulfuron) 0.68 oz/a, Puma (fenoxaprop) 0.66 pt/a, MCP Ester4 0.5 pt/a, BroClean, and Tilt (propiconazole) 2 fl oz/a on 20 Jun. Plant counts and vigor were made on 14 Jun. Plant, root and crown evaluations were made on 21-25 Jun and 28 Jun – 2 Jul. Harvest was with a Massy Ferguson 8 XP combine on 26 Aug. 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 while vigor for Vincit Minima at the high rate and Raxil MD treatments were improved over the untreated check. Rainfall was above normal for May, June, and July but below normal in August. No significant differences or trends were observed in this trial for plant length, tillers per plant, subcrown internode rating or seminal root counts but crown root count for the high rate of Vincit Minima was significantly lower than all treatments except for the low rate of Vincit 5 and low rate of Vincit Minima + Met T. No significant differences were detected for mature plant height, head density, grain test weight, and yield though head density and yield for fungicide treatments tended to be higher than the untreated check.

Crop emergence, injury, vigor and stand counts for Howard, HRSW with various seed treatments at Dickinson, ND, 2010.

Treatment	Rate	CE7 ¹	CE14 ¹	CI7 ²	CI14 ²	Vigor	Stand
	floz cwt ⁻¹	----- % -----					m ⁻¹
Vincit Minima	3.07	25.0	100	0	0	105.0	294.41
Vincit Minima	6.14	30.0	100	0	0	123.8	328.02
Vincit 5	1.54	22.5	100	0	0	96.3	252.67
Vincit 5	3.07	28.8	100	0	0	117.5	310.9
Vincit Minima + Met T	3.07 + .03	26.3	100	0	0	97.5	256.67
Vincit 5 + Met T	1.54 + 0.3	28.8	100	0	0	118.8	314.65
Raxil MD	5	31.3	100	0	0	122.5	317.77
Untreated		25.0	100	0	0	100.0	264.79
Mean		27.2	100	0	0	110.2	292.5
CV%		13.7	0	0	0	12.7	13.45
LSD.05		5.5	-	-	-	20.6	NS

¹CE7, CE14 = Crop Emergence 7 days and 14 days after planting.

²CI7, CI14 = Crop Injury 7 days and 14 days after planting.

Root/plant evaluation of Howard HRSW with various seed treatments at Dickinson, ND, 2010.

Treatment	Rate	Plant length	Stage	Tiller	Subcrown ¹ internode rating	Seminal root count	Crown root count
	floz cwt ⁻¹	mm	Zadoks	plant ⁻¹		plant ⁻¹	plant ⁻¹
Vincit Minima	3.07	392.6	27.3	4.3	1.2	4.1	10.4
Vincit Minima	6.14	379.6	26.6	2.8	1.2	4.6	7.8
Vincit 5	1.54	383.1	25.8	3.1	1.4	4.8	8.3
Vincit 5	3.07	385.0	26.8	3.7	1.4	4.7	9.1
Vincit Minima + Met T	3.07 + .03	367.7	27.5	4.2	1.3	4.6	8.8
Vincit 5 + Met T	1.54 + 0.3	371.6	27.0	4.3	1.3	4.5	9.9
Raxil MD	5	391.0	27.0	3.5	1.2	4.6	9.5
Untreated		376.6	26.7	4.1	1.3	4.4	9.5
Mean		380.9	26.8	3.7	1.3	4.5	9.2
CV%		6.7	2.5	22.7	11.8	12.0	9.7
LSD.05		NS	0.96	NS	NS	NS	1.31

¹Subcrown 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 Howard HRSW grown with various seed treatments at Dickinson, ND, 2010.

---- Grain¹ ----

Treatment	Rate	Mature height	Head density	Test wt	Yield
	floz cwt ⁻¹	mm	m ⁻¹	lb/bu	bu/a
Vincit Minima	3.07	807.5	400.6	56.6	52.0
Vincit Minima	6.14	762.5	376.9	56.9	45.8
Vincit 5	1.54	795	411.4	57.6	48.0
Vincit 5	3.07	765	417.6	56.9	48.0
Vincit Minima + Met T	3.07 + .03	793.8	422.2	57.0	52.2
Vincit 5 + Met T	1.54 + 0.3	780	382.4	57.3	46.8
Raxil MD	5	788.8	399.99	57.0	45.2
Untreated		791.3	363.6	57.7	45.1
Mean		785.5	396.8	57.1	47.9
CV%		5.67	8.73	1.52	9.61
LSD.05		NS	NS	NS	NS

¹Grain yield and test weight are reported on a 12% moisture basis.