

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

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Vincit 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 21 and 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 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 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 (Propiconazole) 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.

Plant counts and vigor observed tended to be greater than the untreated check for seed treatments. No significant difference were observed for root color, mass or subcrown internode ratings though root mass tended to be greater for seed treatments than the untreated check. No significant differences for test weight were detected. Significant differences were detected in head density counts for all seed treatments compared to the untreated check except for the high rate of Vincit Minima and the high rate of Vincit 5 + Metalaxyl and Raxil MD. Grain yield for both seed treatment rates of Vincit 5 and for Vincit Minima + Metalaxyl were significantly higher than the untreated check. Wheat stem sawfly injury was noted in this trial but did not appear to favor any particular treatment.

| Trt Name | Rate | Crop Emergence ¹ | | Plant ² | | Crop Injury ¹ | |
|---------------------------|------------|-----------------------------|--------|--------------------|-------|--------------------------|--------|
| | | 7 DAP | 14 DAP | Stand | Vigor | 7 DAP | 14 DAP |
| | fl oz/cwt | ----- % ----- | | m ⁻² | % | ----- % ----- | |
| Untreated Check | | 0 | 51.2 | 142.7 | 100.0 | 0 | 0 |
| Vincit Minima | 3.07 | 0 | 57.5 | 162.3 | 121.3 | 0 | 0 |
| Vincit Minima | 6.14 | 0 | 57.5 | 168.7 | 128.8 | 0 | 0 |
| Vincit 5 | 1.54 | 0 | 51.3 | 149.5 | 110.0 | 0 | 0 |
| Vincit 5 | 3.07 | 0 | 56.3 | 149.9 | 107.5 | 0 | 0 |
| Vincit Minima + Metalaxyl | 3.07 + 0.3 | 0 | 58.8 | 156.9 | 116.3 | 0 | 0 |
| Vincit 5 + Metalaxyl | 1.54 + 0.3 | 0 | 52.5 | 159.7 | 116.3 | 0 | 0 |
| Raxil MD | 5 | 0 | 55.0 | 164.1 | 130.0 | 0 | 0 |
| Mean | | 0 | 55 | 156.7 | 116 | 0 | 0 |
| CV% | | - | 11.8 | 14.7 | 17.7 | - | - |
| LSD 0.05 | | - | 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.

| Trt Name | Rate | Root Evaluation ¹ | | | Head density | Grain ² | |
|---------------------------|------------|------------------------------|------|------|-----------------|--------------------|---------|
| | | Color | Mass | SCI | | Yield | Test wt |
| | fl oz/cwt | | | | m ⁻² | bu/acre | lb/bu |
| Untreated Check | | 1.52 | 2.80 | 1.2 | 493 | 59.9 | 65.6 |
| Vincit Minima | 3.07 | 1.78 | 3.07 | 1.05 | 594 | 62.6 | 66.1 |
| Vincit Minima | 6.14 | 1.68 | 2.92 | 1.2 | 533 | 61.4 | 64.8 |
| Vincit 5 | 1.54 | 1.58 | 3.23 | 1.1 | 624 | 65.6 | 65.4 |
| Vincit 5 | 3.07 | 1.92 | 3.03 | 1.23 | 611 | 66.1 | 66.1 |
| Vincit Minima + Metalaxyl | 3.07 + 0.3 | 1.54 | 3.02 | 1.15 | 626 | 66.3 | 65.1 |
| Vincit 5 + Metalaxyl | 1.54 + 0.3 | 1.53 | 3.10 | 1.18 | 534 | 60.6 | 64.9 |
| Raxil MD | 5 | 1.32 | 3.18 | 1.15 | 556 | 62.3 | 65.2 |
| Mean | | 1.61 | 3.04 | 1.16 | 571 | 63.1 | 65.4 |
| CV% | | 21.6 | 12.2 | 14.2 | 8.7 | 4.8 | 1.5 |
| LSD 0.05 | | NS | NS | NS | 73 | 4.5 | 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.