Crusoe HRSW seed treatment performance trial near Mott, ND, 2008.

This experiment was conducted in a field located near Mott, ND (SE ¼ Section 14, T136N, R93W, Hettinger County, ND). The previous crop was wheat in 2007. A soil sample was collected on March 26 and analyzed by the North Dakota State University Soil Testing Laboratory. Nutrient levels reported were N=44 lb/a, P(Olsen) = 17 ppm, K = 382 ppm, pH = 6.2. Prior to seeding, seed was treated with Crusoe Pinnacle, Dividend XL RTA, Vitaflow 280+Metastar, Crusoe Pinnacle W, Crusoe Pinnacle AW, Enhance AW, Vitaflow 280 or one of two experimental fungicides. Untreated seed was used as a check. Plots were seeded with a drill equipped with Cross-slot openers on 9 May 2008 at the rate of 150 pls m⁻². Urea at the rate of 116 lbs/a (53lbs/a N) was applied through the drill in a separate band during the seeding operation. A post emergent herbicide and foliar fungicide application of Bromac Advance (Bromoxynil Octanoate and Heptonic + MCPA Isooctyl Ester) at 1.5 pt/a, Puma (Fenoxaprop-P) at 0.66 pt/, and Tilt (Propiconizole) at 2 fl oz/a. Plant counts were made on 15 May and 5 Jun. Initial root evaluations at the six-leaf stage were completed on 25 Jun. Soft dough root and crown evaluations were made on 28-29 Jul. Root samples taken during the soft dough analysis were submitted to the NDSU Plant Diagnostic Laboratory for identification of pathogens. 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 25 Aug. Grain yield, test weight, and protein were adjusted to a 12% moisture basis. All data was statistically analyzed using SAS Statistical Software.

Plant counts observed in initial and second counts tended to be greater than the untreated check for all seed treatments while vigor observed during the second count was significantly different compared to the untreated check for Crusoe Pinnacle, Dividend XL RTA and Crusoe Pinnacle AW. Rainfall was normal for June but below normal for May, July, and August. No significant differences or trends were observed in this trial for root mass or subcrown internode ratings but root color was significantly improved for Dividend XL RTA, and Crusoe Pinnacle AW. *Rhizoctonia* spp., *Phytophthora* spp., *Fusarium graminearum* and *Bipolaris sorokiniana* was not detected in tissue samples submitted from this trial for lab analysis. No significant differences were detected for mature plant height, head density, test weight, grain yields and protein.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Rate</th>
<th>15 May Plant count</th>
<th>15 May Vigor</th>
<th>5 Jun Plant count</th>
<th>5 Jun Vigor</th>
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### Initial root evaluation

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<th>Treatment</th>
<th>Rate (ml kg⁻¹)</th>
<th>Length (mm)</th>
<th>Stage</th>
<th>Tiller Subcrown¹ internode</th>
<th>Seminal root plant ¹</th>
<th>Crown root plant ¹</th>
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¹ Subcrown internode rating, 1-4. 1 = less than 25% of the internode infected, 2 = 25 – 50% of the internode infected, 3 = 51-75% of the internode infected, multiple lesions, and 4 = 75-100% of the internode infected, lesions coalesced.

### Soft dough root evaluation

<table>
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<tr>
<th>Treatment</th>
<th>Rate (ml kg⁻¹)</th>
<th>Root¹ mass</th>
<th>Root² color</th>
<th>Subcrown³ internode</th>
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¹ Root mass: 1 to 4, 1 = few roots, 4 = many roots.
² Root color: 1 to 4, 1 = white, 4 = dark.
³ Subcrown internode rating, 1-4. 1 = less than 25% of the internode infected, 2 = 25 – 50% of the internode infected, 3 = 51-75% of the internode infected, multiple lesions, and 4 = 75-100% of the internode infected, lesions coalesced.
<table>
<thead>
<tr>
<th>Treatment</th>
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<th>Head density</th>
<th>Test weight</th>
<th>Yield</th>
<th>Protein</th>
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1Grain values adjust to a 12% moisture basis.