SWEET CORN (*Zea mays* 'Super Sweet Jubilee' (*sh2*))
Damping-off; various seed and soilborne pathogens

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Evaluation of seed treatments on sweet corn in the Columbia Basin of Washington, 2009.

A trial was established in a commercial field of sweet corn near Ephrata, WA to evaluate 27 seed treatments for improving seedling stand and vigor of sweet corn. The seed lot and seed treatments were selected by the Seed Treatment Committee of the International Sweet Corn Development Association (ISCDA). The seed treatments included conventional fungicides, experimental fungicides, and organic fungicides. Many of the treatments also included seed enhancements and insecticides. The treatments were applied to seeds in a slurry using commercial seed treaters (applied by Bayer CropScience, Syngenta Crop Protection, AgriCoat LLC, or The McGregor Co.). The trial was located in a center pivot-irrigated field that had a previous crop of sweet corn in 08. Manure was spread and incorporated in the spring prior to bed formation. Seeds for this trial were planted by hand in raised beds on 24 Apr 09. Seeding depth was 1-in. One-hundred seeds were planted per plot. Each plot consisted of one 30-ft long row with an inter-row spacing of 30-in. Treatments were replicated four times in a randomized complete block design. Stand counts and vigor ratings were recorded 34 days after planting (DAP). Stand was expressed as a percentage of the number of seeds planted. Vigor was rated on a whole plant basis using a subjective visual scale of 1-5 (1 = extremely weak seedlings, 2 = weak, 3 = fair, 4 = vigorous, 5 = very vigorous seedlings). Data were subjected to analysis of variance and means comparison using Student-Newman-Keuls least significant difference (LSD).

The cooler than normal temperatures for the Columbia Basin of central Washington in the first three weeks after planting contributed to variable plant vigor and poor stands in the trial. At 34 DAP, most seedlings were at the 4-leaf stage, but some plants had just emerged and others were at the 5-leaf stage. Many seeds had not emerged. The average stand for the trial was only 59%. Mean stand counts for the seed treatments ranged from 31 to 73%, and the mean stand for the nontreated control plots was 45%. The seed treatment with AgriCoat Organic + Yield Shield resulted in the lowest stand count (31%). Plots with this treatment had significantly fewer emerged plants compared to plots with the three treatments that had the highest stand counts, BAS 595 XG (at the higher rate) + Acquire + Stamina (at the higher rate) + Axcess (73%), Dividend Extreme + Apron XL LS + Maxim 4FS + Vitavax 34 + Dynasty 0.83FS (72%), and Dividend Extreme + Apron XL LS + Maxim 4FS + Vitavax 34 + Cruiser 5FS + Maize Coat ZN + Polymer + B-U 1197 (72%). Although higher stand counts were observed in plots for most of the seed treatments (24 of 27) than in the nontreated control plots, stand counts were not statistically different for any of the treatments compared with the nontreated control plots. The three lowest ranking treatments for stand were the three treatments that included an AgriCoat-Organic treatment combination with Yield Shield (31%), T-22 (36%), or Yield Shield + T-22 (35%). Although plots with these treatments had lower stand counts than in the nontreated control plots, the differences were not significant statistically. No statistically significant differences were observed in plant vigor among treatments.

Treatment and rate of product	Stand (%)	Vigor (1-5)
AgriCoat Organic 51.2[z] + Yield Shield 1.3[z]	31 b[v]	2.8 a
AgriCoat Organic 51.2[z] + T-22 19.3[z] + Yield Shield 1.3[z]	35 ab	3.0 a
AgriCoat Organic 51.2[z] + T-22 19.3[z]	36 ab	3.0 a
No treatment	45 ab	3.8 a
Senator 600 FS 0.6[y] + Sebring 2.65 ST 15.5[x] + Signet 78[x]	49 ab	3.0 a
Vortex FS 2.5[x] + Allegience FS 15.5[x] + Trilex 15[x] + Poncho 250 0.25[y]	51 ab	2.5 a
Vortex FS 2.5[x] + Allegiance FS 15.5[x] + Tops 30 [x] 111	56 ab	3.0 a
Senator 600 FS 0.6[y] + Sebring 2.65 ST 15.5[x] + Signet 78[z] + Maize Coat ZN + Polymer 51.2[z]	57 ab	3.0 a
Vortex FS 2.5[x] + Allegiance FS 15.5[x] + Tops 30 111[x] + Biological Combo	58 ab	4.3 a
BAS 595 XG 10[xw] + Acquire 15.5[x] + Stamina 10[x] + Axcess 0.25[y]	58 ab	2.5 a
Vortex FS 2.5[x] + Allegience FS 15.5[x] + Trilex 15[x]	58 ab	4.3 a
Dividend Extreme 15[x] + Apron XL LS 8.9[x] + Maxim 4FS 2.5[x] + Vitavax 34 91.3[x]	59 ab	4.0 a
Dividend Extreme15[x] + Apron XL LS 8.9[x] + Trilex 15[x] + Vitavax 34 91.3[x]	59 ab	2.0 a
Vortex FS 2.5[x] + Allegiance FS 15.5[x] + Thiram 42S 39[x] + Captan 400 47[x] + Poncho 250 0.25[y]	62 ab	4.3 a
Vortex FS 2.5[x] + Allegiance FS 15.5[x] + Thiram 42S 39[x] + Poncho 250 0.25[y]	62 ab	3.0 a
Vortex FS 2.5[x] + Allegiance FS 15.5[x] + Thiram 42 S 39[x]	63 ab	4.5 a
Apron XL LS 2.5[x] + A16148B 5[xw] + Maxim 4FS 2.5[x] + Cruiser 5 FS 0.25[y] + Dividend Extreme 15[x]	63 ab	3.5 a
Dividend Extreme 15[x] + Apron XL LS 8.9[x] + Maxim 4FS 2.5[x] + Vitavax 34 91.3[x] + AgriCoat Exp[w]	64 ab	2.5 a
Vortex FS 2.5[x] + Allegiance FS 15.5[x] + Tops 30 111[x] + Poncho 250 0.25[y]	64 ab	3.8 a
Vortex FS 2.5[x] + Allegiance FS 15.5[x] + Thiram 42S 39[x] + Captan 400 4 [x]	67 ab	4.3 a
Vortex FS 2.5[x] + Allegiance FS 15.5[x] + L0121-A 78[xw]	67 ab	3.5 a
Tops 30 111[x] + Apron XL LS 8.9[x] + Maxim 4FS 2.5[x] + Vitavax 34 91.3[x]	68 ab	3.3 a
Captan 400 32[x] + Thiram 42S 32[x] + Dividend Extreme 62.5[x] + Apron XL LS 41[x] + Vitavax 34 51.2[x]	68 ab	4.0 a
Apron XL LS 4.5[x] + Dynasty 0.83FS 1[x] + Maxim 4FS 2.5[x] + Cruiser 5 FS 0.25[y] + Dividend Extreme 15[x]	69 ab	3.8 a
Vortex FS 2.5[x] + Apron XL LS 8.9[x] + Maxim 4FS 2.5[x] + Vitavax 34 91.3[x]	70 ab	3.3 a
Dividend Extreme 15[x] + Apron XL LS 8.9[x] + Maxim 4FS 2.5[x] + Vitavax 34 91.3[x] + Cruiser 5FS 0.25[y] + Maize Coat ZN + Polymer 51.2[z] + B-U 1197 51.2[xw]	72 a	3.3 a
Dividend Extreme 15[x] + Apron XL LS 8.9[x] + Dynasty 0.83FS 1[x] + Maxim 4FS 2.5[x] + Vitavax 34 91.3[x]	72 a	3.8 a
BAS 595 XG 20[xw] + Acquire 15.5[x] + Stamina 20[x] + Axcess 0.25[y]	73 a	2.5 a
LSD ($P < 0.10$)	20	1.2

[z] Rate applied in g product/100 kg seed.

[y] Rate applied in mg a.i./seed.

[x] Rate applied in g a.i./100 kg seed.

[w] Experimental fungicide.

[v] Column numbers followed by the same letter are not significantly different based on Student-Newman-Keuls least significant difference (LSD)