

Table 55

Varieties in ACS Biotech trials vs. varieties approved for unlimited sale for 2004 @

| Description | Approval Status | Rec. Sugar/T * | | | | | | Rec. Sugar/A * | | | | | Rec/T+Rec/A | | | | | Cercospora * | | | |
|------------------------------------|------------------|----------------|-------|-------|-----------|-----------|--------------|----------------|--------|--------|--------|--------|-------------|-------|-------|---------|------|--------------|------|-----------|-----------|
| | | 2001 | 2002 | 2003 | 2 Yr Mean | 3 Yr Mean | 3 Yr % Appr. | 2001 | 2002 | 2003 | Mean | Mean | % Appr. | 2 Yr | 3 Yr | % Appr. | 2001 | 2002 | 2003 | 2 Yr Mean | 3 Yr Mean |
| Beta 991RR | Approved in 2002 | 324.3 | 309.1 | 319.6 | 314.4 | 317.7 | 98.2 | 8304 | 7862 | 8675 | 8268 | 8280 | 106.0 | 203.0 | 204.2 | 198.4 | 4.61 | 5.07 | 4.99 | 5.03 | 4.89 |
| Beta 993RR(Rzm) | CR too High | | 289.0 | 320.0 | 304.5 | | | | 7524 | 8774 | 8149 | | | | | | 5.34 | 5.13 | 5.23 | | |
| Beta 995RR | Only 1 Yr | | | 315.9 | | | | | | 8453 | | | | | | | | 5.54 | | | |
| Crystal RX309RR | Only 1 Yr | | | 325.1 | | | | | | 8518 | | | | | | | | 5.12 | | | |
| Crystal X210RR | Sugar Low | | 304.4 | 321.2 | 312.8 | | | | 7352 | 7795 | 7573 | | | 193.7 | | | 4.76 | 4.73 | 4.75 | | |
| Hilleshog 129RzRR | Approved Rzm | 310.7 | 283.7 | 325.6 | 304.6 | 306.7 | 94.8 | 7645 | 6315 | 8712 | 7514 | 7557 | 96.7 | 190.4 | 191.5 | 5.27 | 4.93 | 5.14 | 5.03 | 5.11 | |
| Hilleshog 131RzRR | Approved Rzm | | 289.9 | 314.8 | 302.4 | | | | 7137 | 8864 | 8001 | | | 195.9 | | | 5.15 | 4.45 | 4.80 | | |
| Hilleshog 132RzRR | Approved Rzm | | 279.1 | 307.0 | 293.0 | | | | 6902 | 8147 | 7525 | | | 186.9 | | | 5.11 | 5.02 | 5.07 | | |
| Van der Have H85001RR | Sugar Low | | 300.1 | 321.6 | 310.9 | | | | 7984 | 8457 | 8221 | | | 201.3 | | | 4.79 | 5.45 | 5.12 | | |
| 22 Full Market Var. app'd for 2004 | | 324.5 | 312.9 | 333.5 | 323.2 | 323.7 | | 7796.4 | 7570.6 | 8068.2 | 7819.4 | 7811.7 | | | | | | | | | |

*Recoverable sugar/ton and recoverable sugar/acre adjusted to commercial status on basis of 4 check varieties common to commercial and semi comm.tests.

Created 11-10-03.

@ Approval after 3 years is more probable if varieties exceed 100% Rec/T, 195% Rec/T+Rec/A, and are less than 5.20 for Cercospora.

Biotech seed is NOT APPROVED for sale to ACS growers for the 2004 crop.

Table 56
2003 Performance of Varieties - Minn-Dak Semi-Commercial Coded Test
Minn-Dak Sites - All Characters (Commercial Status - 2 sites)

| Description @ | Code | Rec/T lbs. | Rec/A lbs. | Rev/T \$ ++ | Rev/A \$ ++ | Loss Mol % | Sugar % | Yield T/A | Na ppm | K ppm | AmN ppm | Bolter % | Cerc.** Rating | Aph** Root |
|--------------------------------|------|------------|------------|-------------|-------------|------------|---------|-----------|--------|-------|---------|----------|----------------|------------|
| Beta 3820(Check)2003 | 305 | 326.4 | 8185 | | 1.37 | 17.69 | 25.15 | 440 | 1998 | 364 | 0.00 | NA | NA | |
| Beta BX1103 | 304 | 321.2 | 8515 | | 1.49 | 17.54 | 26.65 | 585 | 1987 | 420 | 0.21 | 4.69 | 5.47 | |
| Beta BX1319 | 308 | 318.7 | 7928 | | 1.51 | 17.43 | 25.09 | 584 | 1928 | 447 | 0.00 | 4.94 | 6.05 | |
| Crystal 999(Check)2003 | 307 | 326.8 | 8248 | | 1.47 | 17.79 | 25.28 | 495 | 1953 | 440 | 0.00 | NA | NA | |
| Filler#2 | 309 | 325.1 | 8580 | | 1.49 | 17.74 | 26.45 | 499 | 2005 | 440 | 0.00 | NA | NA | |
| Holly 03HX322 Rzm | 303 | 324.3 | 7817 | | 1.29 | 17.52 | 24.19 | 343 | 1924 | 359 | 0.11 | 3.92 | 4.54 | |
| Holly 03HX323 Rzm | 316 | 327.1 | 8243 | | 1.38 | 17.75 | 25.32 | 457 | 1846 | 418 | 0.00 | 3.74 | 3.53 | |
| Holly 03HX324 Rzm | 310 | 322.9 | 8165 | | 1.34 | 17.49 | 25.40 | 314 | 1973 | 391 | 0.00 | 4.61 | 5.39 | |
| Holly 03HX327 | 312 | 323.7 | 7952 | | 1.42 | 17.62 | 24.71 | 411 | 2085 | 398 | 0.00 | 5.12 | 5.98 | |
| Holly 03HX328 | 306 | 321.2 | 7492 | | 1.34 | 17.43 | 23.36 | 319 | 2012 | 385 | 0.00 | 4.28 | 4.66 | |
| Seedex Monarch(Check)2003 | 302 | 320.4 | 8440 | | 1.48 | 17.50 | 26.42 | 497 | 2084 | 424 | 0.00 | NA | NA | |
| Seedex SX0930 | 314 | 310.8 | 7388 | | 1.46 | 16.99 | 23.96 | 411 | 2187 | 396 | 0.00 | 4.35 | 6.86 | |
| Van der Have H46177(Check)2003 | 315 | 329.8 | 7854 | | 1.28 | 17.79 | 23.93 | 313 | 2032 | 335 | 0.00 | NA | NA | |
| Van der Have H66729 | 311 | 317.6 | 8386 | | 1.50 | 17.37 | 26.64 | 477 | 2143 | 416 | 0.00 | 4.97 | 5.44 | |
| Van der Have H66853 | 301 | 310.2 | 8379 | | 1.54 | 16.96 | 27.17 | 525 | 2158 | 432 | 0.00 | 5.20 | 5.80 | |
| Van der Have H66854 | 313 | 331.7 | 8058 | | 1.34 | 17.93 | 24.34 | 330 | 1937 | 393 | 0.00 | 4.94 | 5.24 | |
| Check Mean | | 322.4 | 8102 | | 1.42 | 17.54 | 25.25 | 437 | 2016 | 404 | 0.02 | | | |
| Coef. of Var. (%) | | 2.3 | 5.3 | | 5.7 | 1.9 | 5.3 | 18.6 | 4.8 | 9.0 | | | | |
| F Value | | 3.6 | 4.8 | | 7.6 | 2.4 | 4.6 | 8.9 | 7.2 | 5.4 | | | | |
| Mean LSD (0.05) | | 9.5 | 447 | | 0.09 | 0.50 | 1.64 | 87 | 106 | 39 | | | | |
| Mean LSD (0.01) | | 13.1 | 592 | | 0.11 | 0.69 | 2.27 | 115 | 147 | 52 | | | | |

++ Rev/Ton and Rev/Acre not collected.

Created 11-1-03

**Lower numbers indicate better resistance (1 = Ex, 9 = poor). Cerc. data from Rosemount, MN. Aph data from Shakopee, MN.

Trial # = 03MDSC

@ Some varieties not approved for sale. Refer to approval list for approval status.

Table 57
2003 Rhizoctonia Readings for Coded Test Entries (Exp 8R, 2003)
USDA Station - Ft Collins CO

| Description | Entry | 2003 Disease Evaluation + | | | | | | 2002 DI * |
|--|-------|---------------------------|---------|-------|------------|--------|------|-----------|
| | | DI * | Hlthy % | 0-3 % | Hlthy Z% @ | 0-3 Z% | DI * | |
| Beta BX1301 (Rhc & Rzm) | 1003 | 5.0 | 3 | 15 | 6 | 22 | - | |
| Beta BX1311 (Rhc) | 1006 | 4.2 | 8 | 33 | 12 | 34 | - | |
| Hilleshog 7172 RZ | 1001 | 3.9 | 15 | 32 | 22 | 34 | 2.8 | |
| Seedex SX0830 (Aph & Rhc) | 1004 | 5.8 | 0 | 10 | 0 | 17 | - | |
| Seedex SX0932 (Aph & Rzm) | 1007 | 5.3 | 0 | 7 | 0 | 10 | - | |
| Van der Have H46521 (Aph & Rhc) | 1002 | 5.1 | 0 | 8 | 0 | 12 | 3.5 | |
| Van der Have H46522 (Aph & Rhc, Rzm) | 1005 | 4.4 | 3 | 28 | 6 | 31 | - | |
| Susceptible Check (FC901/USDA line C817) | | 5.7 | 7 | 9 | 13 | 13 | | |
| Highly Resistant Check (FC705/1) | | 2.9 | 23 | 66 | 25 | 58 | | |
| Resistant Check (FC703) | | 3.0 | 19 | 64 | 22 | 54 | | |
| LSD .05 | | 0.78 | | 11.2 | 14.5 | 1.26 | | |

* Disease Index is based on a scale of 0 (=healthy) to 7 (= plant dead).

+ Percent of healthy roots (DI 0-1 combined), likely to be processed (DI 0-3 combined)

@ Percentages transformed to arcsine-square roots to normal the data for analyzes.

Note, the given Mean and LSD values are for the entire plot which included 5 other entries. LSD was calculated using five reps.