

FIELD EVALUATION OF SELECTED SOYBEAN CULTIVARS FOR RESISTANCE TO SOYBEAN SEVERE STUNT NEPO VIRUS, 2001

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The field trial was planted in a loamy-sand soil that has had a history of soybean severe stunt disease and was planted to soybeans the previous season. This virus disease is soilborne and the putative vector is the dagger nematode, *Xiphenema* sp. (Plant Disease 76:747-750).

OBJECTIVE: Twenty-two soybean cultivars in maturity groups IV & V in addition to six populations of F-3 selections from Southern Illinois University were evaluated for resistance to soybean severe stunt nepo virus (SSSV) near Millsboro, DE. The F-3 populations were crosses between Chesapeake x LS94-3207, Delsoy 4710 x Manokin, Essex x Chesapeake, Accomac x Choska, Accomac x Choska, and Delsoy 4710 x Choska. The parents were selected for resistance to SSSV and the soybean cyst nematode. All of the commercial varieties in this test are Round-Up resistant, and some have resistance to the soybean cyst nematode.

PRODUCTION PRACTICES: The site was planted May 30. Variety plots consisted of two rows, 20 ft long, spaced 15 in. apart. Seeding rate was 6 seeds per row foot. Each two-row plot was bordered by a single row of the susceptible cultivar 'Hutcheson'. The experimental design was a randomized

complete block with four replications. The six F-3 populations were plants in 21 single-row plots and also had the susceptible 'Hutcheson' planted between every two rows. Temperatures were normal and favorable for disease development. Rainfall was above normal for most of the season. The cultivars were evaluated on 3 Jul (V4-5 stage of growth), and the check rows evaluated when no symptoms were seen in the test rows. A cultivar was not given a rating of 1=apparently healthy, unless symptomatic plants were observed in the adjacent check row.

COMMENTS: The disease severity within the plot area was extremely variable. Disease incidence was random resulting in treatments having from 2-4 replications with symptoms.

RESULTS AND SUMMARY: Delsoy 4710 continued to show immunity (no infected plants) and Hutcheson to be susceptible. Clark CL 47 had one replication with plants with stunting and regrowth and should be considered susceptible. All the rest of the varieties with ratings above a 2 are susceptible. Troll, Dekalb 40-51, USG 7449 NRR, Schillinger 401 RC, Clark CL441 NRR, and Delsoy 5710 appeared to be resistant in this test. The best plants in the F-3 rows were selected at maturity and the seed removed from each plant for advancing into the 2002 test.

Cultivar reactions to soybean severe stunt nepo virus. Mulrooney and Evans, 2001.

Brand/Cultivar	Disease Rating*	Number of usable replications
Group IV		
Public Delsoy 4710	1.0	2
Public Troll	1.0	3
Northrup King S46-W8	5.0	4
Dekalb 44-51	5.0	4
Dekalb 40-51	1.0	2
Hyttest 4320 RR	4.5	2
USG 7449 NRR	1.3	3
Schillinger 401 RC	1.0	3
Schillinger 431 RSC	4.0	3
Schillinger 451 RCF	5.0	2
Schillinger 481 RCS	2.0	2
Clark CL 441 NRR	1.3	3
Clark CL 47 NRR	2.5	2
Southern States RT 446N	4.5	4
Southern States RT 4495N	4.5	4
Agway APK 470 NRR	4.7	4
Agway APK 471 NRR	4.2	4
Group V		
Public Delsoy 5710	1.0	2
Public Hutcheson	5.0	4
Agway APK 507 NRR	4.7	3
Southern States RT 5001N	5.0	3
Delta Pine DP 5414RR	4.7	3

* Rating scale: 1= apparently healthy, 2 = stunted and no necrosis, 3 = stunted and necrosis present, 4= severely dwarfed and normal growth breaking, 5 = severely dwarfed.