

**2022**

**NORTHERN REGIONAL**

**SOYBEAN CYST NEMATODE**

**TESTS**

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# 2022 NORTHERN REGIONAL SCN TESTS

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## INTRODUCTION

The purpose of the Northern Regional Soybean Cyst Nematode (SCN) Tests is to evaluate the best experimental SCN resistant soybean lines developed by public researchers in the U. S. and Canada and to provide soybean breeders with a source of genetically diverse germplasm for continued progress in the release of well adapted, SCN resistant breeding lines and varieties. Participants are encouraged to exchange germplasm within the legal guidelines pertaining to transgenic strains.

Tests are established for each maturity group 00 to IV. Transgenic (ie. Roundup Ready) entries are established in separate tests from conventional strains. Experimental strains are evaluated in Preliminary Tests grown at a limited number of locations for one year before they are entered in Uniform Tests. Uniform Tests are grown at more locations with more replications than Preliminary Tests.

## POLICY ON EVALUATION AND RELEASE OF STRAINS

### **Qualifications for inclusion in the Northern Regional SCN Tests**

- 1) Participants must be willing and able to conduct separate tests for conventional strains and strains containing proprietary and/or transgenic traits. However, all participants are not required to evaluate both; and, placement of entries in tests depends on whether the entries are transgenic or non-transgenic.
- 2) Participants are individually responsible to ensure that any proprietary and/or transgenic strains that they submit are approved for human consumption and are cleared for sale as commodity seed.
- 3) Participants must disclose pedigrees to the Uniform Test Coordinator for publication with performance data in Uniform Soybean Test Report unless contract arrangements prohibit disclosure of information.
- 4) It is recommended that breeders obtain written permission for the use of privately developed varieties or strains as parents in the development of lines included in the Uniform Tests.

### **Use of Northern Regional SCN Test Entries in Soybean Breeding and Research**

- 1) Seed of Uniform test entries is for evaluation in the Uniform tests only and may not be distributed to non-participants of these tests without prior approval by the originator of the entry.
- 2) Uniform Test participants must obtain written approval before using any entry, other than their own, in any breeding or genetic studies, or for any other research.
- 3) Experimental strains entered in the Uniform Tests should be labeled "Experimental Strain" and should not be identified by strain designation when grown in demonstration plots or when the Uniform Tests are shown on field days or farm tours.
- 4) Seed of any transgenic entry must not be used for further evaluation without written permission from the originator of the entry, and must be discarded at the end of the season, except for crossing purposes, subject to the restrictions outlined in the preceding section two.

### **Release of Northern Regional SCN Test Entries**

- 1) Entries in the Northern Regional SCN Tests are released according to the policies and procedures of the originating institution.
- 2) Restricted or contractual releases cannot impose any restriction on the prior use of an entry as a parent by SCN Test Participants.



## METHODS

Regional SCN Uniform Tests and Preliminary Tests are planted in multiple-row plots with the center rows used for data collection and harvested for yield. Plots in the Uniform Tests are generally replicated three times while plots in the Preliminary Tests are generally replicated twice. The coefficient of variability (CV) is reported for replicated data at each location. Yield data with a CV value of greater than 15 is generally not included in the test means.

**Descriptive Code** is abbreviated as underlined below.

Flower color: Purple, White, M indicates mixed flower color

Pubescence color: Tawny, Gray, Light tawny, M indicates mixed pubescence color

Hilum color: black, imperfect black, brown, buff, gray, yellow

**Previous testing** is the number of previous years in the same SCN Uniform Test or a reference to the previous year's test, abbreviated to SCN PIII for SCN Preliminary Test III, for example.

**Yield** is measured after the seeds have been dried to a uniform moisture content and is recorded in bushels (60 pounds) per acre.

**Maturity** is the date when 95% of the pods have ripened. Delayed leaf drop and green stems are not considered in assigning maturity. Maturity is expressed as days earlier (-) or later (+) than the reference variety.

**Height** is the average length in inches from the ground to the tip of the main stem at maturity.

**Lodging** is rated at maturity according to the following scores:

1 = Almost all plants erect.

2 = All plants leaning slightly or a few plants down.

3 = All plants leaning moderately (45 degrees), or 25 to 0% of the plants down.

4 = All plants leaning considerably, or 50 to 80% of the plants down.

5 = Almost all plants down.

**Seed quality** is rated according to the following scores considering the amount and degree of wrinkling, defective seed coat (growth cracks), greenishness, and moldy or rotten seeds. Threshing or handling damage is not included, nor is mottling or other pigment.

1 = Very good    2 = Good    3 = Fair    4 = Poor    5 = Very poor

**Seed size** is recorded in grams per 100 seeds based on a 100 or 200 seed sample.

**Seed Composition** is measured on samples submitted to the University of Minnesota. A 25-gram sample of clean seed is prepared by taking an equal volume or weight of seed from each replication. Protein and oil content is measured on these samples using infrared reflectance and is reported as dry-weight percentage values. The values listed in this report have been converted to a 13% moisture basis.

**Shattering** is scored at a specified time after maturity and is based on estimates of the percent of open pods as follows:

- 1 no shattering
- 2 1 to 10% shattered
- 3 10 to 25% shattered
- 4 25 to 50% shattered
- 5 over 50% shattered

**Minnesota Iron Chlorosis scores (IDC)** Scores are the mean of 2 reps and 2 observation and are based on the amount and severity of chlorosis (leaf yellowing). Scale; 1 = no chlorosis to 5 = severe chlorosis, leaf necrosis and possibly plant death. Data was collected from Lake Lillian and Wilkin Co. Minnesota.

**Green Stem** is a rating of delayed green stem at time of plant maturity (R8 = 95% of the pods have reached mature pod color). The condition is rated according to the following scores.

- 1 = almost all plant stems yellowing or have ripened, as indicated by their mature stem color.
- 2 = 1 - 10% plants with green stems
- 3 = 11 - 25% plants with green stems
- 4 = 26 - 50% plants with green stems
- 5 = > 50% plants with green stems.

**Missouri Frogeye Leaf Spot (FELS)** was rated by Dr. Allen Wrather at Portageville, MO on a 0 to 9 scale with 0=no frogeye and 9=severe.

**Missouri Rootknot Nematode (RKNT)** was rated on 2 reps on a 1 to 5 scale with 1=no galls and 5=severe galls at 2 locations in plantings behind potatoes near Bertrand, MO.

**Nebraska Gall Midge** scores were based on the average visual observation of two reps using a 1 to 9 scale where 1=10% infection, 2=20% infection, etc.

## SCN/DISEASE SCREENING

**SCN greenhouse test:** Soybean cyst nematode resistance bioassays were conducted in a greenhouse at the University of Missouri. Seeds for each test line along with susceptible controls and indicator lines were germinated in a 27°C incubator. Seedlings were transplanted into pots (100 cm<sup>3</sup>) of steam pasteurized sandy loam soil and inoculated with 1,000 eggs. Each soybean line had five replicates and were organized in a randomized complete block design. Experiments were conducted in temperature-controlled water tanks to maintain 27°C soil temperature. Twenty-eight days after inoculation each root was soaked in water and the females were collected by rinsing the root with high pressure water. The females from each sample were counted using a stereo microscope and the mean number from each line was obtained. Female index (FI) values were determined by dividing the mean number of females from the test line by the mean number of females from the susceptible control and multiplying by 100. Coefficient of variation (CV) was calculated for lines with FI 25 or greater. Lines were rated according to the Illinois resistance scale as: highly resistant (FI < 10), resistant (FI = 10-24), moderately resistant (FI = 25-39), low resistance (FI = 40-59), or no effective resistance (FI ≥ 60). Ratings were not determined if CV values were greater than 35, if there were fewer than 3 data points from a test line, or if resistant and susceptible individuals were present within a line yet fell below the FI or CV thresholds.

HR = FI of < 10  
 R = FI of 10 to 24  
 MR = FI of 25 to 39  
 LR = FI of 40 to 59  
 NR = FI of > 60  
 nd = not determined FI>10, CV>35

**Heterodera glycines (HG) Type testing:** Cooperators submit soil samples taken in the spring from SCN infested locations. Each soil sample is homogenized thoughtfully, and 100 ccs of soil are used for nematode extraction. All samples are planted to a mix of Essex, Williams 82, and Lee 74 for scn increase. Seed of each indicator line is germinated in germination paper at 27° C for two days. One healthy seedling of each line is then placed in an individual container of sterilized sandy soil and infested with 1,000 eggs (+or- 50). Each line is replicated five times. Infested seedlings are grown in a greenhouse under 16 hour light in a water bath system that maintains a constant 27° C soil temperature. After 30 days, SCN females and cysts are washed from the roots of each seedling and counted. A female index (FI) is calculated for each indicator line by dividing the mean number of SCN females and cysts on the entry by the mean number of cysts on the susceptible check Lee 74 and multiplying by 100. A FI greater than or equal to 10 is considered a positive (+) response on each indicator line. HG Type classifications of the SCN populations are determined using the following table:

Indicator line	HG Type							
	0	1	2	3	4	5	6	7
PI 548402 (Peking)		+						
PI 88788			+					
PI 90763				+				
PI 437654					+			
PI 209332						+		
PI 89772							+	
PI 548316 (Cloud)								+

## STRAIN DESIGNATIONS

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Experimental (i.e. unreleased) strains are identified by a number with a state or province code letter prefix. The code letters have been agreed upon in meetings of experiment station agronomists with the U.S. Department of Agriculture. Additional code letters may be used to designate the individual within a state or province that developed the strain.

A	Iowa
C	Purdue (Indiana) (C=Wilcox, CL=Leroy, CR=Rainey)
D	Mississippi
E	Michigan
HC	Ohio (Cooper)
HF	Ohio (Fioritto)
HS	Ohio (St. Martin)
HM	Ohio (McHale)
K	Kansas
Ky	Kentucky
L	Illinois (Bernard)
LN	Illinois (Nickell)
LG	Illinois (Nelson)
LD	Illinois (Diers)
LS	Southern Illinois University
M	Minnesota
Md	Maryland
ORC	Ridgetown, Ontario
S	Missouri (Shannon)
SA	Missouri (Scaboo)
SS	Missouri (Sleper)
SD	South Dakota
TN	Tennessee
U	Nebraska
UD	Delaware
V	Virginia
W	Wisconsin

## 2022 IDENTIFICATION OF PARENT STRAINS

Strain	Parentage
235.T	line from Schillinger Seed Co.
41-43	
435.TCS	line from Schillinger Seed Co.
4J10534	
51-34	
A00-711022	A95-485020 x IA2036
A00-711024	A95-485020 x IA2036
A04-545045	Pioneer 93B86 x A00-711022
A1	Anoka x Mack
A13	Selection from AP9 Fe(S1) C7
A20	BSR101 x CN210
A29	1% linolenic plant selection developed by Iowa State University
A72-507	Amsoy x Wayne
A76-304020	(Beeson x AP68-1016) x (L15 x Calland)
A77-211021	Beeson x A72-507
A78-123018	Pride B216 x Hodgson
A81-356022	Century x A76-304020
A86-301024	A81-356022 x Hack
A87-395012	Fayette x Asgrow A3659
A91-701035	A86-301024 x Dekalb 226
A92-77021	
A94-773014	Pioneer P9303 x A87-395012
A95-485020	(Pioneer P7273 x A13) x Jack
A95-581028	Marcus x Pioneer P9273
A96-591033	IA3003 x Pioneer P9273
A97-871009	
A98-781041	Pioneer P9204 x Pioneer P9281
AAC Malden	
Agripro 97284-N00-47977	
AgriPro 98180-A01-06131	
Agripro AP 26	Beeson x Calland
Agripro AP1989	Agripro AP26 x Vickery
Agripro AP1995	Agripro AP 1989 x Asgrow A3427
AP6	Crop Sci. 15:739 1975
AP68-1016	Clark(5) x PI 84.946-2
AP9	Iron-def. chlor. Resis. (Crop Sci. 20:677, 1980)
AR02-101001	Pioneer P9233 x A96-591033

## 2022 IDENTIFICATION OF PARENT STRAINS

Strain	Parentage
AR03-161009	(PI 507354 x Marcus) x IA1008
AR03-161013	(Marcus x PI507354) x IA2036
AR06-365042	Golden Harvest H-2632 x Syngenta S18-N5
AR08-186008	Golden Harvest H-2285 x AR02-101001
AR08-286003	
AR09-191003	Agripro 97284-N00-47977 x AR02-101001
AR09-191018	Agripro 97284-N00-47977 x AR02-101001
AR09-192019	LD01-7323 x AR02-101001
AR09-291011	AR03-161009 x Agripro 97284-N00-47977
AR09-391017	Syngenta SJ833009 x AR03-161013
AR1	IA2039BC x IA2021
AR10-205011	SS02-12014 x AR02-101001
AR10-205011	SS02-12014 x AR02-101001
AR11-113050	SS02-12014 x AR05-150119
AR11SDS-SCN	
AR12-127091	AR03-161009 x AR06-365042
AR12-327073	
AR13-232106	
AR13-331018	Ina x AR3
AR8SCN	PI88788 x Columbia
Asgrow A1564	Hark x C1453
Asgrow A2234	[(Calland X Amsoy) x (Century(3) X Williams 82)]
Asgrow A2943	Asgrow A1564 x Asgrow A3127
Asgrow A3127	Williams x Essex
Asgrow A3427	Asgrow X3836 x Asgrow A3127
Asgrow A3659	Williams x Essex
Asgrow A3733	Elf x Asgrow A3127
Asgrow A3860	Williams x Essex
Asgrow A3935	MO474C x Asgrow A3127
Asgrow A4009	Asgrow A3860 x Fayette
Asgrow A4138	Asgrow A4595 x Asgrow A4009
Asgrow A4595	Douglas x Asgrow A3127
Asgrow A4715	Asgrow A5474 x (Douglas x Asgorw A3127)
Asgrow A5474	(Tracy x D71-6234) x J74-122
Asgrow X3836	Williams x Mack
C1079	Lincoln x Ogden
C1253	Blackhawk x Harosoy

## 2022 IDENTIFICATION OF PARENT STRAINS

Strain	Parentage
C1266R	Harosoy x C1079
C1453	C1266R x C1253
C1842	(Spencer(2) x Pella) x Resnik
CL05-32415	
CL05-4637	
CL0J173-6-8	Kottman x Dwight
CM304	Unknown
D49-2491	S100 x CNS = sister line of Lee
D61-2624	D49-2491(4) x PI 174.862 high protein
D61-3505	D49-2491(2) x PI 174.862 high protein
D66-7398	D61-3505 x (PI 96.035 x D61-2624)
D71-6234	D66-7398 x PI 95.560
DA10x30-09F	
Dairyland 99540	Stine 2660 x DSR-275
Dairyland DSR 304	Williams x Unknown
E05181-T	Loda x IA2053
E05276-T	
E07051	IA3017 x Loda
E09014	AxN-1-55 x A00-711003
E09088	
E11128T	E05276-T x LD01-7323
E12042	
E12076T	
E13100	LD01-7323 x U01-390489
E13367	E07051 x E10928
E13390	
E14077	U03-300134 x E07051
E15806	
E15901	E11955-4 x E07051
E15917	
E16826	
E16830-1	
E16854	
E16901	
E16902	
E17805-12	
HF03-546	A95-581028 x PI 592926

## 2022 IDENTIFICATION OF PARENT STRAINS

Strain	Parentage
HM09-W084	Dennison x HF03-546
HM11-W192	
HM8536	HW79149 x HW79022
HS5-3417	
HS93-4118	IA2007 x Dairyland DSR 304
HW79022	Woodworth x L60-347-1-60-3B
HW79149	[A72-507(6) x A1] x [A72-507(5) x PI 82.263-2]
J74-122	Forrest(3) x PI 88.788
K07-1633	IA3023 x LD00-3309
K10-8556	IA3023 x LD00-3309
K11-2363B	435.TCS x LD05-30578a
K11-2363T	435.TCS x LD05-30578a
K12-1355	
K13-1515	LG06-5920 x LD04-13265
L15	Wayne(6) x Clark 63
L46-2132	Lincoln(2) x Richland
L57-0034	L46-2132 x Adams
L60-347-1-60-3B	Harosoy x Higan
L65-1274	Harosoy (6) x T201
L66L-154	Wayne x L57-0034
L69-4143	[L15(5) x ((Clark(6) x T201) x (Clark(6) x T145))] x (Wayne(10) x Kanrich)
L73-4673	Corsoy x L66L-154(Williams sib)
L77-906	Williams X PI209.332
L77-994	Williams x PI88.788
L85P-558	L73-4673 X Fayette
LD00-2817	Ina x Dwight
LD00-3296	LN95-5724 x Pana
LD00-3309	Maverick x Dwight
LD00-4970	Maverick x Dwight
LD01-5907	Ina x IA3010
LD01-7323	LN95-5454 x Dwight
LD02-4485	M90-184111 x IA3010
LD02-5320	IA2052 x Dwight
LD02-9050	LN97-24270 x LS93-0375
LD03-10504	LN97-26569 x A98-781041
LD03-7610	LN95-5817 x IA3010
LD04-11056W	U96-2208 x Syngenta S38-T8



## 2022 IDENTIFICATION OF PARENT STRAINS

Strain	Parentage
LD04-13265	Syngenta S32-Z3 x U98-205355
LD04-13296	Syngenta S32-Z3 x U98-311442
LD05-16638	Dwight(3) x (Dowling x Loda)
LD05-30578a	LD00-3309(2) x [LD00-4970(2) x (Dowling x Loda)]
LD05-30588a	LD00-3309(2) x (LD00-4970(2) x (Dowling x Loda))
LD05-3171	U97-201128 x Syngenta S42-H1
LD05-3230	Syngenta S25-J5 x LD00-3296
LD06-2009	U97-201128 x U98-307162
LD06-7620	IA3023 x LD00-3309
LD06-7762	
LD07-3395bf	Syngenta WW115926 x LD00-2817
LD07-3419	Syngenta WW115926 x LD00-2817
LD07-4477	IA3023 x LD00-3309
LD07-5065	Dwight x F1 plant (A81-356022(4) x PI 468916)
LD08-12435a	LD02-4485(2) x (Ina x PI 200538)
LD08-12441a	LD02-4485(2) x (Ina x PI200538)
LD08-12446a	LD02-4485(2) x (Ina x PI 200538)
LD09-10220	CL0J173-6-8 x Dairyland 99846-74
LD09-30224	LD05-3230 x [LD05-16638 x (Dwight x (Ina x PI 200538))]
LD09-3913	Syngenta 02JR318004 x LD03-7610
LD10-10198	LD05-3230 x LD00-3309
LD10-10219	LD05-3230 x LD00-3309
LD10-10226	LD05-3230 x LD00-3309
LD10-2715	LD03-10504 x LD00-2817P
LD10-5213a	LD02-4485(5) x (Ina x PI 200538)
LD10-5903a	M99-286047 x LD05-16638
LD10-9168	LD06-7648 x LD02-4485
LD11-10069	LD06-2009 x LG04-6000
LD11-2170	Syngenta 03JR313108 x LD05-3171
LD11-7311	Syngenta 03JR313108 x LD02-4485
LD12- 459	LD02-4485 x LD06-7620
LD12-10534	LG04-6000 x (LD00-3309(5) x LD07-5065)
LD12-12701a	LD08-12446a x LD05-30588a
LD12-268	LD06-2009 x LD06-7620
LD12-3903	LD06-7620 x Syngenta 05BR006009
LD12-459	LD02-4485 x LD06-7620
LD12-6010a	Syngenta 06NB204846 x LD09-15464

## 2022 IDENTIFICATION OF PARENT STRAINS

Strain	Parentage
LD12-8677	LD04-11056W x Shillinger 432.TCS
LD13-13228R1a	LD08-12430a x LD06-30505Ra
LD13-3483	LD07-3395 x CL06-121119
LD13-3673	Syngenta BN0800009 x CL05-32415
LD13-6640	LD07-3395 x NE0900094
LD13-8470	U05-226055 x 09Hill784(LD00-2817(5) x LDX01-1-65)
LD13-8769	LD06-7596 x (LD00-3309(5) x LD07-5065)
LD14-3702	LD07-4477 x LG06-5798
LD14-6190	LD09-30015 x LD09-30460
LD14-8003	[Titan(5) x E10005] x [Titan(5) x F1 plt (LD08-12446a x LD05-30588a)]
LD15-9224	(LD00-3309(5) x IA3023) x (LD00-3309(2) x PI 567516C)
LG00-2455	F6 LG95-441-4 x IA2022
LG00-3372	
LG01-5822	HS93-4118 x LG97-9912
LG01-7728	Williams 82 x (F1 Williams x PI 479767 G. soja)
LG03-3020	LG96-1711 x LG92-4208
LG03-3780	LG94-4396 x LG96-3159
LG04-6000	HS93-4118 x LG97-9912
LG07-2249	IA3023 x LG01-7728
LG07-6944	LG98-1454 x LG00-2455
LG10-12313	
LG11-2963	
LG11-3370	
LG11-6208	LG03-3020 x LG03-3780
LG11-6210	LG03-3020 x LG03-3780
LG11-6760	LG00-3372 x LD00-3309
LG12-2177	
LG84-1096	PI 297515 x PI 290126B
LG84-1269	PI 227333 x PI 91730-1
LG84-1272	PI 227333 x PI 91730-1
LG86-7394	PI 68508 x FC 04007B
LG86-7841	PI 407710 x Century
LG88-2248	PI 438151 x A78-123018
LG88-3146	PI 427099 x PI 445830
LG89-6661	Sherman x LG84-1096
LG90-4181	PI 436682 x Lawrence
LG91-7431	LG84-1272 x Elgin

## 2022 IDENTIFICATION OF PARENT STRAINS

Strain	Parentage
LG92-4208	LG84-1269 x Chamberlain
LG94-4396	LG86-7394 x S42-30
LG95-441-4	PI 68508 x FC 04007B
LG96-1711	LG88-3146 x LG88-2248
LG96-3159	LG86-7841 x A3935
LG97-8984	LG89-6661 x HS89-3261
LG97-9912	LG90-4181 x A3322
LG98-1454	LG91-7431 x P9273
LN94-14862-97-2	Jack x Hartwig
LN95-5454	Jack x IA3003
LN95-5724	Jack x IA3003
LN95-5817	Jack x C1842
LN97-24270	Jack x Macon
LN97-26569	Yale x Macon
LS02-0425	LN93-11632 x IA1008
LS02-2213	LS93-0375 x SS94-4337
LS05-3229	LS93-0375 x Ina
LS07-3125	SS98-7851 x LD00-3309
LS07-3131	SS98-7851 x LD00-3309
LS09-1803	LD00-1938 x LS02-2213
LS93-0375	Asgrow A3935 x Pioneer P9402
M00-110002	U96-2408 x MN0302
M00-113176	M90-184111 x M94-246028
M00-351195	MN0902CN x M95-123116
M00-365137	Jim x LN94-14862-97-2
M00-365181	Jim x LN94-14862-97-2
M01-314114	MN0902CN x M95-123116
M02-328023	MN0304 x A00-712012
M02-333013	M94-162105 x MN0304
M03-172059	IA2052 x MN0304
M04-239147	
M05-363022	IA1008 x MN1011CN
M06-288155	M00-365137 x M99-286050
M06-288181	M00-365137 x M99-286050
M06-288190	M00-365137 x M99-286050
M06-289001	
M06-289273	M00-351195 x M00-365181

## 2022 IDENTIFICATION OF PARENT STRAINS

Strain	Parentage
M07-209037	M90-184111 x MN0606CN
M07-292111	
M07-296048	M01-314114 x MN1011CN
M07-297007	MN0902CN x LD02-5320
M08-362045	
M08-362051	MN0606CN x U03-100612
M08-365038	M90-184111 x U03-100612
M08-434072	MTC03-111-75 x Hendricks
M08-609011	
M09-285149	
M10-218053	
M10-236018	
M10-237089	
M60-406	Blackhawk x Harosoy
M68-303	M60-406 x Beeson
M75-89	Corsoy x M68-303
M86-1973	L77-906 X M75-89
M87-227	A82-161034 X Dawson
M87-349	
M90-1437	Dawson X HM8536
M90-184111	L85P-558 X M86-1973
M92-1631	Fairbault x Bell
M92-1651	Faribault x PI 437654
M92-1708	Kato x Bell
M92-270029	M87-227 x M87-349
M92-674	Agassiz x Ozzie
M93-313135	Agassiz x M90-1437
M94-246028	Lambert x M92-1651
M94-275024	M89-1006 x Kato
M95-123116	Parker x M92-1631
M96-356062	M92-674 x M92-1708
M97-121138	MN0302 x 9004
M97-136016	M90-162034 x IA2021
M99-286047	IA1008 x Pioneer P9234
M99-286050	IA1008 x Pioneer P9234
MO474C	White flowered off-type in Mitchell
MSC09-774074	Sheyenne x PI567516C

## 2022 IDENTIFICATION OF PARENT STRAINS

Strain	Parentage
MSC09-776063	MN1410 x PI567516C
ND01-3901	Pioneer 9071 x A96-492041
ND02-992	ND92-2381 x ND95-938
ND03-5441	Barnes x MN0602CN
ND03-7566	Barnes x MN0602CN
ND07-2205	LaMoure x ND01-1690
ND07-3761	ProSoy x ND01-2006
ND07-4027	M96-356062 x Ashtabula
ND10-2522	ND03-7566 x ND03-5441
ND10-2993	ND04-11329 x ND03-7566
ND10-3330	
ND10-3427	
ND10-3464	ND03-7566 x [ND03-5441 x LaMoure]
ND10-3601	ND03-7566 x [ND03-5441 x LaMoure]
ND10-3608	ND03-7566 x [ND03-5441 x LaMoure]
ND10-3610	ND03-7566 x [ND03-5441 x LaMoure]
Northrup King S19-90	Pride B152 x Pella
OAC 05-21	
OAC Prescott	
ORC_3713N	
Pioneer 91M10	
Pioneer 92B12	Pioneer P9221 x (Pioneer P9162 x Pioneer P9234)
Pioneer 93B82	
Pioneer 93B86	
Pioneer P1677	Corsoy(2) x Rampage
Pioneer P2981	S20 x Hark
Pioneer P9004	Maple Ridge x Lakota
Pioneer P9061	Wells x Pioneer P1677
Pioneer P9071	Pioneer P9061 x Pioneer P9181
Pioneer P9181	Beeson x Williams
Pioneer P9233	CM293 x ST2250
Pioneer P9234	Pioneer P9221 x Pioneer P9162
Pioneer P9273	Pioneer 2981 x Asgrow A3127
Pioneer P9281	Hark x (Corsoy x Calland)
Pioneer P9303	Asgrow A2943 x Asgrow A5474
Pioneer P9341	CM304 x Asgrow A3127
Pioneer P9362	Asgrow A2943 x Asgrow A5474

## 2022 IDENTIFICATION OF PARENT STRAINS

Strain	Parentage
Pioneer P9381	(Essex x L69-4143) x Sprite
Pioneer P9402	(L77-994 x Asgrow A3127) x L77-994
PR33	rust resistant line form Georgia
Pride B152	Northrup King S1346(6) x Mack
S100	Rouge in Illini
S11-17025	
S11-20124	
S13-4214	
S15-17108	
S18-R6	
S20	L15 x C1423
S23-T5	
SA13-1310	K07-1633 x LD04-13265
SA13-1363	K07-1633 x LD04-13265
SA13-1385	K07-1633 x LD04-13265
SA13-2489	LD07-3419 x K07-1633
SA13-2692	LS07-3125 x LD04-13265
SA13-2699	LS07-3125 x LD04-13265
SA13-2926	
SA13-3135	LS07-3125 x LG07-2309
SA13-5761	LG04-5187 x LG05-4092
SC 5414N	
SD08CV-2102	M97-136016 x SD96-135-3
SS02-12014	Hamilton x PI438489B
SS94-4337	Jack x Pioneer P9341
SS98-7851	Pioneer P9362 x Magellan
Syngenta 02JR318004	S32-Z3 x CM4035N
Syngenta 03JR313108	
Syngenta 05BR006009	SG801122200 x 96601-B99-17498
Syngenta BN09002129	
Syngenta S18-N5	
Syngenta S23-T5	
Syngenta S25-J5	
Syngenta S42-H1	
Syngenta SJ833009	
Syngenta WN0902577	
Syngenta WW115926	

## 2022 IDENTIFICATION OF PARENT STRAINS

Strain	Parentage
T180	F3 sib of T181
T181	Non-nodulating rjl mutant in Lincoln(2) x Richland
T201	T181 x T180
U01-190311	NE1900 x A97-871009
U01-390489	IA1008 x NE3001
U02-242055	NE1900 x Pioneer P93B82
U03-100612	U99-009019 x Pioneer P92B12
U03-200317	U99-009019 x Pioneer P92B12
U03-260216	U99-009010 x UP1Fe(s1)C7-150
U03-300134	NE3202 x Pioneer P92B12
U05-226055	U98-307917 x UP1C4-95-30
U06-300925	
U09-105007	OAC 05-21 x U03-300134
U09-118017	U01-190311 x U02-242055
U09-133021	U02-242055 X U03-200317
U09-215057	U01-390489 x U03-200317
U11-494100	LG04-6005 x LD00-2817P
U11-610107	
U11-614093	U02-242055 x LD04-13265
U11-614119	U02-242055 x LD04-13265
U11-616086	U02-242055 x LD02-4485
U11-622148	U02-242055 x LD04-13265
U11-911079	LD02-4485 x U03-300134
U11-917032	LD02-4485 x U03-100612
U11-920017	HS5-3417 x LD02-4485
U11-932025	U06-300925 x U03-100612
U11-935093	
U12-909109R	
U12-921088	MN1410 x LD04-13265
U13-912010	
U14-211226	U09-407147 x LD02-4485
U14-212231	U09-407147 x LD02-4485
U14-903100	U09-105007 x LD02-4485
U14-909100	U09-105007 x LD02-4485
U14-910097	U09-105007 x LD07-3419
U14-924158	U11-935093 x LD07-3419
U14-925152	U11-935093 x LD07-3419

## 2022 IDENTIFICATION OF PARENT STRAINS

Strain	Parentage
U94-2306	Holt x Dairyland DSR 304
U96-2208	Colfax x A91-701035
U97-201128	U94-2306 x UP1Fe-95-9
U98-205355	A94-773014 x Bell
U98-307162	
U98-307917	U94-2306 x A92-77021
U98-311442	A94-773014 x Bell
U99-009019	MSBP6S4 (Intermated population)
UP1Fe-95-9	



## 2022 NORTHERN REGIONAL SCN TEST LOCATIONS

			Uniform Tests					Preliminary Tests			
Location	GPS Coordinates	Cooperator	SCN*	0	I	II	III	IV	IIAB	IIIAB	
<b>IA</b>	<b>Ames</b>	41.985293, -93.640417	A. Singh	I		1	1		1	1	
<b>IL</b>	<b>Urbana</b>	40.053643, -88.233975	B. Diers	I		1	1	1	1	1	
<b>IN</b>	<b>West Lafayette</b>	40.480469, -87.004761	G. Cai	I		1	1				
<b>KS</b>	<b>Manhattan</b>	39.1324074, -96.6200412	W. Schapaugh	I			1	1		1	
<b>KS</b>	<b>Ottawa</b>	38.540444, -95.247722	W. Schapaugh	NI				1			
<b>KS</b>	<b>Salina</b>		W. Schapaugh	NI				X			
<b>MI</b>	<b>Decatur</b>	42.1241, -86.0339	D. Wang	I		1	1		1		
<b>MN</b>	<b>Crookston</b>	47.819730, -96.611440	A. Lorenz	NI	1						
<b>MN</b>	<b>Moorhead</b>	47.006182, -96.802012	A. Lorenz	NI	1						
<b>MN</b>	<b>Shelly</b>		A. Lorenz	I	X						
<b>MN</b>	<b>Lamberton</b>	44.242857, -95.315917	A. Lorenz	I		1					
<b>MN</b>	<b>Rosemount</b>	44.422266, -93.420500	A. Lorenz	I		1					
<b>MN</b>	<b>Waseca</b>		A. Lorenz	I		X					
<b>MO</b>	<b>Columbia 2A</b>	38.8894444, -92.2080556	A. Scaboo	I				1		1	
<b>MO</b>	<b>Columbia 2B</b>	38.8894444, -92.2080556	A. Scaboo	I			1				
<b>MO</b>	<b>Novelty</b>	39.9427548, -92.0533528	A. Scaboo	I			1	1		1	
<b>MO</b>	<b>Albany B1b</b>	40.238423, -94.343286	A. Scaboo	I			1			1B	
<b>MO</b>	<b>Albany B2</b>	40.238423, -94.343286	A. Scaboo	I						1A	
<b>MO</b>	<b>Albany B2b</b>	40.238423, -94.343286	A. Scaboo	NI				1			
<b>MO</b>	<b>Portageville</b>	36.394407, -89.610160	G. Shannon	I				1			
<b>ND</b>	<b>Absaraka</b>	46.964223, -97.384587	C. Miranda	I	1						
<b>ND</b>	<b>Prosper</b>	47.003094, -97.112680	C. Miranda	I	1						
<b>ND</b>	<b>Wyndmere</b>	46.249534, -97.144819	C. Miranda	I	1						
<b>NE</b>	<b>Cotesfield</b>	41.292283, -98.531392	G. Graef	NI		1	1		1		
<b>NE</b>	<b>Mead</b>	41.157994, -96.418761	G. Graef	NI		1	1		1		
<b>NE</b>	<b>Cook</b>	40.508990, -96.15047	G. Graef	NI			1			1	
<b>NE</b>	<b>Phillips</b>	40.847276, -98.177013	G. Graef	I			1			1	
<b>ON</b>	<b>Palmyra</b>	42.458148, -81.729070	M. Eskandari	I		1					
<b>ON</b>	<b>Ottawa</b>	45.374914, -75.724415	E. Cober	NI	1						
<b>ON</b>	<b>Elora</b>	43.644522, -80.400715	I. Rajcan	NI	1						
<b>ON</b>	<b>St. Pauls</b>	43.332870, -81.176672	I. Rajcan	NI		1					
<b>ON</b>	<b>Woodstock</b>	43.142702, -80.795667	I. Rajcan	NI		1					
<b>TN</b>	<b>Jackson</b>	35.633885, -88.859439	C. Smallwood	I				1			
Total Tests					7	9	6	9	8	5	7

\* I = infested, NI = non-infested, X= Data not submitted for location

## 2022 Characteristics of *Heterodera glycines* populations

Location	Eggs/ 250cc	HG Type	Female Index ( % of Lee 74)							HG 7 Cloud	Pickett
			HG 1 Peking	HG 2 88788	HG 3 90763	HG 4 437654	HG 5 209332	HG 6 89772			
IA Ames	13750	2.5.7	3	31	0	0	16	0	27	3	
IL Urbana	1250	2.5.7	1	45	0	0	39	0	60	7	
IN West Lafayette	375	2.5.7	1	39	0	0	12	0	57	8	
KS Manhattan	375	7	3	5	1	0	5	1	18	3	
KS Ottawa	0										
KS Salina	0										
MI Decatur	1300		Egg counts reported by cooperator, no HG typing								
MN Crookston	0										
MN Moorhead	NI										
MN Shelly	Inf										
MN Lamberton	250	2.5.7	1	42	0	0	29	0	63	9	
MN Rosemount	250	1.2.5.7	28	51	1	0	51	5	73	47	
MN Waseca	Inf										
MO Columbia 2A	3500	2.5.7	8	66	0	0	42	0	58	58	
MO Columbia 2B	2500	1.2.5.7	13	96	1	0	50	0	57	33	
MO Novelty	750	1.2.5.7	18	46	1	0	33	1	33	60	
MO Albany B1b	5250	1.2.5.7	35	41	0	0	58	2	72	110	
MO Albany B2	250	1.2.5.7	35	52	2	0	11	1	68	96	
MO Albany B2b	0										
MO Portageville	500	2.5	5	33	0	0	10	0	7	66	
ND Absaraka	500	2.7	0	22	0	0	7	0	36	1	
ND Prosper	1000	0	0	3	0	0	1	0	6	0	
ND Wyndmere	250	2.7	0	11	0	0	2	0	32	1	
NE Cotesfield	0										
NE Mead	0										
NE Cook	0										
NE Phillips	250	2.5.7	2	34	0	0	16	1	75	3	
ON Palmyra	Inf										
ON Ottawa	NI										
ON Elora	NI										
ON St. Pauls	NI										
ON Woodstock	NI										
TN Jackson	2100	1.2.5.7	Egg count and HG type reported by cooperator								

Inf=infested, NI = non-infested

## 2022 NORTHERN REGIONAL SCN TESTS SCN SCREENING

Female Index (FI) = (mean number of females on test cultivar) ÷ (mean number of females on control) x 100		inoc rate = 1000 eggs	HG Type 7					
			rep1	rep2	rep3	rep4	rep5	mean
<b>Rating scale</b>  FI < 10 = Highly Resistant; HR FI 10 to 24 = Resistant; R FI 25 to 39 = Moderately Resistant; MR FI 40 to 59 = Low Resistance; LR FI > 60 = No Resistance; NR FI > 25, CV > 35 = Not Determined; **	Williams 82						165	
	Lee 74	202	139	192	180	158	174	
	PI548402	1	3	5	2	3	3	2
	PI88788	15	20	5	7	2	10	6
	PI90763	3	2	1	2	0	2	1
	PI437654	0	0	0	0	0	0	0
	PI209332	11	9	7	6	14	9	5
	PI89772	7	0	2	3	5	3	2
	PI548316	22	15	20	31	34	24	<b>14</b>
Pickett	18	7	8	7	1	8	5	

inoc rate = 1000 eggs	HG Type 2.5.7						
	rep1	rep2	rep3	rep4	rep5	mean	FI
Williams 82						151	
Lee 74	181	187	130	134	185	163	
PI548402	1	1	5	1	4	2	1
PI88788	168	90	107	66	197	126	<b>77</b>
PI90763	0	0	0	0	0	0	0
PI437654	0	0	0	0	0	0	0
PI209332	160	124	147	145	171	149	<b>91</b>
PI89772	1	0	1	0	0	0	0
PI548316	177	115	141	98	144	135	<b>83</b>
Pickett	5	21	13	6	8	11	6

inoc rate = 1000 eggs	HG Type 1.2.5.7						
	rep1	rep2	rep3	rep4	rep5	mean	FI
Williams 82						179	
Lee 74	198	222	218	210	187	207	
PI548402	44	42	47	46	35	43	<b>21</b>
PI88788	172	150	176	170	153	164	<b>79</b>
PI90763	0	0	1	0	0	0	0
PI437654	1	0	0	0	0	0	0
PI209332	199	153	179	186	158	175	<b>85</b>
PI89772	0	1	1	0	0	0	0
PI548316	164	165	164	163	171	165	<b>80</b>
Pickett	203	134	121	150	172	156	75

## 2022 NORTHERN REGIONAL SCN TESTS SCN SCREENING

(\*)=small root, (.)=missing sample, (\*\*)=rep data too variable to rate

Test			HG Type 7									2.5.7		1.2.5.7	
			rep 1	rep 2	rep 3	rep 4	rep 5	mean	cv	FI	rating	FI	rating	FI	rating
U 0	3	MN0404CN (SCN)	13	19	21	17	6	15		9	HR				
U 0	4	MN1511CN (SCN)	9	9	12	7	15	10		6	HR				
U 0	5	M13-118036	16	10	8	9	6	10		6	HR	87	NR	90	NR
U 0	6	M13-250056	0	2	0	1	3	1		1	HR	1	HR	19	R
U 0	7	M13-257047	61	38	30	32	16	35		21	R				
U 0	8	M15-221040	16	28	23	10	26	21		13	R				
U 0	9	M15-108094	49	45	35	37	53	44	18	27	MR				
U 0	10	M15-220021	24	39	12	15	25	23		14	R				
U 0	11	M16-215122	20	26	16	12	19	19		11	R				
U 0	12	M16-121069	12	28	11	15	27	19		11	R				
U 0	13	M16-465-20015	9	6	7	8	6	7		4	HR	70	NR	89	NR
U 0	14	ND17-20565	10	17	12	43	9	18		11	R				
U 0	15	ND17-20754	88	76	79	118	99	92	19	56	LR				
U 0	16	ND17-22117	10	11	8	17	13	12		7	HR				
U 0	17	ND17-22120	18	14	21	18	24	19		12	R				
U 0	18	OAC 19-05C-SCN	21	18	5	14	24	16		10	R				
U I,II	3	U11-917032 (SCN)	23	165	8	16	15	45	148	28	**				
U I	4	E15338	11	20	26	6	9	14		9	HR				
U I	5	E20078	10	9	7	12	8	9		6	HR	0	HR	23	R
U I	6	E20099	98	9	25	38	27	39		24	**	57	**	110	NR
U I	7	LD19-5366a	54	27	18	23	31	31		19	R				
U I	8	M13-250046	6	2	5	5	6	5		3	HR	1	HR	14	R
U I	9	M13-251003	9	16	3	2	12	8		5	HR	84	NR	70	NR
U I	10	M13-262015	14	16	26	15	30	20		12	R				
U I	11	M13-266011	193	128	152	108	137	144	22	87	NR				
U I	12	M14-122031	12	14	10	2	9	9		6	HR				
U I	13	M14-122035	6	18	4	6	3	7		4	HR	74	NR	89	NR
U I	14	M15-159120	13	3	3	1	1	4		3	HR	79	NR	71	NR
U I	15	M15-179024	6	11	15	5	6	9		5	HR				
U I	16	M16-116016	25	13	21	17	4	16		10	HR				
U I	17	M16-134052	4	4	6	7	1	4		3	HR				
U I	18	M16-214187	13	14	10	6	10	11		6	HR				
U I	19	M16-215143	20	16	23	15	18	18		11	R				
U I	20	M16-215179	8	14	22	18	7	14		8	HR				
U I	21	M16-465-20078	4	11	10	6	3	7		4	HR	80	NR	77	NR

## 2022 NORTHERN REGIONAL SCN TESTS SCN SCREENING

(\*)=small root, (.)=missing sample, (\*\*)=rep data too variable to rate

Test			HG Type 7									2.5.7		1.2.5.7	
			rep 1	rep 2	rep 3	rep 4	rep 5	mean	cv	FI	rating	FI	rating	FI	rating
U I	22	OAC 19-62C-SCN	11	7	18	22	19	15		9	HR				
U I	23	ORC 5120	10	19	12	12	11	13		8	HR				
U I	24	ORC 5420	13	20	18	20	20	18		11	R				
U I	25	U20-912087	73	9	7	19	23	26		16	R				
U I	26	U20-923006	110	241	119	150	177	159	33	97	NR	90	NR	95	NR
U II	2	LD02-4485 (SCN)	10	10	11	8	9	10		6	HR				
U II,III	4	U14-910097 (SCN)	3	2	7	3	4	4		2	HR	2	HR	23	R
U II	5	A15208- 17	10	6	3	3	10	6		4	HR	7	HR	28	**
U II	6	E17040	12	8	12	22	17	14		9	HR				
U II	7	E17203	11	13	13	40	9	17		10	R				
U II	8	E19314T	81	144	84	62	65	87	38	53	**				
U II	10	E19413	20	17	20	12	7	15		9	HR				
U II	11	LD17-2558	6	7	4	5	7	6		4	HR				
U II	12	LD17-2903	2	11	9	5	6	7		4	HR				
U II	13	LD17-3855	9	18	22	12	21	16		10	R				
U II	14	LD18-0173	17	24	10	12	13	15		9	HR				
U II	15	LD18-0986	60	72	70	69	68	68	7	41	LR				
U II	16	LD18-4231	17	26	16	7	10	15		9	HR				
U II	17	LD18-4236	12	71	9	18	9	24		14	R				
U II	18	LD18-4406	9	31	11	8	13	14		9	HR				
U II	19	LD18-5062	19	12	5	5	11	10		6	HR				
U II	20	LD18-6259a	6	7	12	5	4	7		4	HR	82	NR	86	NR
U II	21	U18-613247	8	7	5	10	4	7		4	HR				
U II	22	U19-602215	10	35	20	21	25	22		13	R	93	NR	103	NR
U II	23	U19-618131	2	0	3	5	3	3		2	HR	0	HR	20	R
U II	24	U19-618247	3	2	6	5	3	4		2	HR	55	LR	71	NR
U II	25	U19-911031	3	2	3	6	5	4		2	HR	21	**	18	R
U II	26	U19-913011	51	26	20	38	30	33		20	R				
U II	27	U19-923124	5	6	2	2	3	4		2	HR	0	HR	24	R
U II	28	U19-924091	7	124	4	3	5	29		17	**	78	NR	95	NR
U II	29	U19-926126	5	184	8	10	5	42	187	26	**	8	HR	62	NR

## 2022 NORTHERN REGIONAL SCN TESTS SCN SCREENING

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Test			HG Type 7									2.5.7		1.2.5.7	
			rep 1	rep 2	rep 3	rep 4	rep 5	mean	cv	FI	rating	FI	rating	FI	rating
U III	1	LD11-2170 (III)	17	21	19	16	18	18		11	R				
U III	2	U15-606207 (SCN)	2	7	7	4	8	6		3	HR	1	HR	24	R
U III	3	LD07-3395bf (SCN)	9	11	12	9	5	9		6	HR	9	HR	63	**
U III	5	A15203- 59	3	2	1	5	3	3		2	HR	8	HR	58	LR
U III	6	A15208-104	1	7	3	6	1	4		2	HR	0	HR	18	R
U III	7	A15208-113	5	2	3	5	2	3		2	HR	9	HR	59	LR
U III	8	LD18-1767	7	13	16	15	13	13		8	HR				
U III	9	LD18-4251	20	9	15	15	13	14		9	HR				
U III	10	LD18-6596	8	37	31	12	23	22		13	R				
U III	11	LD18-7491	23	15	18	26	24	21		13	R				
U III	11	LD18-7491	41	28	25	29	38	32		20	R				
U III	12	LD18-7606	63	103	89	82	62	80	22	48	LR				
U III	13	LD18-7628	62	46	34	48	44	47	21	28	MR				
U III	13	LD18-7628	57	59	27	63	57	53	28	32	MR				
U III	14	LD18-10010	70	74	41	59	45	58	25	35	MR	29	**	58	LR
U III	15	LD19-10352	3	2	3	3	1	2		1	HR	32	MR	58	**
U III	16	U18-617265	3	12	8	8	9	8		5	HR				
U III	17	U18-617270	20	30	19	27	24	24		15	R				
U III	18	U19-604203	5	11	3	4	4	5		3	HR	1	HR	20	R
U III	19	U19-605170	163	100	7	12	18	60	115	36	**				
U III	20	U19-607156	13	17	6	9	3	10		6	HR	8	HR	70	NR
U III	21	U19-608187	8	5	5	7	6	6		4	HR	7	HR	48	**
U III	22	U19-613113	154	113	78	10	5	72	90	44	**	42	**	34	**
U III	23	U19-613290	133	17	131	101	11	79	77	48	**	82	NR	90	NR
U III	25	U19-928235	8	8	108	5	10	28		17	**	75	NR	77	NR
U IV	1	LD15-3818 (IV)	18	15	10	26	13	16		10	R				
U IV	2	LD00-2817 (L)	8	7	12	6	4	7		4	HR	1	HR	24	R
U IV	4	K17-6388	11	16	3	12	4	9		6	HR				
U IV	5	K18-1247	49	41	32	40	27	38		23	R				
U IV	6	K18-1396	30	17	28	20	14	22		13	R				
U IV	7	K18-2401	9	7	2	6	2	5		3	HR				
U IV	8	K19-1628	19	20	19	16	30	21		13	R				
U IV	9	K19-4225	26	25	37	27	16	26		16	R				
U IV	10	K19-4248	21	19	11	23	13	17		11	R				

## 2022 NORTHERN REGIONAL SCN TESTS SCN SCREENING

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Test			HG Type 7									2.5.7		1.2.5.7	
			rep 1	rep 2	rep 3	rep 4	rep 5	mean	cv	FI	rating	FI	rating	FI	rating
U IV	11	K19-4471	15	15	6	18	19	15		9	HR				
U IV	12	K19-4777	21	18	49	27	34	30		18	R				
U IV	13	K19-6003	7	12	9	7	19	11		7	HR				
U IV	14	K19-6041	20	26	27	20	11	21		13	R				
U IV	15	K19-6079	8	12	7	13	14	11		7	HR				
U IV	16	LD18-3068	26	9	19	156	111	64	102	39	**				
U IV	17	LD18-4159	14	12	9	18	16	14		8	HR				
U IV	18	LD19-4657	100	117	114	161	80	114	26	69	NR				
U IV	19	LD19-7948	141	134	108	162	103	130	19	79	NR				
U IV	20	LD19-10076	2	7	5	5	7	5		3	HR				
U IV	21	LD19-10244	50	3	3	5	32	19		11	R				
U IV	22	S19-10701C	69	199	94	84	187	127	49	77	**	92	NR	94	NR
U IV	23	SA18-10815	3	8	14	18	4	9		6	HR				
U IV	24	SA18-11346	37	44	23	48	31	37		22	R				
U IV	25	SA18-12086	9	4	7	12	8	8		5	HR	37	**	56	LR
U IV	26	SA18-14143	4	10	9	6	6	7		4	HR				
U IV	27	SA19-10248	16	13	29	38	15	22		13	R				
U IV	28	SA19-12580	10	17	13	30	9	16		10	HR				
U IV	29	SA19-7246	7	17	6	12	4	9		6	HR				





## 2022 NORTHERN REGIONAL SCN TESTS SNP MARKER ANALYSIS

Test	Ent	Strain	Phytophthora							Brown stem rot	Frogeye leaf spot	Stem canker	
			Rps 1a	Rps 1c	Rps 1d	Rps 1k	Rps 2	Rps 3a	Rps 6				
U 0	1	ND Dickey (0)	S	R	S	S	S	S	S	S	S	R	
U 0	2	MN0095	Het	S	S	Het	S	S	S	Het	S	R	
U 0	3	MN0404CN (SCN)	S	S	S	R	S	S	R	R	S	R	
U 0	4	MN1511CN	S	R	S	S	S	S	S	Het	S	R	
U 0	5	M13-118036	S	S	S	S	S	S	S	R	S	R	
U 0	6	M13-250056	S	R	S	S	S	S	S	R	S	R	
U 0	7	M13-257047	R	S	S	S	S	S	S	R	S	R	
U 0	8	M15-221040	R	S	S	S	S	S	R	R	S	R	
U 0	9	M15-108094	S	S	S	S	S	S	S	S	S	R	
U 0	10	M15-220021	S	S	S	S	S	S	S	R	S	R	
U 0	11	M16-215122	S	S	S	S	S	S	S	.	S	R	
U 0	12	M16-121069	S	S	S	S	S	S	S	Het	S	R	
U 0	13	M16-465-20015	.	S	S	S	S	S	S	R	S	R	
U 0	14	ND17-20565	S	S	S	S	S	S	R	Het	S	R	
U 0	15	ND17-20754	S	S	S	S	S	S	R	Het	S	R	
U 0	16	ND17-22117	S	S	S	S	S	S	S	R	S	R	
U 0	17	ND17-22120	S	S	S	S	S	S	S	Het	S	R	
U 0	18	OAC 19-05C-SCN	sample not screened										

## 2022 NORTHERN REGIONAL SCN TESTS SNP MARKER ANALYSIS

Test	Ent	Strain	SCN			Root Knot Nematode	Iron Chlorosis		
			Rhg1-PI88788	Rhg1-Peking	Rhg4		Fec-LgA1	Fec-LgN	Ch13
UI	1	MN1410	R	S	R	S	R	R	R
UI	2	ND Dickey (0)	S	S	S	S	R	S	R
UI	3	U11-917032 (SCN)	R	S	S	S		S	R
UI	4	U14-103015	R	S	S	S	R	R	R
UI	5	E20078	S	R	R	S	R	R	R
UI	6	E20099	sample not screened						
UI	7	LD19-5366a	R	S	S	S	S	R	R
UI	8	M13-250046	S	R	R	S	R	S	R
UI	9	M13-251003	R	S	S	S	R	S	R
UI	10	M13-262015	R	S	S	S	.	S	R
UI	11	M13-266011	S	S	S	S	R	R	.
UI	12	M14-122031	R	S	S	S	R	Het	R
UI	13	M14-122035	R	S	S	S	R	R	R
UI	14	M15-159120	R	S	S	S	R	R	R
UI	15	M15-179024	R	S	S	S	S	S	R
UI	16	M16-116016	R	S	S	S	R	S	R
UI	17	M16-134052	R	S	S	S	S	S	R
UI	18	M16-214187	R	S	S	S	S	S	R
UI	19	M16-215143	.	S	S	S	S	Het	R
UI	20	M16-215179	R	S	S	S	S	S	R
UI	21	M16-465-20078	R	S	S	S	S	S	R
UI	22	OAC 19-62C-SCN	R	S	S	S	S	S	R
UI	23	ORC 5120	R	S	S	S	S	.	R
UI	24	ORC 5420	R	S	S	S	S	R	S
UI	25	U20-912087	Het	.	S	S	S	Het	R
UI	26	U20-923006	Het	S	R	S	S	S	R

## 2022 NORTHERN REGIONAL SCN TESTS SNP MARKER ANALYSIS

Test	Ent	Strain	Phytophthora							Brown stem rot	Frogeye leaf spot	Stem canker
			Rps 1a	Rps 1c	Rps 1d	Rps 1k	Rps 2	Rps 3a	Rps 6			
UI	1	MN1410	S	R	S	S	S	S	S	Het	S	R
UI	2	ND Dickey (0)	S	R	S	S	S	S	S	S	S	R
UI	3	U11-917032 (SCN)	S	S	S	S	S	S	S	S	S	R
UI	4	U14-103015	S	S	S	R	S	S	S	R	S	R
UI	5	E20078	R	S	S	S	S	S	S	Het	S	R
UI	6	E20099										
UI	7	LD19-5366a	S	S	S	S	S	S	S	S	S	R
UI	8	M13-250046	S	R	S	S	S	S	S	R	S	R
UI	9	M13-251003	S	S	S	S	S	S	S	R	S	R
UI	10	M13-262015	R	S	S	S	S	S	S	S	S	R
UI	11	M13-266011	S	S	S	S	S	S	S	R	S	R
UI	12	M14-122031	S	S	S	S	S	S	S	Het	S	R
UI	13	M14-122035	S	S	S	S	S	S	S	R	S	R
UI	14	M15-159120	S	S	S	S	S	S	S	R	S	R
UI	15	M15-179024	S	S	S	S	S	S	R	R	S	R
UI	16	M16-116016	S	S	S	S	S	S	S	S	S	R
UI	17	M16-134052	S	S	S	S	S	S	S	S	S	R
UI	18	M16-214187	S	S	S	.	S	S	S	Het	S	R
UI	19	M16-215143	S	S	S	S	S	S	S	S	S	R
UI	20	M16-215179	S	S	S	S	S	S	S	S	S	R
UI	21	M16-465-20078	S	S	S	S	S	S	S	S	S	R
UI	22	OAC 19-62C-SCN	S	R	S	S	S	S	S	S	S	R
UI	23	ORC 5120	S	S	S	S	S	S	S	Het	S	R
UI	24	ORC 5420	S	R	S	S	S	S	S	S	S	R
UI	25	U20-912087	R	S	S	S	S	S	S	Het	S	R
UI	26	U20-923006	S	S	S	S	S	S	S	S	S	R

**2022 NORTHERN REGIONAL SCN TESTS SNP MARKER ANALYSIS**

Test	Ent	Strain	SCN			Root Knot Nematode	Iron Chlorosis		
			Rhg1-PI88788	Rhg1-Peking	Rhg4		Fec-LgA1	Fec-LgN	Ch13
U II	1	IA2102	R	S	S	S	R	S	R
U II	2	LD02-4485 (SCN)	R	S	S	S	S	S	R
U II	3	U11-917032 (SCN)	R	S	S	S	.	S	R
U II	4	U14-910097 (SCN)	S	R	R	S	Het	S	R
U II	5	A15208- 17	S	R	R	S	R	R	R
U II	6	E17040	R	S	S	S	R	R	R
U II	7	E17203	R	S	S	S	Het	S	R
U II	8	E19314T	R	S	S	S	S	S	R
U II	9	E19323T	R	S	S	S	S	R	R
U II	10	E19413	R	S	S	S	R	R	R
U II	11	LD17-2558	R	S	S	S	S	R	Het
U II	12	LD17-2903	R	S	S	S	R	S	S
U II	13	LD17-3855	R	S	S	S	S	S	R
U II	14	LD18-0173	R	S	S	S	R	Het	R
U II	15	LD18-0986	S	S	S	S	S	R	Het
U II	16	LD18-4231	R	S	S	S	R	R	R
U II	17	LD18-4236	R	S	S	S	R	R	R
U II	18	LD18-4406	R	S	S	S	S	S	R
U II	19	LD18-5062	R	S	S	S	S	S	R
U II	20	LD18-6259a	R	S	S	S	R	R	S
U II	21	U18-613247	R	S	S	S	R	S	R
U II	22	U19-602215	Het	S	Het	S	S	Het	R
U II	23	U19-618131	S	Het	R	S	S	R	R
U II	24	U19-618247	.	Het	R	S	R	S	R
U II	25	U19-911031	S	S	S	S	S	S	R
U II	26	U19-913011	R	S	S	S	S	S	R
U II	27	U19-923124	S	R	R	S	S	S	R
U II	28	U19-924091	Het	S	S	S	S	R	R
U II	29	U19-926126	S	R	R	S	S	S	R

**2022 NORTHERN REGIONAL SCN TESTS SNP MARKER ANALYSIS**

Test	Ent	Strain	Phytophthora							Brown stem rot	Frogeye leaf spot	Stem canker
			Rps 1a	Rps 1c	Rps 1d	Rps 1k	Rps 2	Rps 3a	Rps 6			
U II	1	IA2102	S	S	S	S	S	S	S	R	S	R
U II	2	LD02-4485 (SCN)	S	S	S	S	S	S	S	S	S	R
U II	3	U11-917032 (SCN)	S	S	S	S	S	S	S	S	S	R
U II	4	U14-910097 (SCN)	S	S	S	S	S	S	S	S	S	R
U II	5	A15208- 17	S	S	S	S	S	S	S	R	S	R
U II	6	E17040	S	S	S	R	S	S	S	R	S	R
U II	7	E17203	S	S	S	S	S	S	S	S	S	R
U II	8	E19314T	S	S	S	R	S	S	S	R	S	R
U II	9	E19323T	S	S	S	S	S	S	S	R	S	R
U II	10	E19413	S	S	S	R	S	S	S	R	S	R
U II	11	LD17-2558	S	S	S	S	S	S	S	R	S	R
U II	12	LD17-2903	S	S	S	R	S	S	S	R	S	R
U II	13	LD17-3855	S	S	S	S	S	S	S	S	S	R
U II	14	LD18-0173	S	S	S	S	S	S	S	Het	S	R
U II	15	LD18-0986	S	S	S	S	S	S	S	R	S	R
U II	16	LD18-4231	S	S	S	S	S	S	S	R	S	R
U II	17	LD18-4236	S	S	S	S	S	S	S	R	S	R
U II	18	LD18-4406	S	S	S	R	S	S	S	R	S	R
U II	19	LD18-5062	S	S	S	R	S	S	S	S	S	R
U II	20	LD18-6259a	S	S	S	S	S	S	S	R	S	R
U II	21	U18-613247	S	R	S	S	S	S	S	R	S	R
U II	22	U19-602215	S	S	S	R	S	S	S	S	S	R
U II	23	U19-618131	S	S	S	R	S	S	S	Het	S	R
U II	24	U19-618247	S	.	S	S	S	S	Het	Het	S	R
U II	25	U19-911031	S	S	S	S	S	S	S	S	S	R
U II	26	U19-913011	S	R	S	S	S	S	S	R	S	R
U II	27	U19-923124	S	S	S	S	S	S	S	S	S	R
U II	28	U19-924091	S	S	S	R	S	S	S	R	S	R
U II	29	U19-926126	S	S	S	S	S	S	S	S	S	R













**2022 NORTHERN REGIONAL SCN TESTS SNP MARKER ANALYSIS**

Test	Ent	Strain	Phytophthora							Brown stem rot	Frogeye leaf spot	Stem canker
			Rps 1a	Rps 1c	Rps 1d	Rps 1k	Rps 2	Rps 3a	Rps 6			
U III	1	LD11-2170 (SCN)	S	Het	S	Het	S	S	S	Het	S	R
U III	2	U15-606207 (SCN)	S	S	S	S	S	S	R	S	S	R
U III	3	LD07-3395bf (SCN)	S	S	S	S	S	S	S	S	S	R
U III	4	U14-910097 (SCN)	S	S	S	S	S	S	S	S	S	R
U III	5	A15203- 59	S	S	S	S	S	S	S	R	S	R
U III	6	A15208-104	S	S	S	S	S	S	S	R	S	R
U III	7	A15208-113	R	S	S	S	S	S	S	R	S	R
U III	8	LD18-1767	S	S	S	S	S	S	S	R	S	R
U III	9	LD18-4251	S	S	S	S	S	S	S	R	S	R
U III	10	LD18-6596	S	S	S	R	S	S	S	Het	S	R
U III	11	LD18-7491	S	S	S	R	S	S	S	S	S	R
U III	12	LD18-7606	S	S	S	R	S	S	S	Het	S	R
U III	13	LD18-7628	S	S	S	S	S	S	S	R	S	R
U III	14	LD18-10010	S	Het	S	S	S	S	S	R	S	R
U III	15	LD19-10352	S	S	S	R	S	S	S	R	S	Het
U III	16	U18-617265	S	R	S	S	S	S	S	S	S	R
U III	17	U18-617270	S	S	S	S	S	S	S	R	S	R
U III	18	U19-604203	S	S	S	R	S	S	S	Het	S	R
U III	19	U19-605170	S	S	S	S	S	S	S	S	S	R
U III	20	U19-607156	S	S	S	S	S	S	S	S	S	R
U III	21	U19-608187	S	S	S	S	S	S	S	S	S	R
U III	22	U19-613113	S	S	S	S	S	S	R	S	S	R
U III	23	U19-613290	S	R	S	S	S	S	R	R	S	R
U III	24	U19-924091	S	S	S	S	S	S	S	S	S	R
U III	25	U19-928235	S	S	S	S	S	S	S	S	S	R









**2022 NORTHERN REGIONAL SCN TESTS SNP MARKER ANALYSIS**

Test	Ent	Strain	SCN			Root Knot Nematode	Iron Chlorosis		
			Rhg1-PI88788	Rhg1-Peking	Rhg4		Fec-LgA1	Fec-LgN	Ch13
U IV	1	LD15-3818 (SCN)	R	S	S	S	S	R	Het
U IV	2	LD00-2817P (SCN)	S	R	R	R	S	R	R
U IV	3	LD07-3395bf (SCN)	S	R	R	S	S	R	R
U IV	4	K17-6388	R	S	S	S	Het	R	R
U IV	5	K18-1247	R	S	S	S	S	R	R
U IV	6	K18-1396	R	S	S	S	S	R	R
U IV	7	K18-2401	R	S	S	S	R	R	R
U IV	8	K19-1628	R	S	S	S	S	R	R
U IV	9	K19-4225	R	S	S	S	S	R	R
U IV	10	K19-4248	.	S	S	S	S	R	R
U IV	11	K19-4471	R	S	S	S	S	R	R
U IV	12	K19-4777	R	S	S	S	S	R	R
U IV	13	K19-6003	R	S	S	S	S	R	R
U IV	14	K19-6041	R	S	S	S	S	R	R
U IV	15	K19-6079	R	S	S	S	S	R	R
U IV	16	LD18-3068	S	S	S	S	S	S	R
U IV	17	LD18-4159	R	S	S	S	S	R	R
U IV	18	LD19-4657	S	R	S	S	R	R	R
U IV	19	LD19-7948	S	R	S	S	R	R	R
U IV	20	LD19-10076	R	S	S	S	S	R	R
U IV	21	LD19-10244	S	S	S	S	S	R	R
U IV	22	S19-10701C	S	Het	S	R	R	S	S
U IV	23	SA18-10815	R	S	S	S	S	R	S
U IV	24	SA18-11346	.	.	.	.	.	.	.
U IV	25	SA18-12086	S	R	R	S	S	R	R
U IV	26	SA18-14143	R	S	S	S	S	S	R
U IV	27	SA19-10248	R	S	S	S	S	S	R
U IV	28	SA19-12580	R	S	S	S	S	R	R
U IV	29	SA19-7246	R	S	S	S	S	R	R



**2022 NORTHERN REGIONAL SCN TESTS SNP MARKER ANALYSIS**

Test	Ent	Strain	Phytophthora							Brown stem rot	Frogeye leaf spot	Stem canker
			Rps 1a	Rps 1c	Rps 1d	Rps 1k	Rps 2	Rps 3a	Rps 6			
U IV	1	LD15-3818 (SCN)	R	S	S	S	S	S	S	S	S	R
U IV	2	LD00-2817P (SCN)	S	S	S	S	S	S	S	S	S	R
U IV	3	LD07-3395bf (SCN)	S	S	S	S	S	S	S	S	S	R
U IV	4	K17-6388	S	S	S	S	S	S	S	S	R	R
U IV	5	K18-1247	S	S	S	S	S	S	S	S	R	R
U IV	6	K18-1396	S	R	S	S	S	S	S	S	R	R
U IV	7	K18-2401	S	S	S	S	S	S	S	S	R	R
U IV	8	K19-1628	S	S	S	S	S	S	S	S	R	R
U IV	9	K19-4225	S	R	S	S	S	S	S	S	R	R
U IV	10	K19-4248	S	R	S	S	S	S	S	S	R	R
U IV	11	K19-4471	S	S	S	S	S	S	S	S	R	R
U IV	12	K19-4777	S	S	S	S	S	S	S	S	R	R
U IV	13	K19-6003	S	S	S	S	S	S	S	S	R	R
U IV	14	K19-6041	S	S	S	S	S	S	S	S	R	R
U IV	15	K19-6079	S	S	S	S	S	S	S	S	R	R
U IV	16	LD18-3068	S	S	S	R	S	S	S	S	R	R
U IV	17	LD18-4159	S	S	S	S	S	S	S	S	R	R
U IV	18	LD19-4657	S	S	S	S	S	S	S	S	R	R
U IV	19	LD19-7948	S	S	S	S	S	S	S	S	R	R
U IV	20	LD19-10076	S	S	S	S	S	S	S	S	R	R
U IV	21	LD19-10244	S	S	S	S	S	S	S	S	R	Het
U IV	22	S19-10701C	S	S	S	S	S	S	S	S	R	R
U IV	23	SA18-10815	S	S	S	S	S	S	S	S	Het	R
U IV	24	SA18-11346	.	.	R	.	.	.	.	.	.	.
U IV	25	SA18-12086	S	S	S	S	S	S	S	S	S	R
U IV	26	SA18-14143	S	S	S	S	S	S	S	S	R	R
U IV	27	SA19-10248	S	S	S	R	S	S	S	S	R	R
U IV	28	SA19-12580	S	S	S	S	S	S	S	S	R	R
U IV	29	SA19-7246	S	S	S	S	S	S	S	S	S	R

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## 2022 SCN UNIFORM TEST 0

Strain	Descriptive code	Parentage	Previous testing
1 ND Dickey (0)	PGy	P.91M10 x Sheyenne	3
2 MN0095	PGibl	M92-270029 x M93-313135	11
3 MN0404CN (SCN)	PTbl	MN0902CN x MN0304	4
4 MN1511CN	PGbf	M06-288181 x M06-358188	21SCN U I
5 M13-118036	PGy	M06-288155 x U09-118017	3
6 M13-250056	WGbf	M06-288190 x AR09-191018	3
7 M13-257047	PGy	M07-209037 x LD08-12441a	21SCN U0
8 M15-221040	PGbf	ND10-2993 x M07-292111	21SCN U0
9 M15-108094	WGy	M04-239147 x ND10-3330	21SCN U0
10 M15-220021	WGy	ND10-2993 x M07-292111	21SCN U0
11 M16-215122	PGbf/ibl	LD10-5213a x M10-218053	NEW
12 M16-121069	WLT+Gy	M07-209037 x MN0208CN	NEW
13 M16-465-20015	WTbr	MSC09-774074 x (M08-362045 X Williams 82T)	NEW
14 ND17-20565	WGy	ND10-3601 x Pioneer 91M10	21SCN U0
15 ND17-20754	P+WGy	ND10-3610 x Pioneer 91M10	21SCN U0
16 ND17-22117	WGbf	ND10-3610 x Pioneer 91M10	21SCN U0
17 ND17-22120	PGy	ND10-3610 x Pioneer 91M10	21SCN U0
18 OAC 19-05C-SCN	WLT+Ggr	OAC Prescott x M05-363022	21SCN U0

## 2022 SCN UNIFORM TEST 0

Strain	Gen comp	Cooperator reported SCN resistance source	Cooperator reported Traits
1 ND Dickey (0)	F4	None	
2 MN0095	F5	PI 88788, 437654, 438489B	Rps1
3 MN0404CN (SCN)	F5	PI 88788	Rps1k
4 MN1511CN	F5	PI 88788	
5 M13-118036	F5	PI 88788	
6 M13-250056	F5	PI 88788	
7 M13-257047	F5	PI 88788	
8 M15-221040	F5	PI 88788	
9 M15-108094	F5	PI 88788	APHID
10 M15-220021	F5	PI 88788	
11 M16-215122	F7	PI 88788	Aphid R
12 M16-121069	F7	PI 88788	Rhizo
13 M16-465-20015		PI567516C	Triple NULL
14 ND17-20565	F5	PI 88788	
15 ND17-20754	F5	PI 88788	
16 ND17-22117	F5	PI 88788	
17 ND17-22120	F5	PI 88788	
18 OAC 19-05C-SCN	F4	PI 88788	

## 2022 SCN UNIFORM TEST 0

### Disease Screening

Strain	Missouri SCN Screening						SNP marker analysis			MN
	HG 7		HG 2.5.7		HG 1.2.5.7		SCN			IDC
	FI	rating	FI	rating	FI	rating	88788	Peking	Rhg4	score
1 ND Dickey (0)	no data						S	S	S	3.3
2 MN0095	no data						.	S	S	1.8
3 MN0404CN (SCN)	9	HR					R	S	S	1.8
4 MN1511CN	6	HR					R	S	R	1.8
5 M13-118036	6	HR	87	NR	90	NR	R	S	S	3.5
6 M13-250056	1	HR	1	HR	19	R	S	R	R	1.0
7 M13-257047	21	R					R	S	S	2.5
8 M15-221040	13	R					R	S	S	3.0
9 M15-108094	27	MR					R	S	S	3.8
10 M15-220021	14	R					R	S	S	1.8
11 M16-215122	11	R					R	S	S	1.5
12 M16-121069	11	R					R	S	S	1.5
13 M16-465-20015	4	HR	70	NR	89	NR	R	S	S	1.5
14 ND17-20565	11	R					R	S	S	2.5
15 ND17-20754	56	LR					S	S	S	4.3
16 ND17-22117	7	HR					R	S	S	2.3
17 ND17-22120	12	R					R	S	S	2.3
18 OAC 19-05C-SCN	10	R					no data			2.3

Mean 2.4  
CV 33.8  
LSD 1.7

**2022 SCN UNIFORM TEST 0**

**Predicted resistance genes based on SNP marker analysis**

Strain	SCN	Iron Chlorosis	Phytophthora	BSR	FLS	SC
1 ND Dickey (0)	none	R-(LgA1+Ch13)	Rps1c	S	S	R
2 MN0095	none	R-(LgA1+Ch13)	Het-(Rps1a+Rps1k)	Het	S	R
3 MN0404CN (SCN)	Rhg1_PI88788	R-(LgA1+LgN+Ch13)	Rps1k + Rps6	R	S	R
4 MN1511CN	Rhg1_PI88788+Rhg4	R-(LgA1+LgN+Ch13)	Rps1c	Het	S	R
5 M13-118036	Rhg1_PI88788	R-Ch13		R	S	R
6 M13-250056	Rhg1_Peking+Rhg4	R-(LgA1+Ch13)	Rps1c	R	S	R
7 M13-257047	Rhg1_PI88788	R-(LgA1+LgN+Ch13)	Rps1a	R	S	R
8 M15-221040	Rhg1_PI88788	Het-LgN + R-Ch13	Rps1a + Rps6	R	S	R
9 M15-108094	Rhg1_PI88788	Het-(LgA1+LgN+Ch13)		S	S	R
10 M15-220021	Rhg1_PI88788	Het-LgN + R-Ch13		R	S	R
11 M16-215122	Rhg1_PI88788	R-Ch13			S	R
12 M16-121069	Rhg1_PI88788	R-(LgA1+Ch13) + Het-LgN		Het	S	R
13 M16-465-20015	Rhg1_PI88788	R-Ch13		R	S	R
14 ND17-20565	Rhg1_PI88788	R-(LgA1+Ch13)	Rps6	Het	S	R
15 ND17-20754	none	R-(LgA1+Ch13)	Rps6	Het	S	R
16 ND17-22117	Rhg1_PI88788	R-(LgA1+Ch13)		R	S	R
17 ND17-22120	Rhg1_PI88788	R-(LgA1+Ch13)		Het	S	R
18 OAC 19-05C-SCN	no marker data			S	S	R

BSR=Brown Leaf Spot, FLS=Frogeye Leaf Spot, SC=Stem Canker

## 2022 SCN UNIFORM TEST 0

### Summary

Locations	Yield						Seed						
	All		Infested		Non-infested		Maturity	Lodging	Height	weight	quality	protein	oil
	bu/a	rank	bu/a	rank	bu/a	rank	date	score	inches	g/100	score	@13%	@13%
	6		3		4		6	6	4	4	4	5	5
1 ND Dickey (0)	56.3	3	61.4	8	52.5	1	9/18	1.2	28	18.3	1.0	35.1	17.6
2 MN0095	44.8	17	51.9	17	40.1	16	-11	1.2	25	14.0	1.3	35.3	18.5
3 MN0404CN (SCN)	44.9	16	52.7	16	39.0	17	-8	1.2	27	14.7	1.3	34.5	18.7
4 MN1511CN	55.4	5	64.0	3	49.3	6	6	1.1	33	15.1	1.1	34.2	18.1
5 M13-118036	57.5	1	68.3	1	49.8	5	2	1.1	28	16.2	1.3	34.3	17.9
6 M13-250056	56.8	2	68.3	1	48.1	9	1	1.1	30	16.0	1.1	33.7	18.4
7 M13-257047	50.0	13	59.7	10	42.6	14	-2	1.2	29	18.9	1.1	35.8	18.4
8 M15-221040	47.8	14	56.5	14	41.7	15	-5	1.2	27	15.5	1.1	36.1	17.9
9 M15-108094	52.8	9	58.8	11	48.6	7	2	1.2	31	17.7	1.5	35.1	17.9
10 M15-220021	47.1	15	53.7	15	42.6	13	-6	1.2	27	14.2	1.3	35.7	18.6
11 M16-215122	50.6	11	61.2	9	43.1	12	6	1.1	26	15.6	1.1	33.9	18.5
12 M16-121069	42.3	18	48.6	18	37.9	18	-7	1.1	27	16.0	1.5	36.4	17.9
13 M16-465-20015	50.2	12	57.7	13	45.0	11	1	1.1	27	17.0	1.0	33.7	19.1
14 ND17-20565	54.8	6	61.5	7	50.2	3	4	1.1	28	18.4	1.3	35.7	18.3
15 ND17-20754	52.3	10	57.8	12	48.6	8	-1	1.0	24	15.8	1.1	35.0	18.3
16 ND17-22117	56.2	4	63.7	5	50.9	2	2	1.1	27	14.4	1.5	35.6	18.3
17 ND17-22120	54.8	6	61.9	6	49.9	4	0	1.1	27	16.3	1.4	34.6	18.7
18 OAC 19-05C-SCN	54.1	8	63.8	4	47.1	10	2	1.2	32	16.1	1.1	35.8	17.6
Mean	51.6		59.5		45.9		-0.9	1.1	27.9	16.1	1.2	35.0	18.3
LSD(.05)	16.8		13.1		14.5								
C.V. %	5.3		7.3		5.4								
Replications	20		8		12								

## 2022 SCN UNIFORM TEST 0

### 2 Year Summary

	Yield						Seed						
	All		Infested		Non-infested		Maturity	Lodging	Height	weight	quality	protein	oil
	bu/a	rank	bu/a	rank	bu/a	rank	date	score	inches	g/100	score	@13%	@13%
Locations	10		5		6		11	8	6	8	8	10	10
1 ND Dickey (0)	54.6	3	54.8	5	55.0	1	9/18	1.1	29	17.9	1.0	34.8	17.8
2 MN0095	42.7	14	45.0	14	42.5	13	-11	1.2	27	13.3	1.5	35.3	18.7
3 MN0404CN (SCN)	43.6	13	48.0	12	40.6	14	-6	1.2	29	14.2	1.2	34.5	18.7
5 M13-118036	55.2	2	59.8	2	52.5	3	1	1.2	29	15.9	1.3	34.5	17.8
6 M13-250056	55.6	1	62.6	1	50.8	4	1	1.1	32	16.1	1.3	33.8	18.5
7 M13-257047	48.2	10	52.8	9	45.5	10	-4	1.1	32	17.8	1.5	35.6	18.5
8 M15-221040	46.4	12	50.2	11	44.4	12	-5	1.2	29	14.8	1.3	35.8	18.1
9 M15-220021	46.7	11	49.6	12	45.5	10	-6	1.2	29	13.5	1.2	35.3	18.8
10 M15-108094	50.7	7	53.0	8	49.6	7	1	1.2	32	16.9	1.4	34.8	18.1
14 ND17-20565	50.1	8	54.0	7	49.2	9	3	1.2	29	17.6	1.2	35.5	18.4
15 ND17-20754	49.5	9	50.6	10	49.8	6	-3	1.0	24	15.0	1.1	34.5	18.6
16 ND17-22117	53.7	5	59.3	3	50.8	4	1	1.1	28	13.9	1.4	34.9	18.7
17 ND17-22120	54.1	4	57.3	4	52.8	2	-1	1.1	29	15.9	1.4	34.3	19.1
18 OAC 19-05C-SCN	51.4	6	54.3	6	49.6	8	1	1.2	33	15.9	1.3	35.5	17.9
Mean	50.2		53.7		48.5		-2.2	1.1	29.5	15.7	1.3	34.9	18.4



## 2022 SCN UNIFORM TEST 0

### Yield (bu/a)

Strain	Absaraka	Prosper	Wynd-	Crookston	Moorhead	Elora	Ottawa
	ND 2.7	ND 0	ND 2.7	MN NI	MN NI	ON NI	ON NI
1 ND Dickey (0)	64.1	52.0	68.0	46.1	65.1	49.3	50.1
2 MN0095	48.1	33.5	63.9	38.6	50.4	34.0	42.2
3 MN0404CN (SCN)	49.3	42.6	60.2	37.9	42.6	36.9	41.5
4 MN1511CN	58.4	65.9	67.7	37.9	61.3	45.2	55.9
5 M13-118036	65.4	67.2	72.4	46.7	61.5	44.2	47.8
6 M13-250056	67.2	56.1	63.4	44.7	64.7	45.0	45.5
7 M13-257047	57.4	45.3	63.3	42.2	57.2	40.9	28.5
8 M15-221040	50.7	60.3	58.3	42.3	56.6	35.9	37.7
9 M15-108094	53.9	54.8	67.6	43.9	59.2	44.9	44.3
10 M15-220021	51.7	54.1	55.2	39.9	57.9	35.8	37.6
11 M16-215122	55.5	62.2	65.8	34.9	60.8	40.1	45.1
12 M16-121069	43.1	41.1	61.5	36.9	50.8	35.6	29.7
13 M16-465-20015	51.7	53.2	68.2	41.0	59.4	41.9	36.0
14 ND17-20565	58.7	58.2	67.4	38.0	69.8	41.4	45.6
15 ND17-20754	54.8	52.9	65.7	42.6	61.4	38.8	42.4
16 ND17-22117	61.7	67.0	62.3	41.2	59.8	42.2	46.6
17 ND17-22120	55.9	55.1	74.7	40.7	58.0	51.7	47.8
18 OAC 19-05C-SCN	59.5	64.0	67.9	42.2	53.8	48.3	43.3
Mean	55.9	56.7	65.2	41.0	58.3	41.8	42.6
C.V. %	11.6	18.8	6.6	9.5	11.0	8.3	11.4
LSD(2-sided,.05)	13.7	17.8	7.1	6.5	10.8	5.8	9.7
Replications	2	3	3	3	3	3	3
Row spacing (in.)	30	30	30	30	30	13	17.7

## 2022 SCN UNIFORM TEST 0

### Yield (rank)

Strain	Absaraka	Prosper	Wynd-	Crookston	Moorhead	Elora	Ottawa
	ND 2.7	ND 0	ND 2.7	MN NI	MN NI	ON NI	ON NI
1 ND Dickey (0)	3	14	4	2	2	2	2
2 MN0095	17	18	11	13	17	18	12
3 MN0404CN (SCN)	16	16	16	15	18	14	13
4 MN1511CN	7	3	6	16	6	4	1
5 M13-118036	2	1	2	1	4	7	3
6 M13-250056	1	8	12	3	3	5	7
7 M13-257047	8	15	13	8	13	11	18
8 M15-221040	15	6	17	6	14	15	14
9 M15-108094	12	10	7	4	10	6	9
10 M15-220021	13	11	18	12	12	16	15
11 M16-215122	10	5	9	18	7	12	8
12 M16-121069	18	17	15	17	16	17	17
13 M16-465-20015	14	12	3	10	9	9	16
14 ND17-20565	6	7	8	14	1	10	6
15 ND17-20754	11	13	10	5	5	13	11
16 ND17-22117	4	2	14	9	8	8	5
17 ND17-22120	9	9	1	11	11	1	4
18 OAC 19-05C-SCN	5	4	5	7	15	3	10

## 2022 SCN UNIFORM TEST 0

### Maturity

Strain	Absaraka	Prosper	Wynd-	Crookston	Moorhead	Elora	Ottawa
	ND 2.7	ND 0	ND 2.7	MN NI	MN NI	ON NI	ON NI
1 ND Dickey (0)	9/27	9/18	9/20	9/22		9/24	9/23
2 MN0095	-12	-9	-12	-15		-7	-11
3 MN0404CN (SCN)	-7	-3	-11	-9		-5	-12
4 MN1511CN	4	12	6	4		6	1
5 M13-118036	1	7	0	1		1	-1
6 M13-250056	2	7	0	1		-2	-5
7 M13-257047	-2	5	-7	-3		-1	-8
8 M15-221040	-9	-1	-9	0		-4	-7
9 M15-108094	1	4	-1	5		4	-2
10 M15-220021	-2	-2	-7	-11		-6	-6
11 M16-215122	3	11	-1	9		10	3
12 M16-121069	-7	-2	-7	-11		-5	-10
13 M16-465-20015	-1	6	-5	4		4	0
14 ND17-20565	2	10	-2	8		3	1
15 ND17-20754	-2	0	-6	2		-2	-3
16 ND17-22117	1	5	0	1		2	1
17 ND17-22120	-2	4	-2	1		1	-2
18 OAC 19-05C-SCN	-1	5	2	4		-1	-3
Planted	6/06	5/25	5/23	5/27	5/28	5/25	5/13

## 2022 SCN UNIFORM TEST 0

### Lodging (score)

Strain	Absaraka	Prosper	Wynd- mere	Crookston	Moorhead	Elora	Ottawa
	ND 2.7	ND 0	ND 2.7	MN NI	MN NI	ON NI	ON NI
1 ND Dickey (0)	1.0	1.0	1.0	1.7		1.0	1.3
2 MN0095	1.0	1.0	1.0	2.0		1.0	1.0
3 MN0404CN (SCN)	1.0	1.0	1.0	2.0		1.0	1.0
4 MN1511CN	1.0	1.0	1.0	1.7		1.0	1.0
5 M13-118036	1.0	1.0	1.0	1.7		1.0	1.0
6 M13-250056	1.0	1.0	1.0	1.7		1.0	1.0
7 M13-257047	1.0	1.0	1.0	2.0		1.0	1.0
8 M15-221040	1.0	1.0	1.0	2.0		1.0	1.0
9 M15-108094	1.0	1.0	1.0	2.0		1.0	1.0
10 M15-220021	1.3	1.0	1.0	1.7		1.0	1.0
11 M16-215122	1.0	1.0	1.0	1.3		1.0	1.0
12 M16-121069	1.0	1.0	1.0	1.7		1.0	1.0
13 M16-465-20015	1.0	1.0	1.0	1.3		1.0	1.0
14 ND17-20565	1.0	1.0	1.0	1.7		1.0	1.0
15 ND17-20754	1.0	1.0	1.0	1.0		1.0	1.0
16 ND17-22117	1.0	1.0	1.0	1.3		1.0	1.0
17 ND17-22120	1.0	1.0	1.0	1.3		1.0	1.0
18 OAC 19-05C-SCN	2.0	1.0	1.0	1.3		1.0	1.0

## 2022 SCN UNIFORM TEST 0

### Height (inches)

Strain	Absaraka	Prosper	Wynd-	Crookston	Moorhead	Elora	Ottawa
	ND 2.7	ND 0	ND 2.7	MN NI	MN NI	ON NI	ON NI
1 ND Dickey (0)			36	26		31	19
2 MN0095			37	24		26	15
3 MN0404CN (SCN)			38	25		27	18
4 MN1511CN			46	29		36	20
5 M13-118036			37	26		29	19
6 M13-250056			40	30		32	18
7 M13-257047			39	27		33	17
8 M15-221040			35	27		30	17
9 M15-108094			40	29		34	20
10 M15-220021			38	26		29	16
11 M16-215122			36	22		30	17
12 M16-121069			37	26		29	15
13 M16-465-20015			36	27		29	16
14 ND17-20565			37	26		29	19
15 ND17-20754			31	23		23	17
16 ND17-22117			37	25		29	17
17 ND17-22120			36	24		30	18
18 OAC 19-05C-SCN			41	30		35	23

## 2022 SCN UNIFORM TEST 0

### Seed Weight (g/100)

Strain	Absaraka	Prosper	Wynd- mere	Crookston	Moorhead	Elora	Ottawa
	ND 2.7	ND 0	ND 2.7	MN NI	MN NI	ON NI	ON NI
1 ND Dickey (0)				14.3	19.5	16.4	22.9
2 MN0095				10.9	15.3	12.8	16.8
3 MN0404CN (SCN)				12.1	14.7	14.0	17.9
4 MN1511CN				11.1	15.3	14.2	19.8
5 M13-118036				12.8	16.9	14.5	20.5
6 M13-250056				13.1	16.9	13.3	20.5
7 M13-257047				15.1	19.7	18.8	22.0
8 M15-221040				12.1	17.1	14.6	18.1
9 M15-108094				13.1	18.5	16.4	22.8
10 M15-220021				11.1	15.6	12.0	18.0
11 M16-215122				12.7	14.5	14.7	20.3
12 M16-121069				13.0	17.4	14.3	19.3
13 M16-465-20015				14.6	17.6	15.0	20.6
14 ND17-20565				14.8	19.9	16.0	22.7
15 ND17-20754				12.9	16.3	13.7	20.4
16 ND17-22117				10.8	14.5	13.4	18.7
17 ND17-22120				12.3	17.3	14.4	21.0
18 OAC 19-05C-SCN				13.8	16.0	14.7	19.8

## 2022 SCN UNIFORM TEST 0

### Seed Quality (score)

Strain	Absaraka	Prosper	Wynd- mere	Crookston	Moorhead	Elora	Ottawa
	ND 2.7	ND 0	ND 2.7	MN NI	MN NI	ON NI	ON NI
1 ND Dickey (0)				1.0	1.0	1.5	1.0
2 MN0095				1.0	1.0	1.5	1.7
3 MN0404CN (SCN)				1.0	1.0	1.5	1.7
4 MN1511CN				1.0	1.0	1.5	1.0
5 M13-118036				1.0	1.0	2.0	1.0
6 M13-250056				1.0	1.0	1.5	1.0
7 M13-257047				1.0	1.0	1.5	1.0
8 M15-221040				1.0	1.0	1.5	1.0
9 M15-108094				1.0	1.0	1.5	2.3
10 M15-220021				1.0	1.0	1.0	2.0
11 M16-215122				1.0	1.0	1.5	1.0
12 M16-121069				1.0	1.0	1.5	2.7
13 M16-465-20015				1.0	1.0	1.0	1.0
14 ND17-20565				1.0	1.0	1.5	1.7
15 ND17-20754				1.0	1.0	1.5	1.0
16 ND17-22117				1.0	1.0	1.5	2.3
17 ND17-22120				1.0	1.0	1.5	2.0
18 OAC 19-05C-SCN				1.0	1.0	1.5	1.0

## 2022 SCN UNIFORM TEST 0

### Protein (%)

Strain	Absaraka	Prosper	Wynd-	Crookston	Moorhead	Elora	Ottawa
	ND 2.7	ND 0	ND 2.7	MN NI	MN NI	ON NI	ON NI
1 ND Dickey (0)	34.4			35.7	35.0	34.9	35.6
2 MN0095	35.3			34.2	35.2	36.1	35.9
3 MN0404CN (SCN)	34.5			34.3	34.5	34.4	34.8
4 MN1511CN	34.0			34.1	33.4	34.3	35.3
5 M13-118036	34.4			33.8	33.7	35.5	34.2
6 M13-250056	33.9			33.9	33.1	33.5	34.3
7 M13-257047	35.1			35.4	35.7	36.5	36.5
8 M15-221040	36.3			35.1	36.5	36.1	36.4
9 M15-108094	34.9			35.0	34.5	35.8	35.3
10 M15-220021	34.9			35.5	35.2	35.3	37.4
11 M16-215122	34.7			33.4	32.6	34.3	34.4
12 M16-121069	36.7			35.7	36.4	36.8	36.3
13 M16-465-20015	33.7			33.8	33.1	33.6	34.0
14 ND17-20565	35.8			35.0	35.6	35.7	36.3
15 ND17-20754	34.7			34.9	34.7	35.8	34.9
16 ND17-22117	35.6			35.1	34.6	35.7	36.7
17 ND17-22120	34.6			34.3	34.0	35.1	35.0
18 OAC 19-05C-SCN	36.1			35.6	34.8	36.9	35.7



## 2022 SCN UNIFORM TEST 0

### Oil (%)

Strain	Absaraka	Prosper	Wynd-	Crookston	Moorhead	Elora	Ottawa
	ND 2.7	ND 0	ND 2.7	MN NI	MN NI	ON NI	ON NI
1 ND Dickey (0)	18.2			17.2	17.6	17.2	18.0
2 MN0095	18.6			19.0	18.4	18.2	18.3
3 MN0404CN (SCN)	18.4			18.5	18.7	19.2	18.6
4 MN1511CN	17.9			18.4	18.1	18.0	18.1
5 M13-118036	17.7			17.7	18.1	17.4	18.6
6 M13-250056	18.4			18.0	18.1	19.0	18.5
7 M13-257047	18.4			18.6	18.6	17.7	18.8
8 M15-221040	17.7			18.2	17.5	18.5	17.6
9 M15-108094	18.2			18.4	17.6	17.3	18.0
10 M15-220021	18.4			19.1	18.4	18.5	18.6
11 M16-215122	18.0			19.0	18.4	18.7	18.2
12 M16-121069	17.4			18.4	17.7	17.6	18.5
13 M16-465-20015	19.0			19.5	18.6	19.2	19.2
14 ND17-20565	18.6			17.8	18.1	19.2	17.9
15 ND17-20754	18.5			18.5	17.9	18.2	18.5
16 ND17-22117	17.9			18.4	18.1	18.6	18.5
17 ND17-22120	18.4			19.9	18.0	18.5	18.6
18 OAC 19-05C-SCN	17.6			17.7	17.9	16.9	18.1

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## 2022 SCN UNIFORM TEST I

Strain	Descriptive code	Parentage	Previous testing
1 MN1511CN	PGbf	M06-288181 x M06-358188	4
2 ND Dickey (0)	PGy	P.91M10 x Sheyenne	2
3 U11-917032 (SCN)	PTbl	LD02-4485 x U03-100612	7
4 E15338	PGibl	E09088 x E12901	4
5 E20078	PLtbl	E14077 x AR09-191018	NEW
6 E20099	PLt+Gbl/ibl	E14077 x AR09-191018	NEW
7 LD19-5366a	WLtbl	LD12-6010a x M07-297007	NEW
8 M13-250046	PGbf	M06-288190 x AR09-191018	2
9 M13-251003	PGy	M06-289273 x AR09-291011	1
10 M13-262015	PGbf	M03-172059 x LD08-12435a	2
11 M13-266011	P+WGy	MN1505SP x LD10-5903a	2
12 M14-122031	PTbr	M08-365038 x IA1026	1
13 M14-122035	PTy	M08-365038 x IA1026	1
14 M15-159120	WTgr	M07-292111 x MN0107	21SCN P I
15 M15-179024	WLt+Gy	ND10-3427 x M08-609011	21SCN P I
16 M16-116016	WLt+Gy	M07-209037 x U11-917032	NEW
17 M16-134052	WLt+Gy	M07-209037 x M09-285149	NEW
18 M16-214187	PGbf	E12042 x M10-218053	NEW
19 M16-215143	PGbf	LD10-5213a x M10-218053	NEW
20 M16-215179	PTbr	LD10-5213a x M10-218053	NEW
21 M16-465-20078	PTbl	MSC09-774074 x (M08-362045 X Williams 82T)	NEW
22 OAC 19-62C-SCN	PLtgr	OAC Prescott x S23-T5	NEW
23 ORC 5120	PGy	SC 5414N x U11-610107	NEW
24 ORC 5420	WGy	SC 5414N x AAC Malden	NEW
25 U20-912087	PGy	ORC_3713N x LD14-3702	NEW
26 U20-923006	PLtbl	U14-910097 x U14-212231	NEW

## 2022 SCN UNIFORM TEST I

Strain	Gen comp	Cooperator reported SCN resistance source	Cooperator reported Traits
1 MN1511CN	F5	PI 88788	
2 ND Dickey (0)	F4	None	
3 U11-917032 (SCN)	F6	PI 88788	
4 E15338	F5	PI 88788	
5 E20078	F5	PI88788 + Peking	
6 E20099	F5	PI88788 + Peking	
7 LD19-5366a	F5	PI 88788	Rag 2
8 M13-250046	F5	PI 88788	
9 M13-251003	F5	PI 88788	
10 M13-262015	F5	PI 88788	
11 M13-266011	F5	PI 88788	Rag 1
12 M14-122031	F5	PI 88788	
13 M14-122035	F5	PI 88788	
14 M15-159120	F5	PI 88788	EARLYCN
15 M15-179024	F5	PI 88788	IDC-SCN
16 M16-116016	F7	PI 88788	YLD, SCN
17 M16-134052	F7	PI 88788	SCN
18 M16-214187	F7	PI 88788	Aphid R, SCN
19 M16-215143	F7	PI 88788	Aphid R, SCN
20 M16-215179	F7	PI 88788	Aphid R, SCN
21 M16-465-20078		PI567516C	Triple NULL, SCN
22 OAC 19-62C-SCN	F5	PI88788	SCN, yield
23 ORC 5120	F4	PI 88788	Conventional
24 ORC 5420	F4	PI 88788	Conventional
25 U20-912087	F5	PI_88788	
26 U20-923006	F5	PI_88788, PI_437654	Rps

## 2022 SCN UNIFORM TEST I

### Disease Screening

Strain	Missouri SCN Screening						SNP marker analysis			MN
	HG 7		HG 2.5.7		HG 1.2.5.7		SCN			IDC
	FI	rating	FI	rating	FI	rating	88788	Peking	Rhg4	score
1 MN1511CN							R	S	R	1.8
2 ND Dickey (0)							S	S	S	2.3
3 U11-917032 (SCN)	28	**					R	S	S	3.0
4 E15338	9	HR					R	S	S	2.8
5 E20078	6	HR	0	HR	23	R	S	R	R	2.5
6 E20099	24	**	57	**	110	NR	no data			2.8
7 LD19-5366a	19	R					R	S	S	3.3
8 M13-250046	3	HR	1	HR	14	R	S	R	R	2.5
9 M13-251003	5	HR	84	NR	70	NR	R	S	S	2.3
10 M13-262015	12	R					R	S	S	3.5
11 M13-266011	87	NR					S	S	S	2.0
12 M14-122031	6	HR					R	S	S	3.5
13 M14-122035	4	HR	74	NR	89	NR	R	S	S	2.5
14 M15-159120	3	HR	79	NR	71	NR	R	S	S	2.5
15 M15-179024	5	HR					R	S	S	3.3
16 M16-116016	10	HR					R	S	S	2.8
17 M16-134052	3	HR					R	S	S	2.3
18 M16-214187	6	HR					R	S	S	2.3
19 M16-215143	11	R					.	S	S	3.5
20 M16-215179	8	HR					R	S	S	2.3
21 M16-465-20078	4	HR	80	NR	77	NR	R	S	S	1.3
22 OAC 19-62C-SCN	9	HR					R	S	S	3.5
23 ORC 5120	8	HR					R	S	S	4.0
24 ORC 5420	11	R					R	S	S	4.0
25 U20-912087	16	R					Het	.	S	4.0
26 U20-923006	97	NR	90	NR	95	NR	Het	S	R	3.5

Mean 2.9  
CV 25.4  
LSD 1.5

## 2022 SCN UNIFORM TEST I

### Predicted resistance genes based on SNP marker analysis

Strain	SCN	Iron Chlorosis	Phytophthora	BSR	FLS	SC
1 MN1511CN	Rhg1_PI88788+Rhg4	R-(LgA1+LgN+Ch13)	Rps1c	Het	S	R
2 ND Dickey (0)	none	R-(LgA1+Ch13)	Rps1c	S	S	R
3 U11-917032 (SCN)	Rhg1_PI88788	R-Ch13		S	S	R
4 E15338	Rhg1_PI88788	R-(LgA1+LgN+Ch13)	Rps1k	R	S	R
5 E20078	Rhg1_Peking+Rhg4	R-(LgA1+LgN+Ch13)	Rps1a	Het	S	R
6 E20099	no marker data available					
7 LD19-5366a	Rhg1_PI88788	R-(LgN+Ch13)		S	S	R
8 M13-250046	Rhg1_Peking+Rhg4	R-(LgA1+Ch13)	Rps1c	R	S	R
9 M13-251003	Rhg1_PI88788	R-(LgA1+Ch13)		R	S	R
10 M13-262015	Rhg1_PI88788	R-Ch13	Rps1a	S	S	R
11 M13-266011	none	R-(LgA1+LgN)		R	S	R
12 M14-122031	Rhg1_PI88788	R-(LgA1+Ch13) + Het-LgN		Het	S	R
13 M14-122035	Rhg1_PI88788	R-(LgA1+LgN+Ch13)		R	S	R
14 M15-159120	Rhg1_PI88788	R-(LgA1+LgN+Ch13)		R	S	R
15 M15-179024	Rhg1_PI88788	R-Ch13	Rps6	R	S	R
16 M16-116016	Rhg1_PI88788	R-(LgA1+Ch13)		S	S	R
17 M16-134052	Rhg1_PI88788	R-Ch13		S	S	R
18 M16-214187	Rhg1_PI88788	R-Ch13		Het	S	R
19 M16-215143	Rhg1_PI88788	Het-LgN + R-Ch13		S	S	R
20 M16-215179	Rhg1_PI88788	R-Ch13		S	S	R
21 M16-465-20078	Rhg1_PI88788	R-Ch13		S	S	R
22 OAC 19-62C-SCN	Rhg1_PI88788	R-Ch13	Rps1c	S	S	R
23 ORC 5120	Rhg1_PI88788	R-Ch13		Het	S	R
24 ORC 5420	Rhg1_PI88788	R-LgN	Rps1c	S	S	R
25 U20-912087	Het-Rhg1_PI88788	Het-LgN + R-Ch13	Rps1a	Het	S	R
26 U20-923006	Het-Rhg1_PI88788,R-Rhg4	R-Ch13		S	S	R

BSR=Brown Leaf Spot, FLS=Frogeye Leaf Spot, SC=Stem Canker

## 2022 SCN UNIFORM TEST I

### Summary

Locations	Yield						Maturity date	Lodging score	Height inches	Seed					
	All		Infested		Non-infested					weight	quality	protein	oil		
	bu/a	rank	bu/a	rank	bu/a	rank				g/100	score	@13%	@13%		
	9		5		4		6		7		7		6		6
1 MN1511CN	54.7	15	55.1	17	54.4	14	9/17	1.2	31	16.1	1.3	34.3	19.0		
2 ND Dickey (0)	47.9	25	48.8	26	46.9	24	-4	1.0	27	18.6	1.3	35.2	18.8		
3 U11-917032 (SCN)	56.5	13	55.1	17	58.3	10	7	1.3	29	16.8	1.3	32.4	20.6		
4 E15338	56.7	11	57.9	13	55.3	11	6	1.4	31	17.9	1.4	34.0	18.8		
5 E20078	62.2	6	64.8	1	59.2	8	8	1.5	37	17.0	1.3	33.6	19.3		
6 E20099	63.0	2	63.8	2	62.0	4	9	1.4	32	18.4	1.3	34.1	19.7		
7 LD19-5366a	62.4	5	63.1	3	61.6	5	7	1.3	31	16.9	1.1	35.5	18.6		
8 M13-250046	53.2	17	57.8	14	47.5	23	0	1.7	30	17.9	1.2	34.8	19.4		
9 M13-251003	52.8	18	54.2	20	51.1	19	-1	1.2	32	17.9	1.7	35.0	18.3		
10 M13-262015	56.6	12	58.0	12	55.1	12	8	1.1	28	15.9	1.3	32.8	20.1		
11 M13-266011	50.4	24	52.4	21	48.1	22	2	1.0	29	20.2	1.3	36.5	18.1		
12 M14-122031	62.8	3	62.6	4	63.2	3	6	1.1	29	17.9	1.5	34.6	19.1		
13 M14-122035	61.4	7	62.2	7	60.6	7	8	1.1	32	18.5	1.5	34.9	19.3		
14 M15-159120	59.0	9	59.6	8	58.4	9	5	1.1	29	15.7	1.4	35.0	18.4		
15 M15-179024	52.4	19	54.4	19	50.1	20	2	1.2	29	16.6	1.8	35.6	18.6		
16 M16-116016	50.7	22	49.0	25	53.0	15	5	1.0	27	17.2	1.6	32.5	20.3		
17 M16-134052	56.0	14	59.1	10	52.2	17	2	1.3	30	18.7	1.3	33.9	19.6		
18 M16-214187	59.4	8	58.4	11	60.9	6	3	1.3	28	17.3	1.5	33.8	18.7		
19 M16-215143	50.7	22	52.1	22	49.1	21	4	1.3	28	18.5	1.4	35.3	18.9		
20 M16-215179	51.4	20	50.9	23	52.3	16	0	1.2	26	17.5	1.3	34.8	19.1		
21 M16-465-20078	46.3	26	49.4	24	42.6	26	0	1.1	26	19.1	1.3	33.9	19.3		
22 OAC 19-62C-SCN	57.4	10	59.4	9	55.0	13	5	1.5	34	17.9	1.3	36.1	17.7		
23 ORC 5120	51.4	20	55.5	15	46.5	25	4	1.6	34	19.4	1.3	34.9	18.7		
24 ORC 5420	53.7	16	55.4	16	51.6	18	9	1.1	33	18.5	1.4	35.9	18.1		
25 U20-912087	62.8	3	62.3	6	63.5	2	8	1.2	31	18.4	1.5	33.4	19.9		
26 U20-923006	63.2	1	62.6	4	64.2	1	8	1.1	31	16.1	1.3	32.4	20.2		
Mean	56.0		57.1		54.7		4.4	1.3	30.1	17.7	1.4	34.4	19.2		
C.V. %	14.5		13.9		13.7										
LSD(.05)	4.4		5.7		6.0										
Replications	22		13		9										

## 2022 SCN UNIFORM TEST I

### 2 Year Summary

	Yield						Seed						
	All		Infested		Non-infested		Maturity	Lodging	Height	weight	quality	protein	oil
	bu/a	rank	bu/a	rank	bu/a	rank	date	score	inches	g/100	score	@13%	@13%
Locations	16		10		6		13	14	14	14	14	13	13
1 MN1511CN	52.0	7	50.9	8	53.7	6	9/16	1.4	35	15.5	1.3	34.4	19.0
2 ND Dickey (0)	46.5	10	45.3	10	48.5	10	-4	1.3	29	17.8	1.4	34.8	19.0
3 U11-917032 (SCN)	55.8	4	54.4	5	58.2	3	5	1.6	30	16.6	1.4	33.3	20.1
4 E15338	56.4	3	56.2	3	56.6	4	5	1.7	33	17.4	1.4	33.9	18.9
8 M13-250046	51.0	8	51.9	7	49.3	8	0	2.0	33	18.0	1.3	34.9	19.4
9 M13-251003	52.3	6	52.1	6	52.6	7	-1	1.5	34	17.2	1.8	34.9	18.4
10 M13-262015	55.0	5	54.8	4	55.3	5	7	1.3	30	15.5	1.4	32.8	19.7
11 M13-266011	49.5	9	49.7	9	49.1	9	2	1.2	31	19.9	1.4	36.4	18.2
12 M14-122031	59.2	1	57.4	2	62.2	1	6	1.4	31	17.6	1.6	34.7	19.3
13 M14-122035	59.0	2	57.9	1	60.9	2	7	1.5	33	18.2	1.5	35.0	19.4
Mean	53.7		53.1		54.6		3.0	1.5	31.8	17.4	1.4	34.5	19.1



## 2022 SCN UNIFORM TEST I

Strain	Yield (bu/a)								
	Urbana IL 2.5.7	Decatur MI Inf	Lamber- ton MN 2.5.7	Rose- mount MN 1.2.5.7	Palmrya ON Inf	Cotesfield NE NI	Mead NE NI	St. Pauls ON NI	Wood- stock ON NI
1 MN1511CN	47.7	41.1	65.1	54.1	65.5	68.9	76.3	42.8	32.7
2 ND Dickey (0)	35.4	38.5	56.5	45.5	66.5	59.9	60.6	42.0	28.2
3 U11-917032 (SCN)	49.4	53.4	59.6	50.0	61.4	83.1	74.1	44.5	34.6
4 E15338	50.5	48.9	62.4	48.7	77.3	73.0	72.1	43.2	36.1
5 E20078	59.6	72.4	61.0	53.1	75.9	75.8	68.6	55.0	40.4
6 E20099	56.3	63.0	61.1	59.7	77.4	83.2	85.0	43.0	40.1
7 LD19-5366a	56.6	58.1	69.4	49.5	80.5	81.2	76.6	55.1	36.6
8 M13-250046	45.3	56.3	59.0	60.9	65.8	61.4	57.4	36.5	37.8
9 M13-251003	37.0	46.5	60.2	55.2	70.6	68.1	53.2	50.1	36.1
10 M13-262015	49.6	53.4	66.2	51.7	67.4	81.1	68.9	41.9	31.6
11 M13-266011	44.6	42.8	58.5	44.6	74.9	68.2	60.4	38.0	29.0
12 M14-122031	53.9	66.4	64.6	52.8	73.8	82.9	77.6	52.7	42.9
13 M14-122035	54.5	56.1	60.8	54.8	83.3	83.8	73.1	54.3	34.3
14 M15-159120	54.9	56.9	54.9	59.3	61.8	76.7	71.2	52.0	36.8
15 M15-179024	41.5	41.7	68.3	48.4	70.3	73.6	60.8	38.0	31.0
16 M16-116016	32.7	44.9	52.1	46.7	66.7	81.5	64.5	38.4	30.9
17 M16-134052	54.0	50.5	56.9	47.1	85.4	73.0	61.2	38.2	39.5
18 M16-214187	51.0	49.0	58.5	53.0	78.9	84.7	73.4	50.7	37.8
19 M16-215143	40.1	45.3	56.1	46.0	71.1	72.5	64.1	33.1	29.9
20 M16-215179	38.7	46.8	55.2	46.4	65.6	71.7	66.4	42.0	32.2
21 M16-465-20078	33.7	48.3	51.1	45.1	60.4	46.7	45.4	49.7	31.7
22 OAC 19-62C-SCN	49.5	44.0	67.2	56.8	77.7	75.1	61.7	51.3	35.0
23 ORC 5120	42.2	27.0	58.4	54.3	80.1	55.0	53.0	41.5	39.5
24 ORC 5420	37.5	43.4	64.1	51.9	78.5	69.6	66.5	41.9	31.7
25 U20-912087	46.5	50.9	69.1	58.8	84.2	87.3	83.0	53.6	33.3
26 U20-923006	52.6	64.4	62.3	53.4	78.5	93.7	84.2	49.7	32.3
Mean	46.7	50.4	60.7	51.8	73.0	74.3	67.7	45.4	34.7
C.V. %	11.8	18.6	11.7	12.1	9.4	8.3	7.7	14.3	10.1
LSD(2-sided,.05)	11.3	15.4	11.8	10.2	14.2	15.1	12.8	13.3	5.8
Replications	2	3	3	3	2	2	2	2	3
Row spacing (in.)	30	30	30	30	17	30	30	13	13

## 2022 SCN UNIFORM TEST I

### Yield (rank)

Strain	Urbana	Decatur	Lamber-	Rose-	Palmrya	Cotesfield	Mead	St. Pauls	Wood-
	IL 2.5.7	MI Inf	ton MN 2.5.7	mount MN 1.2.5.7	ON Inf	NE NI	NE NI	ON NI	stock ON NI
1 MN1511CN	14	24	6	9	23	20	6	15	16
2 ND Dickey (0)	24	25	21	24	20	24	21	16	26
3 U11-917032 (SCN)	13	10	15	16	25	6	7	12	13
4 E15338	10	14	9	18	11	16	10	13	10
5 E20078	1	1	12	11	12	12	13	2	2
6 E20099	3	4	11	2	10	5	1	14	3
7 LD19-5366a	2	5	1	17	4	9	5	1	9
8 M13-250046	16	7	16	1	21	23	23	25	6
9 M13-251003	23	17	14	6	16	22	24	9	10
10 M13-262015	11	9	5	15	18	10	12	18	21
11 M13-266011	17	22	18	26	13	21	22	23	25
12 M14-122031	7	2	7	13	14	7	4	5	1
13 M14-122035	5	8	13	7	3	4	9	3	14
14 M15-159120	4	6	24	3	24	11	11	6	8
15 M15-179024	19	23	3	19	17	14	20	23	22
16 M16-116016	26	19	25	21	19	8	16	21	23
17 M16-134052	6	12	20	20	1	15	19	22	4
18 M16-214187	9	13	17	12	6	3	8	8	6
19 M16-215143	20	18	22	23	15	17	17	26	24
20 M16-215179	21	16	23	22	22	18	15	16	18
21 M16-465-20078	25	15	26	25	26	26	26	10	19
22 OAC 19-62C-SCN	12	20	4	5	9	13	18	7	12
23 ORC 5120	18	26	19	8	5	25	25	20	4
24 ORC 5420	22	21	8	14	7	19	14	18	19
25 U20-912087	15	11	2	4	2	2	3	4	15
26 U20-923006	8	3	10	10	7	1	2	10	17

## 2022 SCN UNIFORM TEST I

### Maturity

Strain	Urbana	Decatur	Lamber-	Rose-	Palmrya	Cotesfield	Mead	St. Pauls	Wood-
	IL 2.5.7	MI Inf	ton MN 2.5.7	mount MN 1.2.5.7	ON Inf	NE NI	NE NI	ON NI	stock ON NI
1 MN1511CN	9/04			9/25	9/10		9/17	9/24	9/22
2 ND Dickey (0)	-5			-7	0		-7	-4	-3
3 U11-917032 (SCN)	10			4	12		3	3	10
4 E15338	7			1	8		2	8	9
5 E20078	9			2	13		4	9	10
6 E20099	13			3	11		8	10	10
7 LD19-5366a	9			1	9		3	9	10
8 M13-250046	-1			-2	5		-2	-1	-1
9 M13-251003	-7			-2	3		-2	-3	4
10 M13-262015	10			3	12		3	11	10
11 M13-266011	5			-3	7		1	0	4
12 M14-122031	9			1	11		3	4	8
13 M14-122035	11			2	13		5	8	8
14 M15-159120	9			-3	11		1	4	8
15 M15-179024	5			-2	9		-1	3	1
16 M16-116016	7			-2	9		3	8	6
17 M16-134052	6			-5	7		-1	1	6
18 M16-214187	8			-2	8		3	-2	2
19 M16-215143	8			0	10		2	-1	6
20 M16-215179	0			-4	4		-1	-2	2
21 M16-465-20078	0			-2	5		-3	-1	-1
22 OAC 19-62C-SCN	6			-3	10		1	5	9
23 ORC 5120	4			-3	10		3	1	10
24 ORC 5420	8			2	17		5	10	10
25 U20-912087	9			3	14		4	9	10
26 U20-923006	8			3	15		5	9	10
Planted	5/17	5/10	5/24	6/02	5/25	5/28	5/28	5/20	6/02

## 2022 SCN UNIFORM TEST I

### Lodging (score)

Strain	Urbana IL 2.5.7	Decatur MI Inf	Lamber- ton MN 2.5.7	Rose- mount MN 1.2.5.7	Palmrya ON Inf	Cotesfield NE NI	Mead NE NI	St. Pauls ON NI	Wood- stock ON NI
1 MN1511CN	1.0		1.3	2.0	1.0		1.0	1.0	1.0
2 ND Dickey (0)	1.0		1.0	1.3	1.0		1.0	1.0	1.0
3 U11-917032 (SCN)	1.3		1.7	2.0	1.0		1.0	1.0	1.0
4 E15338	1.3		1.7	2.3	1.5		1.0	1.0	1.0
5 E20078	1.5		2.0	2.3	1.5		1.0	1.0	1.0
6 E20099	1.0		2.0	2.3	1.5		1.0	1.0	1.0
7 LD19-5366a	1.3		1.7	1.7	1.5		1.0	1.0	1.0
8 M13-250046	1.5		2.0	3.0	2.0		1.5	1.0	1.0
9 M13-251003	1.0		1.0	2.3	1.0		1.0	1.0	1.0
10 M13-262015	1.0		1.3	1.3	1.0		1.0	1.0	1.0
11 M13-266011	1.0		1.0	1.3	1.0		1.0	1.0	1.0
12 M14-122031	1.0		1.3	1.7	1.0		1.0	1.0	1.0
13 M14-122035	1.0		1.0	2.0	1.0		1.0	1.0	1.0
14 M15-159120	1.0		1.0	1.7	1.0		1.0	1.0	1.0
15 M15-179024	1.3		1.3	2.0	1.0		1.0	1.0	1.0
16 M16-116016	1.0		1.3	1.0	1.0		1.0	1.0	1.0
17 M16-134052	1.0		1.7	1.7	1.5		1.0	1.0	1.0
18 M16-214187	1.3		2.0	1.7	1.0		1.0	1.0	1.0
19 M16-215143	1.0		1.7	1.7	1.5		1.0	1.0	1.0
20 M16-215179	1.0		1.7	2.0	1.0		1.0	1.0	1.0
21 M16-465-20078	1.0		1.0	1.7	1.0		1.0	1.0	1.0
22 OAC 19-62C-SCN	1.5		1.7	2.7	1.5		1.0	1.0	1.0
23 ORC 5120	1.5		2.0	1.9	1.5		2.5	1.0	1.0
24 ORC 5420	1.0		1.3	1.7	1.0		1.0	1.0	1.0
25 U20-912087	1.0		2.0	1.7	1.0		1.0	1.0	1.0
26 U20-923006	1.0		1.3	1.3	1.0		1.0	1.0	1.0

## 2022 SCN UNIFORM TEST I

### Height (inches)

Strain	Urbana	Decatur	Lamber-	Rose-	Palmrya	Cotesfield	Mead	St. Pauls	Wood-
	IL 2.5.7	MI Inf	ton MN 2.5.7	mount MN 1.2.5.7	ON Inf	NE NI	NE NI	ON NI	stock ON NI
1 MN1511CN	29		35	33	28		35	25	30
2 ND Dickey (0)	26		30	28	26		30	20	25
3 U11-917032 (SCN)	28		33	31	26		32	24	28
4 E15338	29		33	33	31		34	28	29
5 E20078	37		42	41	31		39	32	36
6 E20099	31		37	32	31		39	26	29
7 LD19-5366a	30		36	30	32		34	26	29
8 M13-250046	29		34	31	27		32	25	29
9 M13-251003	29		34	35	28		43	24	26
10 M13-262015	27		32	28	28		33	23	26
11 M13-266011	28		36	31	27		32	23	26
12 M14-122031	31		33	31	28		30	23	29
13 M14-122035	32		34	33	31		35	24	27
14 M15-159120	30		33	27	29		32	26	28
15 M15-179024	30		33	30	30		30	20	25
16 M16-116016	24		31	31	26		30	23	29
17 M16-134052	29		36	31	30		29	23	28
18 M16-214187	28		32	27	26		32	21	27
19 M16-215143	26		31	31	26		33	21	27
20 M16-215179	24		31	30	24		29	21	28
21 M16-465-20078	24		29	27	26		27	21	27
22 OAC 19-62C-SCN	32		38	33	35		38	29	29
23 ORC 5120	31		38	36	32		36	29	30
24 ORC 5420	27		38	37	31		33	29	30
25 U20-912087	28		36	30	31		34	26	29
26 U20-923006	29		35	31	30		37	25	27

## 2022 SCN UNIFORM TEST I

### Seed Weight (g/100)

Strain	Urbana	Decatur	Lamber-	Rose-	Palmrya	Cotesfield	Mead	St. Pauls	Wood-
	IL 2.5.7	MI Inf	ton MN 2.5.7	mount MN 1.2.5.7	ON Inf	NE NI	NE NI	ON NI	stock ON NI
1 MN1511CN	15.7		15.9	16.1	15.2		15.7	17.8	12.5
2 ND Dickey (0)	17.2		18.1	19.0	17.2		18.3	21.9	15.9
3 U11-917032 (SCN)	16.3		16.1	16.5	16.5		16.1	19.1	14.1
4 E15338	17.8		18.0	17.6	16.2		18.1	19.8	14.4
5 E20078	16.1		15.2	17.0	17.0		17.2	19.5	15.2
6 E20099	19.0		17.2	17.8	17.2		19.1	19.9	17.7
7 LD19-5366a	16.6		17.1	16.7	16.3		16.1	18.3	15.0
8 M13-250046	16.0		17.8	17.8	17.5		18.5	19.8	15.4
9 M13-251003	17.2		17.9	17.4	17.3		17.2	20.2	14.6
10 M13-262015	15.3		16.1	15.5	16.4		15.5	16.3	13.2
11 M13-266011	20.7		20.0	18.8	20.5		20.0	21.5	15.5
12 M14-122031	17.3		17.0	17.3	18.1		16.9	20.6	16.1
13 M14-122035	18.7		16.3	19.4	18.0		17.3	21.3	15.1
14 M15-159120	15.4		14.9	16.4	15.4		15.2	17.0	13.8
15 M15-179024	15.8		16.5	17.1	15.5		16.8	17.8	12.5
16 M16-116016	17.4		17.4	16.6	16.4		16.9	18.3	13.7
17 M16-134052	17.4		17.8	19.1	18.3		18.7	20.7	15.5
18 M16-214187	17.2		17.5	17.9	16.4		16.3	18.8	12.8
19 M16-215143	18.0		18.6	18.0	18.4		18.7	19.5	15.5
20 M16-215179	15.8		18.0	18.0	16.2		17.4	19.3	15.3
21 M16-465-20078	18.8		19.1	19.0	18.3		19.0	20.3	15.3
22 OAC 19-62C-SCN	16.5		17.4	18.2	17.6		17.1	20.5	15.5
23 ORC 5120	19.6		18.0	19.7	19.4		18.8	20.8	17.3
24 ORC 5420	17.9		17.1	17.4	18.4		20.0	20.3	17.7
25 U20-912087	17.4		17.5	18.4	18.4		18.4	20.4	16.8
26 U20-923006	15.4		14.8	15.9	16.1		16.1	18.2	13.7

## 2022 SCN UNIFORM TEST I

### Seed Quality (score)

Strain	Urbana	Decatur	Lamber-	Rose-	Palmrya	Cotesfield	Mead	St. Pauls	Wood-
	IL 2.5.7	MI Inf	ton MN 2.5.7	mount MN 1.2.5.7	ON Inf	NE NI	NE NI	ON NI	stock ON NI
1 MN1511CN	2.0		1.0	1.0	1.0		1.0	1.5	1.0
2 ND Dickey (0)	2.0		1.0	1.0	1.0		1.0	2.0	1.5
3 U11-917032 (SCN)	2.0		1.0	1.0	1.0		1.0	2.0	1.5
4 E15338	2.0		1.0	1.0	1.0		1.0	2.5	1.5
5 E20078	2.0		1.0	1.0	1.0		1.0	2.0	1.5
6 E20099	2.0		1.0	1.0	1.0		1.0	1.5	1.0
7 LD19-5366a	1.0		1.0	1.0	1.0		1.0	1.5	1.5
8 M13-250046	1.0		1.0	1.0	1.0		1.0	2.0	1.0
9 M13-251003	3.0		2.0	1.0	1.0		1.0	2.0	1.5
10 M13-262015	2.0		1.0	1.0	1.0		1.0	2.0	1.5
11 M13-266011	2.0		1.0	1.0	1.0		1.0	2.0	1.0
12 M14-122031	2.0		1.0	1.0	1.0		1.0	3.0	2.0
13 M14-122035	2.0		1.0	1.0	1.0		1.0	3.0	1.0
14 M15-159120	2.0		1.0	1.0	1.0		1.0	2.5	1.0
15 M15-179024	3.0		1.0	2.0	1.0		1.0	2.5	1.5
16 M16-116016	3.0		1.0	1.0	1.0		1.0	2.5	1.0
17 M16-134052	2.0		1.0	1.0	1.0		1.0	1.5	1.0
18 M16-214187	2.0		1.0	1.0	1.0		1.0	3.0	1.0
19 M16-215143	2.0		1.0	1.0	1.0		1.0	2.5	1.5
20 M16-215179	2.0		1.0	1.0	1.0		1.0	2.0	1.0
21 M16-465-20078	2.0		1.0	1.0	1.0		1.0	2.0	1.0
22 OAC 19-62C-SCN	2.0		1.0	1.0	1.0		1.0	2.0	1.0
23 ORC 5120	2.0		1.0	1.0	1.0		1.0	2.0	1.5
24 ORC 5420	3.0		1.0	1.0	1.0		1.0	1.5	1.0
25 U20-912087	2.0		2.0	1.0	1.0		1.0	2.0	1.5
26 U20-923006	2.0		1.0	1.0	1.0		1.0	1.5	1.5

## 2022 SCN UNIFORM TEST I

### Protein (%)

Strain	Urbana	Decatur	Lamber-	Rose-	Palmrya	Cotesfield	Mead	St. Pauls	Wood-
	IL	MI	ton	mount	ON	NE	NE	ON	stock
	2.5.7	Inf	MN	MN	Inf	NI	NI	NI	ON
			2.5.7	1.2.5.7					NI
1 MN1511CN	34.2		.	32.5			34.6	35.5	34.7
2 ND Dickey (0)	35.3		34.8	34.1			34.1	36.2	36.4
3 U11-917032 (SCN)	32.9		33.5	31.1			31.0	33.3	32.5
4 E15338	34.7		33.9	33.1			34.0	34.7	33.8
5 E20078	33.1		33.9	32.6			33.4	34.5	34.2
6 E20099	33.6		33.7	33.9			34.4	34.5	34.3
7 LD19-5366a	35.5		35.1	34.3			35.0	36.7	36.3
8 M13-250046	34.0		34.6	34.6			34.4	35.4	35.8
9 M13-251003	34.9		34.1	34.1			35.6	36.2	35.1
10 M13-262015	33.2		33.0	31.1			31.9	33.5	34.1
11 M13-266011	37.8		36.8	33.8			35.9	37.0	38.0
12 M14-122031	33.6		35.1	33.6			33.6	36.3	35.7
13 M14-122035	34.7		35.1	33.1			34.1	36.5	35.6
14 M15-159120	35.4		34.3	35.7			33.9	35.8	34.9
15 M15-179024	35.4		35.6	35.7			35.3	36.1	35.6
16 M16-116016	33.2		33.0	29.8			32.9	33.3	32.7
17 M16-134052	33.6		34.2	31.8			34.0	36.0	33.5
18 M16-214187	33.7		33.6	34.1			32.5	34.6	34.1
19 M16-215143	35.0		35.7	34.7			35.8	36.2	34.6
20 M16-215179	33.2		34.6	34.8			35.8	35.8	34.8
21 M16-465-20078	34.4		34.2	32.1			34.2	35.1	33.3
22 OAC 19-62C-SCN	35.1		36.2	37.0			35.1	37.4	35.9
23 ORC 5120	35.1		34.5	34.2			34.8	35.9	35.2
24 ORC 5420	35.6		35.2	34.6			35.7	36.7	37.2
25 U20-912087	33.8		34.1	30.5			33.3	34.8	34.1
26 U20-923006	31.8		33.3	30.9			31.1	33.4	33.6



## 2022 SCN UNIFORM TEST I

### Oil (%)

Strain	Urbana	Decatur	Lamber-	Rose-	Palmrya	Cotesfield	Mead	St. Pauls	Wood-
	IL 2.5.7	MI Inf	ton MN 2.5.7	mount MN 1.2.5.7	ON Inf	NE NI	NE NI	ON NI	stock ON NI
1 MN1511CN	19.3		.	20.1			18.6	17.9	18.9
2 ND Dickey (0)	19.3		18.4	19.1			20.1	17.8	18.3
3 U11-917032 (SCN)	21.2		20.4	20.6			21.6	19.9	20.2
4 E15338	19.2		18.8	19.5			19.2	17.6	18.8
5 E20078	19.9		19.1	19.5			19.9	18.1	19.2
6 E20099	20.6		19.7	19.6			19.6	19.3	19.3
7 LD19-5366a	18.6		19.0	19.1			18.9	17.8	18.4
8 M13-250046	20.4		19.5	19.0			20.2	18.4	18.8
9 M13-251003	18.9		18.5	18.4			18.5	16.9	18.4
10 M13-262015	20.0		19.8	21.0			20.7	19.5	19.6
11 M13-266011	17.9		18.2	19.7			18.2	17.1	17.6
12 M14-122031	19.6		19.1	20.1			19.5	18.2	18.2
13 M14-122035	20.3		19.3	20.4			19.2	18.0	18.8
14 M15-159120	18.7		19.1	17.7			18.9	17.7	18.3
15 M15-179024	19.3		18.4	18.7			18.8	18.0	18.3
16 M16-116016	21.3		19.7	21.3			19.7	19.6	20.1
17 M16-134052	20.2		19.2	20.4			19.5	18.6	19.5
18 M16-214187	19.3		19.3	18.4			19.1	17.7	18.7
19 M16-215143	19.5		19.3	18.6			18.9	18.0	19.3
20 M16-215179	20.6		18.8	19.0			18.4	18.1	19.6
21 M16-465-20078	19.5		19.3	19.9			19.1	17.9	19.8
22 OAC 19-62C-SCN	17.9		17.7	17.5			18.6	16.5	17.8
23 ORC 5120	19.3		19.6	19.1			19.0	17.7	17.7
24 ORC 5420	18.6		18.3	18.8			18.5	17.1	17.6
25 U20-912087	20.8		19.8	20.9			20.1	18.5	19.0
26 U20-923006	20.9		19.7	20.5			20.9	19.3	19.8

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## 2022 SCN UNIFORM TEST II

Strain	Descriptive code	Parentage	Previous testing
1 IA2102	WGy	A04-545045 x AgriPro 98180-A01-06131	9
2 LD02-4485 (SCN)	PGbf	M90-184111 x IA3010	16
3 U11-917032 (SCN)	PTbl	LD02-4485 x U03-100612	3
4 U14-910097 (SCN)	PGbf	U09-105007 x LD07-3419	4
5 A15208- 17	WLt+Gbl/bf	(AR12-127102/AR12-327073) x LD07-3419	21SCN P IIB
6 E17040	WGy	E07051 x IA2102	21SCN P IIA
7 E17203	PGbf	E11128T x LD02-4485	2
8 E19314T	PGy	E16902 x E11128T	21SCN P I
9 E19323T	PGy	E16902 x E11128T	21SCN P I
10 E19413	PGy/gr	E13390 x E13100	21SCN P IIA
11 LD17-2558	PGibl	U11-614119 x LD09-30224	1
12 LD17-2903	P+WLtbl	U11-614119 x LD09-30224	1
13 LD17-3855	PGy	LD10-10198 x LG11-6210	1
14 LD18-0173	PGibl	LD10-10198 x U11-917032	21SCN P IIA
15 LD18-0986	PGibl	LD12-3866 x U11-911079	21 UTP II
16 LD18-4231	P+WLtbl/gr	U11-932025 x LD10-10198	21SCN P IIA
17 LD18-4236	P+WLtbl/gr	U11-932025 x LD10-10198	21SCN P IIA
18 LD18-4406	WLty	U11-614119 x M08-362051	21SCN P IIA
19 LD18-5062	PLtbl	LD10-5213a x U11-911079	21SCN P IIA
20 LD18-6259a	PGibl	U11-932025 x LD09-30224	21SCN P IIB
21 U18-613247	PLtbl	LD10-10198 x U11-911079	1
22 U19-602215	PLtbr	U14-910097 x LD11-2170	21SCN P IIB
23 U19-618131	PLtbr	U14-910097 x LD11-2170	21SCN P IIB
24 U19-618247	PLtbr	U14-903100 x U14-924158	21SCN P IIB
25 U19-911031	PGbf/ibl	ORC_3713N x U14-925152	21SCN P I
26 U19-913011	PGy/gr	ORC_3713N x U14-925152	21SCN P I
27 U19-923124	PGbf	U14-910097 x LD11-2170	21SCN P IIB
28 U19-924091	PLtbr	U14-910097 x LD11-2170	21SCN P IIB
29 U19-926126	PLtbr	U14-910097 x U14-924158	21SCN P IIB

## 2022 SCN UNIFORM TEST II

Strain	Gen comp	Cooperator reported SCN resistance source	Cooperator reported Traits
1 IA2102	F4	None	
2 LD02-4485 (SCN)	F5	PI 88788	
3 U11-917032 (SCN)	F6	PI 88788	
4 U14-910097 (SCN)	F5	PI 88788,437654	
5 A15208- 17	F5	PI 88788, PI 437654, PI 507354	
6 E17040	F5	PI 88788	
7 E17203	F5	PI 88788	
8 E19314T	F5	PI 88789	
9 E19323T	F5	PI 88789	high protein
10 E19413	F5	PI 88788	
11 LD17-2558	F5	PI 88788	
12 LD17-2903	F5	PI 88788	
13 LD17-3855	F5	PI 88788	
14 LD18-0173	F5	PI 88788	SCN
15 LD18-0986		PI 88788	
16 LD18-4231	F5	PI 88788	
17 LD18-4236	F5	PI 88788	SCN
18 LD18-4406	F5	PI 88788	SCN
19 LD18-5062	F5	PI 88788	SCN
20 LD18-6259a	F5	PI 88788	Rag 1
21 U18-613247	F5	PI 88788	Expected Rps
22 U19-602215	F5	PI 88788,437654	
23 U19-618131	F5	PI 88788, 437654	Rps
24 U19-618247	F5	PI 88788,437654	
25 U19-911031	F5	PI 88788,437654	IDC
26 U19-913011	F5	PI 88788,437654	IDC
27 U19-923124	F5	PI 88788, 437654	Rps
28 U19-924091	F5	PI 88788, 437654	Rps
29 U19-926126	F5	PI 88788,437654	IDC

## 2022 SCN UNIFORM TEST II

### Disease Screening

Strain	Missouri SCN Screening						SNP marker analysis			
	HG 7		HG 2.5.7		HG 1.2.5.7		SCN			
	FI	rating	FI	rating	FI	rating	88788	Peking	Rhg4	
1 IA2102	no data						R	S	S	
2 LD02-4485 (SCN)	6	HR					R	S	S	
3 U11-917032 (SCN)	28	**					R	S	S	
4 U14-910097 (SCN)	2	HR	2	HR	23	R	S	R	R	
5 A15208- 17	4	HR	7	HR	28	**	S	R	R	
6 E17040	9	HR					R	S	S	
7 E17203	10	R					R	S	S	
8 E19314T	53	**					R	S	S	
9 E19323T	18	R					R	S	S	
10 E19413	9	HR					R	S	S	
11 LD17-2558	4	HR					R	S	S	
12 LD17-2903	4	HR					R	S	S	
13 LD17-3855	10	R					R	S	S	
14 LD18-0173	9	HR					R	S	S	
15 LD18-0986	41	LR					S	S	S	
16 LD18-4231	9	HR					R	S	S	
17 LD18-4236	14	R					R	S	S	
18 LD18-4406	9	HR					R	S	S	
19 LD18-5062	6	HR					R	S	S	
20 LD18-6259a	4	HR	82	NR	86	NR	R	S	S	
21 U18-613247	4	HR					R	S	S	
22 U19-602215	13	R	93	NR	103	NR	Het	S	Het	
23 U19-618131	2	HR	0	HR	20	R	S	Het	R	
24 U19-618247	2	HR	55	LR	71	NR	.	Het	R	
25 U19-911031	2	HR	21	**	18	R	S	S	S	
26 U19-913011	20	R					R	S	S	
27 U19-923124	2	HR	0	HR	24	R	S	R	R	
28 U19-924091	17	**	78	NR	95	NR	Het	S	S	
29 U19-926126	26	**	8	HR	62	NR	S	R	R	

## 2022 SCN UNIFORM TEST II

### Predicted resistance genes based on SNP marker analysis

Strain	SCN	Iron Chlorosis	Phytophthora	BSR	FLS	SC
1 IA2102	Rhg1_Pi88788	R-(LgA1+Ch13)		R	S	R
2 LD02-4485 (SCN)	Rhg1_Pi88788	R-Ch13		S	S	R
3 U11-917032 (SCN)	Rhg1_Pi88788	R-Ch13		S	S	R
4 U14-910097 (SCN)	Rhg1-Peking+Rhg4	Het-LgA1 + R-Ch13		S	S	R
5 A15208- 17	Rhg1-Peking+Rhg4	LgA1+LgN+Ch13		R	S	R
6 E17040	Rhg1_Pi88788	R-(LgA1+LgN+Ch13)	Rps1k	R	S	R
7 E17203	Rhg1-Pi88788	Ch13, Het LgN		S	S	R
8 E19314T	Rhg1_Pi88788	R-Ch13	Rps1k	R	S	R
9 E19323T	Rhg1_Pi88788	R-(LgN+Ch13)		R	S	R
10 E19413	Rhg1_Pi88788	R-(LgA1+LgN+Ch13)	Rps1k	R	S	R
11 LD17-2558	Rhg1_Pi88788	R-LgN + Het-Ch13		R	S	R
12 LD17-2903	Rhg1_Pi88788	R-LgA1	Rps1k	R	S	R
13 LD17-3855	Rhg1_Pi88788	R-Ch13		S	S	R
14 LD18-0173	Rhg1-Pi88788	LgA+Ch13, Het LgN		Het	S	R
15 LD18-0986	none	R-LgN + Het-Ch13		R	S	R
16 LD18-4231	Rhg1_Pi88788	R-(LgA1+LgN+Ch13)		R	S	R
17 LD18-4236	Rhg1_Pi88788	R-(LgA1+LgN+Ch13)		R	S	R
18 LD18-4406	Rhg1-Pi88788	Ch13	Rps1k	R	S	R
19 LD18-5062	Rhg1_Pi88788	R-Ch13	Rps1k	S	S	R
20 LD18-6259a	Rhg1-Pi88788	LgA1+LgN		R	S	R
21 U18-613247	Rhg1-Pi88788	LgA1+Ch13	Rps1c	R	S	R
22 U19-602215	Het Rhg1-Pi88788	Ch13, Het LgN	Rps1k	S	S	R
23 U19-618131	Rhg4, Het Rhg1-Peking	LgN+Ch13	Rps1k	Het	S	R
24 U19-618247	Rhg4, Het Rhg1-Peking	LgA1+Ch13	Het Rps6	Het	S	R
25 U19-911031	none	R-Ch13		S	S	R
26 U19-913011	Rhg1-Pi88788	Ch13	Rps1c	R	S	R
27 U19-923124	Rhg1-Peking+Rhg4	Ch13		S	S	R
28 U19-924091	Het Rhg1-Pi88788	LgN+Ch13	Rps1k	R	S	R
29 U19-926126	Rhg1-Peking+Rhg4	Ch13		S	S	R

BSR=Brown Leaf Spot, FLS=Frogeye Leaf Spot, SC=Stem Canker

## 2022 SCN UNIFORM TEST II

### Summary

Locations	Yield						Maturity date	Lodging score	Height inches	Seed			
	All		Infested		Non-infested					weight	quality	protein	oil
	bu/a	rank	bu/a	rank	bu/a	rank				g/100	score	@13%	@13%
	6		4		2		4	4	4	4	4	4	4
1 IA2102	63.9	21	56.9	24	82.3	16	9/22	1.8	34	17.0	1.6	33.4	19.4
2 LD02-4485 (SCN)	67.1	18	61.6	17	82.4	15	0	1.8	35	16.2	1.5	31.6	19.6
3 U11-917032 (SCN)	57.8	26	52.7	28	72.4	25	-5	1.4	30	15.6	1.8	31.9	21.0
4 U14-910097 (SCN)	76.4	2	71.7	2	90.5	3	6	1.7	34	15.7	1.6	32.5	20.4
5 A15208- 17	62.7	23	57.7	23	77.1	23	-3	1.0	31	15.4	1.5	31.2	20.4
6 E17040	67.7	15	62.3	16	83.1	14	3	1.9	36	16.6	1.8	33.3	18.4
7 E17203	67.6	16	60.4	19	86.5	7	2	1.2	35	16.8	1.8	33.3	19.4
8 E19314T	54.2	29	50.6	29	65.9	29	-3	1.1	32	19.3	1.6	35.0	19.2
9 E19323T	56.6	28	53.3	27	67.6	27	-3	1.3	34	19.5	1.9	34.2	19.5
10 E19413	62.3	24	59.1	21	73.3	24	3	2.1	37	19.0	1.9	33.7	19.3
11 LD17-2558	73.2	4	66.1	5	91.9	1	3	1.4	36	17.2	1.7	33.1	19.7
12 LD17-2903	64.9	20	59.4	20	80.4	20	-3	1.1	32	17.0	1.3	33.5	20.8
13 LD17-3855	69.9	11	66.1	5	81.8	17	3	1.4	37	15.5	1.7	33.6	18.3
14 LD18-0173	63.4	22	54.8	25	85.2	12	-1	1.2	34	16.3	2.0	33.6	20.5
15 LD18-0986	70.8	7	65.3	10	86.2	9	5	1.2	35	16.4	1.6	33.8	19.3
16 LD18-4231	69.3	13	65.5	8	81.5	18	0	1.4	34	15.4	1.8	33.2	18.9
17 LD18-4236	67.3	17	62.5	14	81.4	19	-1	1.3	34	16.2	1.6	33.5	19.2
18 LD18-4406	68.0	14	62.5	14	83.4	13	-1	1.4	34	15.6	1.5	33.6	19.2
19 LD18-5062	71.9	5	65.2	11	89.9	4	2	1.3	36	15.3	1.5	32.4	19.0
20 LD18-6259a	69.7	12	67.3	4	79.1	22	6	1.4	37	17.2	1.5	33.8	19.8
21 U18-613247	66.2	19	61.4	18	80.1	21	2	1.1	39	14.4	1.4	34.0	19.4
22 U19-602215	70.8	7	65.4	9	86.0	11	6	1.4	34	16.1	1.2	34.3	19.4
23 U19-618131	76.7	1	71.5	3	91.6	2	5	1.3	35	17.5	1.5	33.8	19.7
24 U19-618247	71.2	6	65.7	7	86.5	7	7	1.1	35	16.3	1.3	32.2	20.1
25 U19-911031	59.1	25	57.8	22	66.2	28	-3	1.2	34	17.4	1.5	33.7	20.5
26 U19-913011	57.2	27	53.9	26	68.4	26	-4	1.1	34	17.7	1.8	32.7	21.1
27 U19-923124	76.3	3	72.0	1	89.3	5	3	1.2	34	16.2	1.6	33.2	20.7
28 U19-924091	70.3	10	63.5	13	88.4	6	5	1.4	35	17.6	1.5	33.1	20.6
29 U19-926126	70.5	9	64.9	12	86.1	10	4	1.3	34	14.4	1.6	32.7	20.6
Mean	67.0		62.0		81.5		1.4	1.4	34.5	16.6	1.6	33.4	19.9
C.V. %	10.9		11.3		8.1								
LSD(.05)	4.8		5.6		9.3								
Replications	14		10		4								

## 2022 SCN UNIFORM TEST II

### 2 Year Summary

	Yield								Seed				
	All		Infested		Non-infested		Maturity date	Lodging score	Height inches	weight g/100	quality score	protein @13%	oil @13%
	bu/a	rank	bu/a	rank	bu/a	rank							
Locations	13		10		3		9	8	8	9	9	9	9
1 IA2102	68.3	7	68.9	6	70.6	7	9/19	2.1	34	17.0	1.6	34.4	18.7
2 LD02-4485 (SCN)	69.1	6	68.7	7	74.7	4	1	2.0	33	15.6	1.5	32.6	19.0
3 U11-917032 (SCN)	60.3	9	60.3	9	64.0	9	-4	1.8	29	15.9	1.7	32.7	20.4
4 U14-910097 (SCN)	78.3	1	78.6	1	81.8	1	6	1.9	33	15.7	1.5	33.1	19.8
7 E17203	69.7	5	69.3	5	75.3	3	2	1.6	33	16.7	1.9	33.9	18.9
11 LD17-2558	73.4	3	72.5	3	80.4	2	3	1.5	34	17.0	1.6	33.4	19.3
12 LD17-2903	65.0	8	65.1	8	68.7	8	-3	1.4	31	16.7	1.5	33.9	20.1
13 LD17-3855	73.6	2	74.6	2	74.3	5	3	1.4	35	15.3	1.7	33.9	17.9
21 U18-613247	70.0	4	70.5	4	72.3	6	3	1.1	37	14.4	1.6	34.4	18.8
Mean	69.7		69.8		73.6		1.4	1.6	33.3	16.0	1.6	33.6	19.2



## 2022 SCN UNIFORM TEST II

### Yield (bu/a)

Strain	West					
	Ames IA 2.5.7	Urbana IL 2.5.7	Lafayette IN 2.5.7	Decatur MI Inf	Cotesfield NE NI	Mead NE NI
1 IA2102	62.8	58.3	58.3	54.4	82.9	81.7
2 LD02-4485 (SCN)	63.2	63.2	67.2	59.2	87.0	77.7
3 U11-917032 (SCN)	58.8	51.9	53.6	52.7	84.1	60.7
4 U14-910097 (SCN)	67.3	71.5	65.7	88.5	86.1	94.8
5 A15208- 17	56.5	57.6	58.6	64.4	78.4	75.8
6 E17040	66.0	70.5	57.8	61.2	83.9	82.3
7 E17203	60.6	63.1	59.1	65.1	86.8	86.2
8 E19314T	54.0	56.2	47.5	51.1	65.4	66.5
9 E19323T	62.7	53.2	48.8	55.0	67.8	67.5
10 E19413	64.2	62.1	58.8	57.5	73.8	72.7
11 LD17-2558	67.0	69.4	67.9	66.5	88.6	95.3
12 LD17-2903	67.4	63.6	58.7	54.1	80.2	80.5
13 LD17-3855	69.0	68.2	66.4	67.1	80.4	83.2
14 LD18-0173	59.8	55.3	61.9	48.3	89.6	80.7
15 LD18-0986	58.5	66.9	69.8	72.3	88.0	84.4
16 LD18-4231	67.1	72.0	66.0	63.1	78.9	84.1
17 LD18-4236	63.7	65.0	59.0	68.5	81.8	81.0
18 LD18-4406	64.9	66.1	63.7	61.5	84.1	82.8
19 LD18-5062	73.2	67.0	64.7	62.0	90.5	89.2
20 LD18-6259a	72.0	72.6	60.7	70.2	74.8	83.4
21 U18-613247	64.4	64.3	60.4	62.8	81.6	78.6
22 U19-602215	68.1	70.5	59.4	70.1	86.4	85.6
23 U19-618131	73.5	76.3	62.5	79.8	91.3	91.8
24 U19-618247	60.3	74.3	60.6	74.1	88.3	84.7
25 U19-911031	65.3	58.8	57.2	56.0	65.9	66.4
26 U19-913011	58.1	56.4	50.8	56.4	68.1	68.7
27 U19-923124	72.7	68.8	70.3	82.7	87.8	90.7
28 U19-924091	73.3	65.8	67.1	54.1	84.7	92.2
29 U19-926126	59.9	65.7	56.8	83.6	85.0	87.2
Mean	64.6	64.6	60.6	64.2	81.8	81.3
C.V. %	9.4	7.9	9.3	13.1	7.0	9.1
LSD(2-sided,.05)	9.9	10.4	11.5	13.8	14.1	18.1
Replications	3	2	2	3	2	2
Row spacing (in.)	30	30	30	30	30	30

## 2022 SCN UNIFORM TEST II

### Yield (rank)

Strain	West					
	Ames IA 2.5.7	Urbana IL 2.5.7	Lafayette IN 2.5.7	Decatur MI Inf	Cotesfield NE NI	Mead NE NI
1 IA2102	19	23	22	24	17	17
2 LD02-4485 (SCN)	18	19	4	19	8	22
3 U11-917032 (SCN)	25	29	26	27	14	29
4 U14-910097 (SCN)	9	5	8	1	11	2
5 A15208- 17	28	24	21	13	23	23
6 E17040	12	6	23	18	16	16
7 E17203	21	20	17	12	9	8
8 E19314T	29	26	29	28	29	27
9 E19323T	20	28	28	23	27	26
10 E19413	16	21	19	20	25	24
11 LD17-2558	11	8	3	11	4	1
12 LD17-2903	8	18	20	25	21	20
13 LD17-3855	6	10	6	10	20	14
14 LD18-0173	24	27	12	29	3	19
15 LD18-0986	26	12	2	6	6	11
16 LD18-4231	10	4	7	14	22	12
17 LD18-4236	17	16	18	9	18	18
18 LD18-4406	14	13	10	17	15	15
19 LD18-5062	3	11	9	16	2	6
20 LD18-6259a	5	3	13	7	24	13
21 U18-613247	15	17	15	15	19	21
22 U19-602215	7	6	16	8	10	9
23 U19-618131	1	1	11	4	1	4
24 U19-618247	22	2	14	5	5	10
25 U19-911031	13	22	24	22	28	28
26 U19-913011	27	25	27	21	26	25
27 U19-923124	4	9	1	3	7	5
28 U19-924091	2	14	5	26	13	3
29 U19-926126	23	15	25	2	12	7

## 2022 SCN UNIFORM TEST II

### Maturity

Strain	West					
	Ames IA 2.5.7	Urbana IL 2.5.7	Lafayette IN 2.5.7	Decatur MI Inf	Cotesfield NE NI	Mead NE NI
1 IA2102	9/30	9/17	9/15			9/25
2 LD02-4485 (SCN)	0	0	1			0
3 U11-917032 (SCN)	-3	-3	-6			-6
4 U14-910097 (SCN)	6	5	7			7
5 A15208- 17	-2	-2	-2			-4
6 E17040	6	3	2			1
7 E17203	1	3	2			2
8 E19314T	-4	-1	-4			-4
9 E19323T	-3	1	-4			-5
10 E19413	2	3	2			4
11 LD17-2558	2	3	3			3
12 LD17-2903	-3	-1	-3			-6
13 LD17-3855	6	4	2			1
14 LD18-0173	-1	-1	1			-2
15 LD18-0986	5	5	4			4
16 LD18-4231	0	2	1			-4
17 LD18-4236	-1	0	2			-5
18 LD18-4406	-1	0	0			-1
19 LD18-5062	2	2	1			2
20 LD18-6259a	6	5	6			5
21 U18-613247	3	2	3			2
22 U19-602215	7	5	5			6
23 U19-618131	6	5	5			6
24 U19-618247	6	6	6			8
25 U19-911031	-3	0	-2			-6
26 U19-913011	-4	-2	-5			-5
27 U19-923124	3	3	3			5
28 U19-924091	6	4	5			4
29 U19-926126	5	4	4			5
Planted	6/04	5/17	5/12	5/10	5/28	5/28

## 2022 SCN UNIFORM TEST II

### Lodging (score)

Strain	West					
	Ames IA 2.5.7	Urbana IL 2.5.7	Lafayette IN 2.5.7	Decatur MI Inf	Cotesfield NE NI	Mead NE NI
1 IA2102	2.3	1.5	2.0			1.5
2 LD02-4485 (SCN)	2.3	1.5	2.0			1.5
3 U11-917032 (SCN)	2.0	1.3	1.0			1.5
4 U14-910097 (SCN)	2.3	1.5	2.0			1.0
5 A15208- 17	1.0	1.0	1.0			1.0
6 E17040	2.7	2.0	2.0			1.0
7 E17203	1.7	1.3	1.0			1.0
8 E19314T	1.0	1.5	1.0			1.0
9 E19323T	1.7	1.5	1.0			1.0
10 E19413	3.0	2.0	2.0			1.5
11 LD17-2558	2.0	1.5	1.0			1.0
12 LD17-2903	1.0	1.5	1.0			1.0
13 LD17-3855	2.0	1.5	1.0			1.0
14 LD18-0173	1.7	1.3	1.0			1.0
15 LD18-0986	1.7	1.3	1.0			1.0
16 LD18-4231	1.7	2.0	1.0			1.0
17 LD18-4236	1.3	1.8	1.0			1.0
18 LD18-4406	2.0	1.5	1.0			1.0
19 LD18-5062	1.7	1.5	1.0			1.0
20 LD18-6259a	2.0	1.8	1.0			1.0
21 U18-613247	1.3	1.3	1.0			1.0
22 U19-602215	1.7	1.3	1.5			1.0
23 U19-618131	2.0	1.3	1.0			1.0
24 U19-618247	1.0	1.5	1.0			1.0
25 U19-911031	1.7	1.3	1.0			1.0
26 U19-913011	1.0	1.5	1.0			1.0
27 U19-923124	1.7	1.3	1.0			1.0
28 U19-924091	2.3	1.3	1.0			1.0
29 U19-926126	1.7	1.5	1.0			1.0

## 2022 SCN UNIFORM TEST II

### Height (inches)

Strain	West					
	Ames IA 2.5.7	Urbana IL 2.5.7	Lafayette IN 2.5.7	Decatur MI Inf	Cotesfield NE NI	Mead NE NI
1 IA2102	33	35	32			38
2 LD02-4485 (SCN)	38	34	31			35
3 U11-917032 (SCN)	33	29	28			32
4 U14-910097 (SCN)	37	32	32			37
5 A15208- 17	34	30	27			33
6 E17040	37	37	31			38
7 E17203	38	33	32			39
8 E19314T	33	33	30			31
9 E19323T	38	35	26			39
10 E19413	38	36	36			39
11 LD17-2558	38	37	30			38
12 LD17-2903	35	33	29			33
13 LD17-3855	40	38	33			38
14 LD18-0173	36	33	28			38
15 LD18-0986	36	36	31			39
16 LD18-4231	36	34	29			36
17 LD18-4236	36	32	31			37
18 LD18-4406	36	34	32			37
19 LD18-5062	37	37	32			38
20 LD18-6259a	39	36	33			41
21 U18-613247	38	40	36			41
22 U19-602215	36	34	30			38
23 U19-618131	38	36	31			37
24 U19-618247	37	35	31			36
25 U19-911031	38	33	30			34
26 U19-913011	37	34	30			36
27 U19-923124	37	32	30			37
28 U19-924091	38	34	32			37
29 U19-926126	37	35	31			35

## 2022 SCN UNIFORM TEST II

### Seed Weight (g/100)

Strain	West					
	Ames IA 2.5.7	Urbana IL 2.5.7	Lafayette IN 2.5.7	Decatur MI Inf	Cotesfield NE NI	Mead NE NI
1 IA2102	17.0	16.6	17.2			17.2
2 LD02-4485 (SCN)	17.0	15.9	16.6			15.3
3 U11-917032 (SCN)	16.6	14.4	16.1			15.4
4 U14-910097 (SCN)	16.2	15.6	16.1			14.8
5 A15208- 17	15.8	15.5	15.8			14.5
6 E17040	17.2	17.4	16.4			15.4
7 E17203	17.4	16.1	17.4			16.5
8 E19314T	19.7	18.3	19.5			19.7
9 E19323T	19.7	18.7	20.2			19.6
10 E19413	19.1	18.9	18.6			19.3
11 LD17-2558	17.1	17.3	17.2			17.3
12 LD17-2903	17.2	17.6	17.0			16.2
13 LD17-3855	16.1	15.4	15.4			14.9
14 LD18-0173	16.8	16.2	16.1			16.1
15 LD18-0986	16.6	16.4	16.3			16.5
16 LD18-4231	16.2	15.5	15.3			14.6
17 LD18-4236	16.8	15.9	16.6			15.5
18 LD18-4406	15.6	16.0	15.6			15.3
19 LD18-5062	16.0	15.5	15.5			14.4
20 LD18-6259a	16.9	17.6	17.3			17.0
21 U18-613247	15.3	14.3	14.2			13.9
22 U19-602215	16.8	16.0	16.6			15.0
23 U19-618131	17.7	18.0	17.4			17.0
24 U19-618247	16.4	17.2	16.1			15.7
25 U19-911031	18.0	16.9	17.5			17.3
26 U19-913011	18.1	18.0	17.1			17.6
27 U19-923124	16.5	16.6	15.8			15.9
28 U19-924091	17.9	17.7	18.1			16.7
29 U19-926126	14.3	14.7	14.8			13.9

## 2022 SCN UNIFORM TEST II

### Seed Quality (score)

Strain	West					
	Ames	Urbana	Lafayette	Decatur	Cotesfield	Mead
	IA 2.5.7	IL 2.5.7	IN 2.5.7	MI Inf	NE NI	NE NI
1 IA2102	2.3	2.0	1.0			1.0
2 LD02-4485 (SCN)	2.0	2.0	1.0			1.0
3 U11-917032 (SCN)	3.3	2.0	1.0			1.0
4 U14-910097 (SCN)	2.3	2.0	1.0			1.0
5 A15208- 17	2.0	2.0	1.0			1.0
6 E17040	2.3	3.0	1.0			1.0
7 E17203	2.3	3.0	1.0			1.0
8 E19314T	2.3	2.0	1.0			1.0
9 E19323T	2.7	3.0	1.0			1.0
10 E19413	2.0	3.0	1.5			1.0
11 LD17-2558	2.3	2.0	1.5			1.0
12 LD17-2903	2.3	1.0	1.0			1.0
13 LD17-3855	2.7	2.0	1.0			1.0
14 LD18-0173	3.0	2.0	2.0			1.0
15 LD18-0986	2.3	2.0	1.0			1.0
16 LD18-4231	2.7	2.0	1.5			1.0
17 LD18-4236	2.0	2.0	1.5			1.0
18 LD18-4406	2.0	2.0	1.0			1.0
19 LD18-5062	2.0	2.0	1.0			1.0
20 LD18-6259a	2.0	2.0	1.0			1.0
21 U18-613247	2.0	1.0	1.5			1.0
22 U19-602215	1.7	1.0	1.0			1.0
23 U19-618131	2.0	2.0	1.0			1.0
24 U19-618247	1.3	2.0	1.0			1.0
25 U19-911031	2.0	2.0	1.0			1.0
26 U19-913011	2.3	3.0	1.0			1.0
27 U19-923124	2.3	2.0	1.0			1.0
28 U19-924091	2.0	2.0	1.0			1.0
29 U19-926126	2.3	1.0	2.0			1.0

## 2022 SCN UNIFORM TEST II

### Protein (%)

Strain	West					
	Ames IA 2.5.7	Urbana IL 2.5.7	Lafayette IN 2.5.7	Decatur MI Inf	Cotesfield NE NI	Mead NE NI
1 IA2102	33.0	33.8	33.5			33.3
2 LD02-4485 (SCN)	32.4	32.0	30.9			31.2
3 U11-917032 (SCN)	32.5	33.3	30.1			31.7
4 U14-910097 (SCN)	33.7	33.2	31.2			32.0
5 A15208- 17	30.2	32.1	30.8			31.8
6 E17040	34.1	34.5	32.7			32.0
7 E17203	33.0	34.1	33.4			32.8
8 E19314T	33.7	36.0	34.9			35.3
9 E19323T	31.4	36.2	34.6			34.8
10 E19413	33.8	34.3	33.2			33.6
11 LD17-2558	32.9	32.9	32.9			33.7
12 LD17-2903	34.0	34.3	32.8			33.1
13 LD17-3855	33.8	34.8	33.0			32.9
14 LD18-0173	33.9	34.4	31.7			34.3
15 LD18-0986	32.9	35.2	34.0			33.3
16 LD18-4231	33.5	34.5	31.5			33.3
17 LD18-4236	33.9	34.2	33.1			32.7
18 LD18-4406	33.4	34.0	32.8			34.3
19 LD18-5062	32.0	33.7	31.1			33.0
20 LD18-6259a	33.2	34.0	33.4			34.4
21 U18-613247	34.8	34.5	33.2			33.4
22 U19-602215	34.3	35.6	34.0			33.3
23 U19-618131	33.7	34.4	33.4			33.9
24 U19-618247	31.0	33.9	31.7			32.4
25 U19-911031	34.0	34.1	33.2			33.3
26 U19-913011	33.1	34.4	31.8			31.6
27 U19-923124	32.9	34.6	32.4			32.9
28 U19-924091	33.3	34.4	32.7			31.9
29 U19-926126	31.6	34.6	32.8			32.0



## 2022 SCN UNIFORM TEST II

### Oil (%)

Strain	West					
	Ames IA 2.5.7	Urbana IL 2.5.7	Lafayette IN 2.5.7	Decatur MI Inf	Cotesfield NE NI	Mead NE NI
1 IA2102	20.0	19.1	19.6			18.8
2 LD02-4485 (SCN)	18.6	19.5	20.5			19.7
3 U11-917032 (SCN)	20.6	20.6	22.4			20.4
4 U14-910097 (SCN)	19.9	20.0	21.4			20.4
5 A15208- 17	20.5	20.2	21.0			19.7
6 E17040	17.8	18.3	19.2			18.4
7 E17203	19.3	19.3	19.9			18.9
8 E19314T	20.3	18.5	19.8			18.1
9 E19323T	21.2	18.5	19.6			18.6
10 E19413	19.5	19.3	19.8			18.7
11 LD17-2558	19.2	19.9	20.8			18.9
12 LD17-2903	20.5	20.4	21.5			20.7
13 LD17-3855	18.1	17.9	19.2			18.2
14 LD18-0173	20.4	20.5	21.1			20.0
15 LD18-0986	19.3	18.3	20.1			19.5
16 LD18-4231	19.2	17.8	20.1			18.3
17 LD18-4236	18.6	19.1	20.1			19.2
18 LD18-4406	18.2	19.3	20.6			18.6
19 LD18-5062	20.2	18.3	19.4			17.9
20 LD18-6259a	20.5	19.1	20.2			19.6
21 U18-613247	18.9	18.8	20.2			19.6
22 U19-602215	19.2	18.6	20.3			19.5
23 U19-618131	19.6	19.3	20.6			19.1
24 U19-618247	20.8	19.4	20.8			19.5
25 U19-911031	19.8	20.0	21.2			21.0
26 U19-913011	21.0	20.8	21.8			21.0
27 U19-923124	20.2	20.2	21.6			20.6
28 U19-924091	20.6	20.3	20.7			20.7
29 U19-926126	21.3	19.7	20.6			21.0

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## 2022 SCN PRELIMINARY TEST IIA

Strain	Descriptive code	Parentage
1 IA2102	WGy	A04-545045 x AgriPro 98180-A01-06131
2 LD02-4485 (SCN)	PGbf	M90-184111 x IA3010
3 U11-917032 (SCN)	PTbl	LD02-4485 x U03-100612
4 U14-910097 (SCN)	PGbf	U09-105007 x LD07-3419
5 A16204-20	PLtbl	(AR13-331018 x 51-34) x U11-911079
6 A16204-36	PLtbl	(AR13-331018 x 51-34) x U11-911079
7 A16204-65	PLtbr	(AR13-331018 x 51-34) x U11-911079
8 A16204-67	PLtbl	(AR13-331018 x 51-34) x U11-911079
9 A16204-105	WLtbl/br	(AR13-331018 x 51-34) x U11-911079
10 A16212-37	PLtbl	(AR13-331018 x PI603915C) x U11-622148
11 E20012	PGgr	E09014 x E13100
12 E20026	PGy/bf	E15901 x E13100
13 E20154	PGibl	E07051 x E15806
14 E20303T	PGbf	NE3400 x E11128T
15 E20316T	PGy/bf	NE3400 x E11128T
16 E20327	PGibl	LD02-4485 x E14077
17 E20329	PLt+Gbr/bf	LD02-4485 x E14077
18 E20333	PTbl	LD02-4485 x E14077
19 E20335	PGbf/ibl	LD02-4485 x E14077
20 E20351	PGibl	LD10-10198 x E14077
21 E20352	PLt+Gbl/ibl	LD10-10198 x E14077
22 E20355	PGy/gr	LD10-10198 x E14077
23 E20394	PTbl	E17805-12 x LD13-13228R1a
24 E20404	PTbl	E17805-12 x LD10-10198

## 2022 SCN PRELIMINARY TEST IIA

Strain	Gen comp	Cooperator reported SCN resistance source	Cooperator reported Traits
1 IA2102	F4	None	
2 LD02-4485 (SCN)	F5	PI 88788	
3 U11-917032 (SCN)	F6	PI 88788	
4 U14-910097 (SCN)	F5	PI 88788,437654	
5 A16204-20	F5	PI 88788, 437654	
6 A16204-36	F5	PI 88788, 437654	
7 A16204-65	F5	PI 88788, 437654	
8 A16204-67	F5	PI 88788, 437654	
9 A16204-105	F5	PI 88788, 437654	
10 A16212-37	F5	PI 88788, 437654	
11 E20012	F5	PI 88788	
12 E20026	F5	PI 88788	
13 E20154	F5	PI 88788	High Oleic
14 E20303T	F5	PI 88788	High Protein
15 E20316T	F5	PI 88788	High Protein
16 E20327	F5	PI 88788	
17 E20329	F5	PI 88788	
18 E20333	F5	PI 88788	
19 E20335	F5	PI 88788	
20 E20351	F5	PI 88788	
21 E20352	F5	PI 88788	
22 E20355	F5	PI 88788	
23 E20394	F5	PI 88788	High Oleic
24 E20404	F5	PI 88788	High Oleic

## 2022 SCN PRELIMINARY TEST IIA

### Disease Screening

Strain	SNP marker analysis			
	SCN			
	88788	Peking	Rhg4	
1 IA2102				
2 LD02-4485 (SCN)				
3 U11-917032 (SCN)				
4 U14-910097 (SCN)				
5 A16204-20	R	S	S	
6 A16204-36	R	S	S	
7 A16204-65	S	R	S	
8 A16204-67	R	S	S	
9 A16204-105	S	.	R	
10 A16212-37	S	S	R	
11 E20012	R	S	S	
12 E20026	R	S	S	
13 E20154	.	S	S	
14 E20303T	Het	S	S	
15 E20316T	S	S	S	
16 E20327	R	S	R	
17 E20329	R	S	Het	
18 E20333	R	S	S	
19 E20335	R	S	S	
20 E20351	R	S	Het	
21 E20352	R	S	.	
22 E20355	R	S	S	
23 E20394	R	S	S	
24 E20404	R	S	S	

## 2022 SCN PRELIMINARY TEST IIA

### Predicted resistance genes based on SNP marker analysis

Strain	SCN	Iron Chlorosis	Phytophthora	BSR	FLS	SC
1 IA2102						
2 LD02-4485 (SCN)						
3 U11-917032 (SCN)						
4 U14-910097 (SCN)						
5 A16204-20	Rhg1_PI88788	R-(LgA1+Ch13)	Rps1c	S	S	R
6 A16204-36	Rhg1_PI88788	R-Ch13	Rps1c	S	S	R
7 A16204-65	Rhg1_Peking	R-(LgA1+Ch13)	Rps1c	S	S	R
8 A16204-67	Rhg1_PI88788	R-(LgA1+Ch13)	Rps1c	S	S	R
9 A16204-105	Rhg4	R-(LgA1+LgN+Ch13)		S	S	R
10 A16212-37	Rhg4	R-(LgN+Ch13)		S	S	S
11 E20012	Rhg1_PI88788	R-(LgN+Ch13)		R	S	R
12 E20026	Rhg1_PI88788	R-(LgA1+LgN+Ch13)	Rps1k + Rps6	R	S	R
13 E20154			Het-Rps1k	Het	S	R
14 E20303T	Het-Rhg1_PI88788	Het-Ch13		R	S	R
15 E20316T	none	R-(LgN+Ch13)		Het	S	R
16 E20327	Rhg1_PI88788+Rhg4	R-Ch13		S	S	R
17 E20329	Rhg1_PI88788, Het-Rhg4	R-Ch13	Rps1k	S	S	R
18 E20333	Rhg1_PI88788	R-(LgA1+Ch13)		Het	S	R
19 E20335	Rhg1_PI88788	R-Ch13	Rps1k	S	S	R
20 E20351	Rhg1_PI88788, Het-Rhg4	R-(LgA1+LgN+Ch13)		Het	S	R
21 E20352	Rhg1_PI88788	R-(LgA1+LgN+Ch13)		S	S	R
22 E20355	Rhg1_PI88788	R-(LgA1+Ch13)	Het-Rps1k	R		R
23 E20394	Rhg1_PI88788	R-Ch13	Rps1c	R	S	R
24 E20404	Rhg1_PI88788	R-(LgN+Ch13)	Rps1c	S	S	R

BSR=Brown Leaf Spot, FLS=Frogeye Leaf Spot, SC=Stem Canker

## 2022 SCN PRELIMINARY TEST IIA

### Summary

	Yield						Seed						
	All		Infested		Non-infested		Maturity	Lodging	Height	weight	quality	protein	oil
	bu/a	rank	bu/a	rank	bu/a	rank	date	score	inches	g/100	score	@13%	@13%
Locations	5		3		2		3	3	3	6	3	3	3
1 IA2102	67.7	10	57.9	14	82.5	8	9/24	1.7	35	17.1	1.8	33.7	19.0
2 LD02-4485 (SCN)	71.4	5	63.9	5	82.6	6	1	1.5	34	16.1	1.5	32.2	19.6
3 U11-917032 (SCN)	61.4	18	51.1	20	76.7	16	-3	1.3	32	16.0	2.0	33.4	20.4
4 U14-910097 (SCN)	77.9	1	72.6	1	85.9	1	6	1.7	36	15.7	1.3	33.2	19.9
5 A16204-20	62.1	16	58.0	13	68.3	21	2	1.5	42	15.0	1.5	35.3	18.2
6 A16204-36	64.7	15	56.6	15	76.8	14	2	1.3	39	14.0	1.7	35.4	18.4
7 A16204-65	64.9	14	59.4	10	73.3	17	4	1.5	37	15.2	2.0	34.8	17.6
8 A16204-67	59.6	19	51.3	19	72.0	20	-1	1.2	41	14.9	1.5	34.8	18.5
9 A16204-105	66.4	12	59.4	10	76.8	14	5	1.2	36	14.7	1.5	33.4	19.1
10 A16212-37	59.1	20	47.1	24	77.1	13	2	1.3	39	14.8	1.5	32.3	19.5
11 E20012	65.3	13	60.3	9	72.9	18	4	1.3	35	18.6	1.8	32.9	19.3
12 E20026	68.8	9	59.4	10	82.8	5	-2	1.4	36	18.3	1.3	32.4	20.1
13 E20154	56.5	23	49.0	21	67.9	23	-3	1.0	31	20.4	1.8	36.0	18.4
14 E20303T	57.8	22	47.9	23	72.6	19	4	1.6	39	17.7	1.7	36.5	18.6
15 E20316T	61.8	17	48.9	22	81.2	11	4	1.3	37	17.2	1.5	36.3	18.8
16 E20327	67.2	11	56.6	15	83.2	4	-1	1.0	34	17.4	1.7	33.1	19.8
17 E20329	71.0	6	64.1	4	81.3	10	2	1.2	34	16.7	1.8	32.5	19.9
18 E20333	70.2	8	63.8	6	79.9	12	4	1.4	38	16.1	1.7	32.6	19.9
19 E20335	72.0	3	65.7	3	81.4	9	5	1.7	39	17.5	1.8	33.4	19.0
20 E20351	70.8	7	60.6	8	84.6	2	5	1.3	39	15.8	1.7	33.8	18.9
21 E20352	71.7	4	63.4	7	84.1	3	6	1.6	41	14.9	1.7	33.4	18.9
22 E20355	73.3	2	67.2	2	82.6	6	8	1.6	40	16.7	1.8	33.4	18.6
23 E20394	58.5	21	52.1	18	68.1	22	0	1.6	40	15.7	1.8	36.0	18.8
24 E20404	56.0	24	54.0	17	58.9	24	3	1.6	39	14.4	1.8	37.5	16.5
Mean	65.7		57.9		77.2		2.5	1.4	37.2	16.3	1.7	34.1	19.0
C.V. %	10.4		11.7		6.8								
LSD(.05)	6.1		7.8		7.5								
Replications	10		6		4								

## 2022 SCN PRELIMINARY TEST IIA

### Yield (bu/a)

Strain	Ames	Urbana	Decatur	Cotesfield	Mead
	IA 2.5.7	IL 2.5.7	MI Inf	NE NI	NE NI
1 IA2102	60.8	59.4	53.5	87.4	77.5
2 LD02-4485 (SCN)	57.0	65.9	68.9	85.4	79.8
3 U11-917032 (SCN)	54.3	55.5	43.5	84.3	69.2
4 U14-910097 (SCN)	71.9	79.1	66.7	84.5	87.2
5 A16204-20	55.7	58.5	59.8	74.9	67.3
6 A16204-36	50.5	57.9	61.5	76.4	77.2
7 A16204-65	46.7	58.2	73.2	76.5	70.1
8 A16204-67	43.2	60.6	50.0	72.9	71.1
9 A16204-105	56.9	58.1	63.2	76.3	77.3
10 A16212-37	39.5	60.0	41.9	74.6	79.5
11 E20012	61.3	68.1	51.4	70.8	75.1
12 E20026	53.9	66.1	58.3	86.8	78.9
13 E20154	48.0	47.8	51.2	77.6	58.1
14 E20303T	39.1	58.3	46.5	71.1	74.2
15 E20316T	37.2	62.3	47.1	80.1	82.3
16 E20327	54.5	61.8	53.6	86.9	79.5
17 E20329	59.3	63.2	70.0	75.9	86.7
18 E20333	61.3	65.4	64.6	84.7	75.0
19 E20335	69.6	62.6	65.0	79.8	83.0
20 E20351	63.4	66.0	61.4	82.9	86.3
21 E20352	67.2	63.1	59.9	85.7	82.4
22 E20355	61.0	72.4	68.3	86.6	84.9
23 E20394	49.3	53.0	53.8	73.2	62.9
24 E20404	45.9	55.2	60.9	52.7	65.1
Mean	54.5	61.6	58.0	78.7	76.3
C.V. %	9.8	7.5	15.7	6.3	6.7
LSD(2-sided,.05)	11.0	9.6	18.9	12.7	12.6
Replications	2	2	2	2	2
Row spacing (in.)	30	30	30	30	30



## 2022 SCN PRELIMINARY TEST IIA

### Yield (rank)

Strain	Ames	Urbana	Decatur	Cotesfield	Mead
	IA 2.5.7	IL 2.5.7	MI Inf	NE NI	NE NI
1 IA2102	8	15	17	1	12
2 LD02-4485 (SCN)	10	6	3	6	8
3 U11-917032 (SCN)	14	21	23	9	20
4 U14-910097 (SCN)	1	1	5	8	1
5 A16204-20	12	16	13	18	21
6 A16204-36	16	20	9	15	14
7 A16204-65	19	18	1	14	19
8 A16204-67	21	13	20	21	18
9 A16204-105	11	19	8	16	13
10 A16212-37	22	14	24	19	9
11 E20012	5	3	18	23	15
12 E20026	15	4	14	4	11
13 E20154	18	24	19	13	24
14 E20303T	23	17	22	22	17
15 E20316T	24	11	21	11	7
16 E20327	13	12	16	3	10
17 E20329	9	8	2	17	2
18 E20333	6	7	7	7	16
19 E20335	2	10	6	12	5
20 E20351	4	5	10	10	3
21 E20352	3	9	12	5	6
22 E20355	7	2	4	2	4
23 E20394	17	23	15	20	23
24 E20404	20	22	11	24	22

## 2022 SCN PRELIMINARY TEST IIA

### Maturity

Strain	Ames IA 2.5.7	Urbana IL 2.5.7	Decatur MI Inf	Cotesfield NE NI	Mead NE NI
1 IA2102	9/30	9/17			9/24
2 LD02-4485 (SCN)	0	1			2
3 U11-917032 (SCN)	-2	-2			-5
4 U14-910097 (SCN)	8	6			4
5 A16204-20	1	3			3
6 A16204-36	1	5			1
7 A16204-65	2	5			5
8 A16204-67	-2	1			-1
9 A16204-105	4	5			5
10 A16212-37	0	4			3
11 E20012	4	4			4
12 E20026	-2	-1			-3
13 E20154	-4	-2			-2
14 E20303T	0	5			7
15 E20316T	0	5			7
16 E20327	-4	0			0
17 E20329	0	2			5
18 E20333	6	4			1
19 E20335	6	4			6
20 E20351	4	5			6
21 E20352	6	5			6
22 E20355	8	7			9
23 E20394	1	1			-2
24 E20404	2	5			2
Planted	6/04	5/17	5/10	5/28	5/28

## 2022 SCN PRELIMINARY TEST IIA

### Lodging (score)

Strain	Ames IA 2.5.7	Urbana IL 2.5.7	Decatur MI Inf	Cotesfield NE NI	Mead NE NI
1 IA2102	2.5	1.5			1.0
2 LD02-4485 (SCN)	2.0	1.5			1.0
3 U11-917032 (SCN)	2.0	1.0			1.0
4 U14-910097 (SCN)	2.0	2.0			1.0
5 A16204-20	2.0	1.5			1.0
6 A16204-36	1.5	1.5			1.0
7 A16204-65	2.0	1.5			1.0
8 A16204-67	1.0	1.5			1.0
9 A16204-105	1.5	1.0			1.0
10 A16212-37	1.5	1.5			1.0
11 E20012	1.5	1.5			1.0
12 E20026	1.5	1.8			1.0
13 E20154	1.0	1.0			1.0
14 E20303T	1.5	1.8			1.5
15 E20316T	1.5	1.5			1.0
16 E20327	1.0	1.0			1.0
17 E20329	1.5	1.0			1.0
18 E20333	2.0	1.3			1.0
19 E20335	2.5	1.5			1.0
20 E20351	1.5	1.4			1.0
21 E20352	2.0	1.8			1.0
22 E20355	2.0	1.8			1.0
23 E20394	2.0	1.8			1.0
24 E20404	2.0	1.8			1.0

## 2022 SCN PRELIMINARY TEST IIA

### Height (inches)

Strain	Ames IA 2.5.7	Urbana IL 2.5.7	Decatur MI Inf	Cotesfield NE NI	Mead NE NI
1 IA2102	36	33			38
2 LD02-4485 (SCN)	33	32			38
3 U11-917032 (SCN)	29	32			36
4 U14-910097 (SCN)	37	34			36
5 A16204-20	39	42			45
6 A16204-36	37	38			44
7 A16204-65	37	40			35
8 A16204-67	34	42			48
9 A16204-105	33	36			40
10 A16212-37	34	40			42
11 E20012	33	34			38
12 E20026	36	36			38
13 E20154	30	31			33
14 E20303T	36	40			42
15 E20316T	33	38			39
16 E20327	32	33			38
17 E20329	32	35			36
18 E20333	37	38			41
19 E20335	39	38			42
20 E20351	37	38			43
21 E20352	39	40			44
22 E20355	39	39			44
23 E20394	38	39			43
24 E20404	37	37			44

## 2022 SCN PRELIMINARY TEST IIA

### Seed Weight (g/100)

Strain	Ames IA 2.5.7	Urbana IL 2.5.7	Decatur MI Inf	Cotesfield NE NI	Mead NE NI
1 IA2102	16.4	17.6			17.3
2 LD02-4485 (SCN)	16.4	16.9			14.9
3 U11-917032 (SCN)	16.4	16.4			15.2
4 U14-910097 (SCN)	15.8	16.7			14.7
5 A16204-20	15.5	15.0			14.5
6 A16204-36	13.8	14.7			13.5
7 A16204-65	15.8	15.1			14.7
8 A16204-67	15.2	15.3			14.2
9 A16204-105	15.0	15.2			13.9
10 A16212-37	14.6	15.6			14.2
11 E20012	18.6	19.6			17.5
12 E20026	18.0	19.0			17.9
13 E20154	20.7	21.2			19.3
14 E20303T	17.0	18.3			17.8
15 E20316T	16.6	17.5			17.5
16 E20327	17.2	18.0			16.9
17 E20329	16.6	17.5			15.9
18 E20333	17.0	16.1			15.1
19 E20335	17.9	18.0			16.5
20 E20351	16.4	16.3			14.8
21 E20352	15.3	15.0			14.5
22 E20355	16.8	17.0			16.2
23 E20394	16.0	16.0			15.0
24 E20404	14.8	15.0			13.4

## 2022 SCN PRELIMINARY TEST IIA

### Seed Quality (score)

Strain	Ames IA 2.5.7	Urbana IL 2.5.7	Decatur MI Inf	Cotesfield NE NI	Mead NE NI
1 IA2102	1.5	3.0			1.0
2 LD02-4485 (SCN)	1.5	2.0			1.0
3 U11-917032 (SCN)	2.0	3.0			1.0
4 U14-910097 (SCN)	1.0	2.0			1.0
5 A16204-20	1.5	2.0			1.0
6 A16204-36	2.0	2.0			1.0
7 A16204-65	2.0	3.0			1.0
8 A16204-67	1.5	2.0			1.0
9 A16204-105	1.5	2.0			1.0
10 A16212-37	1.5	2.0			1.0
11 E20012	2.5	2.0			1.0
12 E20026	2.0	1.0			1.0
13 E20154	1.5	3.0			1.0
14 E20303T	1.0	3.0			1.0
15 E20316T	1.5	2.0			1.0
16 E20327	2.0	2.0			1.0
17 E20329	1.5	3.0			1.0
18 E20333	2.0	2.0			1.0
19 E20335	2.5	2.0			1.0
20 E20351	2.0	2.0			1.0
21 E20352	2.0	2.0			1.0
22 E20355	2.5	2.0			1.0
23 E20394	2.5	2.0			1.0
24 E20404	2.5	2.0			1.0

## 2022 SCN PRELIMINARY TEST IIA

### Protein (%)

Strain	Ames IA 2.5.7	Urbana IL 2.5.7	Decatur MI Inf	Cotesfield NE NI	Mead NE NI
1 IA2102	31.6	35.1			34.3
2 LD02-4485 (SCN)	31.7	32.6			32.3
3 U11-917032 (SCN)	34.4	33.3			32.4
4 U14-910097 (SCN)	33.3	33.9			32.5
5 A16204-20	35.0	35.4			35.4
6 A16204-36	34.6	36.3			35.4
7 A16204-65	34.1	36.0			34.4
8 A16204-67	34.5	35.7			34.2
9 A16204-105	31.9	35.1			33.1
10 A16212-37	30.7	34.3			31.8
11 E20012	31.8	33.2			33.6
12 E20026	32.6	32.4			32.3
13 E20154	35.8	37.0			35.1
14 E20303T	35.4	37.2			36.8
15 E20316T	34.8	37.9			36.1
16 E20327	33.0	33.6			32.6
17 E20329	31.3	33.2			32.9
18 E20333	32.9	33.4			31.6
19 E20335	32.7	34.2			33.2
20 E20351	32.6	34.7			34.2
21 E20352	32.9	34.4			33.0
22 E20355	32.6	34.5			33.1
23 E20394	36.7	36.7			34.5
24 E20404	37.0	39.4			36.1

## 2022 SCN PRELIMINARY TEST IIA

### Oil (%)

Strain	Ames IA 2.5.7	Urbana IL 2.5.7	Decatur MI Inf	Cotesfield NE NI	Mead NE NI
1 IA2102	20.2	18.6			18.3
2 LD02-4485 (SCN)	19.7	19.6			19.5
3 U11-917032 (SCN)	20.0	20.9			20.3
4 U14-910097 (SCN)	19.8	19.4			20.5
5 A16204-20	18.4	17.6			18.7
6 A16204-36	18.4	18.1			18.8
7 A16204-65	18.0	17.1			17.8
8 A16204-67	19.1	17.6			18.7
9 A16204-105	19.4	18.3			19.7
10 A16212-37	19.9	18.9			19.6
11 E20012	19.6	18.8			19.4
12 E20026	20.2	20.2			19.9
13 E20154	19.0	17.8			18.5
14 E20303T	19.9	17.7			18.1
15 E20316T	20.2	17.6			18.7
16 E20327	20.7	19.7			19.1
17 E20329	21.1	19.5			19.2
18 E20333	19.8	19.6			20.2
19 E20335	18.8	19.0			19.3
20 E20351	19.6	18.6			18.6
21 E20352	19.5	18.6			18.6
22 E20355	18.9	18.4			18.6
23 E20394	19.1	18.0			19.4
24 E20404	17.3	15.5			16.8



## 2022 SCN PRELIMINARY TEST IIB

Strain	Descriptive code	Parentage
1 IA2102	WGy	A04-545045 x AgriPro 98180-A01-06131
2 LD02-4485 (SCN)	PGbf	M90-184111 x IA3010
3 U11-917032 (SCN)	PTbl	LD02-4485 x U03-100612
4 U14-910097 (SCN)	PGbf	U09-105007 x LD07-3419
5 LD19-0959	P+WLtbl	M07-297007 x LD11-2170
6 LD19-1713	PGbf	LD13-3483 x M09-285149
7 LD19-1844	PLtLbl	U14-925152 x LD11-2170
8 LD19-2412	PLtbl	U11-494100 x LD10-10198
9 LD19-5726	PLtbr	LD12-6010a x LD11-2170
10 LD19-6090	PTbl	E13100 x LD12-12701a
11 LD19-6211	PLtbl	U11-614119 x LD13-6640
12 LD19-6359	PGibl	U13-912010 x LD11-2170
13 LD19-6548	PLtbr	U14-925152 x LD11-2170
14 LD20-4671	PTbl	U14-925152 x LD14-6190
15 LD20-4988	PLtbr	U14-910097 x LD11-2170
16 LD20-5050	PGibl	U14-925152 x LD11-2170
17 U19-047020	WLtbl	SA13-1385 x ORC_3713N
18 U19-049031	PGibl	LD12-459 x U14-910097
19 U19-064065	PGy	U14-910097 x ORC_3713N
20 U19-065056	PLty	U14-903100 x ORC_3713N
21 U19-218023	PGbf	U14-910097 x U14-909100
22 U19-220046	PGbf	U14-910097 x U14-909100
23 U19-243017	PGibl/bf	U14-925152 x U14-909100
24 U20-923004	PLtbl/br	U14-910097 x U14-212231
25 U20-934097	PLtbl/br	U14-910097 x U14-212231

## 2022 SCN PRELIMINARY TEST IIB

Strain	Gen comp	Cooperator reported SCN resistance source	Cooperator reported Traits
1	IA2102	F4	None
2	LD02-4485 (SCN)	F5	PI 88788
3	U11-917032 (SCN)	F6	PI 88788
4	U14-910097 (SCN)	F5	PI 88788,437654
5	LD19-0959	F5	PI 88788
6	LD19-1713	F5	PI 88788
7	LD19-1844	F5	PI 88788,437654
8	LD19-2412	F5	PI 88788
9	LD19-5726	F5	PI 88788
10	LD19-6090	F5	PI 88788
11	LD19-6211	F5	PI 88788
12	LD19-6359	F5	PI 88788
13	LD19-6548	F5	PI 88788,437654
14	LD20-4671	F4	PI 88788,437654
15	LD20-4988	F4	PI 88788,437654
16	LD20-5050	F4	PI 88788,437654
17	U19-047020	F5	PI 88788
18	U19-049031	F5	PI 88788,437654 Rps
19	U19-064065	F5	PI 88788,437654 Rps
20	U19-065056	F5	PI 88788 Rps
21	U19-218023	F5	PI 88788,437654 Rps
22	U19-220046	F5	PI 88788,437654 Rps
23	U19-243017	F5	PI 88788,437654 IDC,Rps
24	U20-923004	F5	PI 88788,437654 Rps
25	U20-934097	F5	PI 88788,437654 Rps

## 2022 SCN PRELIMINARY TEST IIB

### Disease Screening

Strain	SNP marker analysis			
	SCN			
	88788	Peking	Rhg4	
1 IA2102				
2 LD02-4485 (SCN)				
3 U11-917032 (SCN)				
4 U14-910097 (SCN)				
5 LD19-0959	R	S	S	
6 LD19-1713	R	S	S	
7 LD19-1844	R	S	S	
8 LD19-2412	R	S	S	
10 LD19-5726	R	S	S	
11 LD19-6090	R	S	S	
12 LD19-6211	S	R	S	
13 LD19-6359	R	S	S	
14 LD19-6548	R	S	S	
15 LD20-4671	S	R	S	
16 LD20-4988	S	R	S	
17 LD20-5050	R	S	R	
18 U19-047020	R	S	S	
19 U19-049031	S	R	R	
20 U19-064065	S	.	S	
21 U19-065056	Het	S	S	
22 U19-218023	S	R	S	
23 U19-220046	Het	S	R	
24 U19-243017	R	S	S	
25 U20-923004	S	S	R	
26 U20-934097	S	S	Het	

## 2022 SCN PRELIMINARY TEST IIB

### Predicted resistance genes based on SNP marker analysis

Strain	SCN	Iron Chlorosis	Phytophthora	BSR	FLS	SC
1 IA2102						
2 LD02-4485 (SCN)						
3 U11-917032 (SCN)						
4 U14-910097 (SCN)						
5 LD19-0959	Rhg1_PI88788	R-(LgA1+LgN) + Het-Ch13	Rps1k	R	S	R
6 LD19-1713	Rhg1_PI88788	R-Ch13	Rps1c	S	S	R
7 LD19-1844	Rhg1_PI88788	R-LgN + Het-Ch13	Rps1k	R	S	R
8 LD19-2412	Rhg1_PI88788	Het-LgN + R-Ch13	Rps1c	S	S	R
9 LD19-5726	Rhg1_PI88788	R-LgN		R	S	R
10 LD19-6090	Rhg1_PI88788	R-LgA1+ Het-Ch13	Rps1c	R	S	R
11 LD19-6211	Rhg1_Peking	Het-LgN + R-Ch13	Rps1k	S	S	R
12 LD19-6359	Rhg1_PI88788	R-(LgN+Ch13)	Rps1k	R	S	R
13 LD19-6548	Rhg1_PI88788	R-(LgN+Ch13)		R	S	R
14 LD20-4671	Rhg1_Peking	R-(LgN+Ch13)		R	S	R
15 LD20-4988	Rhg1_Peking	R-(LgN+Ch13)	Rps1k	R	S	R
16 LD20-5050	Rhg1_PI88788+Rhg4	R-LgN	Rps1k	R	S	R
17 U19-047020	Rhg1_PI88788	R-(LgA1+Ch13)		S	S	R
18 U19-049031	Rhg1_Peking+Rhg4	R-Ch13		S	S	R
19 U19-064065		R-Ch13	Het-Rps1c	Het	S	R
20 U19-065056	Het-Rhg1_PI88788	R-Ch13	Het-Rps1c	S	S	R
21 U19-218023	Rhg1_Peking	R-(LgA1+Ch13)		S	S	R
22 U19-220046	Het-Rhg1_PI88788	R-(LgA1+Ch13)		S	S	R
23 U19-243017	Rhg1_PI88788	R-Ch13		Het	S	R
24 U20-923004	Rhg4	R-(LgA1+Ch13)	Rps1k	S	S	R
25 U20-934097	Het-Rhg4	R-Ch13	Het-Rps1k	S	S	R

BSR=Brown Leaf Spot, FLS=Frogeye Leaf Spot, SC=Stem Canker

## 2022 SCN PRELIMINARY TEST IIB

### Summary

Locations	Yield						Maturity date	Lodging score	Height inches	Seed			
	All		Infested		Non-infested					weight	quality	protein	oil
	bu/a	rank	bu/a	rank	bu/a	rank				g/100	score	@13%	@13%
1 IA2102	69.7	15	60.8	12	83.0	19	9/24	2.2	35	17.7	2.0	34.1	18.9
2 LD02-4485 (SCN)	71.9	10	62.8	9	85.7	11	2	1.7	36	16.3	2.0	32.7	18.9
3 U11-917032 (SCN)	59.0	25	46.0	25	78.6	23	-4	1.6	31	16.9	1.7	33.1	20.8
4 U14-910097 (SCN)	77.8	1	69.7	1	89.9	4	6	1.5	35	16.2	1.7	32.9	20.3
5 LD19-0959	73.4	6	62.2	11	90.2	3	5	1.3	37	14.7	1.5	34.9	19.0
6 LD19-1713	61.9	23	54.9	19	72.4	25	-4	1.3	34	19.5	1.7	34.9	18.1
7 LD19-1844	74.1	3	64.6	3	88.3	8	4	1.2	36	16.0	1.2	34.4	19.1
8 LD19-2412	66.4	18	58.2	18	78.8	22	6	1.3	36	14.4	1.5	33.0	18.5
9 LD19-5726	73.9	5	64.0	5	88.7	6	5	1.5	34	16.5	1.7	33.4	19.9
10 LD19-6090	60.7	24	52.8	22	72.6	24	-3	1.3	34	17.3	1.8	37.2	17.5
11 LD19-6211	64.8	21	51.2	23	85.3	12	-5	1.2	32	16.7	1.2	31.3	20.7
12 LD19-6359	71.0	13	59.2	16	88.7	6	0	1.3	35	16.6	1.7	32.7	20.2
13 LD19-6548	73.0	7	62.3	10	89.2	5	5	1.4	35	17.5	1.8	33.5	19.9
14 LD20-4671	69.3	16	58.8	17	85.1	14	5	1.4	35	17.5	1.0	33.2	20.4
15 LD20-4988	71.3	11	63.4	6	83.3	17	2	1.5	33	16.6	1.5	34.4	19.6
16 LD20-5050	74.1	3	63.3	8	90.3	2	4	1.5	33	16.6	2.0	33.1	19.9
17 U19-047020	69.1	17	60.5	13	81.9	21	2	1.4	37	16.6	1.3	32.2	19.9
18 U19-049031	75.1	2	66.7	2	87.6	9	0	1.2	32	16.5	1.5	32.3	19.9
19 U19-064065	66.4	18	54.9	19	83.8	16	-2	1.4	37	18.5	2.0	33.2	20.6
20 U19-065056	66.1	20	54.6	21	83.3	17	-1	1.3	40	17.4	1.5	32.2	19.9
21 U19-218023	72.6	9	60.4	14	90.8	1	-1	1.3	35	16.2	1.3	33.7	20.8
22 U19-220046	73.0	7	64.5	4	85.8	10	2	1.3	35	16.8	1.3	32.6	20.2
23 U19-243017	71.2	12	63.4	6	82.7	20	2	1.3	37	17.6	1.7	33.5	19.9
24 U20-923004	64.3	22	50.9	24	84.5	15	-3	1.5	36	17.3	1.8	32.0	21.1
25 U20-934097	70.2	14	60.2	15	85.2	13	2	1.3	37	16.9	1.8	32.2	20.5
Mean	69.6		59.6		84.6		1.3	1.4	35.0	16.8	1.6	33.9	19.8
C.V. %	11.9		13.7		6.3								
LSD(.05)	6.0		7.5		7.6								
Replications	10		6		4								

## 2022 SCN PRELIMINARY TEST IIB

### Yield (bu/a)

Strain	Ames	Urbana	Decatur	Cotesfield	Mead
	IA 2.5.7	IL 2.5.7	MI Inf	NE NI	NE NI
1 IA2102	67.2	53.3	62.0	87.8	78.2
2 LD02-4485 (SCN)	70.2	57.8	60.3	88.1	83.3
3 U11-917032 (SCN)	45.9	47.9	44.1	80.3	76.8
4 U14-910097 (SCN)	74.2	67.0	68.1	89.9	89.8
5 LD19-0959	61.3	59.1	66.2	89.7	90.8
6 LD19-1713	63.0	52.2	49.6	74.8	70.0
7 LD19-1844	71.7	60.2	62.0	85.7	91.0
8 LD19-2412	64.3	53.6	56.6	80.6	77.0
9 LD19-5726	62.1	62.8	67.1	87.4	89.9
10 LD19-6090	54.9	47.9	55.7	72.6	72.5
11 LD19-6211	57.8	54.4	41.5	94.6	76.0
12 LD19-6359	60.5	61.5	55.7	88.6	88.8
13 LD19-6548	54.4	65.1	67.3	88.9	89.4
14 LD20-4671	57.6	61.9	57.0	87.6	82.6
15 LD20-4988	54.9	66.4	68.8	80.7	85.8
16 LD20-5050	62.5	64.0	63.4	87.1	93.4
17 U19-047020	64.7	57.5	59.4	84.9	79.0
18 U19-049031	72.0	63.1	65.1	91.7	83.5
19 U19-064065	55.8	57.5	51.3	85.4	82.3
20 U19-065056	56.1	60.1	47.5	88.4	78.2
21 U19-218023	64.0	57.2	60.0	94.4	87.1
22 U19-220046	66.7	61.3	65.3	85.7	85.9
23 U19-243017	72.6	57.0	60.8	80.8	84.7
24 U20-923004	47.8	55.0	49.8	86.0	83.0
25 U20-934097	56.9	63.6	60.0	84.6	85.8
Mean	61.6	58.7	58.6	85.8	83.4
C.V. %	10.2	8.7	15.4	5.0	7.2
LSD(2-sided,.05)	13.0	10.5	14.9	10.5	14.8
Replications	2	2	2	2	2
Row spacing (in.)	30	30	30	30	30

## 2022 SCN PRELIMINARY TEST IIB

### Yield (rank)

Strain	Ames	Urbana	Decatur	Cotesfield	Mead
	IA 2.5.7	IL 2.5.7	MI Inf	NE NI	NE NI
1 IA2102	6	22	10	10	20
2 LD02-4485 (SCN)	5	14	12	9	14
3 U11-917032 (SCN)	25	24	24	23	22
4 U14-910097 (SCN)	1	1	2	4	5
5 LD19-0959	14	13	5	5	3
6 LD19-1713	11	23	22	24	25
7 LD19-1844	4	11	9	15	2
8 LD19-2412	9	21	17	22	21
9 LD19-5726	13	7	4	12	4
10 LD19-6090	22	24	19	25	24
11 LD19-6211	16	20	25	1	23
12 LD19-6359	15	9	18	7	7
13 LD19-6548	23	3	3	6	6
14 LD20-4671	17	8	16	11	16
15 LD20-4988	21	2	1	21	11
16 LD20-5050	12	4	8	13	1
17 U19-047020	8	15	15	18	18
18 U19-049031	3	6	7	3	13
19 U19-064065	20	15	20	17	17
20 U19-065056	19	12	23	8	19
21 U19-218023	10	17	14	2	8
22 U19-220046	7	10	6	16	9
23 U19-243017	2	18	11	20	12
24 U20-923004	24	19	21	14	15
25 U20-934097	18	5	13	19	10

## 2022 SCN PRELIMINARY TEST IIB

### Maturity

Strain	Ames IA 2.5.7	Urbana IL 2.5.7	Decatur MI Inf	Cotesfield NE NI	Mead NE NI
1 IA2102	9/30	9/17			9/26
2 LD02-4485 (SCN)	0	3			3
3 U11-917032 (SCN)	-3	-2			-6
4 U14-910097 (SCN)	7	5			5
5 LD19-0959	6	5			5
6 LD19-1713	-4	0			-7
7 LD19-1844	4	4			4
8 LD19-2412	8	6			5
9 LD19-5726	6	5			5
10 LD19-6090	-2	-2			-4
11 LD19-6211	-4	-3			-7
12 LD19-6359	-2	0			2
13 LD19-6548	6	5			5
14 LD20-4671	6	5			4
15 LD20-4988	2	4			0
16 LD20-5050	6	3			4
17 U19-047020	2	1			2
18 U19-049031	-2	2			-1
19 U19-064065	-3	-1			-3
20 U19-065056	-2	-1			-1
21 U19-218023	-2	-1			0
22 U19-220046	2	1			2
23 U19-243017	1	3			2
24 U20-923004	-2	-2			-4
25 U20-934097	0	3			4
Planted	6/04	5/17	5/10	5/28	5/28



## 2022 SCN PRELIMINARY TEST IIB

### Lodging (score)

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Strain	Ames IA 2.5.7	Urbana IL 2.5.7	Decatur MI Inf	Cotesfield NE NI	Mead NE NI
1 IA2102	3.0	1.5			2.0
2 LD02-4485 (SCN)	2.5	1.5			1.0
3 U11-917032 (SCN)	2.0	1.3			1.5
4 U14-910097 (SCN)	2.0	1.5			1.0
5 LD19-0959	1.5	1.5			1.0
6 LD19-1713	2.0	1.0			1.0
7 LD19-1844	1.5	1.0			1.0
8 LD19-2412	2.0	1.0			1.0
9 LD19-5726	2.5	1.0			1.0
10 LD19-6090	2.0	1.0			1.0
11 LD19-6211	1.5	1.0			1.0
12 LD19-6359	2.0	1.0			1.0
13 LD19-6548	2.0	1.3			1.0
14 LD20-4671	2.0	1.3			1.0
15 LD20-4988	2.0	1.5			1.0
16 LD20-5050	2.0	1.5			1.0
17 U19-047020	2.0	1.3			1.0
18 U19-049031	1.5	1.0			1.0
19 U19-064065	2.0	1.3			1.0
20 U19-065056	1.5	1.3			1.0
21 U19-218023	2.0	1.0			1.0
22 U19-220046	2.0	1.0			1.0
23 U19-243017	1.5	1.3			1.0
24 U20-923004	2.0	1.5			1.0
25 U20-934097	1.5	1.5			1.0

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## 2022 SCN PRELIMINARY TEST IIB

### Height (inches)

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Strain	Ames IA 2.5.7	Urbana IL 2.5.7	Decatur MI Inf	Cotesfield NE NI	Mead NE NI
1 IA2102	36	33			37
2 LD02-4485 (SCN)	36	34			38
3 U11-917032 (SCN)	31	29			33
4 U14-910097 (SCN)	36	32			37
5 LD19-0959	36	36			39
6 LD19-1713	35	29			37
7 LD19-1844	37	33			40
8 LD19-2412	38	32			39
9 LD19-5726	35	33			35
10 LD19-6090	36	32			35
11 LD19-6211	34	31			32
12 LD19-6359	36	33			37
13 LD19-6548	36	32			37
14 LD20-4671	36	30			38
15 LD20-4988	36	31			33
16 LD20-5050	33	31			34
17 U19-047020	36	35			41
18 U19-049031	33	33			30
19 U19-064065	38	34			39
20 U19-065056	39	39			41
21 U19-218023	36	32			37
22 U19-220046	36	32			37
23 U19-243017	36	35			40
24 U20-923004	37	35			38
25 U20-934097	35	36			41

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## 2022 SCN PRELIMINARY TEST IIB

### Seed Weight (g/100)

Strain	Ames IA 2.5.7	Urbana IL 2.5.7	Decatur MI Inf	Cotesfield NE NI	Mead NE NI
1 IA2102	17.4	17.5			18.2
2 LD02-4485 (SCN)	17.2	16.4			15.2
3 U11-917032 (SCN)	16.9	17.2			16.6
4 U14-910097 (SCN)	15.9	16.9			15.7
5 LD19-0959	14.4	15.0			14.7
6 LD19-1713	20.0	20.0			18.4
7 LD19-1844	15.9	16.3			15.9
8 LD19-2412	15.1	13.8			14.2
9 LD19-5726	16.7	15.9			16.9
10 LD19-6090	17.9	17.7			16.4
11 LD19-6211	16.4	17.0			16.6
12 LD19-6359	16.6	16.6			16.6
13 LD19-6548	17.5	17.0			18.0
14 LD20-4671	17.2	18.3			17.0
15 LD20-4988	17.0	16.9			15.9
16 LD20-5050	16.5	16.4			16.9
17 U19-047020	17.0	16.7			16.0
18 U19-049031	16.5	16.7			16.2
19 U19-064065	18.7	18.2			18.5
20 U19-065056	17.9	16.7			17.7
21 U19-218023	16.2	16.5			16.0
22 U19-220046	17.0	16.5			16.8
23 U19-243017	17.8	17.5			17.5
24 U20-923004	17.6	16.8			17.4
25 U20-934097	16.9	16.8			17.1

## 2022 SCN PRELIMINARY TEST IIB

### Seed Quality (score)

Strain	Ames IA 2.5.7	Urbana IL 2.5.7	Decatur MI Inf	Cotesfield NE NI	Mead NE NI
1 IA2102	2.0	3.0			1.0
2 LD02-4485 (SCN)	2.0	3.0			1.0
3 U11-917032 (SCN)	2.0	2.0			1.0
4 U14-910097 (SCN)	2.0	2.0			1.0
5 LD19-0959	1.5	2.0			1.0
6 LD19-1713	2.0	2.0			1.0
7 LD19-1844	1.5	1.0			1.0
8 LD19-2412	1.5	2.0			1.0
9 LD19-5726	2.0	2.0			1.0
10 LD19-6090	2.5	2.0			1.0
11 LD19-6211	1.5	1.0			1.0
12 LD19-6359	2.0	2.0			1.0
13 LD19-6548	2.5	2.0			1.0
14 LD20-4671	1.0	1.0			1.0
15 LD20-4988	2.5	1.0			1.0
16 LD20-5050	3.0	2.0			1.0
17 U19-047020	2.0	1.0			1.0
18 U19-049031	1.5	2.0			1.0
19 U19-064065	3.0	2.0			1.0
20 U19-065056	2.5	1.0			1.0
21 U19-218023	2.0	1.0			1.0
22 U19-220046	1.0	2.0			1.0
23 U19-243017	2.0	2.0			1.0
24 U20-923004	2.5	2.0			1.0
25 U20-934097	2.5	2.0			1.0

## 2022 SCN PRELIMINARY TEST IIB

### Protein (%)

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Strain	Ames IA 2.5.7	Urbana IL 2.5.7	Decatur MI Inf	Cotesfield NE NI	Mead NE NI
1 IA2102	32.8	35.3			34.3
2 LD02-4485 (SCN)	32.2	33.7			32.2
3 U11-917032 (SCN)	33.2	33.8			32.4
4 U14-910097 (SCN)	32.3	33.7			32.7
5 LD19-0959	35.0	35.1			34.7
6 LD19-1713	35.3	35.5			34.0
7 LD19-1844	33.5	35.0			34.8
8 LD19-2412	32.4	34.0			32.7
9 LD19-5726	32.5	33.7			34.0
10 LD19-6090	36.8	37.6			37.3
11 LD19-6211	31.1	31.7			31.2
12 LD19-6359	31.7	33.6			32.7
13 LD19-6548	33.1	34.3			33.1
14 LD20-4671	31.4	34.7			33.5
15 LD20-4988	34.2	35.2			33.9
16 LD20-5050	32.4	33.6			33.2
17 U19-047020	32.7	32.1			31.9
18 U19-049031	31.3	33.5			32.2
19 U19-064065	33.8	33.2			32.7
20 U19-065056	32.3	32.1			32.1
21 U19-218023	33.8	33.7			33.7
22 U19-220046	32.2	32.9			32.8
23 U19-243017	33.4	34.2			32.9
24 U20-923004	31.8	32.9			31.2
25 U20-934097	33.3	31.9			31.5

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## 2022 SCN PRELIMINARY TEST IIB

### Oil (%)

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Strain	Ames IA 2.5.7	Urbana IL 2.5.7	Decatur MI Inf	Cotesfield NE NI	Mead NE NI
1 IA2102	19.5	18.6			18.6
2 LD02-4485 (SCN)	18.9	18.9			18.8
3 U11-917032 (SCN)	20.9	21.4			20.0
4 U14-910097 (SCN)	20.5	20.2			20.2
5 LD19-0959	19.1	19.0			19.0
6 LD19-1713	18.4	17.6			18.2
7 LD19-1844	18.9	19.4			19.1
8 LD19-2412	18.7	18.3			18.6
9 LD19-5726	20.8	19.1			19.9
10 LD19-6090	17.6	17.7			17.2
11 LD19-6211	20.7	21.2			20.3
12 LD19-6359	20.8	20.2			19.7
13 LD19-6548	19.8	19.7			20.1
14 LD20-4671	20.0	20.6			20.5
15 LD20-4988	20.0	19.2			19.5
16 LD20-5050	20.5	19.9			19.4
17 U19-047020	18.8	20.5			20.4
18 U19-049031	20.0	19.6			20.2
19 U19-064065	20.4	20.7			20.6
20 U19-065056	19.0	20.6			20.2
21 U19-218023	21.3	20.6			20.6
22 U19-220046	20.3	20.2			20.1
23 U19-243017	19.4	20.1			20.3
24 U20-923004	21.6	20.7			20.9
25 U20-934097	20.0	20.8			20.7

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### 2022 SCN UNIFORM TEST III

Strain	Descriptive code	Parentage	Previous testing
1 LD11-2170 (SCN)	PLtbr	Syngenta 03JR313108 x LD05-3171	6
2 U15-606207 (SCN)	PGbf	LD07-3419 x U09-105007	4
3 LD07-3395bf (SCN)	WGbf	Syngenta WW115926 x LD00-2817	6
4 U14-910097 (SCN)	PGbf	U09-105007 x LD07-3419	3
5 A15203- 59	WGbf	(AR11-113050 x AR12-327073) x LD07-3419	21SCN P IIIA
6 A15208-104	PLt+Gbl/ibl	(AR12-127102 x AR12-327073) x LD07-3419	21SCN P IIIA
7 A15208-113	PLtbl	(AR12-127102 x AR12-327073) x LD07-3419	21SCN P IIIA
8 LD18-1767	PLtbl	LD10-10226 x LD10-9168	21SCN P IIIA
9 LD18-4251	PLt+Gbl/ibl	U11-932025 x LD10-10198	21SCN P IIIA
10 LD18-6596	WLty	U11-616086 x LD11-2170	21SCN P IIIA
11 LD18-7491	PGibl	U11-614119 x LD12-3866	21 UTP III
12 LD18-7606	PLtbl	LG11-6208 x LD11-2170	21 UTP III
13 LD18-7628	WLtbr	LG11-6208 x LD11-2170	21 UTP III
14 LD18-10010	PLtbl	LD11-10069 x LD13-8470	21SCN U IV
15 LD19-10352	WLtbr	LD11-7311 x LD13-8769	21SCN P IIIB
16 U18-617265	PLtbl	LD12-3903 x U11-917032	1
17 U18-617270	PLtbl	LD12-3903 x U11-917032	1
18 U19-604203	PLtbr	U14-910097 x LD11-2170	21SCN P IIIB
19 U19-605170	PGbf/ibl	U14-910097 x SA13-1310	21SCN P IIIB
20 U19-607156	PLtbr	U14-910097 x U14-924158	21SCN P IIIB
21 U19-608187	PGbf/ibl	U14-910097 x U14-924158	21SCN P IIIB
22 U19-613113	PLtbr	U14-910097 x U14-903100	21SCN P IIIB
23 U19-613290	PLtbl	U14-903100 x LD12-3903	21SCN P IIB
24 U19-924091	PLt+Gbr/bf	U14-910097 x LD11-2170	21SCN P IIB
25 U19-928235	WLtbl	SA13-1385 x U14-924158	21SCN P IIIB

### 2022 SCN UNIFORM TEST III

Strain	Gen comp	Cooperator reported SCN resistance source	Cooperator reported Traits
1 LD11-2170 (SCN)	F5	PI 88788	
2 U15-606207 (SCN)	F5	PI 88788,437654	Rps
3 LD07-3395bf (SCN)	F5	PI 88788,437654	
4 U14-910097 (SCN)	F5	PI 88788,437654	
5 A15203- 59	F5	PI 88788, 437654, 438489B	
6 A15208-104	F5	PI 88788, 437654, 438489B	
7 A15208-113	F5	PI 88788, 437654, 438489B	
8 LD18-1767	F5	PI 88788	
9 LD18-4251	F5	PI 88788	
10 LD18-6596	F5	PI 88788	
11 LD18-7491		PI 88788	
12 LD18-7606	F5	PI 88788	
13 LD18-7628	F5	PI 88788	
14 LD18-10010	F5	PI 88788, 468916	SCN soja
15 LD19-10352	F5	PI 88788, 468916	SCN soja
16 U18-617265	F5	PI 88788	
17 U18-617270	F5	PI 88788	Expected Rps
18 U19-604203	F5	PI 88788,437654	Rps
19 U19-605170	F5	PI 88788,437654	
20 U19-607156	F5	PI 88788,437654	Rps, IDC
21 U19-608187	F5	PI 88788,437654	Rps, IDC
22 U19-613113	F5	PI 88788,437654	Rps
23 U19-613290	F5	PI 88788,437654	Rps
24 U19-924091	F5	PI 88788,437654	Rps
25 U19-928235	F5	PI 88788,437654	IDC



## 2022 SCN UNIFORM TEST III

### Disease Screening

Strain	Missouri SCN Screening						SNP marker analysis			
	HG 7		HG 2.5.7		HG 1.2.5.7		SCN			
	FI	rating	FI	rating	FI	rating	88788	Peking	Rhg4	
1 LD11-2170 (SCN)	11	R					Het	S	Het	
2 U15-606207 (SCN)	3	HR	1	HR	24	R	S	R	R	
3 LD07-3395bf (SCN)	6	HR	9	HR	63	**	S	R	R	
4 U14-910097 (SCN)	2	HR	2	HR	23	R	S	R	R	
5 A15203- 59	2	HR	8	HR	58	LR	S	R	R	
6 A15208-104	2	HR	0	HR	18	R	S	R	R	
7 A15208-113	2	HR	9	HR	59	LR	S	R	R	
8 LD18-1767	8	HR					R	S	S	
9 LD18-4251	9	HR					R	S	S	
10 LD18-6596	13	R					R	S	S	
11 LD18-7491	13	R					R	S	S	
12 LD18-7606	48	LR					Het	S	S	
13 LD18-7628	28	MR					R	S	S	
14 LD18-10010	35	MR	29	**	58	LR	S	S	S	
15 LD19-10352	1	HR	32	MR	58	**	R	S	S	
16 U18-617265	5	HR					R	S	S	
17 U18-617270	15	R					R	S	S	
18 U19-604203	3	HR	1	HR	20	R	S	Het	R	
19 U19-605170	36	**					Het	S	S	
20 U19-607156	6	HR	8	HR	70	NR	S	R	R	
21 U19-608187	4	HR	7	HR	48	**	S	R	R	
22 U19-613113	44	**	42	**	34	**	S	R	R	
23 U19-613290	48	**	82	NR	90	NR	Het	S	S	
24 U19-924091	17	**	78	NR	95	NR	S	R	S	
25 U19-928235	17	**	75	NR	77	NR	Het	S	S	

## 2022 SCN UNIFORM TEST III

### Predicted resistance genes based on SNP marker analysis

Strain	SCN	Iron Chlorosis	Phytophthora	BSR	FLS	SC
1 LD11-2170 (SCN)	Het-Rhg1_Pi88788+Rhg4	Het-Ch13	Het-(Rps1c+Rps1k)	Het	S	R
2 U15-606207 (SCN)	Rhg1_Peking+Rhg4	R-(LgN+Ch13)	Rps6	S	S	R
3 LD07-3395bf (SCN)	Rhg1_Peking+Rhg4	R-(LgN+Ch13)		S	S	R
4 U14-910097 (SCN)	Rhg1_Peking+Rhg4	Het-LgA1 + R-Ch13		S	S	R
5 A15203- 59	Rhg1-Peking+Rhg4	LgA1+LgN		R	S	R
6 A15208-104	Rhg1-Peking+Rhg4	Ch13		R	S	R
7 A15208-113	Rhg1-Peking+Rhg4	LgN+Ch13	Rps1a	R	S	R
8 LD18-1767	Rhg1_Pi88788	R-(LgN+Ch13)		R	S	R
9 LD18-4251	Rhg1_Pi88788	R-(LgA1+Ch13)		R	S	R
10 LD18-6596	Rhg1_Pi88788	R-Ch13	Rps1k	Het	S	R
11 LD18-7491	Rhg1_Pi88788		Rps1k	S	S	R
12 LD18-7606	Het-Rhg1_Pi88788	R-Ch13	Rps1k	Het	S	R
13 LD18-7628	Rhg1_Pi88788	R-(LgN+Ch13)		R	S	R
14 LD18-10010	none	Ch13, Het LgN	Het Rps1c	R	S	R
15 LD19-10352	Rhg1-Pi88788	LgN+Ch13	Rps1k	R	S	Het
16 U18-617265	Rhg1-Pi88788	Ch13	Rps1c	S	S	R
17 U18-617270	Rhg1-Pi88788	LgA1+Ch13		R	S	R
18 U19-604203	Rhg4, Het Rhg1-Peking	Het LgA+Ch13	Rps1k	Het	S	R
19 U19-605170	Het Rhg1-Pi88788	Ch13, Het LgA+LgN		S	S	R
20 U19-607156	Rhg1-Peking+Rhg4	Ch13		S	S	R
21 U19-608187	Rhg1-Peking+Rhg4	Ch13, Het LgN		S	S	R
22 U19-613113	Rhg1-Peking+Rhg4	LgA1+Ch13	Rps6	S	S	R
23 U19-613290	Het Rhg1-Pi88788	LgA1+Ch13	Rps1c+Rps6	R	S	R
24 U19-924091	Rhg1-Peking	Ch13		S	S	R
25 U19-928235	Het Rhg1-Pi88788	Ch13		S	S	R

BSR=Brown Leaf Spot, FLS=Frogeye Leaf Spot, SC=Stem Canker

## 2022 SCN UNIFORM TEST III

### Summary

Locations	Yield						Maturity date	Lodging score	Height inches	Seed			
	All		Infested		Non-infested					weight	quality	protein	oil
	bu/a	rank	bu/a	rank	bu/a	rank				g/100	score	@13%	@13%
	9		8		1		9	8	7	6	6	6	6
1 LD11-2170 (SCN)	60.1	22	57.9	23	79.8	11	9/30	1.4	30	16.5	1.7	34.0	20.2
2 U15-606207 (SCN)	59.9	23	57.5	24	81.1	8	4	1.3	32	16.5	1.5	32.9	19.8
3 LD07-3395bf (SCN)	60.8	19	58.7	21	79.2	12	6	1.3	31	16.6	1.4	32.2	20.2
4 U14-910097 (SCN)	66.2	4	64.1	5	84.3	3	1	1.7	30	15.9	1.5	32.9	20.3
5 A15203- 59	59.3	24	59.0	20	64.0	25	1	1.2	34	14.5	1.4	33.2	19.3
6 A15208-104	61.3	17	60.1	17	72.8	19	2	1.7	34	15.7	1.4	31.9	19.8
7 A15208-113	61.9	12	60.4	15	75.2	17	2	1.3	33	15.3	1.6	31.1	19.8
8 LD18-1767	65.9	6	64.0	6	82.1	7	1	1.2	32	16.4	1.6	32.9	19.5
9 LD18-4251	64.4	8	63.0	8	77.3	15	2	1.4	31	16.3	1.6	34.0	18.5
10 LD18-6596	66.8	2	64.7	3	85.2	1	5	1.2	31	15.8	1.7	32.8	19.6
11 LD18-7491	63.0	11	62.0	11	73.2	18	3	1.5	34	15.2	1.2	33.8	19.4
12 LD18-7606	61.9	13	61.0	12	70.6	20	6	1.8	34	14.1	1.8	33.2	19.0
13 LD18-7628	65.7	7	64.4	4	78.3	14	5	1.9	36	14.9	1.5	32.6	19.3
14 LD18-10010	60.4	20	60.2	16	64.3	24	6	1.9	35	14.9	1.4	33.9	18.8
15 LD19-10352	61.8	14	59.2	19	83.7	5	5	1.2	32	18.1	1.5	34.0	18.7
16 U18-617265	58.5	25	57.3	25	69.2	22	1	1.3	29	16.1	1.5	32.7	20.5
17 U18-617270	61.2	18	61.0	13	64.9	23	5	1.2	31	18.0	1.7	33.8	19.9
18 U19-604203	68.0	1	66.1	1	85.2	2	5	1.7	32	16.2	1.5	33.7	19.8
19 U19-605170	61.4	16	60.5	14	70.4	21	5	1.7	35	16.4	1.7	32.5	19.5
20 U19-607156	66.0	5	63.9	7	83.9	4	4	1.4	32	16.0	1.5	33.1	20.0
21 U19-608187	66.4	3	65.0	2	79.2	13	4	1.3	31	15.9	1.7	32.4	20.3
22 U19-613113	63.9	10	62.1	9	79.8	10	5	1.3	32	16.9	1.3	33.4	19.6
23 U19-613290	60.2	21	58.3	22	77.2	16	2	1.4	34	15.6	1.8	33.5	19.7
24 U19-924091	64.2	9	62.0	10	83.3	6	-1	1.4	32	18.0	1.6	33.7	20.2
25 U19-928235	61.8	14	59.8	18	79.9	9	4	1.3	34	15.9	1.9	32.4	19.8
Mean	62.8		61.3		77.0		3.5	1.4	32.4	16.1	1.5	33.1	19.7
C.V. %	9.4		9.7		7.2								
LSD(.05)	3.2		3.4		13.6								
Replications	23		21		2								

## 2022 SCN UNIFORM TEST III

### 2 Year Summary

	Yield						Seed						
	All		Infested		Non-infested		Maturity date	Lodging score	Height inches	weight g/100	quality score	protein @13%	oil @13%
	bu/a	rank	bu/a	rank	bu/a	rank							
Locations	16		10		6		13	14	14	14	14	13	13
1 LD11-2170 (SCN)	69.3	5	69.0	5	72.4	2	9/28	1.5	32	16.6	1.4	34.6	19.7
2 U15-606207 (SCN)	70.4	2	71.0	2	67.3	4	4	1.4	33	16.7	1.4	33.1	19.2
3 LD07-3395bf (SCN)	69.8	3	70.0	4	68.9	3	5	1.5	32	16.8	1.4	32.4	19.8
4 U14-910097 (SCN)	73.9	1	74.1	1	73.5	1	0	2.1	31	16.0	1.5	33.2	20.0
16 U18-617265	68.1	6	68.8	6	63.5	5	1	1.3	31	16.2	1.4	33.4	20.0
17 U18-617270	69.5	4	70.9	3	60.8	6	4	1.4	32	18.0	1.4	34.2	19.4
Mean	70.2		70.6		67.7		2.7	1.5	31.9	16.7	1.4	33.5	19.7

**2022 SCN UNIFORM TEST III**

Strain	Yield (bu/a)								
	Ames IA 2.5.7	Urbana IL 2.5.7	West Lafayette IN 2.5.7	Man- hattan KS 7	Albany MO 1.2.5.7	Columbia MO 1.2.5.7	Novelty MO 1.2.5.7	Phillips NE 2.5.7	Cook NE NI
1 LD11-2170 (SCN)	64.3	65.9	57.2	55.4	51.0	61.7	41.4	71.8	79.8
2 U15-606207 (SCN)	58.3	68.0	53.7	58.0	53.5	73.1	39.1	61.6	81.1
3 LD07-3395bf (SCN)	60.0	65.6	57.4	65.1	50.3	67.9	36.2	72.6	79.2
4 U14-910097 (SCN)	70.3	69.3	59.6	61.5	60.8	71.5	46.2	78.9	84.3
5 A15203- 59	60.4	61.2	52.8	65.5	58.4	67.9	45.7	65.2	64.0
6 A15208-104	63.3	63.5	59.1	60.9	56.3	65.7	46.1	71.3	72.8
7 A15208-113	63.1	66.3	62.3	63.0	53.6	67.5	40.8	72.4	75.2
8 LD18-1767	68.8	68.9	58.8	69.6	63.6	63.4	48.1	76.5	82.1
9 LD18-4251	69.0	70.1	60.7	60.6	58.2	66.6	50.0	74.2	77.3
10 LD18-6596	66.4	68.1	63.5	68.7	61.9	69.9	51.7	73.4	85.2
11 LD18-7491	55.7	71.8	63.5	71.1	55.9	68.3	44.2	70.8	73.2
12 LD18-7606	60.7	66.2	62.6	63.1	51.6	69.6	43.9	75.8	70.6
13 LD18-7628	58.7	69.6	64.0	71.1	60.1	69.4	48.2	79.5	78.3
14 LD18-10010	51.9	64.8	59.7	63.0	56.0	70.0	51.6	69.7	64.3
15 LD19-10352	66.6	53.7	60.7	56.8	61.7	66.0	43.7	70.1	83.7
16 U18-617265	55.3	65.2	60.3	58.1	48.7	61.8	44.8	69.9	69.2
17 U18-617270	63.4	58.7	58.1	66.2	56.7	65.9	49.0	75.2	64.9
18 U19-604203	65.4	68.6	66.8	69.1	64.3	71.0	45.1	84.0	85.2
19 U19-605170	55.3	59.3	61.0	60.7	66.2	72.4	40.8	73.5	70.4
20 U19-607156	62.0	66.4	68.3	72.7	64.1	71.6	36.8	75.0	83.9
21 U19-608187	65.8	74.7	65.3	74.3	60.0	70.0	44.5	71.2	79.2
22 U19-613113	59.5	57.6	62.0	70.3	56.0	70.2	51.4	75.2	79.8
23 U19-613290	58.0	64.8	52.7	52.6	64.6	69.0	43.7	66.2	77.2
24 U19-924091	67.4	61.3	55.8	64.0	56.2	68.0	50.4	78.4	83.3
25 U19-928235	56.7	60.4	61.6	64.3	68.3	61.6	39.8	70.9	79.9
Mean	61.9	65.2	60.3	64.2	58.3	68.0	44.9	72.9	77.0
C.V. %	8.8	9.2	9.3	7.0	10.0	6.7	10.2	5.1	7.2
LSD(2-sided,.05)	8.9	12.4	11.3	7.3	9.6	7.5	7.5	9.2	13.6
Replications	3	2	2	3	3	3	3	2	2
Row spacing (in.)	30	30	30	30	30	30	30	30	30

**2022 SCN UNIFORM TEST III**

**Yield (rank)**

Strain	Ames	Urbana	West	Man-	Albany	Columbia	Novelty	Phillips	Cook
	IA	IL	Lafayette	hattan	MO	MO	MO	NE	NE
	2.5.7	2.5.7	2.5.7	7	1.2.5.7	1.2.5.7	1.2.5.7	2.5.7	NI
1 LD11-2170 (SCN)	9	13	21	24	23	24	19	15	11
2 U15-606207 (SCN)	19	9	23	22	21	1	23	25	8
3 LD07-3395bf (SCN)	16	14	20	11	24	15	25	13	12
4 U14-910097 (SCN)	1	5	16	17	9	4	9	3	3
5 A15203- 59	15	20	24	10	12	15	11	24	25
6 A15208-104	11	18	17	18	15	21	10	16	19
7 A15208-113	12	11	8	15	20	17	20	14	17
8 LD18-1767	3	6	18	6	6	22	8	5	7
9 LD18-4251	2	3	12	20	13	18	5	10	15
10 LD18-6596	6	8	5	8	7	9	1	12	1
11 LD18-7491	22	2	5	3	19	13	15	19	18
12 LD18-7606	14	12	7	14	22	10	16	6	20
13 LD18-7628	18	4	4	3	10	11	7	2	14
14 LD18-10010	25	16	15	15	17	7	2	22	24
15 LD19-10352	5	25	12	23	8	19	17	20	5
16 U18-617265	24	15	14	21	25	23	13	21	22
17 U18-617270	10	23	19	9	14	20	6	7	23
18 U19-604203	8	7	2	7	4	5	12	1	2
19 U19-605170	23	22	11	19	2	2	20	11	21
20 U19-607156	13	10	1	2	5	3	24	9	4
21 U19-608187	7	1	3	1	11	7	14	17	13
22 U19-613113	17	24	9	5	17	6	3	8	10
23 U19-613290	20	17	25	25	3	12	17	23	16
24 U19-924091	4	19	22	13	16	14	3	4	6
25 U19-928235	21	21	10	12	1	25	22	18	9

**2022 SCN UNIFORM TEST III**

**Maturity**

Strain	Ames	Urbana	West	Man-	Albany	Columbia	Novelty	Phillips	Cook
	IA	IL	Lafayette	hattan	MO	MO	MO	NE	NE
	2.5.7	2.5.7	2.5.7	7	1.2.5.7	1.2.5.7	1.2.5.7	2.5.7	NI
1 LD11-2170 (SCN)	10/7	9/22	9/19	10/04	10/07	9/26	10/03	10/04	10/01
2 U15-606207 (SCN)	2	5	5	3	1	4	7	1	7
3 LD07-3395bf (SCN)	2	8	9	4	2	8	7	3	9
4 U14-910097 (SCN)	1	1	2	1	0	4	1	0	3
5 A15203- 59	1	2	2	1	1	2	2	0	3
6 A15208-104	2	3	4	3	1	2	1	2	1
7 A15208-113	1	3	5	0	2	1	0	1	4
8 LD18-1767	0	2	1	1	1	2	2	0	1
9 LD18-4251	0	3	4	-1	0	2	1	0	6
10 LD18-6596	2	7	5	4	2	5	5	5	7
11 LD18-7491	2	7	4	4	1	7	1	1	2
12 LD18-7606	3	11	8	4	2	6	8	7	8
13 LD18-7628	2	7	5	5	3	7	7	2	5
14 LD18-10010	5	10	7	6	3	7	10	3	3
15 LD19-10352	2	10	6	2	2	7	6	4	9
16 U18-617265	1	3	-1	0	0	2	6	0	1
17 U18-617270	2	9	5	4	3	6	5	4	5
18 U19-604203	2	8	6	4	2	6	7	3	2
19 U19-605170	2	10	6	5	2	6	5	2	10
20 U19-607156	3	5	5	2	1	7	4	2	4
21 U19-608187	1	5	6	3	1	6	8	0	5
22 U19-613113	2	7	6	5	2	6	7	2	8
23 U19-613290	1	4	2	3	2	4	0	0	3
24 U19-924091	-1	-1	-2	0	-5	0	1	0	1
25 U19-928235	2	6	6	3	2	5	0	2	7
Planted	6/04	5/17	5/12	6/17	6/21	6/07	6/16	5/31	6/02

**2022 SCN UNIFORM TEST III**

**Lodging (score)**

Strain	Ames	Urbana	West	Man-	Albany	Columbia	Novelty	Phillips	Cook
	IA	IL	Lafayette	hattan	MO	MO	MO	NE	NE
	2.5.7	2.5.7	2.5.7	7	1.2.5.7	1.2.5.7	1.2.5.7	2.5.7	NI
1 LD11-2170 (SCN)	1.7	1.0	1.0	1.3	1.8	1.5	1.5		1.0
2 U15-606207 (SCN)	1.7	1.3	1.0	1.0	1.3	1.5	1.5		1.0
3 LD07-3395bf (SCN)	1.7	1.5	1.0	1.0	1.0	1.7	1.5		1.0
4 U14-910097 (SCN)	2.0	1.5	1.5	2.0	2.0	1.8	1.5		1.0
5 A15203- 59	1.0	1.3	1.0	1.0	1.0	1.7	1.5		1.0
6 A15208-104	2.3	1.3	1.5	1.7	1.7	2.0	1.8		1.5
7 A15208-113	2.0	1.0	1.0	1.0	1.2	1.5	1.5		1.0
8 LD18-1767	1.3	1.0	1.0	1.3	1.2	1.2	1.5		1.0
9 LD18-4251	2.3	1.0	1.0	1.7	1.7	1.3	1.3		1.0
10 LD18-6596	2.0	1.0	1.0	1.0	1.0	1.3	1.5		1.0
11 LD18-7491	1.7	1.8	2.0	1.3	1.2	1.8	1.5		1.0
12 LD18-7606	2.0	2.0	1.5	2.0	1.5	2.0	1.5		2.0
13 LD18-7628	2.0	1.5	2.0	2.0	1.3	2.2	2.0		2.0
14 LD18-10010	2.7	1.8	1.5	2.3	1.3	2.0	2.0		2.0
15 LD19-10352	1.0	1.3	1.0	1.0	1.0	1.5	1.5		1.0
16 U18-617265	2.0	1.0	1.0	1.0	1.2	1.3	1.5		1.0
17 U18-617270	1.7	1.3	1.0	1.0	1.0	1.5	1.5		1.0
18 U19-604203	2.0	1.3	1.5	2.0	1.5	1.5	1.5		2.0
19 U19-605170	2.0	1.5	2.0	1.7	1.3	1.7	2.0		1.0
20 U19-607156	2.0	1.0	1.5	1.0	1.0	1.8	1.5		1.0
21 U19-608187	1.7	1.0	1.5	1.0	1.2	1.3	1.5		1.0
22 U19-613113	1.7	1.5	1.0	1.3	1.0	1.7	1.5		1.0
23 U19-613290	2.0	1.3	1.0	1.0	1.7	1.5	1.5		1.0
24 U19-924091	2.3	1.0	1.0	1.0	1.5	2.2	1.5		1.0
25 U19-928235	2.0	1.3	1.5	1.0	1.2	1.2	1.5		1.0



**2022 SCN UNIFORM TEST III**

**Height (inches)**

Strain	Ames	Urbana	West	Man-	Albany	Columbia	Novelty	Phillips	Cook
	IA	IL	Lafayette	hattan	MO	MO	MO	NE	NE
	2.5.7	2.5.7	2.5.7	7	1.2.5.7	1.2.5.7	1.2.5.7	2.5.7	NI
1 LD11-2170 (SCN)	36	32	32	32	27	27	24		
2 U15-606207 (SCN)	36	34	31	33	29	30	28		
3 LD07-3395bf (SCN)	37	32	32	34	28	29	25		
4 U14-910097 (SCN)	38	30	30	33	30	28	24		
5 A15203- 59	38	35	34	37	33	32	26		
6 A15208-104	39	36	35	37	32	31	27		
7 A15208-113	39	34	34	36	31	30	26		
8 LD18-1767	38	36	32	34	31	30	24		
9 LD18-4251	37	35	33	33	29	29	23		
10 LD18-6596	38	34	32	34	30	29	24		
11 LD18-7491	38	38	38	38	32	31	23		
12 LD18-7606	39	38	38	36	30	32	26		
13 LD18-7628	41	39	37	41	33	33	30		
14 LD18-10010	39	38	37	39	33	32	27		
15 LD19-10352	37	31	32	32	32	30	28		
16 U18-617265	35	32	31	32	28	27	21		
17 U18-617270	36	33	29	33	29	29	25		
18 U19-604203	38	33	32	36	32	30	25		
19 U19-605170	38	36	37	36	34	34	30		
20 U19-607156	36	33	33	33	31	30	26		
21 U19-608187	36	35	32	32	31	28	25		
22 U19-613113	37	34	34	34	30	31	29		
23 U19-613290	38	37	36	35	33	30	27		
24 U19-924091	38	33	33	32	31	31	26		
25 U19-928235	38	35	36	37	35	32	23		

**2022 SCN UNIFORM TEST III**

**Seed Weight (g/100)**

Strain	Ames	Urbana	West	Man-	Albany	Columbia	Novelty	Phillips	Cook
	IA	IL	Lafayette	hattan	MO	MO	MO	NE	NE
	2.5.7	2.5.7	2.5.7	7	1.2.5.7	1.2.5.7	1.2.5.7	2.5.7	NI
1 LD11-2170 (SCN)	16.7	17.3	16.4	15.8		16.3		16.5	
2 U15-606207 (SCN)	15.3	18.0	16.8	16.2		18.3		14.6	
3 LD07-3395bf (SCN)	16.1	18.2	16.6	15.6		16.8		16.0	
4 U14-910097 (SCN)	15.6	16.8	15.8	15.2		16.6		15.7	
5 A15203- 59	14.1	15.3	14.4	14.4		15.1		13.9	
6 A15208-104	14.2	16.9	15.9	16.5		15.6		15.3	
7 A15208-113	14.6	16.7	16.2	13.5		15.8		15.0	
8 LD18-1767	16.8	16.6	17.0	15.9		16.8		15.3	
9 LD18-4251	16.8	17.5	15.7	15.2		16.7		16.1	
10 LD18-6596	15.8	16.1	16.1	14.8		16.1		16.2	
11 LD18-7491	15.0	16.1	15.0	14.9		15.7		14.4	
12 LD18-7606	13.3	14.8	13.6	13.6		14.3		15.0	
13 LD18-7628	14.3	15.4	14.5	14.2		15.7		15.2	
14 LD18-10010	13.3	16.1	14.8	14.6		16.0		14.9	
15 LD19-10352	18.0	18.6	18.6	18.1		18.8		16.8	
16 U18-617265	17.0	16.9	15.8	14.9		16.5		15.7	
17 U18-617270	18.0	18.6	18.1	16.2		19.5		17.5	
18 U19-604203	15.5	16.7	15.8	16.5		17.3		15.3	
19 U19-605170	15.8	17.0	16.4	16.5		16.2		16.6	
20 U19-607156	15.6	16.5	16.3	14.5		17.0		15.8	
21 U19-608187	16.0	16.5	15.9	15.1		16.7		15.5	
22 U19-613113	16.8	17.8	17.0	15.8		17.3		16.5	
23 U19-613290	15.7	16.1	15.2	14.9		16.3		15.5	
24 U19-924091	18.4	18.6	17.6	17.1		19.1		17.5	
25 U19-928235	16.0	16.6	15.7	15.4		16.1		15.8	

## 2022 SCN UNIFORM TEST III

### Seed Quality (score)

Strain	Ames	Urbana	West	Man-	Albany	Columbia	Novelty	Phillips	Cook
	IA	IL	Lafayette	hattan	MO	MO	MO	NE	NE
	2.5.7	2.5.7	2.5.7	7	1.2.5.7	1.2.5.7	1.2.5.7	2.5.7	NI
1 LD11-2170 (SCN)	2.0	2.0	1.0	2.0		2.0		1.0	
2 U15-606207 (SCN)	1.7	1.0	1.0	2.0		2.0		1.0	
3 LD07-3395bf (SCN)	1.3	2.0	1.0	2.0		1.0		1.0	
4 U14-910097 (SCN)	2.0	2.0	1.0	2.0		1.0		1.0	
5 A15203- 59	1.3	3.0	1.0	1.0		1.0		1.0	
6 A15208-104	1.3	2.0	1.0	2.0		1.0		1.0	
7 A15208-113	1.7	2.0	1.0	2.0		2.0		1.0	
8 LD18-1767	2.0	2.0	1.5	2.0		1.0		1.0	
9 LD18-4251	1.7	2.0	1.0	2.0		2.0		1.0	
10 LD18-6596	1.3	3.0	1.0	3.0		1.0		1.0	
11 LD18-7491	1.0	2.0	1.0	1.0		1.0		1.0	
12 LD18-7606	1.7	2.0	1.0	3.0		2.0		1.0	
13 LD18-7628	1.0	2.0	1.0	2.0		2.0		1.0	
14 LD18-10010	1.3	2.0	1.0	2.0		1.0		1.0	
15 LD19-10352	1.0	2.0	1.0	2.0		2.0		1.0	
16 U18-617265	1.7	2.0	1.0	2.0		1.0		1.0	
17 U18-617270	2.0	2.0	1.0	2.0		2.0		1.0	
18 U19-604203	2.0	2.0	1.0	2.0		1.0		1.0	
19 U19-605170	2.0	2.0	1.0	2.0		2.0		1.0	
20 U19-607156	2.0	2.0	1.0	2.0		1.0		1.0	
21 U19-608187	2.0	2.0	1.0	2.0		2.0		1.0	
22 U19-613113	1.3	2.0	1.5	1.0		1.0		1.0	
23 U19-613290	1.7	2.0	1.0	3.0		2.0		1.0	
24 U19-924091	2.3	2.0	1.0	2.0		1.0		1.0	
25 U19-928235	2.7	2.0	1.5	2.0		2.0		1.0	

## 2022 SCN UNIFORM TEST III

### Protein (%)

Strain	Ames IA 2.5.7	Urbana IL 2.5.7	West Lafayette IN 2.5.7	Man- hattan KS 7	Albany MO 1.2.5.7	Columbia MO 1.2.5.7	Novelty MO 1.2.5.7	Phillips NE 2.5.7	Cook NE NI
1 LD11-2170 (SCN)	33.3	34.3	34.1	33.7		35.1		33.8	
2 U15-606207 (SCN)	32.6	33.9	31.9	31.9		34.6		32.3	
3 LD07-3395bf (SCN)	31.0	33.9	32.4	31.1		33.0		32.1	
4 U14-910097 (SCN)	32.5	33.0	32.5	33.3		34.2		32.2	
5 A15203- 59	32.4	35.1	32.2	32.3		34.2		32.8	
6 A15208-104	30.7	32.7	31.1	32.8		32.1		31.8	
7 A15208-113	29.1	32.4	31.3	30.0		31.5		32.2	
8 LD18-1767	32.4	32.9	33.9	32.4		33.1		32.8	
9 LD18-4251	35.8	34.7	32.1	32.3		35.2		33.6	
10 LD18-6596	32.6	33.6	33.3	31.4		33.4		32.5	
11 LD18-7491	32.7	33.9	33.5	33.1		35.4		34.4	
12 LD18-7606	32.5	34.4	33.1	31.9		33.5		33.7	
13 LD18-7628	33.1	33.7	32.0	30.8		33.5		32.8	
14 LD18-10010	33.4	34.5	32.7	34.0		34.6		34.5	
15 LD19-10352	33.3	35.7	33.5	33.0		35.4		33.0	
16 U18-617265	32.0	33.9	32.9	31.6		33.7		32.3	
17 U18-617270	33.5	34.3	33.6	32.0		34.9		34.8	
18 U19-604203	31.6	34.2	33.6	33.7		34.7		34.2	
19 U19-605170	31.3	34.5	31.5	31.8		33.5		32.6	
20 U19-607156	32.7	33.7	33.0	32.2		34.9		32.2	
21 U19-608187	32.0	33.7	30.6	31.3		34.4		32.6	
22 U19-613113	33.0	34.2	33.1	32.7		34.0		33.5	
23 U19-613290	33.0	34.4	33.4	32.7		34.3		33.2	
24 U19-924091	33.4	34.3	33.7	33.6		34.3		33.0	
25 U19-928235	32.5	33.2	32.4	30.3		33.5		32.8	

## 2022 SCN UNIFORM TEST III

### Oil (%)

Strain	Ames IA 2.5.7	Urbana IL 2.5.7	West Lafayette IN 2.5.7	Man- hattan KS 7	Albany MO 1.2.5.7	Columbia MO 1.2.5.7	Novelty MO 1.2.5.7	Phillips NE 2.5.7	Cook NE NI
1 LD11-2170 (SCN)	19.8	20.1	20.3	21.2		21.1		19.8	
2 U15-606207 (SCN)	19.3	19.2	20.8	21.7		19.8		19.9	
3 LD07-3395bf (SCN)	20.4	19.2	20.2	20.7		21.3		19.8	
4 U14-910097 (SCN)	20.1	20.0	20.6	20.7		20.7		20.3	
5 A15203- 59	19.4	18.4	19.8	20.6		19.7		19.3	
6 A15208-104	19.2	19.7	20.3	20.0		21.3		18.7	
7 A15208-113	19.1	19.7	20.2	21.7		21.1		18.8	
8 LD18-1767	18.8	19.1	20.0	20.1		20.5		19.2	
9 LD18-4251	17.2	18.1	20.2	19.8		18.9		18.4	
10 LD18-6596	18.9	18.9	20.2	21.2		20.8		19.1	
11 LD18-7491	19.3	18.9	19.8	20.3		20.4		18.6	
12 LD18-7606	17.8	18.4	19.8	21.1		20.3		18.6	
13 LD18-7628	17.9	19.2	20.2	20.8		20.5		18.8	
14 LD18-10010	18.3	18.4	19.6	18.8		19.8		18.1	
15 LD19-10352	18.2	17.5	19.5	20.1		19.2		19.1	
16 U18-617265	20.5	20.1	20.6	22.4		21.5		20.0	
17 U18-617270	19.8	19.4	20.5	20.6		20.7		18.9	
18 U19-604203	19.9	19.5	20.3	20.6		20.0		19.4	
19 U19-605170	19.4	18.6	20.3	20.7		20.4		18.9	
20 U19-607156	19.4	19.6	20.2	21.1		20.6		20.2	
21 U19-608187	19.5	19.6	21.8	21.3		20.7		19.8	
22 U19-613113	19.1	19.3	19.9	21.6		20.6		19.1	
23 U19-613290	19.7	19.1	20.2	20.7		19.7		19.6	
24 U19-924091	19.9	19.7	20.8	20.9		21.1		19.7	
25 U19-928235	19.6	20.1	20.0	20.8		19.9		19.3	

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## 2022 SCN PRELIMINARY TEST IIIA

Strain	Descriptive code	Parentage
1 LD11-2170 (SCN)	PLtbr	Syngenta 03JR313108 x LD05-3171
2 U15-606207 (SCN)	PGbf	LD07-3419 x U09-105007
3 LD07-3395bf (SCN)	WGbf	Syngenta WW115926 x LD00-2817
4 U14-910097 (SCN)	PGbf	U09-105007 x LD07-3419
5 A16203-92	P+Wbf/ibl	(AR13-331018 x 41-43) x LD10-10198
6 A16204-92	WLtbl/br	(AR13-331018 x 51-34) x U11-911079
7 A16204-93	PTbl	(AR13-331018 x 51-34) x U11-911079
8 A16212-25	PLty	(AR13-331018 x PI603915C) x U11-622148
9 LD19-1957	PLtbr	LD12-459 x LD11-2170
10 LD19-7156	PLtbl	LD12-459 x LD11-2170
11 U19-048025	PGibl	LD12-459 x U14-910097
12 U19-050115	PLtbl	U14-910097 x U14-903100
13 U19-063133	PGbf	U14-903100 x U14-924158
14 U19-064130	PLtbr	U14-903100 x U14-924158
15 U19-072078	PLtbr	LD12-3903 x U14-910097
16 U19-074083	PGbf/ibl	LD12-459 x U14-910097
17 U19-077092	PLt+Gbr/bf	U14-903100 x LD12-3903
18 U19-078104	PLtbr	U14-903100 x U14-924158
19 U19-220018	PGbf	U14-910097 x U14-909100
20 U19-221019	PGbf/ibl	U14-910097 x U14-909100
21 U19-221027	PGbf	U14-910097 x U14-909100
22 U19-251138	PGibl	U14-925152 x U14-909100
23 U19-251153	PGibl	U14-925152 x U14-909100
24 U19-252167	PGibl	U14-925152 x U14-909100
25 U20-913091	PLtgr	ORC_3713N x LD14-3702

### 2022 SCN PRELIMINARY TEST IIIA

Strain	Gen comp	Cooperator reported SCN resistance source	Cooperator reported Traits
1 LD11-2170 (SCN)	F5	PI 88788	
2 U15-606207 (SCN)	F5	PI 88788,437654	Rps
3 LD07-3395bf (SCN)	F5	PI 88788,437654	
4 U14-910097 (SCN)	F5	PI 88788,437654	
5 A16203-92	F5	PI 88788, 437654	
6 A16204-92	F5	PI 88788, 437654	
7 A16204-93	F5	PI 88788, 437654	
8 A16212-25	F5	PI 88788, 437654	
9 LD19-1957	F5	PI 88788	
10 LD19-7156	F5	PI 88788	
11 U19-048025	F5	PI 88788,437654	Rps
12 U19-050115	F5	PI 88788,437654	Rps
13 U19-063133	F5	PI 88788,437654	IDC,Rps
14 U19-064130	F5	PI 88788,437654	IDC, Rps
15 U19-072078	F5	PI 88788,437654	Rps
16 U19-074083	F5	PI 88788,437654	Rps
17 U19-077092	F5	PI 88788	Rps
18 U19-078104	F5	PI 88788,437654	IDC,Rps
19 U19-220018	F5	PI 88788,437654	Rps
20 U19-221019	F5	PI 88788,437654	Rps
21 U19-221027	F5	PI 88788,437654	Rps
22 U19-251138	F5	PI 88788,437654	IDC,Rps
23 U19-251153	F5	PI 88788,437654	IDC,Rps
24 U19-252167	F5	PI 88788,437654	IDC,Rps
25 U20-913091	F5	PI 88788	



## 2022 SCN PRELIMINARY TEST IIIA

### Disease Screening

Strain	SNP marker analysis		
	SCN		
	88788	Peking	Rhg4
1 LD11-2170 (SCN)			
2 U15-606207 (SCN)			
3 LD07-3395bf (SCN)			
4 U14-910097 (SCN)			
5 A16203-92	<b>R</b>	S	S
6 A16204-92	Het	Het	<b>R</b>
7 A16204-93	<b>R</b>	S	S
8 A16212-25	S	S	S
10 LD19-1957	<b>R</b>	S	S
11 LD19-7156	<b>R</b>	S	S
12 U19-048025	Het	Het	<b>R</b>
13 U19-050115	S	S	S
14 U19-063133	S	S	S
15 U19-064130	S	S	S
16 U19-072078	<b>R</b>	S	Het
17 U19-074083	S	<b>R</b>	S
18 U19-077092	S	Het	Het
19 U19-078104	S	S	S
20 U19-220018	<b>R</b>	S	<b>R</b>
21 U19-221019	<b>R</b>	S	<b>R</b>
22 U19-221027	Het	Het	<b>R</b>
23 U19-251138	<b>R</b>	S	<b>R</b>
24 U19-251153	S	S	Het
25 U19-252167	S	<b>R</b>	<b>R</b>
26 U20-913091	.	S	.

## 2022 SCN PRELIMINARY TEST IIIA

### Predicted resistance genes based on SNP marker analysis

Strain	SCN	Iron Chlorosis	Phytophthora	BSR	FLS	SC
1 LD11-2170 (SCN)						
2 U15-606207 (SCN)						
3 LD07-3395bf (SCN)						
4 U14-910097 (SCN)						
5 A16203-92	Rhg1_PI88788	R-LgN + R-Ch13	Rps1k	R	S	R
6 A16204-92	Het-Rhg1 - SCN Peking	R-(LgA1+LgN+Ch13)	Rps1c	S	S	R
7 A16204-93	Rhg1_PI88788	R-(LgN+Ch13)	Rps1k	S	S	R
8 A16212-25	none	R-(LgA1+Ch13)	Rps1c	S	S	Het
9 LD19-1957	Rhg1_PI88788	R-(LgN+Ch13)		R	S	R
10 LD19-7156	Rhg1_PI88788	R-(LgN+Ch13)	Rps1c	R	S	R
11 U19-048025	Het-Rhg1, R-Rhg4	Het-LgN + R-Ch13	Rps1k		S	R
12 U19-050115	none	Het-LgA1 + R-Ch13	Rps1k	S	S	R
13 U19-063133	none	R-(LgA1+Ch13)		S	S	R
14 U19-064130	none	R-(LgA1+Ch13)		S	S	R
15 U19-072078	Rhg1_PI88788, Het Rhg4	R-Ch13	Rps1k	Het	S	R
16 U19-074083	Rhg1-Peking	R-Ch13	Rps1k	S	S	R
17 U19-077092	Het-SCN Peking	R-Ch13		Het	S	R
18 U19-078104	none	R-(LgA1+Ch13)			S	R
19 U19-220018	Rhg1_PI88788+Rhg4	R-(LgA1+Ch13)	Het-Rps1c	S	S	R
20 U19-221019	Rhg1_PI88788+Rhg4	R-(LgA1+Ch13)	Het-Rps1c	S	S	R
21 U19-221027	Het-Rhg1 - SCN Peking	R-(LgA1+Ch13)		S	S	R
22 U19-251138	Rhg1_PI88788+Rhg4	Het-LgN + R-Ch13		S	S	R
23 U19-251153	Het-Rhg4	R-(LgA1+Ch13)		Het	S	R
24 U19-252167	Rhg1-Peking+Rhg4	Het-LgN + R-Ch13	Rps1k	S	S	R
25 U20-913091	missing data	Het-LgN + R-Ch13	Het-Rps1k	Het	S	R

BSR=Brown Leaf Spot, FLS=Frogeye Leaf Spot, SC=Stem Canker

## 2022 SCN PRELIMINARY TEST IIIA

### Summary

Locations	Yield						Maturity date	Lodging score	Height inches	Seed									
	All		Infested		Non-infested					weight	quality	protein	oil						
	bu/a	rank	bu/a	rank	bu/a	rank				g/100	score	@13%	@13%						
	8		7		1		8		7		6		5		5		5		5
1 LD11-2170 (SCN)	61.3	7	59.1	12	76.9	8	10/02	1.3	30	16.3	1.4	34.6	19.9						
2 U15-606207 (SCN)	62.3	6	59.2	10	83.8	2	3	1.5	30	16.4	1.5	33.2	20.2						
3 LD07-3395bf (SCN)	63.4	5	60.6	5	82.4	4	5	1.4	30	16.6	1.6	32.6	20.1						
4 U14-910097 (SCN)	66.0	1	64.8	1	74.2	11	1	1.6	30	15.8	1.8	33.6	20.3						
5 A16203-92	54.2	22	54.0	22	55.7	22	0	1.2	29	13.7	1.4	34.7	18.2						
6 A16204-92	48.2	25	49.4	25	40.2	24	-1	1.3	30	15.7	1.6	33.5	19.7						
7 A16204-93	50.6	24	51.9	24	41.5	23	0	1.4	32	14.9	1.6	33.2	18.5						
8 A16212-25	53.7	23	52.8	23	60.1	21	-1	1.4	35	16.1	1.8	34.7	19.8						
9 LD19-1957	61.0	8	60.0	6	68.3	18	0	1.1	33	17.6	1.4	33.8	20.2						
10 LD19-7156	63.5	4	62.0	3	74.3	10	1	1.2	30	14.5	1.8	33.9	19.2						
11 U19-048025	60.2	15	59.2	11	67.3	20	-1	1.2	28	15.3	1.2	33.2	19.6						
12 U19-050115	56.6	19	54.4	21	72.0	13	2	1.4	33	16.4	1.6	33.0	19.4						
13 U19-063133	59.0	16	56.0	17	80.0	6	1	1.3	31	16.5	1.2	33.9	19.1						
14 U19-064130	60.9	9	57.4	15	85.1	1	3	1.4	30	15.5	1.4	33.3	19.6						
15 U19-072078	60.7	10	59.7	7	67.8	19	0	1.2	30	16.8	1.6	33.9	20.0						
16 U19-074083	60.6	11	57.4	16	83.5	3	1	1.2	31	14.5	1.7	33.7	19.4						
17 U19-077092	57.7	17	54.8	20	78.5	7	2	1.5	31	16.4	1.4	34.4	19.6						
18 U19-078104	57.6	18	54.9	18	76.7	9	0	1.3	28	16.5	1.4	33.6	19.6						
19 U19-220018	64.3	2	61.9	4	80.6	5	0	1.4	33	16.8	1.8	33.0	20.3						
20 U19-221019	60.6	11	59.5	8	68.4	16	1	1.3	35	15.2	1.6	32.4	20.7						
21 U19-221027	63.7	3	62.3	2	73.7	12	2	1.4	33	16.8	1.6	33.2	20.5						
22 U19-251138	60.6	11	59.0	13	71.5	14	2	1.6	33	16.6	1.7	33.3	19.4						
23 U19-251153	56.5	21	54.8	19	68.3	17	2	1.4	32	16.1	1.4	33.3	20.3						
24 U19-252167	56.6	19	59.0	14	40.2	25	0	1.5	29	16.9	1.5	33.8	20.0						
25 U20-913091	60.5	14	59.4	9	68.7	15	4	1.8	39	17.4	2.0	34.4	19.2						
Mean	59.2		57.7		69.6		1.1	1.4	31.4	16.1	1.6	33.6	19.7						
C.V. %	8.7		8.4		10.0														
LSD(.05)	3.6		3.6		17.1														
Replications	16		14		2														

## 2022 SCN PRELIMINARY TEST IIIA

### Yield (bu/a)

Strain	Ames	Urbana	Man-	Albany	Columbia	Novelty	Phillips	Cook
	IA	IL	hattan	MO	MO	MO	NE	NE
	2.5.7	2.5.7	7	1.2.5.7	2.5.7	Inf	2.5.7	NI
1 LD11-2170 (SCN)	60.6	71.4	56.8	56.4	56.7	36.0	75.7	76.9
2 U15-606207 (SCN)	60.6	67.8	55.9	52.2	64.7	49.4	64.1	83.8
3 LD07-3395bf (SCN)	66.3	75.1	58.2	58.4	56.4	40.1	75.9	82.4
4 U14-910097 (SCN)	75.3	74.9	61.1	59.3	69.6	38.1	75.2	74.2
5 A16203-92	59.1	57.1	50.9	46.2	51.6	42.4	70.6	55.7
6 A16204-92	54.9	52.2	54.5	43.0	48.4	40.9	51.8	40.2
7 A16204-93	52.2	61.1	49.7	56.2	50.8	37.7	55.7	41.5
8 A16212-25	47.3	69.1	42.8	57.4	52.6	39.5	60.9	60.1
9 LD19-1957	64.2	66.6	49.9	56.1	61.4	47.8	74.0	68.3
10 LD19-7156	71.4	66.4	52.8	59.2	59.8	47.1	77.0	74.3
11 U19-048025	58.5	71.9	51.6	61.0	51.5	42.2	77.3	67.3
12 U19-050115	50.4	62.0	49.3	61.4	56.9	42.6	58.5	72.0
13 U19-063133	51.8	71.3	44.5	52.7	58.8	44.8	68.3	80.0
14 U19-064130	51.8	68.2	49.8	60.0	55.5	44.5	71.9	85.1
15 U19-072078	66.4	70.9	56.6	63.7	55.5	43.1	70.7	67.8
16 U19-074083	56.3	65.1	45.0	58.4	57.2	55.9	70.1	83.5
17 U19-077092	58.7	62.3	47.3	54.4	53.8	42.0	64.7	78.5
18 U19-078104	57.5	62.2	46.7	54.1	55.5	41.0	67.3	76.7
19 U19-220018	70.2	61.2	60.3	57.4	60.9	39.1	84.4	80.6
20 U19-221019	71.7	64.3	55.4	57.8	60.6	35.3	71.5	68.4
21 U19-221027	58.8	67.8	56.5	62.2	66.0	48.9	76.0	73.7
22 U19-251138	69.6	65.4	42.9	57.5	61.1	49.2	67.5	71.5
23 U19-251153	50.8	62.7	42.2	56.5	52.6	46.9	71.8	68.3
24 U19-252167	69.2	66.6	54.8	49.7	60.3	43.6	68.6	40.2
25 U20-913091	63.2	68.1	49.0	59.5	55.0	55.1	65.6	68.7
Mean	60.7	66.1	51.4	56.4	57.3	43.5	69.4	69.6
C.V. %	10.4	6.6	7.6	6.9	6.5	11.5	7.3	10.0
LSD(2-sided,.05)	13.0	9.0	8.1	8.0	6.4	8.6	12.7	17.1
Replications	2	2	2	2	2	2	2	2
Row spacing (in.)	30	30	30	30	30	30	30	30

## 2022 SCN PRELIMINARY TEST IIIA

### Yield (rank)

Strain	Ames	Urbana	Man-	Albany	Columbia	Novelty	Phillips	Cook
	IA 2.5.7	IL 2.5.7	hattan KS 7	MO 1.2.5.7	MO 2.5.7	MO 1.2.5.7	NE 2.5.7	NE NI
1 LD11-2170 (SCN)	12	4	4	16	13	24	6	8
2 U15-606207 (SCN)	11	10	7	22	3	3	21	2
3 LD07-3395bf (SCN)	8	1	3	9	14	19	5	4
4 U14-910097 (SCN)	1	2	1	7	1	22	7	11
5 A16203-92	13	24	13	24	22	14	12	22
6 A16204-92	19	25	10	25	25	18	25	24
7 A16204-93	20	23	16	17	24	23	24	23
8 A16212-25	25	7	24	13	20	20	22	21
9 LD19-1957	9	13	14	18	4	6	8	18
10 LD19-7156	3	14	11	8	9	7	3	10
11 U19-048025	16	3	12	4	23	15	2	20
12 U19-050115	24	21	17	3	12	13	23	13
13 U19-063133	21	5	22	21	10	9	16	6
14 U19-064130	22	8	15	5	15	10	9	1
15 U19-072078	7	6	5	1	15	12	14	19
16 U19-074083	18	16	21	9	11	1	13	3
17 U19-077092	15	19	19	19	19	16	20	7
18 U19-078104	17	20	20	20	15	17	18	9
19 U19-220018	4	22	2	13	6	21	1	5
20 U19-221019	2	17	8	11	7	25	11	16
21 U19-221027	14	10	6	2	2	5	4	12
22 U19-251138	5	15	23	12	5	4	17	14
23 U19-251153	23	18	25	15	20	8	10	17
24 U19-252167	6	12	9	23	8	11	15	25
25 U20-913091	10	9	18	6	18	2	19	15

## 2022 SCN PRELIMINARY TEST IIIA

### Maturity

Strain	Ames	Urbana	Man-	Albany	Columbia	Novelty	Phillips	Cook
	IA	IL	hattan	MO	MO	MO	NE	NE
	2.5.7	2.5.7	7	1.2.5.7	2.5.7	1.2.5.7	2.5.7	NI
1 LD11-2170 (SCN)	10/7	9/23	10/02	10/06	9/29	10/06	10/04	9/29
2 U15-606207 (SCN)	2	5	0	4	3	5	-1	6
3 LD07-3395bf (SCN)	3	6	1	4	6	5	3	11
4 U14-910097 (SCN)	3	0	1	4	1	-3	-1	3
5 A16203-92	2	2	0	3	-3	-1	1	-1
6 A16204-92	-1	-1	0	-3	-4	-1	-2	0
7 A16204-93	0	0	-1	-2	-2	-3	1	2
8 A16212-25	1	1	0	-1	-3	-2	-2	1
9 LD19-1957	2	-1	0	-1	-2	-3	1	1
10 LD19-7156	1	4	1	0	-1	-2	2	3
11 U19-048025	0	-1	0	-4	-1	-3	-1	-1
12 U19-050115	2	4	0	4	2	2	-2	5
13 U19-063133	2	3	0	1	2	-2	-1	4
14 U19-064130	3	5	1	4	0	2	1	6
15 U19-072078	1	0	-1	1	2	-3	1	2
16 U19-074083	2	2	1	3	0	2	0	2
17 U19-077092	2	3	1	3	3	-2	1	5
18 U19-078104	2	-1	2	1	1	-3	-3	5
19 U19-220018	0	-1	1	1	-1	-3	-1	3
20 U19-221019	1	1	0	2	-1	-1	2	4
21 U19-221027	2	1	1	1	4	1	3	5
22 U19-251138	2	2	3	2	2	0	1	7
23 U19-251153	2	2	1	4	2	2	1	5
24 U19-252167	0	0	0	1	0	-2	-1	1
25 U20-913091	6	6	2	4	2	3	7	5
Planted	6/04	5/17	6/17	6/21	6/07	6/16	5/31	6/02

## 2022 SCN PRELIMINARY TEST IIIA

### Lodging (score)

Strain	Ames IA 2.5.7	Urbana IL 2.5.7	Man- hattan KS 7	Albany MO 1.2.5.7	Columbia MO 2.5.7	Novelty MO 1.2.5.7	Phillips NE 2.5.7	Cook NE NI
1 LD11-2170 (SCN)	1.0	1.0	1.0	1.8	1.5	1.5		1.0
2 U15-606207 (SCN)	2.0	1.5	1.0	1.3	1.5	1.5		1.5
3 LD07-3395bf (SCN)	2.5	1.3	1.0	1.3	1.5	1.5		1.0
4 U14-910097 (SCN)	3.0	1.5	1.0	1.3	1.8	1.5		1.0
5 A16203-92	1.5	1.0	1.0	1.0	1.3	1.5		1.0
6 A16204-92	2.0	1.0	1.0	1.3	1.5	1.5		1.0
7 A16204-93	2.0	1.5	1.0	1.0	1.5	1.5		1.0
8 A16212-25	2.0	1.5	1.0	1.0	1.5	1.5		1.5
9 LD19-1957	1.5	1.0	1.0	1.0	1.0	1.5		1.0
10 LD19-7156	1.5	1.3	1.0	1.0	1.0	1.5		1.0
11 U19-048025	1.5	1.5	1.0	1.0	1.0	1.5		1.0
12 U19-050115	2.0	1.3	1.0	1.5	1.5	1.5		1.0
13 U19-063133	1.5	1.3	1.0	1.0	1.3	1.5		1.5
14 U19-064130	2.0	1.5	1.0	1.3	1.5	1.5		1.0
15 U19-072078	1.0	1.5	1.0	1.0	1.5	1.5		1.0
16 U19-074083	1.5	1.3	1.0	1.0	1.3	1.5		1.0
17 U19-077092	2.0	1.5	2.0	1.0	1.5	1.5		1.0
18 U19-078104	2.0	1.0	1.0	1.0	1.3	1.5		1.0
19 U19-220018	2.0	1.0	1.0	1.5	2.0	1.5		1.0
20 U19-221019	1.5	1.5	1.0	1.0	1.8	1.5		1.0
21 U19-221027	2.0	1.3	1.0	1.5	1.5	1.5		1.0
22 U19-251138	2.5	1.5	1.0	1.0	1.8	2.5		1.0
23 U19-251153	2.0	1.3	1.0	1.3	1.3	2.0		1.0
24 U19-252167	2.5	1.5	1.0	1.3	1.5	1.5		1.0
25 U20-913091	2.0	2.0	1.0	1.5	2.0	2.5		1.5

## 2022 SCN PRELIMINARY TEST IIIA

### Height (inches)

Strain	Ames IA 2.5.7	Urbana IL 2.5.7	Man- hattan KS 7	Albany MO 1.2.5.7	Columbia MO 2.5.7	Novelty MO 1.2.5.7	Phillips NE 2.5.7	Cook NE NI
1 LD11-2170 (SCN)	33	37	31	28	27	22		
2 U15-606207 (SCN)	34	33	33	27	28	27		
3 LD07-3395bf (SCN)	35	34	32	28	26	25		
4 U14-910097 (SCN)	37	32	31	29	28	26		
5 A16203-92	34	33	31	26	27	26		
6 A16204-92	36	32	33	27	26	29		
7 A16204-93	35	36	34	34	31	24		
8 A16212-25	37	38	39	34	31	30		
9 LD19-1957	38	36	35	33	32	26		
10 LD19-7156	35	34	32	28	28	26		
11 U19-048025	30	33	29	25	23	26		
12 U19-050115	37	37	35	33	31	24		
13 U19-063133	32	36	32	29	34	24		
14 U19-064130	33	35	32	30	28	24		
15 U19-072078	32	33	33	28	29	23		
16 U19-074083	35	32	31	31	29	27		
17 U19-077092	34	33	32	31	27	27		
18 U19-078104	31	33	29	25	28	25		
19 U19-220018	36	35	36	32	33	25		
20 U19-221019	39	37	36	37	34	28		
21 U19-221027	36	36	36	34	31	25		
22 U19-251138	37	35	32	30	32	31		
23 U19-251153	36	34	33	32	28	27		
24 U19-252167	34	32	32	27	28	23		
25 U20-913091	41	45	38	40	35	36		



## 2022 SCN PRELIMINARY TEST IIIA

### Seed Weight (g/100)

Strain	Ames IA 2.5.7	Urbana IL 2.5.7	Man- hattan KS 7	Albany MO 1.2.5.7	Columbia MO 2.5.7	Novelty MO 1.2.5.7	Phillips NE 2.5.7	Cook NE NI
1 LD11-2170 (SCN)	17.0	17.5	12.8		16.9		17.1	
2 U15-606207 (SCN)	16.2	17.7	15.3		17.4		15.6	
3 LD07-3395bf (SCN)	16.4	17.5	14.4		17.9		16.8	
4 U14-910097 (SCN)	15.9	16.3	14.0		17.0		15.8	
5 A16203-92	13.9	14.2	12.3		14.0		14.2	
6 A16204-92	15.6	15.6	15.1		16.2		16.1	
7 A16204-93	15.6	15.3	12.8		15.5		15.3	
8 A16212-25	16.0	17.4	14.1		16.3		16.6	
9 LD19-1957	17.5	18.4	15.3		18.8		18.0	
10 LD19-7156	14.3	14.6	12.7		15.6		15.5	
11 U19-048025	15.2	16.4	14.2		15.7		15.1	
12 U19-050115	16.1	17.0	15.3		17.1		16.4	
13 U19-063133	17.1	19.0	13.7		17.1		15.7	
14 U19-064130	16.0	16.2	13.5		15.6		16.5	
15 U19-072078	17.6	18.2	14.5		17.1		16.7	
16 U19-074083	14.4	15.2	12.8		16.5		13.8	
17 U19-077092	16.4	17.3	15.1		17.3		16.1	
18 U19-078104	17.1	17.0	14.7		16.7		16.8	
19 U19-220018	17.0	17.4	15.0		17.7		16.8	
20 U19-221019	15.3	15.8	14.0		16.0		15.1	
21 U19-221027	16.4	17.7	15.7		18.2		16.2	
22 U19-251138	16.0	16.8	15.9		18.3		15.9	
23 U19-251153	16.4	17.0	13.9		16.6		16.5	
24 U19-252167	16.0	17.2	15.4		19.0		17.0	
25 U20-913091	17.4	18.5	15.0		17.7		18.4	

## 2022 SCN PRELIMINARY TEST IIIA

### Seed Quality (score)

Strain	Ames IA 2.5.7	Urbana IL 2.5.7	Man- hattan KS 7	Albany MO 1.2.5.7	Columbia MO 2.5.7	Novelty MO 1.2.5.7	Phillips NE 2.5.7	Cook NE NI
1 LD11-2170 (SCN)	2.0	1.0	2.0		1.0		1.0	
2 U15-606207 (SCN)	1.5	2.0	2.0		1.0		1.0	
3 LD07-3395bf (SCN)	2.0	2.0	2.0		1.0		1.0	
4 U14-910097 (SCN)	2.0	2.0	2.0		2.0		1.0	
5 A16203-92	2.0	2.0	1.0		1.0		1.0	
6 A16204-92	2.0	2.0	2.0		1.0		1.0	
7 A16204-93	2.0	1.0	2.0		2.0		1.0	
8 A16212-25	2.0	2.0	3.0		1.0		1.0	
9 LD19-1957	2.0	1.0	2.0		1.0		1.0	
10 LD19-7156	2.0	2.0	2.0		2.0		1.0	
11 U19-048025	1.0	1.0	2.0		1.0		1.0	
12 U19-050115	2.0	2.0	2.0		1.0		1.0	
13 U19-063133	1.0	2.0	1.0		1.0		1.0	
14 U19-064130	2.0	2.0	1.0		1.0		1.0	
15 U19-072078	1.0	2.0	2.0		2.0		1.0	
16 U19-074083	2.5	2.0	2.0		1.0		1.0	
17 U19-077092	1.0	2.0	2.0		1.0		1.0	
18 U19-078104	2.0	1.0	2.0		1.0		1.0	
19 U19-220018	2.0	2.0	2.0		2.0		1.0	
20 U19-221019	1.0	2.0	2.0		2.0		1.0	
21 U19-221027	2.0	2.0	2.0		1.0		1.0	
22 U19-251138	1.5	2.0	2.0		2.0		1.0	
23 U19-251153	1.0	2.0	2.0		1.0		1.0	
24 U19-252167	2.5	1.0	2.0		1.0		1.0	
25 U20-913091	2.0	2.0	3.0		2.0		1.0	

## 2022 SCN PRELIMINARY TEST IIIA

Strain	Protein (%)							
	Ames IA 2.5.7	Urbana IL 2.5.7	Man- hattan KS 7	Albany MO 1.2.5.7	Columbia MO 2.5.7	Novelty MO 1.2.5.7	Phillips NE 2.5.7	Cook NE NI
1 LD11-2170 (SCN)	34.0	35.1	35.2		34.1		34.6	
2 U15-606207 (SCN)	31.9	34.4	33.2		33.7		32.8	
3 LD07-3395bf (SCN)	31.7	33.6	32.3		32.7		32.7	
4 U14-910097 (SCN)	33.0	34.4	33.5		34.1		32.8	
5 A16203-92	33.6	36.5	34.4		35.2		33.7	
6 A16204-92	32.6	34.3	33.7		33.7		33.2	
7 A16204-93	31.6	34.1	33.3		33.8		33.3	
8 A16212-25	33.8	35.1	35.6		35.1		34.0	
9 LD19-1957	33.8	34.0	33.2		34.4		33.6	
10 LD19-7156	32.5	35.7	34.1		34.7		32.4	
11 U19-048025	32.4	34.0	33.1		33.9		32.5	
12 U19-050115	32.1	34.3	32.5		33.5		32.6	
13 U19-063133	33.2	34.9	34.0		34.7		32.9	
14 U19-064130	32.5	33.7	33.3		33.8		33.2	
15 U19-072078	33.0	34.6	34.0		34.3		33.7	
16 U19-074083	33.3	35.3	31.7		34.4		33.8	
17 U19-077092	34.1	35.4	33.4		35.2		34.1	
18 U19-078104	33.0	33.3	33.2		35.3		33.0	
19 U19-220018	31.3	34.6	32.4		34.1		32.4	
20 U19-221019	32.1	32.9	32.6		32.6		32.0	
21 U19-221027	32.5	34.6	32.0		33.7		33.2	
22 U19-251138	32.4	34.3	32.7		33.4		33.6	
23 U19-251153	32.9	34.0	33.0		33.6		32.9	
24 U19-252167	32.5	34.3	33.7		35.1		33.5	
25 U20-913091	34.0	33.9	34.6		35.2		34.2	

## 2022 SCN PRELIMINARY TEST IIIA

### Oil (%)

Strain	Ames IA 2.5.7	Urbana IL 2.5.7	Man- hattan KS 7	Albany MO 1.2.5.7	Columbia MO 2.5.7	Novelty MO 1.2.5.7	Phillips NE 2.5.7	Cook NE NI
1 LD11-2170 (SCN)	19.9	19.3	20.5		20.8		19.2	
2 U15-606207 (SCN)	19.9	19.2	21.2		20.9		20.0	
3 LD07-3395bf (SCN)	19.6	19.1	21.1		20.9		19.8	
4 U14-910097 (SCN)	19.8	19.9	21.0		20.7		20.0	
5 A16203-92	17.7	17.2	18.8		18.8		18.5	
6 A16204-92	19.3	19.0	20.3		20.0		20.1	
7 A16204-93	18.5	17.9	19.3		18.9		17.7	
8 A16212-25	19.3	18.9	20.9		20.5		19.4	
9 LD19-1957	20.1	19.7	21.0		20.8		19.6	
10 LD19-7156	19.4	17.6	20.3		19.9		19.0	
11 U19-048025	19.7	18.4	21.0		19.8		19.2	
12 U19-050115	19.1	18.7	20.9		19.5		18.8	
13 U19-063133	18.8	18.1	20.0		20.1		18.7	
14 U19-064130	19.3	18.8	20.2		20.5		19.3	
15 U19-072078	19.2	19.3	21.2		21.0		19.4	
16 U19-074083	18.8	18.4	21.1		19.9		19.0	
17 U19-077092	19.3	18.8	21.1		20.1		19.0	
18 U19-078104	19.1	19.5	20.8		19.6		19.3	
19 U19-220018	20.5	19.3	21.6		20.7		19.4	
20 U19-221019	19.9	20.3	21.8		21.8		19.5	
21 U19-221027	20.2	19.7	22.6		20.8		19.0	
22 U19-251138	19.5	18.9	20.6		19.8		18.3	
23 U19-251153	19.7	19.3	21.5		21.4		19.4	
24 U19-252167	20.3	19.7	20.6		20.3		19.3	
25 U20-913091	18.3	19.6	19.9		19.5		18.6	

## 2022 SCN PRELIMINARY TEST IIIB

Strain	Descriptive code	Parentage
1 LD11-2170 (SCN)	PLtbr	Syngenta 03JR313108 x LD05-3171
2 U15-606207 (SCN)	PGbf	LD07-3419 x U09-105007
3 LD07-3395bf (SCN)	WGbf	Syngenta WW115926 x LD00-2817
4 U14-910097 (SCN)	PGbf	U09-105007 x LD07-3419
5 LD19-2650	PLtbr	LD13-3483 x LD11-2170
6 LD19-5690	WLtbr	LD12-6010a x LD11-2170
7 LD19-6357	P+WGbf/ibl	U13-912010 x LD11-2170
8 LD19-6363	PGbf/ibl	U13-912010 x LD11-2170
9 LD19-6534	PLtbr	U14-925152 x LD11-2170
10 LD19-6606	PLtbr	U14-925152 x LD11-2170
11 LD19-6607	PLtbr	U14-925152 x LD11-2170
12 LD19-6615	PGibl	U14-925152 x LD11-2170
13 LD19-8565	P+WLtbl	LD07-3395bf x LD11-2170
14 LD19-9093	PLtLbl	SA13-1385 x U14-924158
15 LD19-9742	WLtbl	LD07-3395bf x U11-494100
16 LD19-10182	P+WLtbl	U11-494100 x LD13-8769
17 LD20-5524	PLtbr	LD11-2170 x LD12-3903
18 SA19-10016	PLtbl	SA13-1310 x LD11-2170
19 SA19-10777	PGibl	SA13-2926 x LD11-2170
20 SA19-12541	PLtbr	U14-924158 x LD11-2170
21 SA19-28597	PLtbl	SA13-1385 x U14-924158
22 SA19-28698	PLtbl	SA13-1385 x U14-211226
23 SA19-9788	WLtbl/br	SA13-2489 x LD11-2170
24 SA19-9915	WLtbr	SA13-2489 x LD11-2170

## 2022 SCN PRELIMINARY TEST IIIB

Strain	Gen comp	Cooperator reported SCN resistance source	Cooperator reported Traits
1 LD11-2170 (SCN)	F5	PI 88788	
2 U15-606207 (SCN)	F5	PI 88788,437654	Rps
3 LD07-3395bf (SCN)	F5	PI 88788,437654	
4 U14-910097 (SCN)	F5	PI 88788,437654	
5 LD19-2650	F5	PI 88788	
6 LD19-5690	F5	PI 88788	
7 LD19-6357	F5	PI 88788	
8 LD19-6363	F5	PI 88788	
9 LD19-6534	F5	PI 88788,437654	
10 LD19-6606	F5	PI 88788,437654	
11 LD19-6607	F5	PI 88788,437654	
12 LD19-6615	F5	PI 88788,437654	
13 LD19-8565	F5	PI 88788,437654	
14 LD19-9093	F5	PI 88788,437654	
15 LD19-9742	F4	PI 88788,437654	
16 LD19-10182	F5	PI 88788	soja scn
17 LD20-5524	F4	PI 88788	
18 SA19-10016	F5	Rhg1b	Rhg1b, Rps1k, SC
19 SA19-10777	F5	Rhg1b	Rhg1b, Rps1k, SC
20 SA19-12541	F5	Rhg1a+Rhg4	Rhg1a, Rhg4, BSR, SC
21 SA19-28597	F5	Rhg1a+Rhg4	Rhg1a, Rhg4, SC
22 SA19-28698	F5	Rhg1b	Rhg1b, Rps1k, SC
23 SA19-9788	F5	Rhg1a+Rhg2	Rhg1a, Rhg2, Rps1k
24 SA19-9915	F5	Rhg1a+Rhg2	Rhg1a, Rhg2, Rps1k, BSR

## 2022 SCN PRELIMINARY TEST IIIB

### Disease Screening

Strain	SNP marker analysis			
	SCN			
	88788	Peking	Rhg4	
1 LD11-2170 (SCN)				
2 U15-606207 (SCN)				
3 LD07-3395bf (SCN)				
4 U14-910097 (SCN)				
5 LD19-2650	S	.	S	
6 LD19-5690	R	S	S	
7 LD19-6357	R	S	S	
8 LD19-6363	R	S	S	
10 LD19-6534	R	S	S	
11 LD19-6606	R	S	Het	
12 LD19-6607	R	S	Het	
13 LD19-6615	R	S	S	
14 LD19-8565	R	S	S	
15 LD19-9093	.	S	R	
16 LD19-9742	S	R	R	
17 LD19-10182	S	Het	S	
18 LD20-5524	R	S	S	
19 SA19-10016	R	S	S	
20 SA19-10777	R	S	S	
21 SA19-12541	S	R	.	
22 SA19-28597	.	.	.	
23 SA19-28698	R	S	S	
24 SA19-9788	S	R	S	
25 SA19-9915	S	R	S	

## 2022 SCN PRELIMINARY TEST IIIB

### Predicted resistance genes based on SNP marker analysis

Strain	SCN	Iron Chlorosis	Phytophthora	BSR	FLS	SC
1 LD11-2170 (SCN)						
2 U15-606207 (SCN)						
3 LD07-3395bf (SCN)						
4 U14-910097 (SCN)						
5 LD19-2650	none	R-(LgN+Ch13)	Het-Rps1k	R	S	R
6 LD19-5690	Rhg1_PI88788	R-LgN	Het-Rps1k	Het	S	R
7 LD19-6357	Rhg1_PI88788		Rps1k	S	S	R
8 LD19-6363	Rhg1_PI88788	R-(LgN+Ch13)	Rps1k	S	S	R
9 LD19-6534	Rhg1_PI88788	R-(LgN+Ch13)		R	S	R
10 LD19-6606	Rhg1_PI88788	R-LgN	Het-Rps1k	R	S	R
11 LD19-6607	Rhg1_PI88788	R-(LgN+Ch13)	Het-Rps1k	R	S	R
12 LD19-6615	Rhg1_PI88788	R-LgN	Rps1k	R	S	R
13 LD19-8565	Rhg1_PI88788	R-(LgN+Ch13)	Rps1k	S	S	R
14 LD19-9093	Rhg4	R-Ch13		Het	S	R
15 LD19-9742	Rhg1-Peking+Rhg4	R-Ch13	Rps1c	S	S	R
16 LD19-10182	Het-Rhg1-Peking	Het-LgN + R-Ch13		S	S	R
17 LD20-5524	Rhg1_PI88788	R-(LgA1+LgN+Ch13)	Rps1k	R	S	R
18 SA19-10016	Rhg1_PI88788	R-(LgN+Ch13)	Rps1k	S	S	R
19 SA19-10777	Rhg1_PI88788		Rps1k	S	S	R
20 SA19-12541	Rhg1-Peking	R-LgN		R	S	R
21 SA19-28597	no data	Het-LgA1 + R-Ch13		S	S	R
22 SA19-28698	Rhg1_PI88788	R-Ch13	Rps1k	S	S	R
23 SA19-9788	Rhg1-Peking	R-(LgN+Ch13)	Het-Rps1k	S	S	R
24 SA19-9915	Rhg1-Peking	R-(LgN+Ch13)	Rps1k	R	S	R

BSR=Brown Leaf Spot, FLS=Frogeye Leaf Spot, SC=Stem Canker



## 2022 SCN PRELIMINARY TEST IIIB

### Summary

	Yield						Seed							
	All		Infested		Non-infested		Maturity	Lodging	Height	weight	quality	protein	oil	
	bu/a	rank	bu/a	rank	bu/a	rank	date	score	inches	g/100	score	@13%	@13%	
Locations	8		7		1		8	7	7	5	5	5	5	
1 LD11-2170 (SCN)	62.8	5	60.1	12	81.2	6	10/03	1.3	31	16.3	1.6	34.8	20.0	
2 U15-606207 (SCN)	62.2	10	59.2	16	83.2	4	3	1.4	30	16.5	1.6	33.7	19.9	
3 LD07-3395bf (SCN)	66.6	2	64.0	2	84.3	3	4	1.6	30	16.3	1.4	32.7	20.1	
4 U14-910097 (SCN)	67.5	1	66.4	1	75.2	10	0	1.6	30	16.0	1.2	33.6	20.3	
5 LD19-2650	62.7	8	59.9	13	82.6	5	1	1.2	30	16.5	1.4	34.8	19.2	
6 LD19-5690	62.5	9	60.7	9	75.5	9	0	1.3	30	16.4	1.6	35.0	19.4	
7 LD19-6357	58.2	21	56.1	22	72.6	14	-2	1.4	31	18.2	1.6	34.5	20.1	
8 LD19-6363	58.7	20	58.7	19	58.4	21	-2	1.1	29	16.8	1.4	34.0	20.0	
9 LD19-6534	62.2	10	61.1	7	70.2	19	-1	1.3	32	16.5	1.5	33.9	19.7	
10 LD19-6606	59.8	19	62.1	4	43.7	23	0	1.1	33	17.4	1.4	34.3	20.4	
11 LD19-6607	55.5	23	57.6	21	41.0	24	-1	1.4	32	17.6	1.5	34.8	20.5	
12 LD19-6615	62.8	5	61.4	6	72.6	14	-1	1.3	32	15.6	1.4	33.9	20.5	
13 LD19-8565	61.9	14	60.2	10	73.5	13	2	1.4	32	16.7	1.5	34.3	20.0	
14 LD19-9093	62.2	10	60.2	10	75.8	8	3	1.6	35	15.5	1.8	33.4	18.7	
15 LD19-9742	60.7	17	59.0	17	72.2	17	4	1.4	33	15.2	1.8	33.1	19.3	
16 LD19-10182	61.1	16	59.6	14	72.1	18	3	1.3	34	16.0	1.8	33.9	18.6	
17 LD20-5524	64.8	3	63.2	3	76.1	7	3	1.6	33	17.2	1.6	34.5	19.5	
18 SA19-10016	64.1	4	61.1	7	85.1	2	3	1.4	33	14.4	1.6	33.9	19.8	
19 SA19-10777	62.1	13	58.8	18	85.5	1	1	1.2	28	17.0	1.4	32.7	20.0	
20 SA19-12541	62.8	5	61.9	5	69.6	20	3	1.4	30	14.0	1.4	32.0	20.5	
21 SA19-28597	61.2	15	59.3	15	74.5	11	3	1.6	32	15.0	1.2	32.9	19.6	
22 SA19-28698	59.9	18	58.0	20	72.6	14	4	1.3	28	17.8	1.2	33.6	18.6	
23 SA19-9788	51.9	24	52.3	24	49.0	22	2	1.4	30	15.7	1.3	33.5	20.0	
24 SA19-9915	56.0	22	53.4	23	74.4	12	3	1.2	28	14.5	1.6	34.4	19.1	
Mean	61.3		59.8		71.7		1.5	1.4	31.1	16.2	1.5	33.8	19.7	
C.V. %	9.0		8.9		9.5									
LSD(.05)	3.8		4.0		16.8									
Replications	16		14		2									

## 2022 SCN PRELIMINARY TEST IIIB

### Yield (bu/a)

Strain	Ames	Urbana	Man-	Albany	Columbia	Novelty	Phillips	Cook
	IA	IL	hattan	MO	MO	MO	NE	NE
	2.5.7	2.5.7	7	1.2.5.7	2.5.7	Inf	2.5.7	NI
1 LD11-2170 (SCN)	61.8	73.0	51.2	53.3	69.0	39.5	73.2	81.2
2 U15-606207 (SCN)	54.6	71.2	56.4	53.3	74.6	37.0	67.6	83.2
3 LD07-3395bf (SCN)	68.2	69.4	59.0	57.5	74.5	40.8	79.0	84.3
4 U14-910097 (SCN)	64.7	74.7	49.5	63.4	81.3	50.7	80.5	75.2
5 LD19-2650	55.7	57.3	50.4	65.7	67.1	49.4	73.6	82.6
6 LD19-5690	63.8	68.0	41.9	66.1	69.2	42.2	73.6	75.5
7 LD19-6357	54.0	62.0	44.0	55.8	68.7	37.9	70.6	72.6
8 LD19-6363	60.4	55.2	49.9	57.5	69.3	45.6	73.1	58.4
9 LD19-6534	66.7	63.0	47.6	64.8	67.6	39.3	78.7	70.2
10 LD19-6606	69.4	61.9	53.1	55.1	70.6	48.5	76.4	43.7
11 LD19-6607	67.1	52.6	45.6	55.2	68.6	44.8	69.2	41.0
12 LD19-6615	64.1	64.1	54.1	65.4	68.3	45.1	68.9	72.6
13 LD19-8565	55.3	67.0	56.8	63.2	67.3	45.2	66.6	73.5
14 LD19-9093	61.2	60.1	51.4	66.9	67.9	49.0	65.2	75.8
15 LD19-9742	58.6	68.5	43.1	68.1	64.3	43.4	67.1	72.2
16 LD19-10182	63.5	62.0	41.0	58.0	77.4	46.4	68.8	72.1
17 LD20-5524	65.2	66.8	57.3	63.1	65.4	51.7	72.9	76.1
18 SA19-10016	57.2	63.3	46.4	67.4	71.4	41.4	80.4	85.1
19 SA19-10777	59.5	56.2	49.8	58.8	71.5	45.8	69.9	85.5
20 SA19-12541	60.9	58.7	59.3	56.4	77.9	42.5	77.3	69.6
21 SA19-28597	55.6	61.6	53.6	59.2	75.3	35.4	74.1	74.5
22 SA19-28698	46.6	58.3	57.5	62.2	69.1	43.9	68.7	72.6
23 SA19-9788	51.8	57.0	39.2	56.9	61.0	32.0	68.1	49.0
24 SA19-9915	48.3	41.8	43.7	60.9	71.3	41.0	66.7	74.4
Mean	59.8	62.2	50.1	60.5	70.4	43.4	72.1	71.7
C.V. %	10.3	9.4	9.2	7.0	8.7	13.3	5.7	9.5
LSD(2-sided,.05)	12.8	12.0	8.7	8.7	12.6	9.9	10.1	16.8
Replications	2	2	2	2	2	2	2	2
Row spacing (in.)	30	30	30	30	30	30	30	30

## 2022 SCN PRELIMINARY TEST IIIB

### Yield (rank)

Strain	Ames	Urbana	Man-	Albany	Columbia	Novelty	Phillips	Cook
	IA 2.5.7	IL 2.5.7	hattan KS 7	MO 1.2.5.7	MO 2.5.7	MO 1.2.5.7	NE 2.5.7	NE NI
1 LD11-2170 (SCN)	10	2	7	23	14	19	10	6
2 U15-606207 (SCN)	20	3	6	23	5	22	20	4
3 LD07-3395bf (SCN)	2	4	2	16	6	18	3	3
4 U14-910097 (SCN)	6	1	15	8	1	2	1	10
5 LD19-2650	17	19	12	5	21	3	8	5
6 LD19-5690	8	6	22	4	12	15	9	9
7 LD19-6357	21	12	19	20	15	21	13	14
8 LD19-6363	13	22	13	16	11	8	11	21
9 LD19-6534	4	11	16	7	19	20	4	19
10 LD19-6606	1	14	9	22	10	5	6	23
11 LD19-6607	3	23	18	21	16	11	15	24
12 LD19-6615	7	9	7	6	17	10	16	15
13 LD19-8565	19	7	5	9	20	9	23	13
14 LD19-9093	11	16	10	3	18	4	24	8
15 LD19-9742	15	5	21	1	23	13	21	17
16 LD19-10182	9	12	23	15	3	6	17	18
17 LD20-5524	5	8	4	10	22	1	12	7
18 SA19-10016	16	10	17	2	8	16	2	2
19 SA19-10777	14	21	14	14	7	7	14	1
20 SA19-12541	12	17	1	19	2	14	5	20
21 SA19-28597	18	15	8	13	4	23	7	11
22 SA19-28698	24	18	3	11	13	12	18	16
23 SA19-9788	22	20	24	18	24	24	19	22
24 SA19-9915	23	24	20	12	9	17	22	12

## 2022 SCN PRELIMINARY TEST IIIB

### Maturity

Strain	Ames IA 2.5.7	Urbana IL 2.5.7	Man- hattan KS 7	Albany MO 1.2.5.7	Columbia MO 2.5.7	Novelty MO 1.2.5.7	Phillips NE 2.5.7	Cook NE NI
1 LD11-2170 (SCN)	10/7	9/24	10/02	10/09	9/29	10/07	10/06	10/01
2 U15-606207 (SCN)	2	4	1	0	6	3	0	7
3 LD07-3395bf (SCN)	2	5	3	1	5	4	2	10
4 U14-910097 (SCN)	0	-1	0	0	3	-3	-1	2
5 LD19-2650	2	1	1	1	2	-1	1	3
6 LD19-5690	2	-1	-1	0	1	-4	-1	1
7 LD19-6357	0	-2	1	-7	-1	-4	-1	1
8 LD19-6363	0	-3	0	-5	-1	-5	-2	1
9 LD19-6534	-1	-1	1	-1	1	-4	-3	-1
10 LD19-6606	1	0	2	1	-1	1	-1	-1
11 LD19-6607	0	-1	0	1	-1	-4	-1	-1
12 LD19-6615	0	0	0	-1	-1	-3	-2	-1
13 LD19-8565	2	6	3	1	4	1	0	2
14 LD19-9093	3	7	0	2	3	-2	1	10
15 LD19-9742	4	7	4	1	4	2	2	7
16 LD19-10182	3	9	0	0	4	-1	-1	6
17 LD20-5524	2	5	0	1	3	2	4	9
18 SA19-10016	2	7	1	1	3	-1	2	6
19 SA19-10777	2	0	0	1	3	0	1	3
20 SA19-12541	3	5	2	1	3	4	1	6
21 SA19-28597	3	7	1	1	3	4	1	4
22 SA19-28698	2	9	1	2	3	4	5	8
23 SA19-9788	2	4	0	1	4	-1	1	2
24 SA19-9915	2	8	0	1	4	3	2	6
Planted	6/04	5/17	6/17	6/21	6/07	6/16	5/31	6/02

## 2022 SCN PRELIMINARY TEST IIIB

### Lodging (score)

Strain	Ames IA 2.5.7	Urbana IL 2.5.7	Man- hattan KS 7	Albany MO 1.2.5.7	Columbia MO 2.5.7	Novelty MO 1.2.5.7	Phillips NE 2.5.7	Cook NE NI
1 LD11-2170 (SCN)	1.0	1.3	1.0	1.5	2.0	1.5		1.0
2 U15-606207 (SCN)	2.0	1.8	1.0	1.3	1.5	1.5		1.0
3 LD07-3395bf (SCN)	2.0	1.5	1.5	1.8	1.8	1.5		1.0
4 U14-910097 (SCN)	2.0	1.5	1.5	1.8	1.8	1.5		1.0
5 LD19-2650	1.5	1.0	1.0	1.0	1.5	1.5		1.0
6 LD19-5690	1.5	1.3	1.0	1.5	1.5	1.5		1.0
7 LD19-6357	2.0	1.0	1.0	1.5	1.5	1.5		1.0
8 LD19-6363	1.0	1.0	1.0	1.3	1.3	1.5		1.0
9 LD19-6534	2.0	1.0	1.0	1.5	1.3	1.5		1.0
10 LD19-6606	1.0	1.0	1.0	1.0	1.3	1.5		1.0
11 LD19-6607	1.5	1.0	1.5	1.3	1.8	1.5		1.0
12 LD19-6615	1.5	1.0	1.0	1.5	1.3	1.5		1.0
13 LD19-8565	1.5	1.5	1.5	1.3	1.3	1.5		1.0
14 LD19-9093	2.0	1.5	1.5	1.8	1.8	2.0		1.0
15 LD19-9742	1.5	1.3	1.0	1.8	1.5	1.5		1.0
16 LD19-10182	1.5	1.3	1.0	1.3	1.5	1.5		1.0
17 LD20-5524	1.5	1.5	1.0	1.8	2.3	2.0		1.0
18 SA19-10016	1.5	1.5	1.5	1.3	1.5	1.5		1.0
19 SA19-10777	1.5	1.0	1.0	1.0	1.5	1.5		1.0
20 SA19-12541	2.0	1.5	1.0	1.0	1.5	1.5		1.0
21 SA19-28597	2.0	1.3	1.5	1.8	2.0	1.5		1.0
22 SA19-28698	1.5	1.3	1.0	1.3	1.5	1.5		1.0
23 SA19-9788	2.0	1.3	1.0	1.3	1.8	1.5		1.0
24 SA19-9915	1.5	1.0	1.0	1.0	1.5	1.5		1.0

## 2022 SCN PRELIMINARY TEST IIIB

### Height (inches)

Strain	Ames IA 2.5.7	Urbana IL 2.5.7	Man- hattan KS 7	Albany MO 1.2.5.7	Columbia MO 2.5.7	Novelty MO 1.2.5.7	Phillips NE 2.5.7	Cook NE NI
1 LD11-2170 (SCN)	35	36	33	29	29	22		33
2 U15-606207 (SCN)	34	34	32	29	29	25		31
3 LD07-3395bf (SCN)	36	34	31	29	28	23		32
4 U14-910097 (SCN)	34	33	31	30	29	22		30
5 LD19-2650	35	31	32	31	28	24		30
6 LD19-5690	35	35	30	31	28	23		32
7 LD19-6357	35	35	30	30	30	25		31
8 LD19-6363	35	32	30	29	28	22		29
9 LD19-6534	37	32	35	33	29	28		30
10 LD19-6606	38	35	34	31	31	27		33
11 LD19-6607	37	33	32	33	31	29		31
12 LD19-6615	35	35	32	32	29	27		33
13 LD19-8565	35	36	34	33	29	28		32
14 LD19-9093	40	39	37	34	32	29		33
15 LD19-9742	34	36	32	34	32	28		32
16 LD19-10182	36	38	34	33	32	26		36
17 LD20-5524	37	35	31	33	30	27		36
18 SA19-10016	37	38	35	34	30	26		34
19 SA19-10777	29	28	28	27	27	24		32
20 SA19-12541	36	31	29	29	30	25		33
21 SA19-28597	37	35	33	33	31	25		31
22 SA19-28698	27	31	29	30	29	24		30
23 SA19-9788	34	32	29	31	31	27		30
24 SA19-9915	30	27	28	29	27	24		33

## 2022 SCN PRELIMINARY TEST IIIB

### Seed Weight (g/100)

Strain	Ames IA 2.5.7	Urbana IL 2.5.7	Man- hattan KS 7	Albany MO 1.2.5.7	Columbia MO 2.5.7	Novelty MO 1.2.5.7	Phillips NE 2.5.7	Cook NE NI
1 LD11-2170 (SCN)	16.6	17.4	14.0		16.6		17.1	
2 U15-606207 (SCN)	17.4	17.4	13.2		18.3		16.2	
3 LD07-3395bf (SCN)	16.6	16.9	13.1		18.1		16.8	
4 U14-910097 (SCN)	16.5	16.7	13.2		17.1		16.6	
5 LD19-2650	17.0	17.4	13.2		17.7		17.0	
6 LD19-5690	17.0	17.4	13.6		17.1		16.9	
7 LD19-6357	18.9	19.0	15.2		19.1		18.9	
8 LD19-6363	16.7	17.5	14.6		17.8		17.5	
9 LD19-6534	16.2	17.4	15.0		16.9		16.8	
10 LD19-6606	18.0	18.9	14.9		18.2		17.2	
11 LD19-6607	18.5	18.8	14.3		19.1		17.4	
12 LD19-6615	16.4	17.0	12.6		16.4		15.8	
13 LD19-8565	16.2	17.4	15.0		18.3		16.8	
14 LD19-9093	15.3	17.1	13.8		16.9		14.5	
15 LD19-9742	15.2	16.0	12.5		16.9		15.2	
16 LD19-10182	16.6	17.0	12.7		17.7		15.9	
17 LD20-5524	17.6	19.0	13.6		18.3		17.5	
18 SA19-10016	15.0	15.3	12.2		15.0		14.6	
19 SA19-10777	16.9	18.0	13.8		18.4		18.0	
20 SA19-12541	13.8	15.3	11.8		15.6		13.4	
21 SA19-28597	14.7	16.4	12.3		17.3		14.5	
22 SA19-28698	18.3	18.9	15.3		19.7		16.8	
23 SA19-9788	16.4	16.5	12.9		16.9		15.9	
24 SA19-9915	15.1	15.8	11.2		15.9		14.4	

## 2022 SCN PRELIMINARY TEST IIIB

### Seed Quality (score)

Strain	Ames IA 2.5.7	Urbana IL 2.5.7	Man- hattan KS 7	Albany MO 1.2.5.7	Columbia MO 2.5.7	Novelty MO 1.2.5.7	Phillips NE 2.5.7	Cook NE NI
1 LD11-2170 (SCN)	2.0	2.0	2.0		1.0		1.0	
2 U15-606207 (SCN)	2.0	2.0	2.0		1.0		1.0	
3 LD07-3395bf (SCN)	1.0	2.0	2.0		1.0		1.0	
4 U14-910097 (SCN)	2.0	1.0	1.0		1.0		1.0	
5 LD19-2650	1.0	1.0	3.0		1.0		1.0	
6 LD19-5690	2.0	2.0	2.0		1.0		1.0	
7 LD19-6357	2.0	2.0	2.0		1.0		1.0	
8 LD19-6363	1.0	2.0	2.0		1.0		1.0	
9 LD19-6534	2.5	2.0	1.0		1.0		1.0	
10 LD19-6606	2.0	1.0	2.0		1.0		1.0	
11 LD19-6607	1.5	2.0	2.0		1.0		1.0	
12 LD19-6615	2.0	1.0	2.0		1.0		1.0	
13 LD19-8565	1.5	1.0	2.0		2.0		1.0	
14 LD19-9093	2.0	2.0	3.0		1.0		1.0	
15 LD19-9742	2.0	2.0	2.0		2.0		1.0	
16 LD19-10182	2.0	2.0	2.0		2.0		1.0	
17 LD20-5524	1.0	1.0	3.0		2.0		1.0	
18 SA19-10016	2.0	2.0	2.0		1.0		1.0	
19 SA19-10777	1.0	2.0	1.0		2.0		1.0	
20 SA19-12541	2.0	1.0	2.0		1.0		1.0	
21 SA19-28597	2.0	1.0	1.0		1.0		1.0	
22 SA19-28698	1.0	1.0	2.0		1.0		1.0	
23 SA19-9788	1.5	1.0	2.0		1.0		1.0	
24 SA19-9915	2.0	2.0	2.0		1.0		1.0	



## 2022 SCN PRELIMINARY TEST IIIB

Strain	Protein (%)							
	Ames IA 2.5.7	Urbana IL 2.5.7	Man- hattan KS 7	Albany MO 1.2.5.7	Columbia MO 2.5.7	Novelty MO 1.2.5.7	Phillips NE 2.5.7	Cook NE NI
1 LD11-2170 (SCN)	34.3	34.3	35.4		35.1		34.9	
2 U15-606207 (SCN)	31.2	34.4	33.6		35.8		33.4	
3 LD07-3395bf (SCN)	31.6	34.0	32.1		33.5		32.3	
4 U14-910097 (SCN)	32.8	33.5	32.9		35.7		32.9	
5 LD19-2650	33.3	35.1	34.8		35.7		35.1	
6 LD19-5690	33.7	35.0	35.8		35.3		35.1	
7 LD19-6357	33.5	35.0	34.9		33.8		35.4	
8 LD19-6363	32.1	34.5	35.1		34.9		33.6	
9 LD19-6534	32.6	34.3	34.5		34.5		33.8	
10 LD19-6606	33.6	34.8	34.4		34.9		34.0	
11 LD19-6607	34.6	35.7	34.5		34.9		34.3	
12 LD19-6615	33.0	35.5	33.7		33.9		33.5	
13 LD19-8565	33.1	35.6	33.6		35.2		34.1	
14 LD19-9093	32.0	33.6	33.8		34.9		32.7	
15 LD19-9742	30.9	33.9	34.0		34.0		32.8	
16 LD19-10182	32.2	35.2	34.9		34.7		32.7	
17 LD20-5524	33.2	34.9	34.2		35.2		34.9	
18 SA19-10016	33.1	34.5	34.0		34.3		33.5	
19 SA19-10777	31.3	33.5	32.9		33.5		32.4	
20 SA19-12541	31.4	31.7	32.3		32.4		32.1	
21 SA19-28597	30.8	33.7	33.3		33.6		32.9	
22 SA19-28698	32.6	34.2	33.1		34.9		33.3	
23 SA19-9788	33.5	33.6	34.3		33.0		33.0	
24 SA19-9915	34.5	35.3	35.0		34.6		32.7	

## 2022 SCN PRELIMINARY TEST IIIB

### Oil (%)

Strain	Ames IA 2.5.7	Urbana IL 2.5.7	Man- hattan KS 7	Albany MO 1.2.5.7	Columbia MO 2.5.7	Novelty MO 1.2.5.7	Phillips NE 2.5.7	Cook NE NI
1 LD11-2170 (SCN)	19.8	19.7	20.5		21.0		19.1	
2 U15-606207 (SCN)	19.9	19.3	20.5		20.2		19.8	
3 LD07-3395bf (SCN)	20.0	19.2	20.8		20.7		19.8	
4 U14-910097 (SCN)	20.4	20.0	22.0		19.7		19.7	
5 LD19-2650	19.7	18.9	19.6		19.9		18.1	
6 LD19-5690	19.7	18.7	19.6		20.5		18.6	
7 LD19-6357	19.7	19.5	21.1		21.4		18.8	
8 LD19-6363	20.0	19.6	20.9		20.0		19.3	
9 LD19-6534	19.8	19.3	19.9		20.4		19.3	
10 LD19-6606	19.6	20.1	21.4		21.1		19.9	
11 LD19-6607	21.1	19.2	21.6		21.2		19.5	
12 LD19-6615	20.5	18.8	21.2		21.8		20.0	
13 LD19-8565	19.8	18.7	21.7		20.5		19.3	
14 LD19-9093	17.7	17.6	21.8		18.6		17.7	
15 LD19-9742	19.3	18.8	19.8		19.8		18.5	
16 LD19-10182	18.6	17.4	19.4		18.7		18.9	
17 LD20-5524	19.6	18.5	20.9		19.7		19.0	
18 SA19-10016	18.9	19.3	21.4		21.0		18.7	
19 SA19-10777	19.6	19.3	20.9		20.7		19.5	
20 SA19-12541	20.3	20.4	21.4		21.2		19.4	
21 SA19-28597	19.9	18.7	20.5		20.1		18.6	
22 SA19-28698	18.3	17.8	19.9		19.0		17.8	
23 SA19-9788	19.7	19.5	20.4		21.2		19.5	
24 SA19-9915	19.0	18.1	19.1		19.9		19.6	

## 2022 SCN UNIFORM TEST IV

Strain	Descriptive code	Parentage	Previous testing
1 LD15-3818 (SCN)	PLtbl	LD09-3913 x Syngenta BN09002129	4
2 LD00-2817P (SCN)	PGibl	Ina x Dwight	13
3 LD07-3395bf (SCN)	WGbf	Syngenta WW115926 x LD00-2817	8
4 K17-6388	PLtbl	LG11-6208 x K11-2363T	2
5 K18-1247	WLtbl	LG11-6208 x K11-2363B	1
6 K18-1396	PGibl	LG11-2963 x K11-2363B	1
7 K18-2401	PGibl	LD09-30224 x K11-2363T	1
8 K19-1628	PLtbl	HM11-W192 x K11-2363B	NEW
9 K19-4225	PGibl	LG11-2963 x K11-2363B	NEW
10 K19-4248	PLtbl	LG11-2963 x K11-2363B	NEW
11 K19-4471	PLtbl	LG11-3370 x K11-2363B	NEW
12 K19-4777	PLtbl	LG10-12313 x K12-1355	NEW
13 K19-6003	PLtbl	LD06-7762 x K11-2363B	NEW
14 K19-6041	PLtbl	LD06-7762 x K11-2363B	NEW
15 K19-6079	PLtbl	LD06-7762 x K11-2363B	NEW
16 LD18-3068	WLtbl	LD13-3673 x U11-614093	1
17 LD18-4159	WLtbl	LD12-8677 x LG11-6760	1
18 LD19-4657	WGbf	LD13-3483 x LG11-6760	NEW
19 LD19-7948	PLtbr	LD13-3483 x LD12-3903	NEW
20 LD19-10076	PGibl	LD12-459 x LD13-8769	NEW
21 LD19-10244	WLtbl	LG12-2177 x LD13-8769	NEW
22 S19-10701C	WLtbl	S15-17108 x DA10x30-09F	NEW
23 SA18-10815	WLt+Gbf/br/y	LG11-6210 x SA13-2699	NEW
24 SA18-11346	PLtbr	SA13-3135 x LD11-2170	NEW
25 SA18-12086	WGbf	LD07-3395bf x SA13-1363	NEW
26 SA18-14143	PLtbl	SA13-1363 x LD11-2170	NEW
27 SA19-10248	PLtbl	SA13-1310 x LD11-2170	NEW
28 SA19-12580	PLtbr	U14-924158 x LD11-2170	NEW
29 SA19-7246	WLtbl	SA13-1385 x U14-924158	NEW

## 2022 SCN UNIFORM TEST IV

Strain	Gen comp	Cooperator reported SCN resistance source	Cooperator reported Traits	
1	LD15-3818 (SCN)	F5	PI 88788	
2	LD00-2817P (SCN)	F5	PI 88788, 437654	
3	LD07-3395bf (SCN)	F5	PI 88788, 437654	
4	K17-6388	F5	PI 88788	
5	K18-1247	F4	PI 88788	
6	K18-1396	F4	PI 88788	
7	K18-2401	F4	PI 88788	
8	K19-1628	F5	PI 88788	
9	K19-4225	F5	PI 88788	
10	K19-4248	F5	PI 88788	
11	K19-4471	F5	PI 88788	
12	K19-4777	F5	PI 88788	
13	K19-6003	F5	PI 88788	
14	K19-6041	F5	PI 88788	
15	K19-6079	F5	PI 88788	
16	LD18-3068	F5	PI 88788	
17	LD18-4159	F5	PI 88788	
18	LD19-4657	F5	PI 88788	
19	LD19-7948	F5	PI 88788	
20	LD19-10076	F5	PI 88788	scn soja
21	LD19-10244	F5	PI 88788	soja scn
22	S19-10701C		Peking	SCN, RKNT, SC
23	SA18-10815	F5	Rhg1b	Rhg1b,BSR,SC
24	SA18-11346	F5	Rhg1b	Rhg1b,SC
25	SA18-12086	F5	Rhg1a+Rhg4	Rhg1a,Rhg4,SC
26	SA18-14143	F5	Rhg1b	Rhg1b,BSR,SC
27	SA19-10248	F5	Rhg1b	Rhg1b,Rps1k,BSR,SC
28	SA19-12580	F5	Rhg1b	Rhg1b,BSR,SC
29	SA19-7246	F5	Rhg1b	Rhg1b,SC

## 2022 SCN UNIFORM TEST IV

### Disease Screening

Strain	Missouri SCN Screening						SNP marker analysis			Root
	HG 7		HG 2.5.7		HG 1.2.5.7		SCN			Knot
	Fl	rating	Fl	rating	Fl	rating	88788	Peking	Rhg4	
1 LD15-3818 (SCN)	10	R					R	S	S	S
2 LD00-2817P (SCN)	4	HR	1	HR	24	R	S	R	R	R
3 LD07-3395bf (SCN)	6	HR	9	HR	63	**	S	R	R	S
4 K17-6388	6	HR					R	S	S	S
5 K18-1247	23	R					R	S	S	S
6 K18-1396	13	R					R	S	S	S
7 K18-2401	3	HR					R	S	S	S
8 K19-1628	13	R					R	S	S	S
9 K19-4225	16	R					R	S	S	S
10 K19-4248	11	R					.	S	S	S
11 K19-4471	9	HR					R	S	S	S
12 K19-4777	18	R					R	S	S	S
13 K19-6003	7	HR					R	S	S	S
14 K19-6041	13	R					R	S	S	S
15 K19-6079	7	HR					R	S	S	S
16 LD18-3068	39	**					S	S	S	S
17 LD18-4159	8	HR					R	S	S	S
18 LD19-4657	69	NR					S	R	S	S
19 LD19-7948	79	NR					S	R	S	S
20 LD19-10076	3	HR					R	S	S	S
21 LD19-10244	11	R					S	S	S	S
22 S19-10701C	77	**	92	NR	94	NR	S	Het	S	R
23 SA18-10815	6	HR					R	S	S	S
24 SA18-11346	22	R					.	.	.	.
25 SA18-12086	5	HR	37	**	56	LR	S	R	R	S
26 SA18-14143	4	HR					R	S	S	S
27 SA19-10248	13	R					R	S	S	S
28 SA19-12580	10	HR					R	S	S	S
29 SA19-7246	6	HR					R	S	S	S

## 2022 SCN UNIFORM TEST IV

### Predicted resistance genes based on SNP marker analysis

Strain	SCN	Iron Chlorosis	Phytophthora	BSR	FLS	SC
1 LD15-3818 (SCN)	Rhg1_Pi88788	R-LgN + Het-Ch13	Rps1a	S	S	R
2 LD00-2817P (SCN)	Rhg1-Peking+Rhg4	R-(LgN+Ch13)		S	S	R
3 LD07-3395bf (SCN)	Rhg1-Peking+Rhg4	R-(LgN+Ch13)		S	S	R
4 K17-6388	Rhg1-Pi88788	Ch13, Het LgA	none	R	S	R
5 K18-1247	Rhg1-Pi88788	LgN+Ch13	none	R	S	R
6 K18-1396	Rhg1-Pi88788	LgN+Ch13	Rps1c	R	S	R
7 K18-2401	Rhg1-Pi88788	LgA1+LgN+Ch13	none	R	S	R
8 K19-1628	Rhg1_Pi88788	R-(LgN+Ch13)		R	S	R
9 K19-4225	Rhg1_Pi88788	R-(LgN+Ch13)	Rps1c	R	S	R
10 K19-4248	none	R-(LgN+Ch13)	Rps1c	R	S	R
11 K19-4471	Rhg1_Pi88788	R-(LgN+Ch13)		R	S	R
12 K19-4777	Rhg1_Pi88788	R-(LgN+Ch13)		R	S	R
13 K19-6003	Rhg1_Pi88788	R-(LgN+Ch13)		R	S	R
14 K19-6041	Rhg1_Pi88788	R-(LgN+Ch13)		R	S	R
15 K19-6079	Rhg1_Pi88788	R-(LgN+Ch13)		R	S	R
16 LD18-3068	none	Ch13	Rps1k	R	S	R
17 LD18-4159	Rhg1_Pi88788	R-(LgN+Ch13)		R	S	R
18 LD19-4657	Rhg1-Peking	R-(LgA1+LgN+Ch13)		R	S	R
19 LD19-7948	Rhg1-Peking	R-(LgA1+LgN+Ch13)		R	S	R
20 LD19-10076	Rhg1_Pi88788	R-(LgN+Ch13)		R	S	R
21 LD19-10244	none	R-(LgN+Ch13)		R	S	Het
22 S19-10701C	Het-Rhg1-Peking	R-LgA1		R	S	R
23 SA18-10815	Rhg1_Pi88788	R-LgN		Het	S	R
24 SA18-11346	no data		Rps1d	.	.	.
25 SA18-12086	Rhg1-Peking+Rhg4	R-(LgN+Ch13)		S	S	R
26 SA18-14143	Rhg1_Pi88788	R-Ch13		R	S	R
27 SA19-10248	Rhg1_Pi88788	R-Ch13	Rps1k	R	S	R
28 SA19-12580	Rhg1_Pi88788	R-(LgN+Ch13)		R	S	R
29 SA19-7246	Rhg1_Pi88788	R-(LgN+Ch13)		S	S	R

BSR=Brown Leaf Spot, FLS=Frogeye Leaf Spot, SC=Stem Canker

## 2022 SCN UNIFORM TEST IV

### Summary

Locations	Yield						Maturity date	Lodging score	Height inches	Seed			
	All		Infested		Non-infested					weight	quality	protein	oil
	bu/a	rank	bu/a	rank	bu/a	rank				g/100	score	@13%	@13%
	8		6		2		8	7	8	6	6	6	6
1 LD15-3818 (SCN)	58.7	11	61.5	11	50.3	14	10/01	1.4	31	15.2	1.9	34.6	19.7
2 LD00-2817P (SCN)	58.1	13	61.1	12	49.1	19	3	1.8	34	13.6	2.1	33.9	19.7
3 LD07-3395bf (SCN)	58.9	9	61.7	9	50.7	11	-1	1.3	27	15.7	2.2	33.8	19.9
4 K17-6388	60.9	5	64.2	5	51.2	10	4	1.3	32	14.9	1.9	33.2	19.0
5 K18-1247	59.3	8	63.2	7	47.7	25	7	1.6	32	13.6	1.9	35.1	18.1
6 K18-1396	61.3	3	64.3	4	52.6	6	0	1.5	33	13.8	1.9	35.0	19.0
7 K18-2401	57.0	17	59.8	17	48.5	23	4	1.5	31	15.6	2.1	34.5	19.1
8 K19-1628	56.9	18	60.1	15	47.5	26	1	1.5	31	15.6	2.0	35.0	19.0
9 K19-4225	58.0	14	59.4	20	54.0	4	0	1.3	29	15.3	2.3	34.0	18.9
10 K19-4248	59.5	7	62.9	8	49.1	20	-1	1.5	32	13.7	2.0	34.7	18.7
11 K19-4471	56.8	19	60.9	13	44.6	28	5	1.3	30	13.9	1.8	35.0	18.3
12 K19-4777	60.6	6	63.6	6	51.9	8	4	1.2	29	16.3	2.1	34.6	18.8
13 K19-6003	55.8	24	58.6	22	47.4	27	5	1.2	31	15.9	2.3	34.6	18.2
14 K19-6041	56.2	22	58.4	24	49.6	16	2	1.2	28	13.7	2.2	34.6	18.7
15 K19-6079	57.5	16	60.0	16	50.1	15	3	1.2	30	15.7	1.9	35.1	18.4
16 LD18-3068	58.8	10	61.7	10	50.3	13	2	1.1	30	16.6	1.8	35.6	18.8
17 LD18-4159	56.5	20	58.4	23	50.5	12	1	1.3	31	16.6	1.8	34.4	20.0
18 LD19-4657	63.9	1	66.7	1	54.2	2	3	1.6	32	14.3	2.0	34.5	18.4
19 LD19-7948	61.9	2	65.2	3	52.2	7	2	1.4	30	15.9	2.1	35.2	18.8
20 LD19-10076	56.5	20	59.1	21	48.6	22	1	1.3	30	15.4	2.2	34.9	19.5
21 LD19-10244	61.3	3	65.7	2	47.8	24	6	2.1	37	14.8	1.6	35.5	18.7
22 S19-10701C	55.6	25	59.5	19	44.1	29	12	2.2	37	12.6	2.1	35.8	17.7
23 SA18-10815	58.3	12	59.8	18	54.1	3	1	1.5	32	14.7	2.0	34.9	18.9
24 SA18-11346	54.2	29	56.0	26	48.9	21	-1	1.4	30	17.2	2.2	35.6	19.5
25 SA18-12086	54.9	27	55.0	28	54.3	1	3	1.2	29	14.3	2.2	33.0	19.7
26 SA18-14143	57.7	15	60.5	14	49.3	18	1	1.4	31	14.1	2.1	34.3	20.6
27 SA19-10248	55.0	26	55.8	27	51.5	9	0	1.3	30	17.0	2.3	35.2	20.1
28 SA19-12580	56.1	23	58.3	25	49.4	17	-1	1.5	31	17.1	2.1	34.6	19.3
29 SA19-7246	54.4	28	54.9	29	53.0	5	1	1.4	30	14.3	2.1	33.3	19.9
Mean	58.0		60.6		50.1		2.4	1.4	30.8	15.1	2.0	34.6	19.1
C.V. %	11.2		11.3		10.5								
LSD(2-sided,.05)	3.7		4.5		6.0								
Replications	23		17.0		6								

## 2022 SCN UNIFORM TEST IV

### 2 Year Summary

	Yield								Seed				
	All		Infested		Non-infested		Maturity date	Lodging score	Height inches	weight g/100	quality score	protein @13%	oil @13%
	bu/a	rank	bu/a	rank	bu/a	rank							
Locations	16		11		5		16	15	16	13	13	12	12
1 LD15-3818 (SCN)	60.2	6	62.2	5	55.6	7	9/28	1.3	30	15.2	2.3	35.0	19.3
2 LD00-2817P (SCN)	57.5	9	59.5	8	52.7	9	2	1.7	34	13.4	2.4	33.8	19.3
3 LD07-3395bf (SCN)	59.4	8	61.7	7	54.1	8	-1	1.5	27	15.6	2.4	33.9	19.5
4 K17-6388	63.4	2	64.3	1	61.2	6	3	1.4	32	14.6	2.0	33.6	18.5
5 K18-1247	63.3	3	64.1	3	61.5	5	6	2.1	32	13.6	2.1	35.2	17.8
6 K18-1396	63.9	1	64.3	2	63.0	1	-1	1.9	33	14.0	1.9	34.8	18.8
7 K18-2401	62.1	5	62.0	6	62.1	3	3	1.8	31	15.6	2.2	34.7	18.7
16 LD18-3068	63.3	4	63.3	4	62.9	2	1	1.1	30	17.0	2.1	35.5	18.6
17 LD18-4159	60.2	7	59.3	9	61.7	4	0	1.3	31	16.7	2.2	34.2	19.8
Mean	61.5		62.3		59.4		1.6	1.6	31.2	15.1	2.2	34.5	18.9



## 2022 SCN UNIFORM TEST IV

### Yield (bu/a)

Strain	Urbana	Man-	Columbia	Novelty	Port-	Jackson	Albany	Ottawa
	IL	hattan	MO	MO	ageville	TN	MO	KS
	2.5.7	7	2.5.7	1.2.5.7	MO	1.2.5.7	NI	NI
1 LD15-3818 (SCN)	74.6	66.3	63.6	62.3	34.6	68.5	54.0	46.6
2 LD00-2817P (SCN)	61.0	66.6	60.7	61.4	55.2	63.2	52.4	45.9
3 LD07-3395bf (SCN)	75.6	64.5	74.0	59.2	31.8	66.1	54.2	47.1
4 K17-6388	72.8	61.1	64.1	65.6	59.4	63.2	55.6	46.9
5 K18-1247	67.0	60.0	58.3	67.5	70.5	56.9	49.4	46.1
6 K18-1396	71.8	62.3	64.7	60.7	79.8	47.4	55.9	49.4
7 K18-2401	70.3	60.7	64.9	60.7	49.7	53.9	53.2	43.9
8 K19-1628	68.3	53.9	59.3	65.7	58.7	55.7	49.6	45.3
9 K19-4225	69.1	64.7	63.0	61.6	52.5	46.6	60.1	47.8
10 K19-4248	70.2	54.4	60.6	64.9	70.9	57.7	54.5	43.6
11 K19-4471	61.1	53.0	58.8	65.3	68.0	60.4	45.2	44.1
12 K19-4777	67.7	56.8	59.5	59.7	79.4	59.4	61.2	42.6
13 K19-6003	60.3	54.4	58.8	66.7	62.8	50.1	50.7	44.1
14 K19-6041	57.5	65.1	61.6	61.1	55.1	51.0	55.9	43.4
15 K19-6079	69.6	52.3	57.2	68.1	64.4	49.4	57.9	42.4
16 LD18-3068	71.1	60.3	58.6	62.0	55.1	64.0	56.8	43.9
17 LD18-4159	66.4	60.3	58.9	62.7	44.1	60.3	54.2	46.9
18 LD19-4657	69.5	66.1	70.1	76.6	56.4	62.8	63.2	46.8
19 LD19-7948	72.1	55.9	71.9	66.3	66.7	60.3	60.8	43.5
20 LD19-10076	67.0	65.8	62.5	60.2	46.4	53.8	54.0	43.1
21 LD19-10244	65.6	57.5	62.3	65.5	74.5	70.3	53.3	42.3
22 S19-10701C	41.8	.	61.9	63.7	77.1	63.9	43.6	44.6
23 SA18-10815	69.7	64.9	58.7	69.5	40.6	56.3	58.9	49.2
24 SA18-11346	61.2	57.0	55.8	59.1	41.5	62.7	59.1	38.7
25 SA18-12086	78.7	59.5	66.8	62.6	22.5	41.4	63.1	45.5
26 SA18-14143	71.7	55.5	66.9	60.3	56.9	53.0	52.5	46.2
27 SA19-10248	71.1	49.1	58.0	59.0	45.6	53.4	59.9	44.5
28 SA19-12580	75.9	61.3	57.4	62.6	44.3	49.6	53.7	45.1
29 SA19-7246	73.3	58.2	55.6	64.7	29.4	49.4	62.6	43.4
Mean	68.0	57.5	61.9	63.6	55.0	56.9	55.4	44.9
C.V. %	8.0	9.2	11.2	7.9	12.3	14.7	11.8	6.1
LSD(2-sided,.05)	11.1	8.7	11.3	8.2	13.2	13.7	10.7	4.5
Replications	2	3	3	3	3	3	3	3
Row spacing (in.)	30	30	30	30	30	30	30	30

## 2022 SCN UNIFORM TEST IV

### Yield (rank)

Strain	Urbana	Man-	Columbia	Novelty	Port-	Jackson	Albany	Ottawa
	IL 2.5.7	hattan KS 7	MO 2.5.7	MO 1.2.5.7	ageville MO 2.5	TN 1.2.5.7	MO NI	KS NI
1 LD15-3818 (SCN)	4	2	9	17	26	2	18	8
2 LD00-2817P (SCN)	26	1	15	20	15	6	24	11
3 LD07-3395bf (SCN)	3	8	1	27	27	3	16	4
4 K17-6388	6	11	8	8	11	6	14	5
5 K18-1247	20	15	24	4	6	15	27	10
6 K18-1396	8	9	7	22	1	27	12	1
7 K18-2401	12	12	6	22	19	18	22	19
8 K19-1628	18	25	18	7	12	17	26	13
9 K19-4225	17	7	10	19	18	28	6	3
10 K19-4248	13	23	16	11	5	14	15	21
11 K19-4471	25	26	20	10	7	10	28	17
12 K19-4777	19	20	17	26	2	13	4	26
13 K19-6003	27	23	20	5	10	23	25	17
14 K19-6041	28	5	14	21	16	22	12	23
15 K19-6079	15	27	27	3	9	25	10	27
16 LD18-3068	10	13	23	18	16	4	11	19
17 LD18-4159	22	13	19	14	23	11	16	5
18 LD19-4657	16	3	3	1	14	8	1	7
19 LD19-7948	7	21	2	6	8	11	5	22
20 LD19-10076	20	4	11	25	20	19	18	25
21 LD19-10244	23	18	12	9	4	1	21	28
22 S19-10701C	29	29	13	13	3	5	29	15
23 SA18-10815	14	6	22	2	25	16	9	2
24 SA18-11346	24	19	28	28	24	9	8	29
25 SA18-12086	1	16	5	15	29	29	2	12
26 SA18-14143	9	22	4	24	13	21	23	9
27 SA19-10248	10	28	25	29	21	20	7	16
28 SA19-12580	2	10	26	15	22	24	20	14
29 SA19-7246	5	17	29	12	28	25	3	23

## 2022 SCN UNIFORM TEST IV

### Maturity

Strain	Urbana IL 2.5.7	Man- hattan KS 7	Columbia MO 2.5.7	Novelty MO 1.2.5.7	Port- ageville MO 2.5	Jackson TN 1.2.5.7	Albany MO NI	Ottawa KS NI
1 LD15-3818 (SCN)	10/05	10/09	10/08	9/23	9/21	9/16	10/12	10/01
2 LD00-2817P (SCN)	3	0	0	8	6	6	1	1
3 LD07-3395bf (SCN)	-6	-1	-1	4	0	-1	0	-1
4 K17-6388	5	2	0	9	8	4	3	2
5 K18-1247	6	4	1	16	11	7	4	7
6 K18-1396	0	-1	-2	1	5	-1	0	1
7 K18-2401	8	2	1	6	4	4	4	2
8 K19-1628	2	0	-1	3	4	-1	-1	1
9 K19-4225	2	-1	-4	3	0	-4	0	0
10 K19-4248	-2	-3	-3	0	5	-1	1	-1
11 K19-4471	7	1	1	9	11	5	4	5
12 K19-4777	5	-1	0	6	9	6	0	2
13 K19-6003	7	2	1	9	7	6	2	4
14 K19-6041	5	1	0	5	5	0	1	1
15 K19-6079	3	1	0	4	6	4	1	1
16 LD18-3068	1	2	-4	2	8	6	0	-2
17 LD18-4159	3	-1	-2	3	4	-1	-1	0
18 LD19-4657	5	3	0	6	3	5	3	1
19 LD19-7948	5	-2	-1	5	6	6	1	0
20 LD19-10076	4	0	-1	1	1	4	1	-1
21 LD19-10244	9	2	2	9	10	9	5	6
22 S19-10701C	14	10	5	20	18	10	7	10
23 SA18-10815	2	-1	0	1	2	3	-1	1
24 SA18-11346	-1	-4	-3	1	1	-1	0	-2
25 SA18-12086	5	2	0	8	0	6	2	3
26 SA18-14143	2	-1	-2	1	5	3	0	-3
27 SA19-10248	1	-3	-1	1	3	2	-1	0
28 SA19-12580	-3	-1	-4	-1	2	0	-1	-1
29 SA19-7246	2	2	-2	3	1	3	0	0
Planted	5/17	6/17	6/14	5/17	5/10	5/09	6/21	6/16

## 2022 SCN UNIFORM TEST IV

### Lodging (score)

Strain	Urbana IL 2.5.7	Man- hattan KS 7	Columbia MO 2.5.7	Novelty MO 1.2.5.7	Port- ageville MO 2.5	Jackson TN 1.2.5.7	Albany MO NI	Ottawa KS NI
1 LD15-3818 (SCN)	1.5		1.5	1.7	1.0	1.3	1.5	1.0
2 LD00-2817P (SCN)	2.0		1.5	4.0	1.0	1.3	1.7	1.0
3 LD07-3395bf (SCN)	1.5		1.8	1.5	1.0	1.0	1.5	1.0
4 K17-6388	1.5		1.3	2.0	1.0	1.0	1.2	1.0
5 K18-1247	2.3		1.7	2.3	1.0	1.7	1.5	1.0
6 K18-1396	1.5		2.0	2.2	1.3	1.3	1.5	1.0
7 K18-2401	2.0		1.7	1.3	1.0	1.7	1.5	1.0
8 K19-1628	1.8		1.8	1.7	1.0	1.3	1.7	1.0
9 K19-4225	1.5		1.7	1.7	1.0	1.0	1.3	1.0
10 K19-4248	1.8		1.8	2.0	1.0	1.3	1.5	1.0
11 K19-4471	1.5		1.2	2.0	1.0	1.3	1.3	1.0
12 K19-4777	1.0		1.5	1.5	1.0	1.0	1.2	1.0
13 K19-6003	1.5		1.5	1.5	1.0	1.0	1.2	1.0
14 K19-6041	1.0		2.2	1.2	1.0	1.0	1.0	1.0
15 K19-6079	1.5		1.7	1.5	1.0	1.0	1.0	1.0
16 LD18-3068	1.0		1.5	1.3	1.0	1.0	1.2	1.0
17 LD18-4159	1.3		1.8	1.7	1.0	1.0	1.2	1.0
18 LD19-4657	1.5		1.8	2.8	1.0	1.7	1.3	1.0
19 LD19-7948	1.5		1.7	2.0	1.0	1.0	1.5	1.0
20 LD19-10076	1.3		1.7	2.0	1.0	1.0	1.5	1.0
21 LD19-10244	2.3		2.2	2.7	1.0	2.7	2.7	1.0
22 S19-10701C	3.0		2.5	3.0	1.0	1.0	3.2	1.7
23 SA18-10815	1.5		2.0	2.2	1.0	1.0	1.5	1.0
24 SA18-11346	1.5		1.8	1.7	1.0	1.0	1.5	1.0
25 SA18-12086	1.5		1.3	1.5	1.0	1.0	1.3	1.0
26 SA18-14143	1.3		1.7	1.8	1.0	1.3	1.5	1.0
27 SA19-10248	1.0		2.2	1.8	1.0	1.0	1.3	1.0
28 SA19-12580	1.5		2.5	2.2	1.0	1.0	1.5	1.0
29 SA19-7246	1.3		2.2	1.8	1.0	1.3	1.5	1.0

## 2022 SCN UNIFORM TEST IV

### Height (inches)

Strain	Urbana IL 2.5.7	Man- hattan KS 7	Columbia MO 2.5.7	Novelty MO 1.2.5.7	Port- ageville MO 2.5	Jackson TN 1.2.5.7	Albany MO NI	Ottawa KS NI
1 LD15-3818 (SCN)	37	37	28	35	18	31	30	30
2 LD00-2817P (SCN)	41	39	31	35	21	35	36	33
3 LD07-3395bf (SCN)	34	31	27	30	16	24	28	27
4 K17-6388	39	34	28	36	25	30	33	30
5 K18-1247	41	36	30	36	19	29	34	30
6 K18-1396	38	36	31	36	26	32	31	30
7 K18-2401	38	37	30	34	17	29	33	30
8 K19-1628	39	35	28	36	20	31	31	30
9 K19-4225	38	32	27	35	18	26	30	26
10 K19-4248	38	34	30	36	22	30	32	30
11 K19-4471	34	34	26	33	23	32	28	26
12 K19-4777	33	33	28	32	21	28	29	26
13 K19-6003	38	37	30	34	20	31	32	29
14 K19-6041	31	31	31	30	21	28	28	26
15 K19-6079	38	33	28	32	20	30	30	29
16 LD18-3068	37	33	28	31	21	30	30	26
17 LD18-4159	39	34	31	34	19	29	35	31
18 LD19-4657	37	38	30	36	21	30	34	28
19 LD19-7948	35	33	31	33	20	27	34	28
20 LD19-10076	36	37	29	32	19	29	32	26
21 LD19-10244	43	43	32	40	22	39	42	34
22 S19-10701C	46	44	36	37	22	28	41	37
23 SA18-10815	40	37	28	38	22	28	34	31
24 SA18-11346	35	32	28	33	21	29	33	27
25 SA18-12086	38	33	30	32	13	25	32	26
26 SA18-14143	36	36	30	33	24	29	33	30
27 SA19-10248	37	32	29	35	18	26	31	29
28 SA19-12580	39	37	29	35	17	27	33	29
29 SA19-7246	37	34	30	34	15	27	33	29

## 2022 SCN UNIFORM TEST IV

### Seed Weight (g/100)

Strain	Urbana IL 2.5.7	Man- hattan KS 7	Columbia MO 2.5.7	Novelty MO 1.2.5.7	Port- ageville MO 2.5	Jackson TN 1.2.5.7	Albany MO NI	Ottawa KS NI
1 LD15-3818 (SCN)	16.9	15.0	16.3		14.6	14.7		13.6
2 LD00-2817P (SCN)	15.3	12.1	14.8		13.0	13.5		12.8
3 LD07-3395bf (SCN)	17.8	14.7	16.9		15.4	14.4		15.1
4 K17-6388	16.6	14.4	15.7		14.5	14.5		13.7
5 K18-1247	14.9	13.3	13.6		13.7	13.0		13.0
6 K18-1396	15.8	12.3	14.1		14.8	13.2		12.8
7 K18-2401	17.5	14.3	16.1		15.6	15.3		14.7
8 K19-1628	17.5	14.8	17.1		15.8	14.1		14.0
9 K19-4225	16.3	14.8	16.9		14.8	14.0		14.8
10 K19-4248	15.4	12.7	14.2		14.0	13.3		12.6
11 K19-4471	15.2	13.5	14.6		14.6	12.4		13.2
12 K19-4777	17.6	14.7	17.9		16.9	15.7		15.1
13 K19-6003	17.5	15.6	16.3		16.4	15.0		14.8
14 K19-6041	15.5	12.6	15.2		13.8	12.7		12.4
15 K19-6079	18.2	15.0	16.0		16.4	13.6		15.2
16 LD18-3068	18.5	15.9	18.0		16.9	16.4		13.7
17 LD18-4159	18.2	16.2	18.1		16.3	14.7		16.3
18 LD19-4657	16.4	14.0	16.0		12.3	13.3		13.6
19 LD19-7948	18.5	13.0	17.4		16.9	14.6		14.9
20 LD19-10076	17.2	15.9	14.9		15.6	14.6		14.0
21 LD19-10244	16.3	13.3	16.2		14.6	15.4		12.7
22 S19-10701C	12.5	.	12.9		12.2	13.2		12.3
23 SA18-10815	16.4	14.5	16.1		13.6	14.6		13.2
24 SA18-11346	19.5	17.2	17.4		16.7	17.2		15.4
25 SA18-12086	15.5	14.7	15.7		12.5	14.0		13.6
26 SA18-14143	15.9	13.0	15.4		13.7	13.8		12.5
27 SA19-10248	18.6	16.4	18.7		16.4	15.5		16.3
28 SA19-12580	18.7	16.1	18.0		17.2	17.3		15.6
29 SA19-7246	15.4	14.4	15.4		13.5	12.3		14.5

## 2022 SCN UNIFORM TEST IV

### Seed Quality (score)

Strain	Urbana	Man-	Columbia	Novelty	Port-	Jackson	Albany	Ottawa
	IL 2.5.7	hattan KS 7	MO 2.5.7	MO 1.2.5.7	ageville MO 2.5	TN 1.2.5.7	MO NI	KS NI
1 LD15-3818 (SCN)	2.0	2.0	2.0		1.3	2.3		2.0
2 LD00-2817P (SCN)	2.0	2.0	1.0		1.7	2.9		3.0
3 LD07-3395bf (SCN)	3.0	2.0	1.0		2.0	3.3		2.0
4 K17-6388	2.0	2.0	1.0		2.0	2.3		2.0
5 K18-1247	2.0	2.0	1.0		1.3	3.0		2.0
6 K18-1396	2.0	2.0	2.0		1.0	2.3		2.0
7 K18-2401	2.0	2.0	2.0		1.7	3.0		2.0
8 K19-1628	2.0	3.0	1.0		2.0	3.0		1.0
9 K19-4225	2.0	3.0	2.0		2.0	2.7		2.0
10 K19-4248	2.0	2.0	2.0		1.7	2.3		2.0
11 K19-4471	2.0	2.0	1.0		1.7	2.3		2.0
12 K19-4777	2.0	3.0	1.0		1.7	2.7		2.0
13 K19-6003	3.0	3.0	1.0		1.7	3.0		2.0
14 K19-6041	2.0	3.0	2.0		2.0	2.3		2.0
15 K19-6079	2.0	3.0	1.0		1.3	2.3		2.0
16 LD18-3068	2.0	2.0	1.0		1.7	2.3		2.0
17 LD18-4159	2.0	2.0	1.0		2.0	3.0		1.0
18 LD19-4657	2.0	2.0	1.0		2.0	3.0		2.0
19 LD19-7948	2.0	3.0	1.0		1.7	2.7		2.0
20 LD19-10076	2.0	2.0	2.0		2.0	3.3		2.0
21 LD19-10244	1.0	2.0	1.0		1.7	3.1		1.0
22 S19-10701C	2.0	.	2.0		1.7	2.0		3.0
23 SA18-10815	2.0	2.0	1.0		2.0	3.0		2.0
24 SA18-11346	2.0	3.0	1.0		2.0	3.0		2.0
25 SA18-12086	2.0	2.0	2.0		2.0	3.0		2.0
26 SA18-14143	2.0	3.0	1.0		2.0	3.3		1.0
27 SA19-10248	2.0	3.0	2.0		1.7	3.3		2.0
28 SA19-12580	2.0	2.0	2.0		1.7	2.9		2.0
29 SA19-7246	2.0	3.0	1.0		2.0	2.3		2.0

## 2022 SCN UNIFORM TEST IV

### Protein (%)

Strain	Urbana IL 2.5.7	Man- hattan KS 7	Columbia MO 2.5.7	Novelty MO 1.2.5.7	Port- ageville MO 2.5	Jackson TN 1.2.5.7	Albany MO NI	Ottawa KS NI
1 LD15-3818 (SCN)	36.0	33.4	35.2		33.3	35.4		34.4
2 LD00-2817P (SCN)	34.0	32.8	33.3		34.4	36.0		32.6
3 LD07-3395bf (SCN)	33.9	31.7	32.8		35.2	36.4		32.7
4 K17-6388	34.2	32.1	33.1		33.2	34.0		33.0
5 K18-1247	36.5	35.0	35.1		35.4	35.8		33.0
6 K18-1396	35.1	33.9	35.3		36.2	35.8		33.8
7 K18-2401	35.4	32.1	35.2		35.5	35.7		33.1
8 K19-1628	36.1	33.9	35.4		35.6	35.0		34.1
9 K19-4225	35.2	32.8	34.0		33.6	35.2		33.2
10 K19-4248	35.9	33.5	35.0		35.9	34.2		33.6
11 K19-4471	36.4	33.9	34.7		35.6	35.2		34.1
12 K19-4777	35.6	33.9	34.7		34.7	34.9		33.5
13 K19-6003	36.1	33.7	34.6		34.7	35.4		33.2
14 K19-6041	35.2	33.3	34.6		35.4	34.7		34.4
15 K19-6079	36.3	34.8	34.4		36.0	35.5		33.8
16 LD18-3068	36.3	34.6	35.7		36.7	36.0		34.2
17 LD18-4159	34.7	33.6	34.0		35.2	35.7		33.4
18 LD19-4657	35.9	33.5	35.0		34.1	34.7		34.0
19 LD19-7948	36.0	34.7	35.2		36.0	35.5		34.1
20 LD19-10076	35.5	33.0	34.6		35.4	36.0		34.8
21 LD19-10244	36.1	34.0	35.2		36.2	36.6		34.6
22 S19-10701C	35.6	.	34.6		36.7	36.8		35.3
23 SA18-10815	36.0	33.4	35.0		35.1	36.2		33.5
24 SA18-11346	36.7	34.0	35.0		36.7	37.1		34.2
25 SA18-12086	34.1	31.6	33.0		33.4	34.7		31.2
26 SA18-14143	35.8	31.9	34.1		34.9	35.4		33.8
27 SA19-10248	36.8	33.4	35.7		35.5	35.3		34.5
28 SA19-12580	34.3	32.8	34.0		36.1	35.4		34.9
29 SA19-7246	34.5	32.6	32.2		34.2	33.8		32.3



## 2022 SCN UNIFORM TEST IV

### Oil (%)

Strain	Urbana IL 2.5.7	Man- hattan KS 7	Columbia MO 2.5.7	Novelty MO 1.2.5.7	Port- ageville MO 2.5	Jackson TN 1.2.5.7	Albany MO NI	Ottawa KS NI
1 LD15-3818 (SCN)	17.7	20.6	19.3		20.4	19.9		20.1
2 LD00-2817P (SCN)	17.9	20.9	20.3		19.9	19.3		20.3
3 LD07-3395bf (SCN)	18.8	21.2	20.9		19.1	19.0		20.5
4 K17-6388	17.0	19.5	18.9		19.0	19.3		20.0
5 K18-1247	16.2	17.7	18.8		18.2	18.0		19.5
6 K18-1396	17.3	20.2	18.9		18.7	19.0		20.1
7 K18-2401	17.2	20.7	18.8		19.1	18.7		20.3
8 K19-1628	16.5	19.9	19.1		19.2	19.3		19.9
9 K19-4225	16.8	19.4	19.2		18.8	19.1		20.2
10 K19-4248	16.9	18.7	18.6		18.4	19.2		20.5
11 K19-4471	16.1	18.1	18.7		19.1	18.1		19.6
12 K19-4777	16.5	19.6	18.7		18.9	19.4		19.6
13 K19-6003	15.8	18.9	18.6		18.6	18.1		19.3
14 K19-6041	17.1	19.7	18.7		18.4	18.8		19.3
15 K19-6079	16.2	18.7	18.9		18.3	18.6		19.6
16 LD18-3068	16.9	19.2	18.8		19.1	18.8		20.0
17 LD18-4159	18.1	20.4	20.7		20.2	19.8		20.9
18 LD19-4657	16.4	19.6	18.2		18.5	18.2		19.2
19 LD19-7948	16.7	19.4	18.3		19.5	19.0		20.1
20 LD19-10076	18.0	20.4	20.4		18.9	19.1		19.9
21 LD19-10244	17.5	19.8	19.2		18.3	18.0		19.3
22 S19-10701C	15.8	.	17.9		18.4	17.9		18.4
23 SA18-10815	16.9	19.9	18.7		18.6	19.3		20.1
24 SA18-11346	17.8	20.2	20.4		18.7	19.3		20.6
25 SA18-12086	17.9	20.2	19.7		19.2	20.2		21.2
26 SA18-14143	17.7	21.4	20.9		21.1	20.8		21.6
27 SA19-10248	17.8	21.3	20.2		19.6	20.5		21.2
28 SA19-12580	17.9	20.7	20.3		17.8	19.6		19.2
29 SA19-7246	18.2	20.2	21.4		19.2	19.8		20.9