2022 Kansas Performance Tests with

Soybean Varieties

● standard dryland   ★ irrigated

Report of Progress 1173

K·STATE
Research and Extension

Kansas State University Agricultural Experiment Station and Cooperative Extension Service

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2022 KANSAS SOYBEAN PERFORMANCE TESTS

STATEWIDE GROWING CONDITIONS

Statewide average temperature in May was 2.7°F above normal, with an average temperature of 64°F across the state (Fig. 1). Central and western Kansas had the larger temperature departures, which made the drought conditions worse in May.

Climatologically, May had the highest precipitation amount of any month, with a 30-year average of 4.3 inches in Kansas. This May was wetter than usual across the state (1.3 inches higher than normal) -- especially in the central and eastern portions of the state (3 inches higher than normal in the east) (Fig. 1). Still, when considering the 8-month accumulated precipitation (October to May), crop-season precipitation was the driest since 2018. This certainly had the potential to affect soybean yields this year.

Precipitation was inconsistent with temperatures consistently warmer than normal across Kansas by the end of June (Figures 1 and 2). Similar to corn fields, dryland soybean fields started to experience heat stress combined with long periods without rainfall. High temperatures were frequent since the first weeks of July, exacerbating the drought effects.
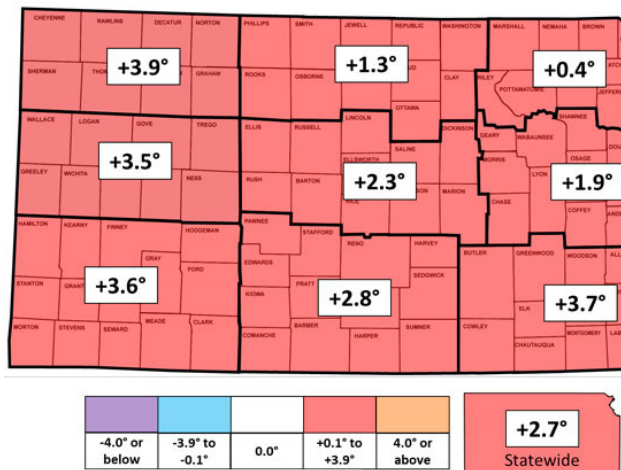

Figure 1. Temperature anomalies by division for the time period July 1-August 17, 2022. All divisions were above normal. Source: Kansas Weather Data Library.
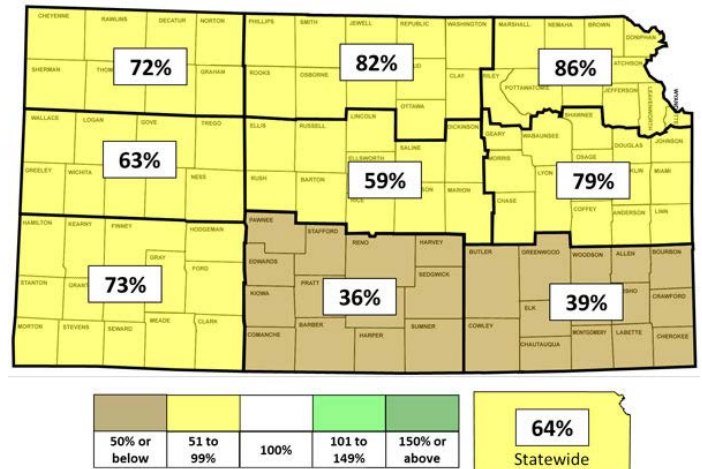

Figure 2. Percent of normal precipitation by division for the time period July 1-August 17, 2022. Source: Kansas Weather Data Library.

The USDA Kansas Crop Progress Report and Condition (August 14, 2022) rated the soybean crop condition as 31% poor or very poor, 33% fair, 33% good, and only 3% as excellent. In parallel, soils are running out of available water with both topsoil and subsoil moisture reported as >40% very short, ~37% short, with only about 20% as adequate, and 0% under water surplus.

Entering the second half of August, most soybean fields entered into the reproductive period (~85% flowering), with already more than half (~57%) of fields setting pods. The lack of moisture combined with warmer-than-normal temperatures accelerated the growing season, moving crop phenology along much faster than the overall plant growth.

Because of extremely high July and August temperatures, irrigated fields were not immune to the effects of drought stress. With numerous days over 100°F, even irrigated plants failed to set or fill pods. When stress continues during seed filling, the crop has fewer possibilities to compensate yield reduction, with major impacts on final seed weight. The pod setting marks the beginning of the most critical period of the crop, when the main yield component is determined: the seed number. Any stress reducing biomass accumulation during this critical period will impact the number of seeds, and thus yield.

Conditions were much warmer than normal in September. The weather conditions in the last portion of September were critical for soybeans as related to seed filling and determining final seed weight. The

USDA Kansas Crop Progress Report and Condition (September 19, 2022) classified 51% of the soybean crop to be in fair or good condition.

Conditions were still harsh (hot/dry) as harvest got underway for most of the state in the second week of October. Weather conditions were conducive to green stem syndrome, in which the stem remains green while the seeds are mature and ready to harvest. (Ignacio Ciampitti, Farming Systems; Adrian Correndo; Matt Sittel, Assistant State Climatologist; Christopher "Chip" Redmond, Mesonet Manager, Department of Agronomy, Kansas State University)

INSECTS

Soybeans started 2022 pretty well with very few reports of early season insect problems (i.e. very little bean leaf beetle, webworm, or green cloverworm damage noted). One, or a combination, of these pests usually occurs in numbers sufficient to cause some concern among producers every year, but not 2022.

Dectes stem borers were plentiful a few weeks after July 4, which caused considerable concern. However, very little plant lodging resulted from these infestations, so very minor impact on yield was noted. Dectes stem borers overwinter in the same field as the larvae were feeding, so fields planted back to soybeans and/or nearby soybean fields may have the potential of earlier Dectes infestations in 2023. (Jeff Whitworth, Department of Entomology,

TEST OBJECTIVES AND PROCEDURES

Soybean performance tests are conducted each year to provide information on the relative performance of new and established varieties and brands at several locations in Kansas.

Seeds for tests are from private seed companies, certified growers, and agricultural experiment stations (Table 1). Seed quality, including factors such as purity and germination, can be important in determining the performance of a variety. Soybean seed used for private and public entries in the Kansas Crop Performance Tests is prepared professionally and usually meets or exceeds Kansas Crop Improvement Certification standards. Relative performance of a given variety comparable to that obtained in these tests is best assured under similar environmental conditions and cultural practices and with the use of certified or professionally prepared seed. All companies known to be developing and marketing soybean varieties or brands are invited to submit test seed; interested companies enter on a

voluntary, fee-entry basis.

Entries were planted in four-row plots with rows 30 inches apart and were replicated three or four times each. Seeding rate ranged from 7 to 12 seeds per foot of row. The center two rows of each plot were harvested for yield. Harvested row lengths ranged from 11 to 33 feet, depending on location. Cultural practices and rainfall for each test location are presented with each table. Results from this year's tests are presented in Tables 2 through 8. Relative yields of each entry from all locations are shown in Table 9.

DATA INTERPRETATION

Yields are recorded as bushels per acre (60 lb/bushel) adjusted to 13% moisture content, when moisture data are available. Seed yield also is expressed as a percentage of the test average to assist in identifying entries that consistently produce better than the average yield.

Maturity is the date on which 95% of the pods have ripened (browned). Delayed leaf drop and green stems are not considered when assigning maturity. About 1 week of good drying weather after maturing is needed before soybeans are ready to harvest.

Lodging is rated at maturity by the following scores:

1. Almost all plants erect

2. All plants slightly leaning or a few plants down

3. All plants leaning moderately (45%) or 25 to 50% of plants down

4. All plants leaning considerably or 50 to 80% plants down

5. Almost all plants down

Height is the average length from the soil surface to the top of the main stem of mature plants.

VARIETY OR BRAND SELECTION

Performance of soybean varieties or brands varies from year to year and from location to location, depending on factors such as weather, management practices, and variety adaptation. When selecting varieties or brands, producers should carefully analyze variety performance for two or more years across locations. Performance averaged over several environments will provide a better estimate of genetic potential and stability than performance based on a few environments.

Small differences in yield between any two varieties or brands usually are not important. Within maturity groups at each location, a LSD (least significant difference) was calculated. The significance level used to calculate the LSD was 10%. Unless two varieties differ in yield by more than the LSD, genetic yield potential of one entry cannot be considered superior to that of another.

The coefficient of variability (CV) represents an estimate of the precision in the replicated yield trials. A CV of less than 10% indicates a good test with a high level of reliability. CVs ranging from 10 to 15% are usually acceptable for performance comparisons. CVs greater than 15% generally lack sufficient precision to provide any more than a rough guide to cultivar performance. For tests in which the precision was insufficient to statistically compare performance among the entries, the LSD value has been replaced with the designation NS, indicating that seed yields were not significantly different.

Test results also can be found online at: https://www.agronomy.k-state.edu/outreach-and-services/crop-performance-tests/soybeans/

Table 1. Entrants in the 2022 Kansas Soybean Performance Tests

Kansas Ag. Exp. Stn. (AES)	**Lakeview Farms**	**Stine Seed**
Manhattan, KS	Middletown, MO	Adel, IA
785-532-7243	573-549-2222	712-249-5884
		stineseed.com
Beck's Seed	**University of Missouri**	**Willcross Seed**
Atlanta, IN	Portageville, MO	Garden City, MO
800-937-2325	573-379-5431	816-802-8203
beckshybrids.com		necoseed.com
Corteva AgriSciences		
Johnston, IA		
800-233-7333		
pioneer.com		
* maturity checks		

Wolf Farm, Kiro, Shawnee County; Eric Adee, agronomist

	April	May	June	July	Aug.	Sept.	Total
Rainfall:	1.4	8.0	5.9	3.0	1.7	1.3	22.4

Planted 5/11/2022 at 100,000 seeds/ft; harvested 10/12/2022; 10 ft. by 4-row plot. Pesticides: 4 oz/a Authority, 1.5 pt/a Dual II Magnum; 3.25 oz/a Anthem Maxx, 0.3 oz/a First Rate, 4 oz/a Pursuit, 2.5 pt/a Warrant + Array.

Table 2. Kiro, Shawnee County Dryland Soybean Performance Test, 2020-2022

BRAND	NAME	ACRE YIELD, BUSHELS					YIELD AS % OF TEST AVERAGE			2022		
		2022	2021	2020	2-Yr. AVG.	3-Yr. AVG.	2022	2021	2020	Mat	Lodge score	Ht (in)
BECKS	3633XF	**65.6**	--	--	--	--	100	--	--	9/23	1.5	40
BECKS	4113XF	60.6	--	--	--	--	92	--	--	9/30	3.0	41
BECKS	4553XF	**69.9**	--	--	--	--	106	--	--	10/5	2.8	40
CHECK	MG3.1	**69.7**	85.9	71.8	77.8	75.8	106	101	101	9/24	2.3	39
CHECK	MG3.9	**65.4**	88.8	68.1	77.1	74.1	99	104	95	10/8	2.0	41
KANSAS AES	KS4117NS	**66.8**	--	**77.6**	--	--	102	--	109	9/30	2.0	34
KANSAS AES	KS4120NSGT	64.8	82.7	**74.0**	73.8	73.8	98	97	104	9/25	2.5	33
KANSAS AES	KS4520NS	**66.7**	87.7	72.4	77.2	75.6	101	103	101	9/29	2.8	33
LAKEVIEW FARMS	LVF3648	63.9	--	--	--	--	97	--	--	9/24	2.8	35
LAKEVIEW FARMS	LVF3731	**66.3**	--	--	--	--	101	--	--	9/23	1.5	33
LAKEVIEW FARMS	LVF3831	63.7	--	--	--	--	97	--	--	9/21	1.0	31
LAKEVIEW FARMS	LVF4331	**69.6**	--	--	--	--	106	--	--	10/1	1.0	32
STINE	36EB32	64.9	--	--	--	--	99	--	--	9/26	1.0	37
STINE	39EC22	**68.9**	--	--	--	--	105	--	--	9/28	2.0	35
STINE	41EB32	64.7	--	--	--	--	98	--	--	10/3	2.3	36
WILLCROSS	WXE8038NS	**67.8**	84.6	--	76.2	--	103	99	--	9/24	1.3	39
WILLCROSS	WXE8043NS	64.6	**92.1**	--	78.4	--	98	108	--	10/6	2.0	33
WILLCROSS	WXE8146NS	59.7	82.7	--	71.2	--	91	97	--	10/4	2.8	37
WILLCROSS	WXE8236N	**65.4**	--	--	--	--	99	--	--	9/28	1.3	37
	AVERAGES	**65.8**	85.3	71.4								
	CV (%)	6.3	5.8	6.0								
	LSD (0.10)	4.9	5.8	6.0								

Values in bold are in the upper LSD group.

Kansas River Valley Experiment Field, Topeka, Shawnee County; Eric Adee, agronomist

	April	May	June	July	Aug.	Sept.	Total
Rainfall:	1.5	6.9	6.8	3.1	1.8	1.5	21.6
Irrigation:				1.3	2.8	1.4	5.52

Planted 5/11/2022 at 140,000 seeds/ft; harvested 10/13/2022; 10 ft. by 4-row plot. Pesticides: 4 oz/a Authority, 1.5 pt/a Dual II Magnum; 3.25 oz/a Anthem Maxx, 0.3 oz/a First Rate, 4 oz/a Pursuit, 2.5 pt/a Warrant + Array.

Table 3. Topeka, Shawnee County Irrigated Soybean Performance Test, 2020-2022

| | | ACRE YIELD, BUSHELS | | | | | YIELD AS % OF TEST AVERAGE | | | 2022 | | |
		2022	2021	2020	2-Yr. AVG.	3-Yr. AVG.	2022	2021	2020	Mat	Lodge score	Ht (in)
BECKS	3633XF	**73.3**	--	--	--	--	116	--	--	9/26	1.0	37
BECKS	4113XF	**67.2**	--	--	--	--	107	--	--	10/1	1.5	35
BECKS	4553XF	48.7	--	--	--	--	77	--	--	10/3	2.5	37
CHECK	MG3.1	58.7	77.1	54.4	67.9	63.4	93	100	93	9/25	3.0	40
CHECK	MG3.9	55.4	76.7	64.9	66.1	65.7	88	99	111	10/5	1.0	36
KANSAS AES	KS4117NS	58.3	--	58.0	--	--	93	--	100	9/27	1.5	31
KANSAS AES	KS4120NSGT	59.6	76.8	60.1	68.2	65.5	95	99	102	9/26	2.0	31
KANSAS AES	KS4520NS	**66.3**	**83.3**	62.8	74.8	70.8	105	108	107	10/2	2.3	34
STINE	36EB32	**66.3**	--	--	--	--	105	--	--	9/23	1.5	36
STINE	39EC22	**70.0**	--	--	--	--	111	--	--	9/30	2.0	32
STINE	41EB32	**69.7**	--	--	--	--	111	--	--	10/2	1.3	32
WILLCROSS	WXE8038NS	60.9	74.2	--	67.6	--	97	96	--	9/22	2.0	38
WILLCROSS	WXE8043NS	64.6	**87.2**	--	75.9	--	102	113	--	10/2	2.0	37
WILLCROSS	WXE8146NS	55.6	63.7	--	59.7	--	88	83	--	10/2	2.8	38
WILLCROSS	WXE8236N	**67.1**	--	--	--	--	107	--	--	9/26	2.0	34
	AVERAGES	63.0	77.2	58.7								
	CV (%)	10.1	6.7	9.5								
	LSD (0.10)	7.5	7.2	7.8								

Values in bold are in the upper LSD group.

East Central Kansas Experiment Field, Ottawa, Franklin County; Eric Adee, agronomist; Darren Hibdon, research tech.

	April	May	June	July	Aug.	Sept.	Total
Rainfall:	1.6	7.2	3.8	5.4	1.8	1.3	21.1

Replant was necessary due to extremely wet conditions. Growing season conditions were hot and dry with several extreme heat periods experienced.

Planted 5/12/2022, replanted 6/13/2022 at 140,000 seeds/ft; harvested 10/20/2022; 26 ft. by 4-row plot. Pesticides: 2.5 oz/a Zidua; 9.4 oz/a Authority XL; 1.5 pt/a Cinch; 2 oz/a Aim; 9 oz/a Select Max.

Table 4. Ottawa, Franklin County Dryland Soybean Performance Test, Maturity Groups III-IV, 2020-2022

BRAND	NAME	ACRE YIELD, BUSHELS					YIELD AS % OF TEST AVERAGE			2022		
		2022	2021	2020	2-Yr. AVG.	3-Yr. AVG.	2022	2021	2020	Mat	Lodge score	Ht (in)
BECKS	3633XF	47.1	--	--	--	--	101	--	--	10/2	1.0	27
BECKS	4113XF	43.2	--	--	--	--	92	--	--	10/6	1.0	29
BECKS	4553XF	**49.7**	--	--	--	--	106	--	--	10/10	1.0	33
CHECK	MG3.1	**49.0**	59.1	57.3	54.1	55.1	105	98	119	10/3	1.0	34
CHECK	MG3.9	48.1	59.5	51.3	53.8	53.0	103	99	107	10/10	1.0	33
KANSAS AES	K17-6185	43.7	--	--	--	--	93	--	--	10/5	1.0	24
KANSAS AES	K17-6326	43.8	--	--	--	--	94	--	--	10/2	1.0	28
KANSAS AES	K17-6388	**49.8**	--	--	--	--	106	--	--	10/4	1.0	30
KANSAS AES	K17-6484	46.0	--	--	--	--	98	--	--	10/5	1.0	28
KANSAS AES	KS4117NS	44.9	--	47.3	--	--	96	--	99	10/6	1.0	27
KANSAS AES	KS4120NSGT	44.3	54.1	50.7	49.2	49.7	95	90	106	10/6	1.0	24
KANSAS AES	KS4520NS	44.0	57.3	44.4	50.7	48.6	94	95	93	10/6	1.0	30
LAKEVIEW FARMS	LVF3648	**51.4**	--	--	--	--	110	--	--	10/2	1.0	33
LAKEVIEW FARMS	LVF3731	41.8	--	--	--	--	89	--	--	10/1	1.0	28
LAKEVIEW FARMS	LVF3831	39.2	--	--	--	--	84	--	--	9/28	1.0	25
LAKEVIEW FARMS	LVF4331	42.9	--	--	--	--	92	--	--	10/2	1.0	24
WILLCROSS	WXE8043NS	**53.8**	--	--	--	--	115	--	--	10/8	1.0	31
WILLCROSS	WXE8049N	**54.3**	--	--	--	--	116	--	--	10/14	1.0	30
WILLCROSS	WXE8146NS	47.6	65.2	--	56.4	--	102	108	--	10/8	1.0	35
WILLCROSS	WXE8248NS	**50.8**	--	--	--	--	109	--	--	10/12	1.0	29
	AVERAGES	46.8	60.2	48.0								
	CV (%)	11.1	5.9	6.8								
	LSD (0.10)	6.1	4.2	4.6								

Values in bold are in the upper LSD group.

East Central Kansas Experiment Field, Ottawa, Franklin County; Eric Adee, agronomist; Darren Hibdon research tech.

	April	May	June	July	Aug.	Sept.	Total
Rainfall:	1.6	7.2	3.8	5.4	1.8	1.3	21.1

Replant was necessary due to extremely wet conditions. Growing season conditions were hot and dry with several extreme heat periods experienced.

Planted 5/12/2022 at 140,000 seeds/ft; harvested 10/20/2022; 26 ft. by 4-row plot. Pesticides: 2.5 oz/a Zidua; 9.4 oz/a Authority XL; 1.5 pt/a Cinch; 2 oz/a Aim; 9 oz/a Select Max.

Table 5. Ottawa, Franklin County Dryland Soybean Performance Test, Maturity Groups IV-V, 2020-2022

BRAND	NAME	ACRE YIELD, BUSHELS					YIELD AS % OF TEST AVERAGE			2022		
		2022	2021	2020	2-Yr. AVG.	3-Yr. AVG.	2022	2021	2020	Mat	Lodge score	Ht (in)
BECKS	4553XF	50.2	--	--	--	--	99	--	--	10/11	1.0	33
BECKS	4887XF	51.6	--	--	--	--	101	--	--	10/11	1.0	34
CHECK	MG4.8	56.8	**63.2**	54.6	60.0	58.2	112	102	112	10/13	1.0	30
KANSAS AES	KS4822NS	50.7	58.3	50.1	54.5	53.0	100	94	103	10/14	1.0	34
KANSAS AES	KS4919N	48.5	57.6	46.3	53.1	50.8	95	93	93	10/16	1.0	37
KANSAS AES	KS5120NS	54.2	59.0	53.1	56.6	55.4	107	95	109	10/17	1.0	34
	AVERAGES	50.8	62.0	48.6								
	CV (%)	7.7	5.6	7.0								
	LSD (0.10)	4.8	4.2	4.1								

Values in bold are in the upper LSD group.

Dale Roberds Farm, Pittsburg, Cherokee County; Bill Schapaugh, agronomist

	April	May	June	July	Aug.	Sept.	Total
Rainfall:	1.8	9.2	3.6	0.3	2.4	0.7	18.0

Field conditions had good moisture about an inch from the suface. The seed was planted into moisture. Growing season was dry but the plants still had good growth.

Planted 6/25/2022 at 155,000 seeds/ft; harvested 11/16/2022; 24 ft. by 4-row plot. Pesticides: 7 oz/a Trivent; 32 oz/a Gramoxone; 7 oz/a Elevest.

Table 6. Pittsburg, Cherokee County No-Till Soybean Performance Test, Maturity Groups III-V, 2020-2022

		ACRE YIELD, BUSHELS					YIELD AS % OF TEST AVERAGE			2022		
BRAND	NAME	2022	2021	2020	2-Yr. AVG.	3-Yr. AVG.	2022	2021	2020	Mat	Lodge score	Ht (in)
BECKS	4113XF	43.3	--	--	--	--	96	--	--	10/4	1.0	29
BECKS	4553XF	45.4	--	--	--	--	101	--	--	10/11	1.0	27
BECKS	4887XF	42.3	--	--	--	--	94	--	--	10/10	1.0	31
CHECK	MG3.9	44.8	51.8	53.4	48.3	50.0	100	107	105	10/10	1.0	29
CHECK	MG4.8	**47.3**	49.9	48.2	48.6	48.5	105	103	95	10/18	1.0	25
KANSAS AES	K179222-1	43.9	--	--	--	--	98	--	--	10/19	1.0	37
KANSAS AES	K179228-5	43.9	--	--	--	--	98	--	--	10/19	1.0	37
KANSAS AES	K179229-8	44.0	--	--	--	--	98	--	--	10/16	1.0	30
KANSAS AES	K179233-1	45.4	--	--	--	--	101	--	--	10/18	1.0	33
KANSAS AES	K179247-8	43.5	49.4	--	46.5	--	97	102	--	10/20	1.0	37
KANSAS AES	K18-6652	46.3	--	--	--	--	103	--	--	10/18	1.0	39
KANSAS AES	K18-6996	44.9	40.0	--	42.5	--	100	83	--	10/14	1.0	27
KANSAS AES	K18-7069	46.3	46.0	--	46.2	--	103	95	--	10/18	1.0	30
KANSAS AES	KS4520NS	44.6	--	--	--	--	99	--	--	10/4	1.0	24
KANSAS AES	KS4822NS	44.8	46.2	54.7	45.5	48.6	100	96	107	10/13	1.0	28
KANSAS AES	KS4919N	45.8	47.9	57.6	46.9	50.4	102	99	113	10/15	1.0	31
KANSAS AES	KS5120NS	**49.5**	50.1	59.8	49.8	53.1	110	103	117	10/18	1.0	32
VIRGINIA AES	HUTCHESON	43.2	--	--	--	--	96	--	--	10/18	1.0	31
WILLCROSS	WXE8049N	**48.9**	--	--	--	--	109	--	--	10/14	1.0	28
WILLCROSS	WXE8146NS	37.4	44.3	--	40.9	--	83	90	--	10/6	1.0	26
WILLCROSS	WXE8248NS	45.6	--	--	--	--	102	--	--	10/11	1.0	28
	AVERAGES	45.0	48.3	50.9								
	CV (%)	5.6	5.3	6.9								
	LSD (0.10)	3.0	3.0	4.1								

Values in bold are in the upper LSD group.

North Central Experiment Field, Scandia, Republic County; Scott Dooley, agronomist

Minor dicamba drift. Mechanical issues delayed the start of irrigation, likely reducing yield potential.

	April	May	June	July	Aug.	Sept.	Total
Rainfall:	1.4	4.0	2.5	4.4	1.4	2.3	16.0
Irrigation:					3.8	2.5	6.25

Planted 6/15/2022 at 152,000 seeds/ft; harvested 10/25/2022; 26 ft. by 2-row plot. Pesticides: 8 oz/a Rifle, 16 oz/a Salvo; 5.25 oz/a Fierce XLT, 1.5 oz/a Makaze + NIS/AMS; 32 oz/a Intensity One + NIS/AMS.

Table 7. Scandia, Republic County Irrigated Soybean Performance Test, 2020-2022

BRAND	NAME	ACRE YIELD, BUSHELS					YIELD AS % OF TEST AVERAGE			2022		
		2022	2021	2020	2-Yr. AVG.	3-Yr. AVG.	2022	2021	2020	Mat	Lodge score	Ht (in)
BECKS	3633XF	60.4	--	--	--	--	96	--	--	--	--	--
BECKS	4113XF	63.4	--	--	--	--	101	--	--	--	--	--
BECKS	4553XF	56.7	--	--	--	--	90	--	--	--	--	--
CHECK	MG3.1	63.3	--	**73.3**	--	--	101	--	122	--	--	--
CHECK	MG3.9	61.0	65.5	57.7	63.3	61.4	97	104	96	--	--	--
KANSAS AES	KS4117NS	61.7	--	**66.0**	--	--	98	--	110	--	--	--
KANSAS AES	KS4120NSGT	59.0	63.8	55.3	61.4	59.4	94	101	92	--	--	--
KANSAS AES	KS4520NS	64.5	58.4	49.7	61.5	57.5	103	93	83	--	--	--
STINE	36EB32	**69.6**	--	--	--	--	111	--	--	--	--	--
STINE	39EC22	**69.2**	--	--	--	--	110	--	--	--	--	--
STINE	41EB32	61.6	--	--	--	--	98	--	--	--	--	--
	AVERAGES	62.8	63.1	60.3								
	CV (%)	5.3	4.0	10.6								
	LSD (0.10)	4.7	3.5	9.0								

Values in bold are in the upper LSD group.

North Central Kansas Experiment Field, Belleville, Republic County; Scott Dooley, agronomist

Accidental application of glyphosate severely impacted two entries. Other entries experienced minor dicamba drift.

	April	May	June	July	Aug.	Sept.	Total
Rainfall:	1.9	4.8	2.4	4.0	1.6	3.7	18.4

Planted 5/20/2022 at 142,000 seeds/ft; harvested 10/27/2022; 23 ft. by 4-row plot. Pesticides: 1.5 qt/a Makaze, 5.75 oz/a Zidua, 0.6 oz/a First Rate + NIS/AMS; 16 oz/a Flexstar, 1.5 qt/a Makaze, 24 oz/a Fusilade + NIS/AMS.

Table 8. Belleville, Republic County Dryland Soybean Performance Test, 2020-2022

BRAND	NAME	ACRE YIELD, BUSHELS					YIELD AS % OF TEST AVERAGE			2022		
		2022	2021	2020	2-Yr. AVG.	3-Yr. AVG.	2022	2021	2020	Mat	Lodge score	Ht (in)
BECKS	3633XF	38.1	--	--	--	--	95	--	--	--	--	--
BECKS	4113XF	**39.0**	--	--	--	--	97	--	--	--	--	--
BECKS	4553XF	**43.0**	--	--	--	--	107	--	--	--	--	--
CHECK	MG3.1	**38.9**	80.6	**72.4**	59.8	64.0	97	111	116	--	--	--
CHECK	MG3.9	**43.7**	50.4	**73.1**	47.1	55.7	108	69	117	--	--	--
KANSAS AES	KS4120NSGT	35.6	66.3	63.6	51.0	55.2	88	66	64	--	--	--
STINE	36EB32	36.2	--	--	--	--	90	--	--	--	--	--
STINE	39EC22	**42.0**	--	--	--	--	104	--	--	--	--	--
STINE	41EB32	**46.0**	--	--	--	--	114	--	--	--	--	--
	AVERAGES	**40.3**	72.8	62.5								
	CV (%)	14.9	8.9	10.4								
	LSD (0.10)	7.7	8.8	9.0								

Values in bold are in the upper LSD group.

Table 9. Yield as a Percentage of Test Average from 2022 Soybean Tests

BRAND/NAME	Riley	Topeka dryland	Topeka irrigated	Ottawa MG4	Ottawa MG5	Parsons MG 3-5	McCune	Pittburg	Scandia	Belle-ville	Assaria	Colby	AVG
BECKS													
3633XF	--	100	116	101	--	--	--	--	96	95	--	--	101
4113XF	--	92	107	92	--	--	--	96	101	97	--	--	98
4553XF	--	106	77	106	99	--	--	101	90	107	--	--	98
4887XF	--	--	--	--	101	--	--	94	--	--	--	--	98
CHECK													
MG3.1	--	106	93	105	--	--	--	--	101	97	--	--	100
MG3.9	--	99	88	103	--	--	--	100	97	108	--	--	99
MG4.8	--	--	--	--	112	--	--	105	--	--	--	--	108
KANSAS AES													
K17-6185	--	--	--	93	--	--	--	--	--	--	--	--	93
K17-6326	--	--	--	94	--	--	--	--	--	--	--	--	94
K17-6388	--	--	--	106	--	--	--	--	--	--	--	--	106
K17-6484	--	--	--	98	--	--	--	--	--	--	--	--	98
K179222-1	--	--	--	--	--	--	--	98	--	--	--	--	98
K179222-1	--	--	--	--	--	--	--	98	--	--	--	--	98
K179228-5	--	--	--	--	--	--	--	98	--	--	--	--	98
K179228-5	--	--	--	--	--	--	--	98	--	--	--	--	98
K179229-8	--	--	--	--	--	--	--	98	--	--	--	--	98
K179233-1	--	--	--	--	--	--	--	101	--	--	--	--	101
K179247-8	--	--	--	--	--	--	--	97	--	--	--	--	97
K18-6652	--	--	--	--	--	--	--	103	--	--	--	--	103
K18-6996	--	--	--	--	--	--	--	100	--	--	--	--	100
K18-7069	--	--	--	--	--	--	--	103	--	--	--	--	103
KS4117NS	--	102	93	96	--	--	--	--	98	--	--	--	97
KS4120NSGT	--	98	95	95	--	--	--	--	94	88	--	--	94
KS4520NS	--	101	105	94	--	--	--	99	103	--	--	--	100
KS4822NS	--	--	--	--	100	--	--	100	--	--	--	--	100
KS4919N	--	--	--	--	95	--	--	102	--	--	--	--	99
KS5120NS	--	--	--	--	107	--	--	110	--	--	--	--	108
LAKEVIEW FARMS													
LVF3648	--	97	--	110	--	--	--	--	--	--	--	--	103
LVF3731	--	101	--	89	--	--	--	--	--	--	--	--	95
LVF3831	--	97	--	84	--	--	--	--	--	--	--	--	90
LVF4331	--	106	--	92	--	--	--	--	--	--	--	--	99

Table 9 continued. Yield as a Percentage of Test Average from 2022 Soybean Tests

BRAND/NAME	Riley	Topeka dryland	Topeka irrigated	Ottawa MG4	MG5	Parsons MG 3-5	McCune	Pittburg	Scandia	Belle-ville	Assaria	Colby	AVG
STINE													
36EB32	--	99	105	--	--	--	--	--	111	90	--	--	101
39EC22	--	105	111	--	--	--	--	--	110	104	--	--	108
41EB32	--	98	111	--	--	--	--	--	98	114	--	--	105
VIRGINIA AES													
HUTCHESON	--	--	--	--	--	--	--	96	--	--	--	--	96
WILLCROSS													
WXE8038NS	--	103	97	--	--	--	--	--	--	--	--	--	100
WXE8043NS	--	98	102	115	--	--	--	--	--	--	--	--	105
WXE8049N	--	--	--	116	--	--	--	109	--	--	--	--	112
WXE8146NS	--	91	88	102	--	--	--	83	--	--	--	--	91
WXE8236N	--	99	107	--	--	--	--	--	--	--	--	--	103
WXE8248NS	--	--	--	109	--	--	--	102	--	--	--	--	105

Table 10. Description of Entries in Soybean Performance Tests

BRAND	NAME	TRAIT	Maturity Group	Flower color	Hilum color	R1	R3	R4	R14	SCN Resistance Source	RR	Phytophthora Tolerance
BECKS	3633XF	Enlist	3.6	--	--	--	--	--	--	--	--	--
BECKS	4113XF	Enlist	4.1	P	Bl	--	--	--	--	--	--	--
BECKS	4553XF	Enlist	4.5	W	Bf	--	--	--	--	--	--	--
BECKS	4887XF	LL	4.8	W	Bl	--	--	--	--	--	--	--
CHECK	MG3.1	RR	3.1	--	--	--	--	--	--	--	--	--
CHECK	MG3.9	RR	3.9	--	--	--	--	--	--	--	--	--
CHECK	MG4.8	RR	4.8	--	--	--	--	--	--	--	--	--
KANSAS AES	K17-6185	C	4.0	--	--	--	--	--	--	--	--	--
KANSAS AES	K17-6326	C	4.0	--	--	--	--	--	--	--	--	--
KANSAS AES	K17-6388	C	4.0	--	--	--	--	--	--	--	--	--
KANSAS AES	K17-6484	C	4.0	--	--	--	--	--	--	--	--	--
KANSAS AES	K179222-1		5.0	--	--	--	--	--	--	--	--	--
KANSAS AES	K179222-1		5.0	--	--	--	--	--	--	--	--	--
KANSAS AES	K179228-5		5.0	--	--	--	--	--	--	--	--	--
KANSAS AES	K179228-5		5.0	--	--	--	--	--	--	--	--	--
KANSAS AES	K179229-8		5.0	--	--	--	--	--	--	--	--	--
KANSAS AES	K179233-1		5.0	--	--	--	--	--	--	--	--	--
KANSAS AES	K179247-8	RR1	5.0	--	--	--	--	--	--	--	--	--
KANSAS AES	K18-6652		5.0	--	--	--	--	--	--	--	--	--
KANSAS AES	K18-6996	RR1	5.0	--	--	--	--	--	--	--	--	--
KANSAS AES	K18-7069	RR1	5.0	--	--	--	--	--	--	--	--	--
KANSAS AES	KS4117NS	C, STS	4.0	P	Bl	--	MR	--	--	--	--	--
KANSAS AES	KS4120NSGT		4.1	--	--	--	--	--	--	--	--	--
KANSAS AES	KS4520NS	C, STS	4.0	P	Bl	--	MR	--	--	--	--	--
KANSAS AES	KS4822NS	C, STS	4.8	W	Br	MR	MR	--	--	--	--	--
KANSAS AES	KS4919N	C	5.0	W	Bl	MR	MR	MR	--	--	--	--
KANSAS AES	KS5120NS	C, STS	5.0	W	Br	--	MR	--	--	--	--	--
LAKEVIEW FARMS LVF3648			3.9	3.6	--	--	--	--	--	--	--	--
LAKEVIEW FARMS LVF3731			4.1	3.7	--	--	--	--	--	--	--	--
LAKEVIEW FARMS LVF3831			3.8	3.8	--	--	--	--	--	--	--	--
LAKEVIEW FARMS LVF4331			4.3	4.3	--	--	--	--	--	--	--	--
MISSOURI	S17-2066C		4.9	W	Bl	--	--	--	--	--	--	--
MISSOURI	S17-2193C		4.7	P	Bf	--	--	--	--	--	--	--
MISSOURI	S18-0097C		5.0	W	Bl	--	--	--	--	--	--	--
STINE	36EB32		3.6	--	--	--	--	--	--	--	--	--
STINE	39EC22		3.9	--	--	--	--	--	--	--	--	--
STINE	41EB32		4.1	--	--	--	--	--	--	--	--	--

Table 10 continued. Description of Entries in Soybean Performance Tests

BRAND	NAME	TRAIT	Maturity Group	Flower color	Hilum color	SCN Resistance					Phytophthora	
						R1	R3	R4	R14	Source	RR	Tolerance
VIRGINIA AES	HUTCHESON		5.0	W	Bf	S	S	S	S	--	S	--
WILLCROSS	WXE8038NS	RR/LL	3.8	W	--	--	--	--	--	--	--	--
WILLCROSS	WXE8043NS	RR/LL	4.3	W	--	--	--	--	--	--	--	--
WILLCROSS	WXE8049N		4.9	--	--	--	--	--	--	--	--	--
WILLCROSS	WXE8146NS	Enlist	4.6	P	Bl	--	--	--	--	--	--	--
WILLCROSS	WXE8236N		3.6	--	--	--	--	--	--	--	--	--
WILLCROSS	WXE8248NS		4.8	--	--	--	--	--	--	--	--	--

Free Soybean Cyst Nematode testing is available through KSU Plant Disease Diagnostic Lab

Soybean cyst nematode (SCN) is a major problem in soybean fields throughout eastern and central Kansas (Figure 1). It is important to monitor SCN levels regularly to determine if management strategies, such as variety resistance and crop rotation, have been successful.
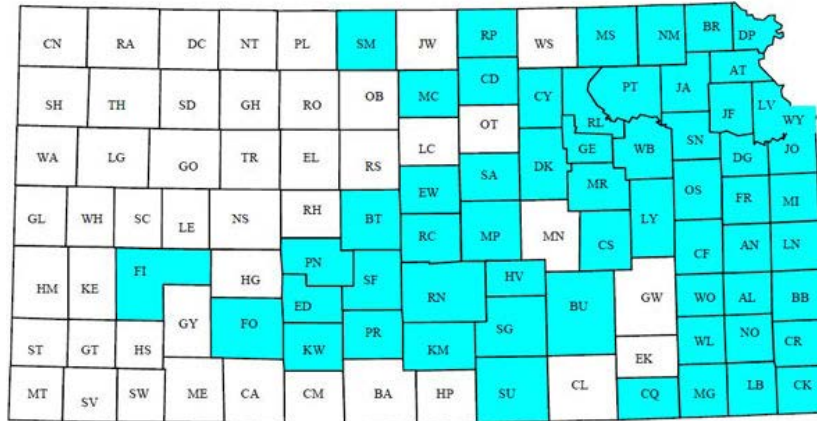
Figure 1. As of January 1, 2020, SCN was identified in 59 Kansas counties that produce >85% of Kansas soybeans. Graphic courtesy of Timothy Todd, Department of Plant Pathology

Immediately following harvest is the best time to check fields for SCN and start planning for next season. Confirming the presence of SCN and determining population levels is the basis for a successful integrated management program.

To make that process easier, the K-State Plant Disease Diagnostic Lab is now offering _**free SCN testing for Kansas producers**_. This program is facilitated by a grant received from the SCN Coalition. Below is some additional information about SCN and details about collecting and shipping a good sample.

To collect a SCN sample you will need:

1. A soil probe (or sharpshooter spade)
2. A bucket
3. A labeled bag. Label should include the following information:
    a. Field identification (*i.e.* Field ID: North Farm, near Doe Creek)
    b. Size of the area being sampled (*i.e.* 20 acres)
    c. Crop history (*i.e.* soybean, corn, and soybean)

Recommended field pattern for sample collection:

If your field is fairly uniform, divide it into quadrants for your SCN sample collection. Sections of the field that have had different cropping histories or have a different soil type should be sampled separately. **For each quadrant or area of the field, you will collect 10 to 20 cores to a depth of 6 to 8 inches.**

It is important that when collecting soil cores you walk in a systematic pattern, such as a "Z" pattern (Figure 2). Collect a total of 10 to 20 soil cores, emptying each into the bucket after collection. All core samples should be mixed well, to account for any minor variation between cores. After mixing, collect 1 pint of soil, approximately 2 cups, in a labeled plastic bag and seal.
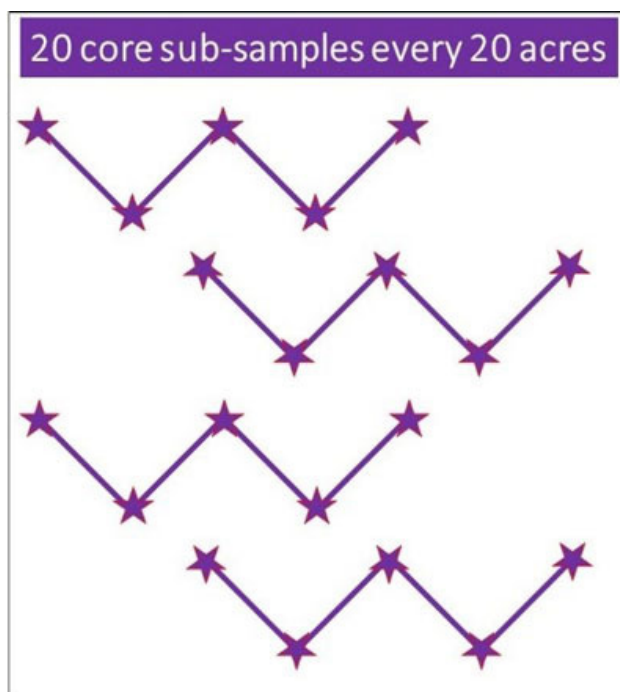
Figure 2. Example of a good sampling pattern for collecting soil to test for SCN.

When sending your samples to the diagnostic lab make sure to:

1. Send overnight or as fast as possible
2. Avoid leaving bags in the sun
3. Send the samples to the Plant Disease Diagnostic Lab in the K-State Plant Pathology Department.
4. You can find the **Plant Disease Diagnostic Check sheet** at https://www.plantpath.k-state.edu/extension/diagnostic-lab/documents/2021_PP_DiseaseLabChecksheet.pdf.pdf

Shipping address:

K-State Plant Disease Diagnostic Lab
4032 Throckmorton PSC
1712 Claflin Road
Manhattan, KS 66506
clinic@ksu.edu
785-532-1383

Remember, your results will only be as good as the sample that you send to the lab!

Check out this short, informative video from our lab: Soybean Cyst Nematode-SCN Sampling 2022, https://youtu.be/b6Eo0isI1I0 .

For more information, feel free to contact us at the K-State Plant Pathology Department.

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To access crop performance testing information electronically, visit our website. The information contained in this publication, plus more, is available for viewing or downloading at:

www.agronomy.k-state.edu/services/crop-performance-tests/index.html

Excerpts from the University Research Policy Agreement with Cooperating Seed Companies

Permission is hereby given to Kansas State University (KSU) to test varieties and/or hybrids designated on the attached entry forms in the manner indicated in the test announcements. I certify that seed submitted for testing is a true sample of the seed being offered for sale.

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