Results of the KENTUCKY SOYBEAN PERFORMANCE TESTS—1967

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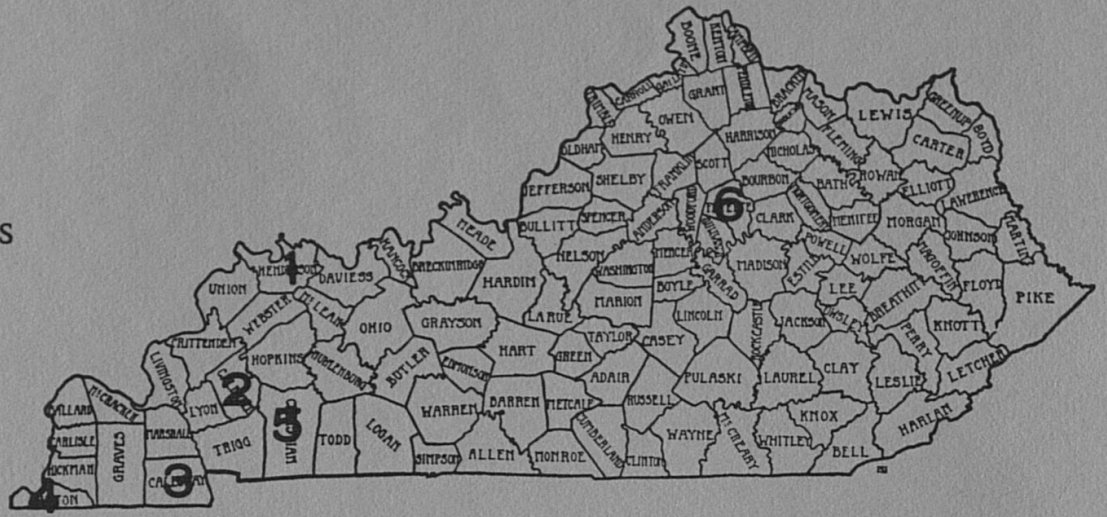
Lexington

LOCATION OF THE 1967
SOYBEAN PERFORMANCE TESTS



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Location	Soil Type	pH	Phosphorus	Potassium	Fertilizer Applied	Date Planted	Row Width
1. Henderson	Sharkey silt loam	5.92	Low	Medium	None	May 10	40"
2. Princeton	Huntington silt loam	7.4	High	Low	None	May 25	40"
3. Murray	Grenada silt loam	7.5	Low	Low	None	June 1	38"
4. Hickman	Robinsville silt loam	7.0	High	High	None	May 11	38"
5. Hopkinsville	Hagerstown silt loam	---	---	---	0-40-40	April 25	38"
6. Lexington	Burgin silt loam	5.9	High	Medium	0-45-90	May 23	40"

RESULTS OF THE KENTUCKY SOYBEAN PERFORMANCE TESTS - 1967

The objective of the Kentucky Soybean Performance Tests is to provide an estimate of the relative performance of standard soybean varieties and to provide information on the performance of experimental strains of soybeans provided by the U. S. Regional Soybean Laboratory. Included in the testing program are herbicide tests, row-spacing tests and fertilizer tests.

Soybean production in Kentucky for 1967 was estimated at 10,638,000 bushels. Production in 1966 was 7,750,000 bushels and 5,726,000 bushels for the period 1961-65. Average yields per acre were 27 bushels for 1967, 25 bushels for 1966 and 24 bushels for 1961-65.

EXPERIMENTAL METHODS

Soybean tests were conducted at five locations in the major soybean-producing areas of the state and at Lexington. The testing locations, soil types, soil test results, pounds of N, P and K applied per acre, date planted and row width are shown on page 2. Varieties and experimental strains tests were planted with each entry in three plots (replications) at all locations with individual plots being 4 rows wide and 19 feet long. The seeding rate was 10 viable seed per foot of row. In the row-spacing test the planting rates were 7, 8, and 10 viable seed per foot of row with rows spaced 20, 30, and 40 inches apart.

In the herbicide test the plot size was 4 rows 40 feet long. The test at Hickman was not harvested because of heavy rains immediately after herbicides were applied.

The herbicide test at Henderson was planted May 23 and the herbicides were applied with a tractor mounted boom sprayer. Chemicals were applied uniformly by using a constant pressure at 40 psi. All chemicals were applied in water at the rate of 25 gal/A. Treflan was applied as preplant treatment and double disked immediately into the soil.

Yield

A 16-foot section from each of the 2 center rows was harvested for yield. Plants were cut by hand and threshed with a small nursery thresher. The yield of the varieties is reported as bushels per acre at 13.0 percent moisture.

Maturity Date

This is the date when the pods are dry and most of the leaves have dropped. Stems are also dry, under most conditions. Maturity may also be expressed as days earlier (-) or later (+) than a standard variety.

Lodging

Lodging was based on a scale of 1 to 5: 1 = almost all plants erect; 2 = all plants over slightly or a few down; 3 = all plants over moderately or 25%-50% down; 4 = all plants over considerably or 50%-80% down; 5 = all plants down badly.

Seed Quality

Quality was also based on a scale of 1 to 5: 1 = very good; 2 = good; 3 = fair; 4 = poor; 5 = very poor.

Seed Size

Seed size is expressed as the weight in grams of 100 seed.

Purple Seed Stain

The amount of purple stain, a disease caused by the fungus Cerospora kikuchii (T.Matsu and Tomoyaau) Gardner, is expressed as the percentage of seed which was stained. Development of the disease is apparently influenced by weather conditions existing during pod formation.

RESULTS

Variety Trials

Performance data for the variety tests are presented in Tables 1-10. Tables 1, 3, 5, and 7 are three-year summaries for Henderson, Hickman, Murray and

Princeton. Tables 2, 4, 6 and 8 are annual summaries for the same respective locations. Hopkinsville and Lexington data are presented in Tables 9 and 10. No one variety was outstanding in yield at all locations.

Yields from a comparison of certified and non-certified seed were 45.3 and 43.2 bushels per acre respectively.

Weed Control Experiments

Weed control ratings for the Henderson test are presented in Table 11 and are based on a scale of 0-10 with 0 being no control and 10 complete control. The best results in 1967 were obtained with treatments of Alanap Plus, Lorox, Ramrod, Ramrod + Lorox and Vernam. Ramrod, Lorox, and Ramrod + Lorox gave the best control of foxtail.

Heavy rainfall during the growing season may have reduced full season control of some weeds in plots treated with Amiben, Planavin and Treflan.

Cost per acre on a broadcast basis and prices at Henderson in 1967 are presented in Table 11. Prices may vary depending on location. Band treatment cost can be calculated from these prices.

Beans from plots where good weed control was accomplished were much easier to thresh than beans from plots with poor weed control. Check plots which were very weedy were very difficult to thresh and clean.

Row-spacing and Fertilizer Experiments

Yield data for the row-spacing experiment at Henderson are presented in Table 12. Lodging was very bad in the 20-inch rows and would have required a pick-up attachment on the combine. Amsoy was significantly higher yielding than Hood. On the average, the 30-inch spacing was higher yielding than the 20 inch or 40-inch spacing.

Yield data for 1966-67 and 1967 at Princeton are presented in Tables 13 and 14. There was no significant difference in yield in 1966 between spacings, but

Clark 63 was significantly higher yielding than Amsoy or Hood. Lodging was negligible in 1966 but quite bad in Amsoy 20" and 30" rows in 1967. Hood and Clark 63 were slightly higher yielding than Amsoy for the two years.

No significant differences in yield were obtained with the application of 100 units of P_2O_5, K_2O, or 100 units of both.

Date-of-Planting, Irrigation, and Variety Experiment

This experiment was conducted for one year at Lexington. Very little moisture stress was observed in 1967. Yields from plantings made April 28 and May 26 were significantly higher than from the June 27 planting. Yieldsof irrigated plots were significantly higher than non-irrigated plots for the April 28 and June 27 planting. The Wayne variety for the May 26 planting produced higher yields on the non-irrigated plots. Data for the Date-of-Planting study are presented below:

Date Planted	Kent		Wayne		
	Irrigated	Non-Irrigated	Irrigated	Non Irrigated	Ave.
April 28	41.2*	46.9	58.1	42.8	48.5**
May 26	47.5	46.2	43.9	48.0*	46.4**
June 27	32.4*	27.5	35.9*	33.0	32.2

* Significantly higher yielding between irrigated and non-irrigated for that date of planting.

** Significantly higher yields for the earlier plantings.

Table 1. Three-year Summary of Soybean Varieties Grown at Henderson, Ky. 1965-67

Variety	Yield, Bu/Acre	Date Matured	Lodging*	Ht, In.	Seed Quality*	G/100 Seed*	Purple Stain,%
Wayne	38.7	9-21	2.2	40	2.7	18.0	4.3
Shelby	34.4	9-22	2.7	40	2.5	16.8	2.0
Clark 63	40.5	9-27	1.9	43	2.2	15.4	1.0
Kent	39.7	10-2	1.6	42	2.2	17.4	0
Scott	36.3	10.8	2.5	44	2.5	14.7	0
Hill	38.0	**	2.7	38	1.5	13.4	0
Dare	37.2	**	2.2	36	1.2	14.3	0
Dyer	35.3	**	2.1	33	1.2	15.8	0
Hood	29.9	**	2.9	39	1.4	14.6	0
Ogden	33.0	**	2.9	43	2.0	15.6	0

* See text for explanation of ratings.
**-Harvested after frost 1966-67.

Table 2. Annual Summary of Soybean Varieties Grown at Henderson, Kentucky 1967

Variety	Yield, Bu/Acre	Date Matured	Lodging*	Ht, In.	Seed Quality*	G/100 Seed	Purple Stain,%
Wayne	45.5	9-19	2.0	44	2.0	18.5	0
Shelby	32.0	9-16	2.7	41	3.0	16.5	0
Clark 63	39.7	9-23	2.7	44	2.7	14.9	0
Kent	39.3	9-24	2.0	43	1.7	16.6	0
Scott	25.8	9-22	2.7	44	2.7	13.0	0
Custer	26.7	9-22	3.0	48	1.3	13.2	0
Hill	27.9	10-12	2.7	39	1.3	10.9	0
Dare	32.8	**	3.0	44	1.3	14.1	0
Dyer	30.5	**	2.0	37	1.3	14.4	0
Hood	25.5	**	2.7	40	1.3	13.0	0
Ogden	31.4	**	2.3	48	2.0	14.8	0
Pickett	15.4	**	2.8	40	2.0	13.3	0

LSD (.05) - 7.0 bu

* See text for explanation of ratings.
** Harvested after frost .

Table 3. Three-year Summary of Soybean Varieties Grown at Hickman, Ky. 1965-67

Variety	Yield, Bu/Acre	Lodging*	Ht, In.	Seed Quality*	G/100 Seed*	Purple Stain,%
Clark 63	35.8	1.8	38	2.4	15.8	5.0
Kent	38.7	1.3	38	2.2	16.6	2.0
Scott	37.4	1.5	40	2.5	14.5	1.4
Hill	36.3	2.4	36	1.6	12.8	0.3
Dare	39.0	2.2	36	1.2	13.4	0.3
Dyer**	40.4	2.2	31	1.8	14.0	0.7
Hood	37.7	1.7	40	1.2	15.1	0.3
Ogden	38.3	1.8	39	1.9	15.1	0
Lee	34.2	2.2	38	1.6	13.1	0.3
Pickett	31.4	2.0	37	2.0	12.7	0
Davis***	39.8	3.0	43	1.8	14.0	0

* See text for explanation of ratings.
** Data from adjacent test.
*** 1966-67 data only.

Table 4. Annual Summary of Soybean Varieties Grown at Hickman, Ky. 1967

Variety	Yield, Bu/Acre	Date Matured	Lodging*	Ht, In.	Seed Quality*	G/100 Seed*	Purple Stain,%
Clark 63	42.6	9-27	2.7	44	2.0	15.8	1.3
Kent	50.2	10-1	1.3	43	2.0	17.5	0
Scott	45.1	9-28	2.0	42	2.7	14.6	1.3
Custer	46.5	9-28	1.7	44	2.0	15.1	0
Hill	41.1	10-4	3.0	40	1.3	13.6	0
Dare	48.5	10-15	3.0	34	1.0	15.1	0
Hood	44.3	10-25	1.7	46	1.0	15.8	0
Lee	38.4	**	2.0	42	1.7	14.1	0
Ogden	45.0	**	2.0	40	2.0	16.2	0
Pickett	27.6	**	2.0	38	2.3	14.4	0
Davis	38.6	**	2.3	44	2.3	15.0	0

LSD (.05) - 6.3 bu

* See text for explanation of ratings.
** Harvested after frost.

Table 5. Three-year Summary of Soybean Varieties Grown at Murray, Ky. 1965-67

Variety	Yield, Bu/Acre	Lodging*	Ht, In.	Seed Quality*	G/100 Seed*	Purple Stain,%
Wayne	32.7	2.7	38	2.3	18.3	1.0
Clark 63	32.4	1.8	42	1.8	16.3	1.0
Kent	35.6	1.5	42	2.0	19.5	1.0
Scott	29.1	1.9	40	2.0	15.7	0.7
Hill	33.7	4.0	34	1.4	15.5	0.8
Dare**	39.0	3.5	39	1.0	15.8	0
Hood	30.5	2.1	36	1.4	16.8	0.7
Ogden	30.5	2.7	40	1.9	17.5	0.7
Lee	31.5	4.5	37	1.6	14.7	0.7
Pickett**	31.0	2.7	37	1.4	14.2	0
Davis**	27.1	2.9	46	1.9	13.5	0

* See text for explanation of ratings.
** 1966-67 data.

Table 6. Annual Summary of Soybean Varieties Grown at Murray, Ky. 1967

Variety	Yield, Bu/Acre	Lodging*	Ht, In.	Seed Quality*	G/100 Seed*
Wayne	33.7	3.0	34	3.0	18.0
Clark 63	34.3	2.3	42	2.0	16.5
Kent	43.0	1.3	42	2.0	21.1
Scott	37.0	2.0	44	2.0	15.9
Custer	31.4	2.7	50	2.0	16.5
Hill	41.0	3.0	37	1.0	16.8
Dare	42.3	3.0	38	1.0	16.1
Hood	31.4	2.3	36	1.3	14.6
Ogden	28.7	3.3	42	2.0	16.4
Lee	31.4	4.0	36	1.7	14.9
Pickett	29.5	3.3	34	1.7	13.9
Davis	21.5	3.7	48	2.0	12.8

LSD (.05) - 8.9 bu

* See text for explanation of ratings.

Table 7. Two-and Three-year Summary of Soybean Varieties Grown at Princeton, Ky. 1965-67

Variety	Yield, Bu/Acre	Date Matured	Lodg-ing*	Ht, In.	Seed Quality*	G/100 Seed*	Purple Stain,%
Wayne**	35.4	9-17	1.8	39	2.7	20.1	1.5
Dare**	38.8	---	2.7	38	1.0	16.5	0.5
Lee**	32.3	---	3.9	41	2.4	17.2	0.5
Davis**	31.1	---	3.5	45	2.7	15.7	0.5
Pickett**	31.0	---	3.0	35	1.7	15.3	0.5
Shelby	28.5	9-20	2.3	38	2.0	15.7	1.7
Clark 63	31.9	9-24	1.9	42	1.4	15.7	1.6
Kent	34.0	9-30	1.3	39	2.4	17.0	3.0
Scott	32.5	10-3	1.8	43	2.5	14.9	3.0
Hill	37.2	10-19	3.1	37	1.6	15.6	1.0
Hood	39.1	10-28	2.6	39	1.1	17.0	0.7
Ogden	35.6	10-29	2.6	43	1.9	17.2	0.7

* See text for explanation of ratings.

** Two year data.

--- Indicates harvest is generally after frost.

Table 8. Annual Summary of Soybean Varieties Grown at Princeton, Ky. 1967

Variety	Yield, Bu/Acre	Date Matured	Lodging*	Ht, In.	Seed Quality*	G/100 Seed*	Purple Stain,%
Wayne	37.2	9-28	2.6	43	3	21	1
Shelby	31.8	10-2	3.6	42	2	18	2
Clark 63	36.2	9-30	3.0	46	1	19	1
Kent	38.5	9-30	1.3	44	2	20	1
Scott	29.8	10-2	2.0	44	3	17	1
Hill	38.1	**	5.0	37	1	18	2
Dare	36.2	**	4.3	37	1	19	1
Hood	42.3	**	3.6	38	1	18	1
Ogden	38.2	**	3.6	43	2	20	1
Lee	31.7	**	5.0	45	3	19	1
Davis	22.7	**	5.0	46	4	16	1
Pickett	28.2	**	3.6	35	2	17	1

LSD (.05) - 11.8 bu

* See text for explanation of ratings.
** Harvested after killing frost October 11.

Table 9. Annual Summary of Soybean Varieties Grown at Hopkinsville, Ky. 1967

Variety	Yield, Bu/Acre	Lodging*	Seed Quality*	G/100 Seed*	Purple Stain,%
Wayne	45.7	1	2.3	16.8	1.0
Shelby	43.4	1	2.5	17.6	8.0
Clark 63	45.8	1	2.3	15.5	1.0
Kent	48.0	1	2.0	18.0	3.0
Scott	43.2	1	1.7	13.9	1.0
Hill	49.3	2	1.0	13.6	0.6
Dare	43.4	2	1.0	13.9	0.5
Hood	51.0	2	1.0	14.1	0.6

LSD (.05) - 5.9 bu.

* See text for explanation of ratings.

Table 10. Annual Summary of Soybean Varieties Grown at Lexington, Ky. 1967

Variety	Yield, Bu/Acre	Date Matured	Lodg-ing*	Ht, In.	Seed Quality*	G/100 Seed*
Wayne	42.6	10-6	2.3	44	1.3	18.0
Shelby	39.8	10-6	2.3	46	2.0	16.8
Clark 63	37.2	10-8	2.0	38	2.0	15.1
Kent	38.2	10-13	1.3	45	1.7	18.5
Scott	33.6	10-10	2.0	44	1.7	14.5
Custer	29.4	10-11	3.7	43	2.0	15.3
Hill	23.6	**	4.0	40	2.0	12.1
Dare	22.8	**	4.0	40	2.0	13.7
Hood	24.0	**	3.7	43	1.7	11.6
Ogden	19.8	**	3.3	52	2.0	12.0
Lee	15.3	**	4.0	38	2.0	12.7
Pickett	8.4	**	2.7	40	**	**
Davis	7.4	**	3.7	52	**	**

LSD (.05)- 5.1 bu

* See text for explanation of ratings.
** Harvested after killing frost October 12, seed still green.

Table 11. Three-year, Two-year and Annual Summary of Herbicide Test, Henderson

Herbicide	Herbicide lb actual per acre	Yield-Bu per acre 1965-67	Yield-Bu per acre 1966-67	Yield-Bu per acre 1967	Weed Rating* 1966-1967	Weed Rating* June 21, 1967	Herbicide Cost $/A 1967**
Alanap Plus(Alanap +CIPC)	3.0 + 2.0	36.3	41.6	36.6	8.3	8.0	11.40
Amiben	3.0	33.4	36.6	30.3	6.8	5.5	15.22
Lorox	1.5	33.5	35.9	35.8	7.5	7.5	8.55
No Treatment	--	23.3	25.0	8.4	0	0	0
Treflan - disk, preplant	0.75	28.2	32.4	21.7	5.4	4.5	6.44
Vernam-Incorporated	3.0	30.9	35.8	25.6	8.1	7.0	8.50
Ramrod	5.0	---	41.1	38.8	8.6	9.2	13.07
Planavin - Incorporated	1.33	---	---	25.6	---	3.7	10.61
Ramrod-Lorox	2.5 + 0.75	---	---	36.1	---	8.0	10.80
LSD (.05)				8.2 bu			

* See text for explanation of ratings.

** Cost per acre broadcast, based on retail prices at Henderson.

Table 12. Soybean Row-spacing Test, Henderson, 1967

Variety	Bushels per acre* 20" Rows	30" Rows	40" Rows	Average
Amsoy	52.3ab	57.6a	48.3 bc	52.7ab
Clark 63	46.2 c	46.1 c	40.1 d	44.1 c
Hood	24.6 e	23.3 e	24.8 e	24.2 e
Average	41.0 d	42.3 cd	37.7 cd	40.4

* Yields followed by the same letter are not significantly different.

Table 13. Two-year Row-spacing Test, Princeton, 1966-67

Variety	Bushels per acre 20" Rows	30" Rows	40" Rows	Average
Amsoy	38.2	34.6	38.3	37.0
Clark 63	42.2	40.6	41.1	41.3
Hood	40.2	40.2	40.0	40.1
Average	40.2	38.4	39.8	39.4

Table 14. Annual Row-spacing Test, Princeton, 1967

Variety	Bushels per acre* 20" Rows	30" Rows	40" Rows	Average
Amsoy	35.4 c	36.1 c	36.0 c	35.8 c
Clark 63	37.0 bc	38.8abc	40.5abc	38.7abc
Hood	36.2 c	41.5a	42.4a	40.0abc
Average	36.2 c	38.8abc	39.6abc	38.1

* Yields followed by the same letter are not significantly different.

(To simplify information in this publication, trade names of some products are used. No endorsement is intended, nor is criticism implied of similar products not named.)

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