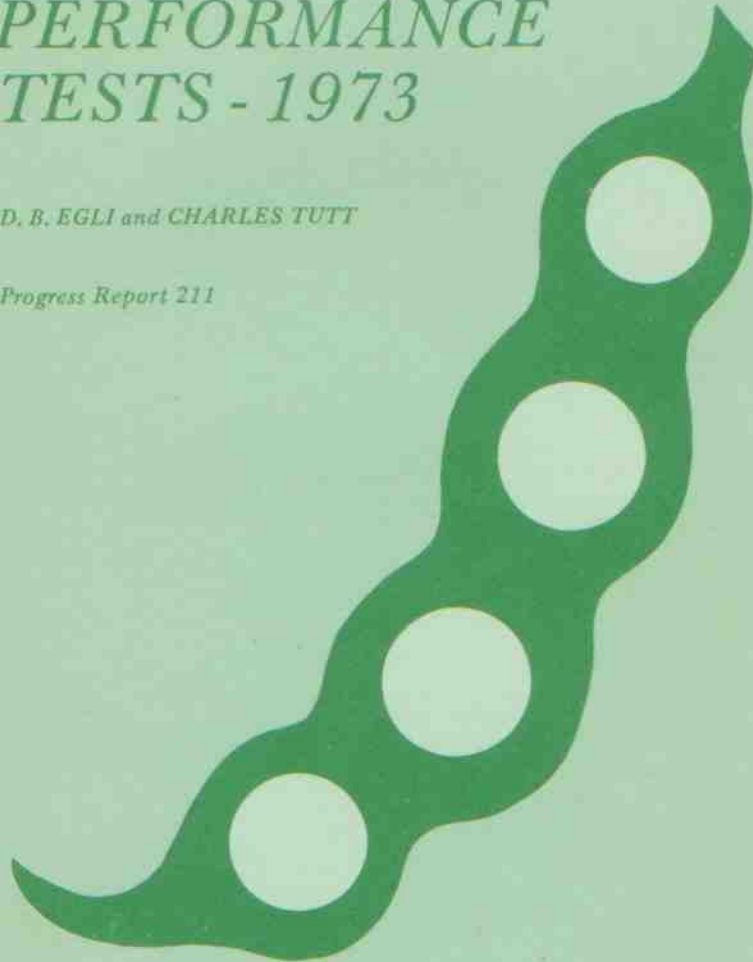


*KENTUCKY
SOYBEAN
PERFORMANCE
TESTS - 1973*

D. B. EGLI and CHARLES TUTT

Progress Report 211



*UNIVERSITY of KENTUCKY • COLLEGE of AGRICULTURE
Agricultural Experiment Station • Department of Agronomy • Lexington*

LOCATION OF THE 1973
SOYBEAN PERFORMANCE TESTS



Acknowledgment is made to the Owensboro Grain Company, Owensboro, and the Ellis Grain Company and Central Soya, Henderson, for their cooperation in the soybean tests at Henderson; also, to the county extension agents and farm cooperators listed below:

<u>Location</u>	<u>Soil Type</u>	<u>Date Planted</u>	<u>Row Width</u>	<u>Farm Cooperators</u>
1. Henderson	Patton silt loam	June 12	30 inches	Huston Ginger
2. Hartford	Melvin silt loam	June 11	30 inches	Preston Vaught
3. Princeton	Crider silt loam	June 8	30 inches	
4. Clinton	Loring silt loam	June 22	30 inches	Randall Mullens
5. Lexington	Maury silt loam	May 15	30 inches	

(Extension Agents who cooperated in the tests included William Hendrick, John Kavanaugh, and Charles Padgett.)

Kentucky Soybean Performance

Tests—1973

By D. B. Eght and Charles Turt

The objective of the Kentucky Soybean Performance Tests is to provide an estimate of the relative performance of soybean varieties in Kentucky. This information may be used by growers and seedsmen in selecting the variety that will give the highest total production for a specific situation. Experimental strains of soybeans provided by the U. S. Regional Soybean Laboratory are also tested at several locations in Kentucky.

Soybean tests in 1973 were conducted at four locations in the major soybean-producing areas of the state and at Lexington. The testing locations, soil types, planting date and row width are shown on the opposite page. Each variety was planted in three plots (replications) at all locations, with individual plots being 3 rows wide and 20 feet long. The seeding rate was approximately 8-10 viable seed per foot of row.

A 16-foot section from each of the center rows was harvested for yield. Plants were cut by hand and threshed with a small nursery thresher. All branches and lodged plants were harvested from each plot. The yield of the varieties is reported as bushels per acre at 13% moisture.

Lodging

Lodging was rated 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% down; 4 = all plants over considerably or 50-80% down; 5 = all plants over badly.

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 that of a standard variety. Maturity dates were not recorded at all locations.

Height

Plant height was measured in inches from the soil surface to the tip of the main stem.

INTERPRETATION

An important step to profitable soybean production is to select good seed of the best variety. The Kentucky Soybean Performance Tests are conducted to provide information useful in making this selection.

Performance of soybean varieties is affected by many factors including season, location, soil type, and time of planting. A particular soybean variety is adapted for full-season growth in a band approximately 100 miles wide from north to south. Thus, the best variety in northern Kentucky may not be the best in southern areas. For this reason the Kentucky Soybean Performance Tests are conducted at several locations in the major soybean-producing areas of the state. Data from the location nearest to a particular soybean grower's farm probably provide the best estimate of the potential of the soybean varieties in that area.

Performance of the varieties will vary from year to year. The average performance of a variety over a period of years provides a better estimate of its potential than its performance in a particular year.

Small differences in yield are usually of little importance. The yield of two varieties at a single location may differ because of chance factors (difference in soil characteristics, fertility, or availability of moisture) even though the inherent yielding ability is the same. To decide if an observed yield difference is real, use the LSD (least significant difference) value quoted at the bottom of the tables. If the difference in yield is greater than the LSD value, you may be reasonably certain that the entries actually do differ in yielding ability.

RECOMMENDED VARIETIES

The soybean varieties recommended by the Kentucky Agricultural Experiment Station for use in Kentucky are listed in Table 1. These varieties have been tested for a minimum of 3 years in Kentucky and have been shown to be superior in yield and other agronomic characteristics. Varieties not on the recommended list are included in the tests to evaluate their potential, and some may eventually be added to the recommended list. Table 1 also lists the characteristics and disease reactions of the recommended varieties.

Variety Adaptation

Early-maturing varieties, such as Wayne, Calland and Clark 63 are best adapted in areas of Western Kentucky north of the Western Kentucky Parkway. Late-maturing varieties, such as Dare, York, and Hood, are best adapted in areas south of the West Kentucky Parkway. Mid-season varieties, such as Cutler, Cutler 71, Custer and Kent, can be successfully grown in most areas in Western Kentucky.

Certified Seed

Always plant high quality seed of recommended varieties. Certified soybean seed is a reliable source of good seed. Certified seed has passed rigid field and laboratory standards for genetic identity and purity of a variety. Certified soybean seed also has good germination and freedom from noxious weed seed

Table 1.—Characteristics and Disease Reactions of the Recommended Varieties.

Variety	Flower Color	Pubescence Color	Hilum Color	Maturity		Seeds per pound	Disease Reaction ^{3/}		
				<u>1/</u>	<u>2/</u>		Phytophthora Root Rot	Cyst Nematode	Bacterial Pustule
Wayne	white	brown	black	-16	III	2700	Sus	Sus	Res
Calland	purple	brown	black	-14	III	2600	Res	Sus	Sus
Clark 63	purple	brown	black	-12	IV	3000	Res	Sus	Res
Cutler	purple	brown	black	- 9	IV	2600	Sus	Sus	Sus
Cutler 71	purple	brown	black	- 9	IV	2600	Res	Res	Res
Custer	purple	gray	black	0	IV	3100	Res	Sus	Sus
Kent	purple	brown	black	0	IV	2600	Sus	Sus	Res
Dare	white	gray	buff	+17	V	3500	M.Res	Sus	M.Res
York	purple	gray	buff	+18	V	2600	M.Res	Sus	Res
Hood	purple	gray	buff	+22	VI	3400	Sus	Sus	Res

1/ Approximate number of days earlier (-) or later (+) than Kent.

2/ Maturity Group.

3/ Res = resistant, Sus = susceptible, M.Res = moderately resistant.

and other crop seed. The Experiment Station recommends that Kentucky certified seed be used whenever possible for growing a commercial crop of soybeans.

Sources of Seed

Entry	Source
Seedmaker 1-E, 1-G, 263G	Seedmakers, Inc. Princeville, Ill. 61559
SRP 307P, 350, 400, 450	Soybean Research Foundation, Inc. Mason City, Ill. 62664
FPR 666, 951194, 953284	Farmers Forage Research, Coop. 4112 E. State Road 225 Lafayette, Ind. 47906
XK-585, XK-707	L. Teweles Seed Co. Clinton, Wisc. 53525

Table 2.—Kentucky Soybean Variety Tests—Henderson.

Variety	Yield (Bu/A)			Lodging ^{1/}				He ^{2/} (In.)
	1971-73	1972-73	1973	1971-73	1972-73	1973	1973	
Hayne	49.0	51.0	46.3	3.2	3.1	3.1	4.0	
SRR-307P	—	—	56.8	—	—	2.0	4.3	
Seedmakers 1-E	—	53.6	57.0	—	3.7	3.1	4.6	
Seedmakers 1-G	—	—	53.3	—	—	1.0	3.8	
Calland	52.8	57.8	58.4	2.0	2.2	2.0	4.5	
Clark 63	47.9	51.9	58.8	2.9	2.8	2.3	4.3	
SRR-350	—	—	51.6	—	—	1.7	4.3	
SRR-400	49.5	53.9	52.8	3.3	3.2	2.3	4.4	
Williams	—	—	62.3	—	—	1.3	4.2	
SRR-425	—	—	62.2	—	—	3.3	4.6	
Cutler 71	53.7	58.7	58.3	2.4	2.5	2.0	4.6	
Seedmakers 2636	—	51.7	55.7	—	2.5	1.5	4.0	
Bonus	—	—	57.0	—	—	2.0	4.7	
Kent	51.5	53.4	58.1	2.0	2.2	1.3	4.2	
SRR-450	50.0	50.7	48.5	3.0	3.7	3.0	4.3	
Essex	—	64.1	69.4	—	2.6	2.0	3.5	
Date	48.7	48.7	50.7	3.9	4.2	4.1	4.6	
York	48.1	48.7	59.0	3.0	2.8	2.3	3.7	
Forrest	—	59.5	69.4	—	3.8	3.0	4.1	
Mark	48.3	53.1	54.3	3.9	3.9	3.7	3.9	
Average	50.0	54.1	57.0	3.0	3.1	2.4	4.2	
LSD (5%)			11.5					

^{1/} See explanation in text.^{2/} 1973 data only.

Table 3.—Kentucky Soybean Variety Tests—Hartford.

Variety	Yield (Bu/A)			Lodging ^{1/}				He ^{2/} (In.)
	1971-73	1972-73	1973	1971-73	1972-73	1973	1973	
SRR-307P	—	—	39.0	—	—	—	4.0	
Seedmakers 1-E	—	30.9	37.6	—	1.4	1.3	3.8	
Seedmakers 1-G	—	—	37.6	—	—	1.0	3.4	
Calland	33.2	32.0	38.3	1.2	1.3	1.5	3.9	
Clark 63	33.8	33.4	36.9	1.3	1.3	1.3	3.9	
SRR-350	—	—	36.2	—	—	—	3.4	
SRR-400	36.3	37.2	41.0	1.6	1.7	1.5	3.8	
Williams	—	—	41.5	—	—	1.2	3.7	
Cutler 71	—	35.6	46.9	—	1.0	1.0	4.2	
Seedmakers 2636	—	—	36.3	—	—	1.5	3.9	
Bonus	—	—	44.4	—	—	—	4.3	
Kent	38.3	38.1	41.9	1.2	1.4	1.7	3.8	
SRR-450	—	—	40.3	—	—	2.3	3.8	
Columbus	40.5	39.2	49.7	2.4	2.3	1.8	4.3	
FFR 951194	—	—	41.9	—	—	1.7	3.8	
Tewelen XK-585	—	—	40.4	—	—	—	3.5	
Tewelen XK-707	—	—	37.3	—	—	1.8	4.0	
Essex	—	—	59.4	—	—	1.3	3.4	
Date	45.3	48.3	53.6	2.6	2.3	2.5	3.8	
York	44.0	45.8	50.9	1.9	2.1	1.7	3.2	
Average	38.8	37.5	42.5	1.7	1.6	1.5	3.8	

^{1/} See explanation in text.^{2/} 1973 data only.

Table 4.—Kentucky Soybean Variety Tests—Princeton.

Variety	Yield (Bu/A)			Lodging ^{1/}			Maturity ^{2/} (dn.)	R ₂ ^{2/} (dn.)
	1971-73	1972-73	1973	1971-73	1972-73	1973		
Wayne	49.8	50.5	50.8	1.3	1.5	1.7	9/10	40
SRF-350	—	—	49.6	—	—	3.7	9/17	42
Seedmakers 1-8	—	51.0	51.2	—	2.9	1.0	9/16	39
Seedmakers 1-6	—	—	53.2	—	—	4.7	9/16	45
Calland	53.5	53.2	51.3	1.6	1.7	1.7	9/17	45
Clark 63	48.8	48.4	44.5	1.9	1.5	1.3	9/19	44
SRF-400	46.1	46.4	39.9	2.0	1.5	1.7	9/19	41
William	—	55.5	53.4	—	1.0	1.0	9/17	41
Cutler 71	52.9	52.0	50.3	1.7	1.9	1.7	9/20	46
SRF-425	—	—	50.6	—	—	2.0	9/22	47
Seedmakers 263C	—	48.2	41.8	—	1.5	1.7	9/22	43
Hood	—	52.7	50.6	—	1.7	2.0	9/19	49
Kent	47.9	45.5	44.0	1.3	1.2	1.3	9/25	42
Teweler XX-707	—	—	52.7	—	—	5.0	9/23	48
Columbus	42.5	43.0	36.7	2.2	2.4	3.7	10/3	43
FR 953284	—	—	41.5	—	—	2.3	10/7	42
Essex	—	—	54.2	—	—	2.3	10/11	35
Forrest	—	47.5 ^{3/}	47.2	—	2.5 ^{3/}	2.3	10/19	41
Mack	—	42.9 ^{3/}	42.1	—	2.4 ^{3/}	2.7	10/18	40
Date	44.9	47.0	46.4	2.7	3.2	3.3	10/13	39
York	51.1	54.0	62.1	1.4	1.3	1.3	10/11	40
Hood	43.5	42.6	43.7	2.3	2.5	2.7	10/20	40
Mean LSD(5%)	48.1	48.8	48.1	1.8	1.9	2.3		

^{1/} See explanation in text.^{2/} 1973 data only.^{3/} 1971 and 1973 data.

Table 5.—Kentucky Soybean Variety Tests—Clinton.

Variety	Yield (Bu/A)			Lodging ^{1/}			Maturity ^{2/} (dn.)
	1971-73	1972-73	1973	1971-73	1972-73	1973	
Calland	—	—	21.5	—	—	—	—
Clark 63	33.1	38.5	26.9	3.0	2.0	1.3	31
Cutler 71	36.6	42.4	32.7	2.7	1.9	1.3	34
SRF-425	—	—	20.6	—	—	3.0	35
Seedmakers 263C	—	38.6	30.5	—	2.4	1.3	30
Kent	33.3	36.3	30.3	2.6	1.5	1.0	34
Columbus	36.5	40.4	33.0	2.7	1.8	1.0	33
SRF-450	—	—	23.5	—	—	1.7	32
FR 953284	—	—	28.2	—	—	1.0	36
FR 666	—	—	31.9	—	—	2.7	35
Knox	—	42.4 ^{3/}	29.7	—	1.7 ^{3/}	1.7	31
Mack	—	38.4 ^{3/}	47.5	—	4.9 ^{3/}	4.7	41
Forrest	—	—	56.5	—	—	3.0	39
Date	—	26.0 ^{3/}	30.5	—	3.2 ^{3/}	2.7	37
York	33.8	35.2	31.8	2.4	1.7	1.0	32
Hood	—	27.4 ^{3/}	27.4	—	3.2 ^{3/}	1.3	33
Pickett 71	40.1	46.3 ^{3/}	50.0	4.7	4.9 ^{3/}	4.7	39
Lee 68	—	28.1 ^{3/}	31.7	—	3.2 ^{3/}	3.5	39
Average	35.6	36.5	32.5	3.0	2.8	2.0	35
LSD (5%)			8.1				

^{1/} See explanation in text.^{2/} 1973 data only.^{3/} 1971 and 1973 data.

The 1973 test location was found to be infested with the soybean cyst nematode. Thus, yields of susceptible varieties were severely reduced. Resistant varieties in the test were Mack, Forrest and Pickett 71. All other varieties in this test are susceptible to the soybean cyst nematode.

Table 6.—Kentucky Soybean Variety Tests—Lexington.

Variety	Yield (bu/A)		Lodging ^{1/}		Ht ^{2/} (in.)
	1972-73	1973	1972-73	1973	
Wayne	44.3	51.4	2.2	2.8	37
SRF-307P	—	56.5	—	4.0	43
Seedmakers 1-E	45.0	50.0	2.7	3.5	44
Seedmakers 1-G	—	47.6	—	2.2	40
Calland	52.6	52.5	1.5	1.8	43
Clark 63	44.2	51.0	3.0	3.6	46
SRF-350	—	52.5	—	2.8	43
SRF-400	41.8	43.4	3.5	4.0	42
Williams	48.0	48.8	1.4	1.7	43
SRF-425	—	43.8	—	3.8	47
Cutler 71	46.9	54.6	2.6	3.0	46
Seedmakers 263G	40.3	39.5	2.2	2.2	41
Bonus	51.4	53.0	2.0	2.2	49
Kent	38.7	40.3	2.4	2.8	45
SRF-450	40.9	43.4	2.0	2.3	43
Columbus	37.9	40.8	3.4	4.0	45
Essex	51.0	50.2	2.6	2.5	37
Dare	37.1	30.3	4.4	5.0	39
Average	44.3	47.2	2.6	3.0	43
LSD (5%)		11.4			

^{1/} See explanation in text.

^{2/} 1973 data only.

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