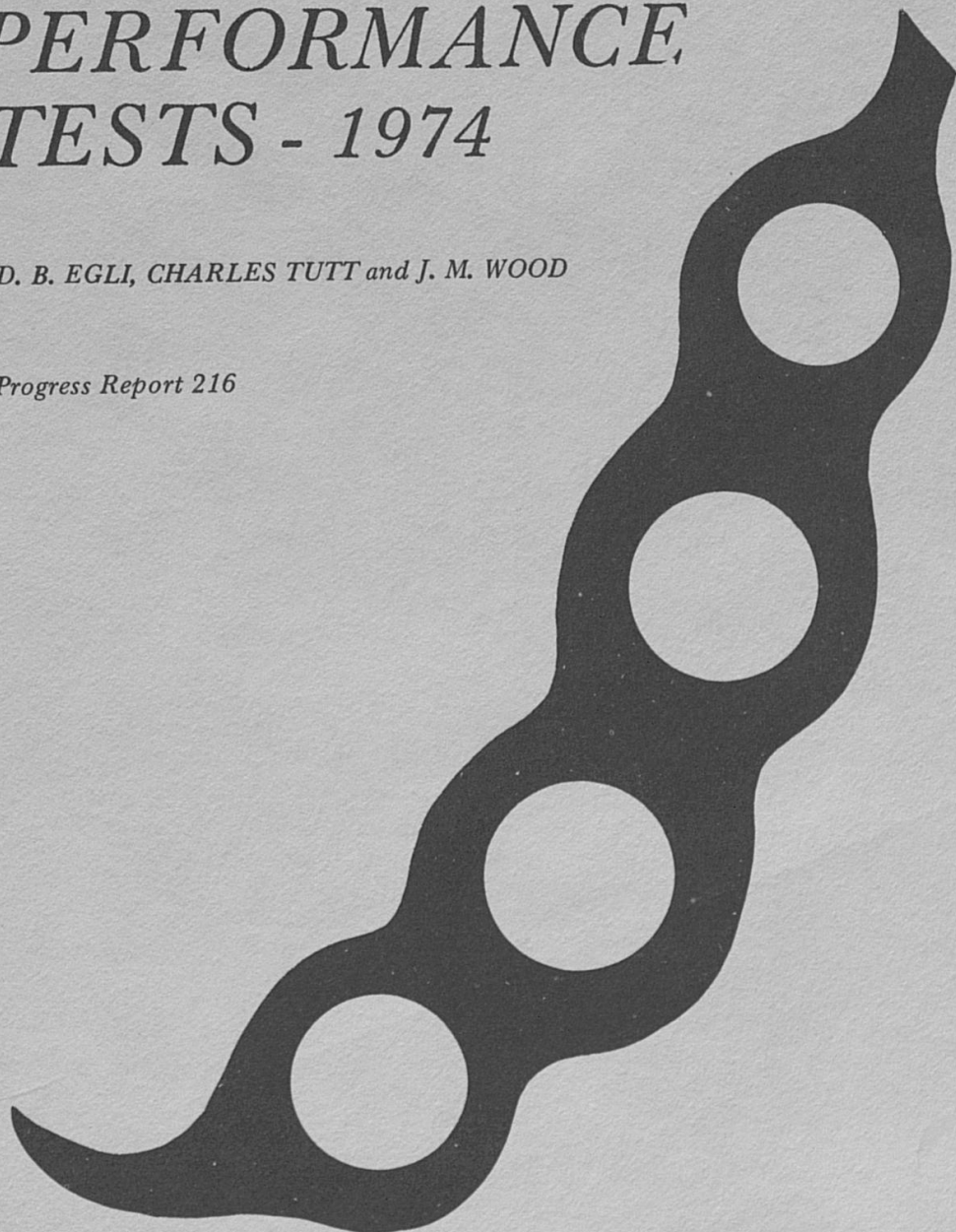


KENTUCKY SOYBEAN PERFORMANCE TESTS - 1974

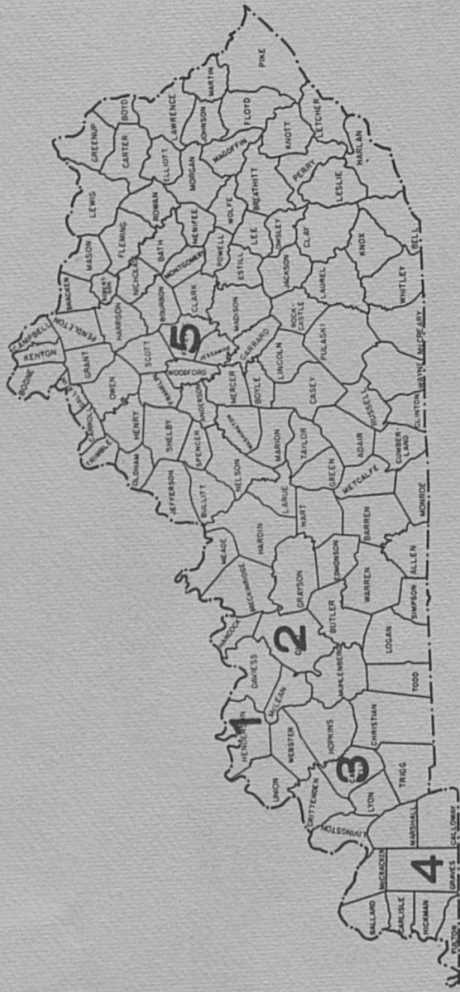
D. B. EGLI, CHARLES TUTT and J. M. WOOD

Progress Report 216



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

LOCATION OF THE 1974 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	May 21	30 inches	Huston Ginger
2. Hartford	Melvin silt loam	June 19	30 inches	Preston Vaught
3. Princeton	Crider silt loam	May 21	30 inches	Gail Dobson
4. Mayfield	Collins silt loam	June 4	38 inches	
5. Lexington	Maury silt loam	May 14	30 inches	

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

Kentucky Soybean Performance Tests—1974

By D. B. Egli, Charles Tutt and J. M. Wood

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 1974 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 (Group III), such as Calland and Williams, are best adapted in areas of Western Kentucky north of the Western Kentucky Parkway. Late-maturing varieties (Group V), such as Dare, York, and Hood, are best adapted in areas south of the West Kentucky Parkway. Mid-season varieties (Group IV), such as 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 <u>1/</u>	Maturity <u>2/</u>	Seeds per pound	Disease Reaction <u>3/</u>		
							Phytophthora Root Rot	Cyst Nematode	Bacterial Pustule
Calland	purple	brown	black	-14	III	2600	Res	Sus	Sus
Williams	white	brown	black	-13	III	2600	Sus	Sus	Res
Cutler 71	purple	brown	black	-9	IV	2600	Res	Sus	Sus
Custer	purple	gray	black	0	IV	3100	Res	Res	Res
Kent	purple	brown	black	0	IV	2600	Sus	Sus	Sus
Essex	purple	gray	buff	+14	V	3500	M.Res.	Sus	Res
Dare	white	gray	buff	+17	V	3500	M.Res.	Sus	Res
York	purple	gray	buff	+18	V	2600	M.Res.	Sus	M.Res.
Mack	purple	brown	black	+19	V	3200	Res	Res	Sus
Forrest	white	brown	black	+20	V	3500	M.Res.	Res	Res
Hood	purple	gray	buff	+22	VI	3000	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

<u>Entry</u>	<u>Source</u>
SM 1-G	Seedmakers, Inc., Sidney, Ill. 61877
SRF 307P,350,400,425, 450	Soybean Research Foundation, Inc. Mason City, Ill. 62664
FFR 333,444,555,666	Farmers Forage Research, Coop. 4112 E. State Road 225 Lafayette, Ind. 47906
XK351, XK585	L. Teweles Seed Co. Clinton, Wis. 53525
SM 1E, Bellatti L263	Louis Bellatti Mt. Pulaski, Ill. 62548
Coker 136	Coker's Pedigreed Seed Co. Hartsville, S. C. 29550

Table 2.—Kentucky Soybean Variety Tests—Henderson.

Variety	Yield (Bu/A)			Lodging ^{1/}			Ht. ^{2/} (in.)
	1972	1973	1974	1972	1973	1974	
	-74	-74		-74	-74		
<u>Early (Group III)</u>							
FFR 333	--	--	42.6	--	--	5.0	47
XK 585	--	--	47.6	--	--	5.0	48
SRF 307P	--	53.1	49.4	--	3.5	5.0	49
SM 1-E	52.7	54.0	50.9	4.1	4.0	5.0	49
SM 1G	--	50.4	47.5	--	3.0	5.0	50
Calland	53.4	51.4	44.4	3.1	3.5	5.0	48
SRF 350	--	53.1	54.6	--	3.4	5.0	47
Williams	--	61.0	59.6	--	3.0	4.8	48
SRF 400	50.1	47.8	42.7	3.7	3.6	4.8	50
L263 ^{3/}	50.9	52.5	49.3	3.3	3.2	5.0	49
Clark 63	49.7	52.1	45.4	3.4	3.5	4.7	49
XK 351	--	--	56.4	--	--	4.8	54
<u>Mid-Season (Group IV)</u>							
FFR 444	--	--	53.8	--	--	4.5	49
Cutler 71	57.5	56.8	55.2	3.3	3.4	4.8	50
SRF 425	--	55.0	47.9	--	4.2	5.0	52
Bonus	--	55.4	53.9	--	3.2	4.5	52
SRF 450	46.8	43.8	39.0	4.0	4.2	4.8	47
Kent	51.1	52.3	46.5	3.0	3.0	4.7	52
Pomona	--	--	50.4	--	--	4.5	44
Columbus	--	--	40.9	--	--	4.8	45
<u>Late (Group V)</u>							
FFR 555	--	--	36.9	--	--	4.8	50
Essex	60.1	60.8	52.2	3.3	3.4	4.7	40
York	47.0	51.2	43.5	3.5	3.6	5.0	42
Mack	50.6	50.0	45.7	4.2	4.4	5.0	43
Forrest	53.1	54.9	40.4	4.2	4.0	5.0	43
Average	51.9	53.1	47.9	3.6	3.6	4.8	48
LSD (.05)			11.80 Bu/A				

^{1/} See explanation in text.

^{2/} 1974 data only.

^{3/} Tested as Seedmakers 263G in 1972 and 1973.

Table 3.—Kentucky Soybean Variety Tests—Hartford.

Variety	Yield (Bu/A)			Lodging ^{1/}			Ht. ^{2/} (in.)
	1972	1973	1974	1972	1973	1974	
	-74	-74		-74	-74		
<u>Early (Group III)</u>							
FFR 333	--	--	33.7	--	--	2.3	35
XK585	--	35.2	29.9	--	1.1	1.2	29
SRF 307P	--	41.6	44.1	--	1.6	2.0	33
SM 1-E	33.2	37.8	37.9	1.8	2.2	2.7	33
SM 1G	--	36.4	35.2	--	1.6	2.3	33
Calland	32.0	35.2	32.1	1.4	1.6	1.8	34
SRF 350	--	32.2	28.1	--	1.4	1.5	31
Williams	--	37.4	33.2	--	1.4	1.5	31
SRF 400	34.3	34.7	28.4	1.5	1.4	1.2	33
L263 ^{3/}	31.1	32.2	28.2	2.0	2.1	2.7	35
Clark 63	32.3	33.4	30.0	1.5	1.8	2.0	34
XK 351 ^{4/}	--	33.4	29.6	--	2.3	2.8	33
<u>Mid-Season (Group IV)</u>							
FFR 444	--	--	34.0	--	--	2.3	35
Cutler 71	33.7	38.5	30.1	1.1	1.2	1.3	34
SRF 425	--	--	31.9	--	--	1.3	34
Bonus	--	37.1	29.8	--	1.2	1.0	36
SRF 450	37.1	37.0	33.6	1.7	2.0	1.7	35
Kent	37.3	38.8	35.7	1.6	2.0	2.2	34
Pomona	--	--	33.9	--	--	1.8	35
Columbus	35.0	38.2	26.7	2.5	2.3	2.8	36
<u>Late (Group V)</u>							
FFR 555	--	--	20.4	--	--	2.8	34
Essex	--	44.2	29.0	--	1.8	2.2	33
York	39.9	39.5	28.1	2.3	2.2	2.8	34
Mack	--	--	17.5	--	--	4.2	36
Forrest	--	--	21.7	--	--	3.5	39
Average	34.6	36.8	30.5	1.7	1.7	2.2	34
LSD (.05)	6.27 Bu/A						

^{1/} See explanation in text.

^{2/} 1974 data only.

^{3/} Tested as Seedmakers 263G in 1972 and 1973.

^{4/} Tested as XK707 in 1973.

Table 4.—Kentucky Soybean Variety Tests—Princeton.

Variety	Yield (Bu/A)			Lodging ^{1/}			Maturity ^{4/}	Ht. ^{2/} (in.)
	1972	1973	1974	1972	1973	1974		
	-74	-74		-74	-74			
<u>Early (Group III)</u>								
FFR 333	--	--	28.4	--	--	3.0	9/3	35
XK 585	--	--	36.4	--	--	1.7	9/5	34
SRF 307P	--	--	53.5	--	--	2.3	9/18	40
SM 1-E	46.6	44.6	37.9	2.5	1.4	1.7	9/12	37
Calland	49.5	46.6	42.0	1.5	1.4	1.0	9/18	36
SRF 350	--	51.6	53.5	--	2.5	1.3	9/21	40
Williams	54.5	53.0	52.7	1.0	1.0	1.0	9/20	38
SRF 400	44.9	39.9	39.9	1.9	2.2	2.7	9/20	39
L263 ^{3/}	44.3	39.2	36.6	1.4	1.5	1.3	9/20	39
Clark 63	46.2	43.1	41.7	1.7	1.6	2.0	9/19	39
XK 351	--	49.1	45.5	--	3.8	2.7	9/19	41
<u>Mid-Season (Group IV)</u>								
FFR 444	--	--	45.5	--	--	1.7	9/20	41
Cutler 71	48.1	45.4	40.5	1.7	1.5	1.3	9/23	38
SRF 425	--	52.0	53.4	--	2.0	2.0	9/25	46
Bonus	51.7	49.2	47.8	1.9	2.2	2.3	9/20	43
SRF 450	--	--	47.3	--	--	1.0	9/27	40
Kent	44.6	43.4	42.8	1.1	1.2	1.0	9/27	41
Pomona	--	--	40.8	--	--	1.3	9/26	37
Columbus	43.8	41.2	45.6	2.1	2.7	1.7	10/2	43
<u>Late (Group V and VI)</u>								
FFR 555	--	--	43.0	--	--	1.0	4/	36
Essex	--	47.5	40.8	--	1.6	1.0	10/5	31
York	53.5	57.3	52.5	1.2	1.2	1.0	4/	33
Mack	--	45.1	48.1	--	2.4	2.0	4/	34
Forrest	48.7	49.2	51.2	2.0	1.6	1.0	4/	34
FFR 666	--	--	38.8	--	--	1.7	4/	30
Coker 136	--	--	51.7	--	--	2.3	4/	37
Hood	42.7	43.4	43.0	2.0	1.8	1.0	4/	35
Average	47.6	46.7	44.5	1.7	1.9	1.6		38
LSD (.05)			10.7 Bu/A					

^{1/} See text for explanation.

^{2/} 1974 data only.

^{3/} Tested as Seedmakers 263G in 1972 and 1973.

^{4/} Were not mature when the first frost occurred.

Table 5.—Kentucky Soybean Variety Tests—Mayfield.

Variety	Yield (Bu/A) 1974	Lodging ^{1/} 1974	Ht. (in.) 1974
<u>Early (Group III)</u>			
XK 585	30.1	5.0	41
Williams	38.0	4.3	40
XK 351	34.7	5.0	43
<u>Mid-Season (Group IV)</u>			
FFR 444	40.1	4.3	43
Cutler 71	38.3	2.7	46
SRF 425	36.3	3.3	44
Bonus	39.5	3.3	47
SRF 450	35.6	3.0	43
Kent	43.5	2.0	45
<u>Late (Group V and VI)</u>			
FFR 555	27.2	3.3	41
Essex	44.4	3.0	37
York	30.0	4.0	42
Mack	36.8	4.7	42
Forrest	30.8	3.3	41
FFR 666	25.5	4.3	39
Coker 136	35.4	2.0	46
Hood	24.8	3.3	41
Lee 68	23.2	5.0	42
Pickett 71	22.3	4.3	40
Average	33.5	3.7	42
LSD (.05)	10.9 Bu/A		

^{1/} See text for explanation.

Table 6.—Kentucky Soybean Variety Tests—Lexington.

Variety	Yield (Bu/A)			Lodging ^{1/}			Maturity ^{2/}	Ht. ^{2/} (in.)
	1972	1973	1974	1972	1973	1974		
	-74	-74		-74	-74			
<u>Early (Group III)</u>								
FFR 333	--	--	41.8	--	--	2.7	9/9	40
XK 585	--	--	46.9	--	--	1.8	9/10	39
SRF 307P	--	56.4	56.3	--	3.6	3.2	9/19	44
SM 1-E	46.1	49.2	48.3	3.0	3.6	3.7	9/14	37
SM 1-G	--	47.5	47.3	--	2.3	2.3	9/17	39
Calland	50.9	50.0	47.3	1.8	2.2	2.5	9/20	43
SRF 350	--	53.0	52.8	--	2.7	2.5	9/25	40
Williams	49.3	50.4	51.9	1.5	1.7	1.7	9/21	40
SRF 400	44.7	47.0	50.6	3.3	3.4	2.8	9/28	37
L 263	41.4	41.6	43.7	2.5	2.6	3.0	9/26	42
Clark 63	46.5	51.1	51.1	2.7	3.0	2.3	9/28	41
XK 351	--	--	50.4	--	--	3.8	9/26	47
<u>Mid-Season (Group IV)</u>								
FFR 444	--	--	50.0	--	--	2.2	9/27	39
Cutler 71	45.3	48.4	42.1	2.3	2.4	1.7	9/30	42
SRF 425	--	45.1	46.3	--	3.2	2.5	9/25	45
Bonus	54.4	56.7	60.4	2.0	2.1	2.0	10/1	47
SRF 450	41.8	43.5	43.6	2.3	2.6	2.8	3/	41
Kent	40.2	41.8	43.2	2.1	2.2	1.5	10/2	43
Pomona	--	--	44.8	--	--	1.5	10/1	43
Columbus	38.6	40.3	39.7	3.5	3.9	3.8	3/	43
<u>Late (Group V)</u>								
FFR 555	--	--	29.5	--	--	2.8	10/2	45
Essex	48.3	46.6	43.0	2.6	2.6	2.7	3/	36
York	--	--	34.5	--	--	3.2	3/	39
Mack	--	--	28.3	--	--	4.7	3/	41
Forrest	--	--	34.2	--	--	3.0	3/	40
Mean	45.6	48.0	44.7	2.5	2.8	2.7		41
LSD (.05)			8.32 Bu/A					

^{1/} See explanation in text.

^{2/} 1974 data only.

^{3/} Were not mature when the first frost occurred.

The College of Agriculture is an Equal Opportunity Organization authorized to provide research, educational information and other services only to individuals and institutions that function without regard to race, color, sex or national origin.