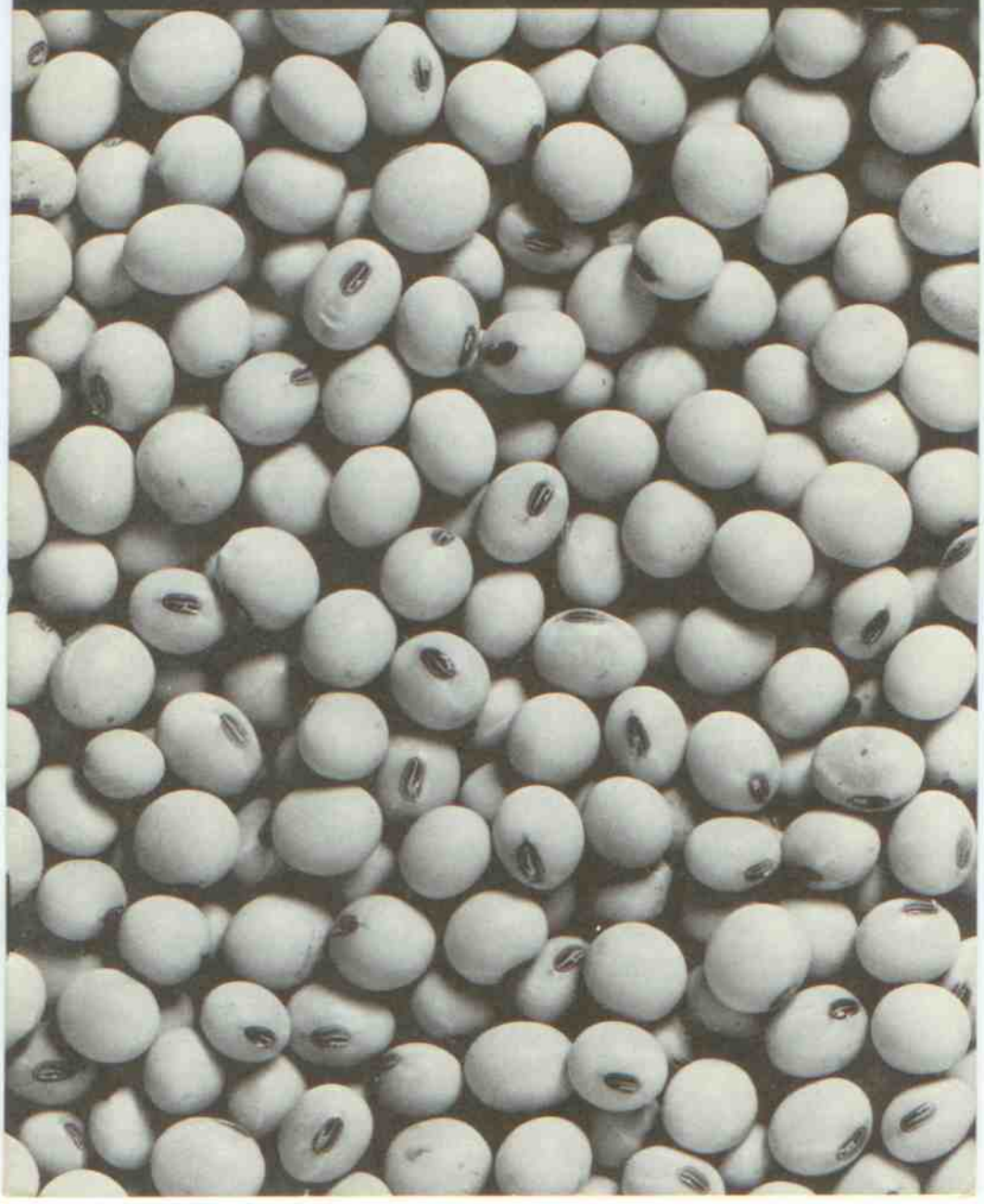
Kentucky Soybean Performance Tests—1981

Progress Report 259

J.M. Wood and Charles Tutt

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



CONTENTS

List of Tables:

Kentucky Soybean Performance Tests—1981*

J. M. Wood and Charles Tutt

The Kentucky Soybean Performance Tests are conducted to provide an unbiased, objective estimate of the relative performance of soybean varieties in Kentucky. This information may be used by growers and seedsmen to aid in selecting a variety that will give the highest total production in a specific situation.

Soybean tests in 1981 were planted at six locations in the state. The testing locations, soil types, planting date, and other information are shown on the following page.

The date of a 50% chance of a fall killing frost is important in determining which variety you select to plant (Table 1). For maximum yield, a variety must mature before the first killing frost in the fall. Maturity dates of varieties are listed for the Princeton and Lexington locations in Tables 7 and 9. Particular attention should be given to the maturity date of a variety when double-cropping soybeans. (See the discussion on double-crop soybeans.)

The dates presented in Table 1 are average dates over a long term. Actual dates will vary from year to year. For the date of a 1 year out of 10 chance of a fall killing frost subtract 13-18 days from the dates in Table 1.

LOCATION OF THE 1981 SOYBEAN PERFORMANCE TESTS

*Acknowledgement is made to Eugene Lacefield for general/technical assistance.

Table 1.—Location, Planting Date, and Climatic Data for the 1981 Soybean Performance Tests.*

	1 Henderson	2 Hartford	3 Princeton	3 Princeton Double Crop	4 Clinton	5 Lexington	6 Russellville Double Crop
Farmer cooperator	James McConathy	Dane Milligan	Exp. Sta.	Exp. Sta.	Junior & Wilson Workman	Exp. Sta.	W.L. & Charles Moore
Extension agent	William Hendrick	John Kavanaugh			Larry Reber		Rodney Haynes
Soil type	Wakeland silt loam	Melvin silt loam	Crider silt loam	Crider silt loam	Collins silt loam	Maury silt loam	Pembroke silt loam
Date of planting	6/18	6/18	5/29	6/25[1]	6/19	6/9	7/16[1]
Row width (inches)	30	30	30	15	30	30	15
Herbicides[2]	2 pt Treflan	3 pt Treflan 2 pt Basagran	1½ pt Treflan 6 pt Lasso	4 pt Lasso 1½ lb Lorox 2 pt Paraquat	2 pt Treflan	6 pt Lasso 1½ pt Basagran	1 lb Lorox 6 pt Lasso 2 pt Paraquat
Soil test							
P	128	61	134	134	111	200+	84
K	342	172	473	473	372	256	329
pH	6.6	6.4	5.7	5.7	6.4	6.6	6.5
Fertilizer[2] applied	None	None	3 T. Lime	3 T. Lime	None	None	None
50% chance fall killing frost[3]	10/26	10/13	10/19	10/19	10/24	10/26	10/24

[1]No-till double-cropped after wheat.
[2]Amount per acre.
[3]Based on a 30-year average.
*Trade names of products mentioned or similar products not named is neither intended as an endorsement nor criticism of such products by the Kentucky Agricultural Experiment Station.

METHODS

All tests were planted in a randomized complete block design with three replications (plots) of each variety. Individual plots were 20 feet long and 4 rows wide with 30 inches between rows in the conventional tests; in the double-crop tests the plots were 20 feet long and 8 rows wide with 15 inches between rows. The seeding rate for the conventional tests was 8-10 viable seeds per foot of row and for the double-crop tests was 5-6 viable seeds per foot of row. All plots were planted with a modified soybean planter. All plots were treated with herbicides and maintained as weed free as possible.

Harvesting was done with a small plot combine according to maturity; thus several harvests were made at each location. Sixteen feet of the center rows were harvested from the plots. No allowances were made for beans that may have been lost as a result of combining or shattering.

YIELD—Yield is reported in bushels per acre adjusted to 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—A variety was considered mature when 95% of the pods had turned their normal mature color. One to two weeks of good drying weather will be needed beyond the date given before the beans will be ready to combine. Maturity may also be expressed as days earlier (–) or later (+) than that of a standard variety (Williams). Maturity dates were recorded at the Lexington and Princeton locations.

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

POD HEIGHT—Height of the lowest pod was measured in inches from the soil surface to the point of attachment of the lowest pod on the plant.

SHATTERING—Shattering was scored 3 weeks after maturity and was based on estimates of the percent of open pods on a scale of 1 to 5;

1=no shattering; 2=1-10% shattered; 3=10-25% shattered; 4=25-30% shattered; and 5=more than 50% shattered. Shattering scores were taken at the Princeton location.

INTERPRETATION

An important step in profitable soybean production is selecting good quality seed of the best variety for **your** management system. 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 soybean grower's farm probably provide the best estimate of the potential of the soybean varieties in that area. **The yields as reported in this bulletin should be used for relative comparisons; absolute yields on a grower's farm may be different.**

Yield is only one factor to consider in selecting a variety for your production system. Maturity, lodging resistance, disease resistance, seed shattering resistance, and time and equipment availability are other factors that need to be considered.

Performance of the soybean varieties will vary from year to year and location to location depending on adaptability, weather conditions, and management. The average performance of a variety over a period of years provides a better estimate of its potential and stability than its performance in a particular year. **When selecting a variety it is important to consider the three- or two-year average presented in the tables; this provides an estimate of a variety's stability and performance potential over years.**

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. The significance level used in the tables is 0.10. 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. "N.S." in the tables indicates that no statistically significant differences were determined.

GROWING CONDITIONS FOR 1981 TESTS

The growing conditions for soybeans in Kentucky in 1981 were generally good. Heavy rainfall in late spring delayed planting over most of the state. Rainfall during the growing season was mostly adequate, but not evenly distributed, causing quite dry conditions in some areas. Lexington yields were reduced considerably due to dry weather. The Hartford and Henderson locations had good growing conditions. The Russellville double-crop test was severely damaged by dry weather (see special note).

Growing conditions at Princeton were excellent throughout the whole season, as evidenced by the high yields. The Clinton location also experienced good weather conditions, with the exception of an especially wet spring. This necessitated late planting, which may have lowered yields.

SPECIAL NOTES

Extremely dry conditions after planting and severe johnsongrass competition caused poor stand in the Russellville double-crop test, thus yield comparisons were impossible to make. Therefore, only data for 1979 and 1980 are presented for this location.

Flooding in October 1979 prevented harvest of the Hartford variety test plots. Therefore, only data for 1980 and 1981 are presented for the Hartford tests.

VARIETY ADAPTATION

Early-maturing varieties (Group III), such as Cumberland and Williams, are best adapted in areas of Kentucky north of the line indicated on the following map. The line is approximately the same as where the Western Kentucky Parkway is located. Late-maturing varieties (Group V), such as Essex and Forrest, are best adapted in areas south of the indicated line. Mid-season varieties (Group IV), such as Union and Franklin, can be successfully grown in most areas in Kentucky.

Approximate areas of adaptation of the maturity groups commonly grown in Kentucky.

DOUBLE-CROP SOYBEANS

Planting soybeans in a double-cropping system usually results in a later planting date than conventional-planted beans. Previous research has shown that soybean yields are generally reduced by 1/2-3/4 bu/A per day for each day planting is delayed after mid-June and 1 bu/A per day when planted after the last part of June. **Practices such as high-moisture harvesting or swathing of the small grains and no-till planting of the soybeans all help to get the soybeans planted earlier and should be used where possible.**

The shorter growing season of a double-cropping system results in a shorter vegetative growth period, reduced plant height, and a smaller plant canopy. **Row spacing research has indicated that the highest yields in double-crop plantings are obtained using narrow rows (10-12 in.), particularly when the planting date is in late June and July.**

Variety selection is very important in a soybean double-cropping system. **Research has shown that the mid- to full-season maturing varieties adapted in your area perform best in a double-crop planting.** Caution must be used to select a variety that will mature before the first fall frost. **When plantings are made in July, a variety that is one maturity group earlier than normally used should be selected to prevent a yield reduction due to frost injury.**

SOIL FERTILITY and INOCULATION

Failure to adjust soil acidity is often the most limiting fertility practice. Acid soils should be limed to pH 6.4. If soil pH is below 6.2 at planting, molybdenum should be applied. Apply phosphate and

potash as needs are indicated by soil test results. For double-cropped beans, phosphate and potash can be applied for both crops when seeding the small grain. Foliar applications may be necessary to correct manganese deficiency problems on some soils with high pH levels in the Western Coal Field region.

No nitrogen is recommended for soybeans. However, if soybeans have not been planted in the field in the past 3 years, seed should be inoculated as close to planting time as possible. See Kentucky Cooperative Extension publication AGR-1 for specific fertility and inoculation recommendations.

SEEDING RATES

Soybean seeding rates should be governed by the final stand desired in terms of plants per foot of row. **To obtain a given number of plants per foot of row, seed size and percent germination of the seed lot must be considered.** Soybean varieties differ considerably in seed size, with the more common varieties ranging from 2,600 to 3,500 seed per pound. After selecting the variety, row spacing, and number of seeds per foot, the planting rate in pounds per acre can be determined from Table 2. If the field conditions are nearly ideal and the seed is of high quality use the lower rate. If field conditions or seed quality is marginal use the higher rate. Adjustments also need to be made for differences in seed lot germination. The seeding rates in Table 2 are recommended for both conventional plantings and double-crop plantings. **When planting with a no-till system, the seeding rates should be increased by 10% to compensate for higher seedling mortality.**

Table 2.—Pounds of Seed per Acre for the Given Row Width and Seed Size at the Recommended Seeding Rate.*

Row spacing (inches)	10	20	30	40
Seeding Rate (seeds per foot)	3-4	6-8	8-10	10-12
Seeds per pound				
2,600	60-80	60-80	54-67	50-60
2,800	56-75	56-75	50-62	47-56
3,000	52-70	52-70	46-58	44-52
3,200	49-65	49-65	44-54	41-49
3,400	46-61	46-61	41-51	38-46
3,600	44-58	44-58	39-48	36-44

*Germination assumed to be 100%.

CERTIFIED SEED

Always plant high quality seed of the variety you select. Certified 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 is free of noxious weed seed and other crop seed. The Agricultural Experiment Station recommends that Kentucky-certified seed be used whenever possible for growing a commercial crop of soybeans. Information on certified seed growers in Kentucky can be obtained from your local extension agent or the Kentucky Seed Improvement Association (P.O. Box 12008, Lexington, Ky. 40579).

KENTUCKY STATE SEED LAW

The Kentucky state seed law requires all seed exposed, offered for sale, or sold in Kentucky to be labeled as to kind and variety for each agricultural seed component present in excess of 5% of the whole and the percentage by weight of each component. All soybean seed blends should be labeled as to the percentage composition of each variety that makes up the mixture. Table 3 lists the soybean blends tested in 1980 and the components of the mixture.

Table 3.—Percentage Composition of Each Variety in the Soybean Blends Tested in 1981.

Name	Variety 1	Variety 2
VR 4004	50% VR Delta	50% Franklin
RA 36	50% SB 27	50% Union
Migro HP 30-30	75% Agripro 25	25% Agripro 27
Migro HP 40-40	75% Agripro 35	25% Williams
Multivar 92	50% S4055	50% Williams
Agrosoy 46B	50% Exp. 500	50% Exp. 794
Agrosoy 68B	50% Exp. 948	50% L-21
CB 550	50% York	50% Essex
Callahan 9400	50% 61914 PBR	50% 474AL

AVERAGE STATEWIDE PERFORMANCE

The performance data of varieties that have been in the Kentucky variety tests for at least 2 years are averaged over years and across locations in maturity zones and are shown in Table 4. **Performance of a variety across a period of years and at several locations in the state is a good indicator of its production potential.**

Varieties that have shown satisfactory yields and lodging resistance in Table 4 can be expected to have satisfactory field performance under similar conditions and locations in Kentucky. If you have soybean cyst nematode problems a resistant variety should be used in conjunction with a recommended crop rotation in your production system (See Kentucky Cooperative Extension publication PPA-3, "Soybean Cyst Nematode," available at your county extension office.)

SOURCES of SEED

The seed planted in the 1981 Soybean Performance Tests was acquired from the following sources:

Entry	Source
A3659, A4268	Asgrow Seed Co., 634 E. Lincoln Way, Ames, IA 50010
J125, J130	Jacques Seed Company, Prescot, WI 54021
RA-481, RA 36, RA-401, RA-480, Mitchell, Mitchell 450	Ring Around Products, Inc., P. O. Box 1629, Plainview, TX 79072
SRF 307P, SRF 450P	Soybean Research Foundation, Inc., Mason City, IL 62664
Voris 465, Voris 339, Voris 495	Voris Seeds, Inc., Box 457, Windfall, IN 46076
VR Delta, VR 8027 VR 4004	V. R. Seeds Inc., P. O. Box M, Plymouth, IN 46563
Callahan 1460 Callahan 1450 Callahan 2380	Callahan Seeds, 700 W. 169th St., Westfield, IN
Gold Tag 1380 Gold Tag 1440	Ferry-Morse Seed Co., Box 24, Genesco, IL 61254
Wilstar 550, Wilstar 430, Stevens	Helena Chemical Co., 5100 Poplar Ave., Suite 3200, Memphis, TN 38117

Entry	Source
G-3443	Funk Seeds Int., 1300 Washington, Box 2911, Bloomington, IL 61701
FFR 559	Southern States Coop., P. O. Box 26234, Richmond, VA 23260
Agrosoy 68	Uphoff Bro. Seed, Box 647, Charleston, IL 61920
JMS 4982	Jim Schultz Seed Co., 106 Pine St., Dietrich, IL 62424
Agripro AP 350	North American Plant Breeders, Route 2, Ames, IA 50010
Agripro AP55	North American Plant Breeders, P. O. Box 1522, West Memphis, AR 72301
Migro HP-3700 Migro HP-4800	North American Plant Breeders, Migro Div., P. O. 2955, Misson, KS 66205
Adler's 202 Adler's 302	Adler's Seeds Inc., R. R. #1, Box 296, Sharpsville, IN 46068
Scott Brand 8047	Scott Seed Co., 708 E. 4th Street, P. O. Box 849, New Albany, IN 47150
Seedmaker's 9-E	Seedmaker's, Box 88, Sydney, IL 61877
Bay, Bedford, Cumberland, DeSoto, Douglas, Elf, Essex, Forrest, Franklin, Miles, Nathan, Pella, Pixie, Union, Williams, Williams 79, Williams 82, York	Kentucky Foundation Seed Project, P. O. Box 11950, Lexington, KY 40579

TABLE 4.—AVERAGE PERFORMANCE ACROSS YEARS and LOCATIONS

Variety	Hartford, Henderson and Lexington		Clinton and Princeton		Princeton and Russellville Double-Crop[a]			
	Yield Bu/Ac 80-81	Lodging 80-81	Yield Bu/Ac 80-81	Lodging 80-81	Yield Bu/Ac 80-81	Lodging 80-81	Approx. seed/lb	Approx.[b] maturity
Early (Groups II & III)								
A3659	52.3	1.1	49.0	1.1	32.2	1.0	2600	0
Cumberland	53.0	2.2	48.1	1.3	32.4	1.1	2600	-2
Elf	51.8	1.0	46.5	1.0	30.4	1.0	2600	0
Gold Tag 1380	53.6	2.2	45.0	2.1	33.7	1.6	2100	+3
Pella	51.4	1.4	45.5	1.1	31.2	1.1	2600	-2
RA-36	49.6	2.6	42.5	2.2	31.1	1.5	2600	+4
Voris 339	51.8	2.2	43.3	1.6	34.1	1.3	2100	-1
Williams	50.2	2.2	43.1	1.9	33.5	1.4	2600	0
Williams 79	50.5	2.3	44.5	2.0	33.1	1.2	2600	0
Mid-Season (Group IV)								
Agripro AP350	53.4	2.7	42.5	2.7	30.6	1.3	2200	+3
Agrosoy 68	51.9	2.5	45.0	1.8	35.5	1.7	2400	+3
Delta	48.3	2.4	39.7	2.2	30.8	1.3	2750	+5
Desoto	49.5	2.6	45.1	1.9	29.7	1.6	2700	+5
Douglas	52.4	2.1	43.9	1.7	32.1	1.0	2600	+2
Franklin[c]	46.6	2.2	42.0	2.8	26.4	1.1	2600	+11
G-3443	48.6	2.9	42.9	2.1	32.2	1.6	2900	+3
J-125	49.8	2.6	46.2	1.7	36.3	1.4	2100	+2
Miles	47.9	3.0	41.8	2.4	31.3	1.4	3000	+9
Mitchell	50.0	2.6	45.3	2.2	29.7	1.5	2900	+9
Mitchell 450	49.5	2.3	43.3	1.6	34.9	1.1	2600	+9
Pixie	54.1	1.1	44.0	1.0	32.8	1.1	2600	0
RA-401	47.3	1.9	41.1	1.9	31.4	1.0	2600	+12
RA-480	45.4	2.4	44.0	2.4	32.1	1.3	2700	+25
Union	48.7	2.9	41.2	2.6	31.2	1.2	2600	+3
Voris 465	50.9	2.3	44.9	2.1	30.1	1.2	2400	+3
Wilstar 430	48.4	2.2	40.6	1.8	25.6	1.2	2600	+7
Late (Group V and VI)								
Bay	40.0	2.6	46.1	1.8	28.6	1.7	2800	+29
Bedford[d]	33.1	3.5	42.5	2.5	21.6	1.9	3500	+39
Essex	49.7	2.9	46.8	1.6	37.0	1.4	3500	+27
Forrest[c]	40.7	3.2	47.7	1.9	27.5	2.2	3500	+33
Nathan[d]	41.2	3.6	41.7	2.5	28.1	2.2	3500	+30
York	40.4	2.7	44.4	1.3	28.8	2.0	2600	+28
Grand Average	48.5	2.4	44.1	1.9	31.1	1.4		
LSD (.10)	5.5	0.5	4.0	1.0	6.1	0.9		

[a]1980 data only for Russellville Double-crop.
[b]Days earlier (-) or later (+) than Williams.
[c]Resistant to the soybean cyst nematode (Race 3).
[d]Resistant to the soybean cyst nematode (Race 4).

TABLE 5.—SOYBEAN VARIETY TESTS—HENDERSON, KY.

VARIETY	YIELD BU/AC 79-81	YIELD BU/AC 80-81	YIELD BU/AC 1981	LODG -ING 79-81	LODG -ING 80-81	LODG -ING 1981	HT.[a] (IN) 1981	POD HT. 1981
EARLY (GROUPS II AND III)								
A 3659	-	57.8	56.9	-	1.2	1.0	33	4.0
ADLER 202	-	-	51.2	-	-	3.3	42	6.3
ADLER 302	-	-	56.2	-	-	4.3	39	6.0
CALLAHAN 2380	-	-	55.4	-	-	3.8	42	7.3
CUMBERLAND	53.2	57.7	55.7	2.4	3.2	3.3	40	6.3
ELF	49.5	59.4	55.2	1.0	1.0	1.0	21	3.3
GOLD TAG 1380	-	60.8	59.4	-	2.6	3.3	45	7.7
MIGRO HP-3700	-	-	53.4	-	-	3.7	40	6.0
PELLA	50.7	57.4	54.0	1.6	1.8	1.8	37	4.3
RA-36[d]	-	53.7	50.1	-	3.5	3.7	42	6.3
SRF 307P	-	-	49.6	-	-	4.2	39	8.0
VORIS 339	-	58.7	51.5	-	3.2	4.0	40	6.0
WILLIAMS	52.1	53.7	52.8	2.4	2.6	3.7	42	5.7
WILLIAMS 79	50.5	55.2	51.7	2.4	2.7	3.2	39	5.0
MID-SEASON (GROUP IV)								
AGRIPRO AP350	-	58.5	58.6	-	3.2	3.5	48	8.3
AGROSUY 68	-	57.3	57.0	-	3.1	4.0	42	7.3
A4266	-	-	50.9	-	-	3.7	38	5.3
CALLAHAN 1450	-	-	57.8	-	-	4.5	51	8.0
CALLAHAN 1460	-	-	54.9	-	-	3.3	46	9.3
DELTA	50.0	52.7	50.0	2.6	2.7	3.5	48	7.3
DESOTO	50.2	55.1	51.3	2.6	3.0	3.8	43	6.3
DOUGLAS	57.0	58.9	58.7	2.5	2.8	3.7	42	9.0
FRANKLIN[b]	46.9	50.1	50.6	2.8	2.7	2.8	41	5.3
G-3995	-	52.6	50.4	-	3.5	4.2	48	6.7
GOLD TAG 1440	-	-	55.6	-	-	3.5	47	6.7
J-125	48.1	55.9	56.6	2.7	3.2	4.0	46	6.0
J-130	-	-	57.2	-	-	4.0	50	7.3
JMS 4982	-	-	56.1	-	-	4.2	47	7.7
MIGRO HP-4800	-	-	56.5	-	-	2.8	35	5.0
MILES	49.0	50.9	45.2	3.1	3.6	3.5	39	7.0
MITCHELL	50.5	52.0	52.8	3.1	3.7	4.5	45	6.3
MITCHELL 450	47.9	53.5	49.9	2.8	2.7	3.0	45	8.3
PIXIE	47.1	59.5	58.1	1.1	1.1	1.2	24	3.0
RA-401	46.9	49.2	47.7	2.4	2.6	2.8	45	7.3
RA-480	-	49.9	43.7	-	3.2	3.8	47	7.3
RA-481	-	-	50.5	-	-	2.8	45	7.7
SCOTT GRAND 8047	-	-	52.0	-	-	4.7	45	7.0
SEEDMAKER'S 9-E	-	-	53.9	-	-	3.2	44	6.0
SRF-450[e]	-	-	48.4	-	-	3.0	45	7.7
STEVENS	-	-	50.6	-	-	3.5	48	9.0
UNION	52.1	53.7	50.0	3.0	3.4	4.0	46	8.3
VORIS 465	-	53.6	51.4	-	2.9	3.7	45	7.7
VORIS 495	-	-	46.6	-	-	4.2	49	8.7
VR 8004[d]	-	-	48.0	-	-	3.3	48	7.3
WILLIAMS 82	-	-	54.4	-	-	2.4	39	4.7
WILSTAR 430	-	50.7	48.2	-	2.8	3.2	48	10.0
LATE (GROUPS V AND VI)								
AGRIPRO AP 55	-	-	42.8	-	-	4.3	45	7.7
BAY	44.0	47.7	43.8	2.7	2.9	3.1	40	5.8
BEDFORD[c]	37.6	41.1	37.7	4.1	4.0	4.7	45	8.7
ESSEX	52.9	56.1	51.6	3.1	3.6	4.3	39	6.3
FFR 559	-	-	44.5	-	-	3.2	42	6.7
FORREST[b]	47.9	55.8	50.6	3.1	3.3	3.0	38	7.7
NATHAN[c]	46.3	48.7	42.9	3.7	3.9	4.8	42	9.0
VR 8027	-	-	38.3	-	-	4.3	38	7.0
WILSTAR 550	-	-	35.0	-	-	3.8	36	7.7
YORK	44.5	47.9	46.6	3.2	3.3	3.5	34	7.3
GRAND AVERAGE	48.9	53.7	51.0	2.6	2.9	3.5	42	6.9
LSD (.10)	8.8	6.1	5.2	0.9	1.1	1.0	4.8	2.3

[a]Plant height.
[b]Resistant to the soybean cyst nematode (Race 3).
[c]Resistant to the soybean cyst nematode (Race 4).
[d]Blend, see Table 3.

TABLE 6.—SOYBEAN VARIETY TESTS—HARTFORD, KY.[a]

VARIETY	YIELD BU/AC 79-81	YIELD BU/AC 80-81	YIELD BU/AC 1981	LODG -ING 79-81	LODG -ING 80-81	LODG -ING 1981	HT.[b] (IN) 1981	POD HT. 1981
EARLY (GROUPS II AND III)								
A 3659	-	56.9	57.3	-	1.0	1.0	32	4.7
ADLER 202	-	-	54.7	-	-	2.2	40	6.0
ADLER 302	-	-	55.8	-	-	2.2	36	6.3
CALLAHAN 2380	-	-	58.3	-	-	2.5	42	6.0
CUMBERLAND	56.6	56.8	57.3	2.0	2.0	2.5	37	5.0
ELF	53.1	52.8	56.5	1.0	1.0	1.0	22	3.7
GOLD TAG 1380	-	57.3	58.1	-	2.2	2.5	41	8.7
MIGRO HP-3700	-	-	58.0	-	-	2.8	41	5.3
PELLA	57.0	55.0	55.0	1.2	1.2	1.2	40	5.7
RA-36[c]	-	56.9	54.8	-	2.2	2.7	46	7.3
SRF 307P	-	-	53.2	-	-	2.8	40	7.7
VORIS 339	-	56.7	57.3	-	2.6	2.2	40	6.7
WILLIAMS	53.5	55.2	56.2	1.9	2.1	2.7	40	6.7
WILLIAMS 79	53.4	53.7	53.5	1.9	2.2	2.7	40	6.3
MID-SEASON (GROUP IV)								
AGRIPRO AP350	-	60.9	62.2	-	2.5	2.5	51	10.0
AGROSUY 68	-	55.7	54.9	-	2.2	2.3	43	7.7
A4266	-	-	54.1	-	-	1.3	33	5.0
CALLAHAN 1450	-	-	55.0	-	-	2.5	46	8.0
CALLAHAN 1460	-	-	49.5	-	-	2.0	47	9.7
DELTA	-	52.5	54.7	-	2.0	2.5	51	9.3
DESOTO	-	53.3	53.1	-	2.4	2.7	39	6.7
DOUGLAS	-	55.3	54.6	-	1.6	1.7	34	7.3
FRANKLIN[d]	51.6	51.3	53.6	1.9	1.7	1.7	45	5.7
G-3995	-	53.4	52.9	-	2.7	2.7	40	7.7
GOLD TAG 1440	-	-	54.9	-	-	2.5	41	6.3
J-125	-	52.7	53.5	-	2.7	3.0	43	6.3
J-130	-	-	57.1	-	-	2.5	46	8.3
JMS 4982	-	-	51.2	-	-	2.8	46	8.0
MIGRO HP-4800	-	-	52.4	-	-	3.0	38	7.3
MILES	-	51.4	50.5	-	2.7	3.0	41	8.3
MITCHELL	55.2	55.0	55.4	2.2	2.3	2.5	44	7.0
MITCHELL 450	-	53.8	49.8	-	2.5	2.5	49	11.7
PIXIE	-	59.8	60.6	-	1.1	1.2	19	3.7
RA-401	54.1	53.0	50.4	1.7	1.6	1.8	45	9.0
RA-480	-	53.1	50.1	-	2.1	2.3	49	9.3
RA-481	-	-	48.8	-	-	2.0	45	9.0
SCOTT GRAND 8047	-	-	54.0	-	-	2.8	48	7.3
SEEDMAKER'S 9-E	-	-	55.1	-	-	2.3	48	5.7
SRF-450P	-	-	47.3	-	-	2.2	43	8.7
STEVENS	-	-	53.9	-	-	2.5	47	7.7
UNION	52.5	51.4	50.5	2.8	2.7	2.8	43	8.7
VORIS 465	-	55.2	52.7	-	2.8	3.0	44	7.7
VORIS 495	-	-	44.8	-	-	2.7	46	9.7
VR 8004[e]	-	-	49.6	-	-	2.3	49	9.0
WILLIAMS 82	-	-	52.9	-	-	1.8	38	6.7
WILSTAR 430	52.9	54.8	48.3	2.0	1.9	1.8	46	6.7
LATE (GROUPS V AND VI)								
AGRIPRO AP 55	-	-	37.5	-	-	3.5	41	8.0
BAY	-	48.0	43.1	-	2.0	2.5	40	8.3
BEDFORD[c]	45.6	43.7	37.9	2.9	2.7	3.0	45	12.0
ESSEX	57.5	56.6	47.5	1.9	2.0	2.2	37	8.0
FFR 559	-	-	42.3	-	-	3.5	40	8.0
FORREST[d]	49.3	45.9	37.2	2.8	2.5	2.7	41	8.0
NATHAN[c]	-	47.2	40.4	-	2.8	2.7	44	9.3
VR 8027	-	-	40.6	-	-	3.0	41	9.7
WILSTAR 550	-	-	39.8	-	-	3.2	37	8.3
YORK	48.7	46.9	40.1	2.1	1.9	2.3	39	8.7
GRAND AVERAGE	52.9	53.5	51.8	2.0	2.1	2.4	42	7.5
LSD (.10)	9.5	9.1	5.4	0.7	0.6	0.8	3.8	2.5

[a]Data for 1979 not reported owing to flooding at harvest.
[b]Plant height.
[c]Resistant to the soybean cyst nematode (Race 3).
[d]Resistant to the soybean cyst nematode (Race 4).
[e]Blend, see Table 3.

TABLE 7.—SOYBEAN VARIETY TESTS—PRINCETON, KY.

VARIETY	YIELD BU/AC 79-81	YIELD BU/AC 80-81	YIELD BU/AC 1981	LODG -ING 79-81	LODG -ING 80-81	LODG -ING 1981	HT.[a] (IN) 1981	MAT. DATE 1981	POD HT. 1981
EARLY (GROUPS II AND III)									
A 3659	-	46.5	60.0	-	1.2	1.3	36	9/19	3.3
ADLER 202	-	-	48.5	-	-	3.0	39	9/13	4.0
ADLER 302	-	-	50.9	-	-	2.3	39	9/16	5.3
CALLAHAN 2380	-	-	56.6	-	-	2.3	42	9/25	4.0
CUMBERLAND	50.9	46.8	57.0	1.8	1.5	1.3	37	9/15	4.0
ELF	48.0	44.8	59.0	1.0	1.0	1.0	18	9/23	2.7
GOLD TAG 1380	-	42.7	53.4	-	2.7	3.7	41	9/27	5.7
HIGRO HP-3700	-	-	53.7	-	-	2.7	41	9/23	5.0
PELLA	46.8	44.4	57.4	1.2	1.2	1.3	39	9/14	4.3
RA-36[d]	-	41.1	51.9	-	2.7	3.7	44	9/25	4.7
SRF 307P	-	-	57.1	-	-	4.7	43	9/19	4.7
VORIS 339	-	40.0	50.7	-	1.7	2.4	41	9/18	3.7
WILLIAMS	44.8	41.7	50.5	1.8	2.0	2.7	38	9/19	5.0
WILLIAMS 79	42.6	43.2	51.9	1.8	2.2	2.3	38	9/17	4.3
MID-SEASON (GROUP IV)									
AGRIPRO AP350	-	42.7	53.9	-	3.2	3.7	44	9/28	4.3
AGROSUY 68	-	43.3	56.4	-	2.2	3.3	41	9/27	3.7
A4268	-	-	59.3	-	-	1.7	38	9/24	4.7
CALLAHAN 1450	-	-	61.6	-	-	3.7	42	10/2	5.3
CALLAHAN 1460	-	-	51.6	-	-	2.3	45	10/5	5.7
DELTA	42.5	38.5	45.3	2.4	2.7	4.0	42	9/29	4.3
DESOTU	46.2	43.7	57.8	2.2	2.5	4.0	41	9/27	4.7
DOUGLAS	47.0	41.2	50.4	2.2	2.3	3.7	39	9/29	4.7
FRANKLIN[b]	45.0	42.7	56.2	2.4	2.7	4.3	45	9/29	3.7
G-3443	-	42.5	53.1	-	2.3	3.3	41	9/25	4.0
GOLD TAG 1440	-	-	53.2	-	-	3.0	42	9/28	3.7
J-125	48.1	43.8	58.5	1.9	1.3	1.7	41	9/29	4.0
J-130	-	-	60.1	-	-	3.7	44	10/3	3.7
JMS 4982	-	-	60.1	-	-	3.3	42	9/30	3.7
MIGRO HP-4800	-	-	56.0	-	-	1.7	51	9/24	4.7
MILES	46.3	41.8	54.5	3.1	3.2	4.0	39	9/28	3.3
MITCHELL	47.9	43.0	58.6	3.0	3.0	3.7	43	9/30	4.7
MITCHELL 450	45.8	41.3	54.7	2.2	1.8	2.7	44	10/5	5.7
PIXIE	44.3	41.7	52.0	1.0	1.0	1.0	18	9/22	2.3
RA-401	43.4	37.5	48.5	2.1	2.0	2.7	44	10/4	6.3
RA-480	-	45.6	55.9	-	2.8	4.7	46	10/8	5.3
RA-481	-	-	59.8	-	-	2.3	47	10/14	6.3
SCOTT BRAND 8047	-	-	57.1	-	-	3.7	43	9/29	3.0
SEEDMAKER'S 9-E	-	-	51.5	-	-	2.0	44	9/24	4.3
SRF-450P	-	-	52.5	-	-	3.0	41	10/5	4.7
STEVENS	-	-	52.7	-	-	5.0	43	9/29	3.3
UNION	45.2	39.3	45.5	2.4	2.3	3.7	43	9/23	4.3
VORIS 465	-	43.1	53.8	-	2.3	3.0	43	9/25	3.7
VORIS 495	-	-	52.1	-	-	4.0	40	10/2	4.7
VR 4004[d]	-	-	51.1	-	-	4.3	41	9/28	4.7
WILLIAMS 82	-	-	56.4	-	-	2.0	40	9/20	4.0
WILSTAR 430	-	38.8	49.6	-	2.0	4.0	44	10/4	4.7
LATE (GROUPS V AND VI)									
AGRIPRO AP 55	-	-	56.0	-	-	5.0	46	10/16	6.3
BAY	50.7	47.1	59.9	2.0	2.0	2.7	41	10/15	4.7
BEDFORD[c]	45.5	43.6	55.9	2.6	2.0	3.0	42	10/19	5.3
ESSEX	51.3	47.8	63.9	1.9	1.8	1.7	35	10/9	4.3
FFR 559	-	-	57.9	-	-	3.0	38	10/15	6.0
FORREST[b]	49.6	46.4	59.9	1.7	1.5	2.0	37	10/17	5.0
NATHAN[c]	45.3	42.8	57.7	2.9	2.7	3.3	41	10/15	4.3
VR 8027	-	-	48.8	-	-	4.7	41	10/17	5.7
WILSTAR 550	-	-	53.4	-	-	2.3	40	10/19	4.7
YORK	47.5	44.2	57.0	1.8	1.5	2.0	34	10/13	4.3
GRAND AVERAGE	46.6	42.9	54.8	2.1	2.1	3.0	40	9/30	4.5
LSD (.10)	6.1	6.6	6.9	1.1	1.4	1.2	3.2	3.4	1.2

[a]Plant height.
[b]Resistant to the soybean cyst nematode (Race 3).
[c]Resistant to the soybean cyst nematode (Race 4).
[d]Blend, see Table 3.

TABLE 8.—SOYBEAN VARIETY TESTS—CLINTON, KY.

VARIETY	YIELD BU/AC 80-81	YIELD BU/AC 1981	LODG -ING 80-81	LODG -ING 1981	HT.[a] (IN) 1981	MAT. DATE 1981
EARLY (GROUPS II AND III)						
A 3659	51.5	51.1	1.0	1.0	30	9/27
ADLER 202	-	43.8	-	1.3	36	9/27
ADLER 302	-	46.4	-	1.0	35	9/27
CALLAHAN 2380	-	42.3	-	1.0	39	9/27
CUMBERLAND	49.4	48.4	1.2	1.0	34	9/26
ELF	48.1	49.8	1.0	1.0	20	9/29
GOLD TAG 1380	47.3	48.8	1.5	1.0	40	10/1
HIGRO HP-3700	-	44.4	-	1.0	36	9/29
PELLA	46.6	45.2	1.0	1.0	33	9/27
RA-36[d]	44.0	42.9	1.8	1.7	40	9/30
SRF 307P	-	44.4	-	2.3	37	9/27
VORIS 339	46.6	44.9	1.5	2.0	37	9/28
WILLIAMS	44.5	45.8	1.8	1.7	35	9/27
WILLIAMS 79	45.9	44.8	1.8	2.7	37	9/26
MID-SEASON (GROUP IV)						
AGRIPRO AP350	42.3	44.0	2.3	1.7	41	10/2
AGROSUY 68	46.7	47.6	1.5	1.3	39	10/1
A4268	-	47.4	-	1.0	31	9/27
CALLAHAN 1450	-	46.9	-	3.7	40	10/5
CALLAHAN 1460	-	44.5	-	1.0	40	10/10
DELTA	40.8	40.7	1.8	2.7	43	10/4
DESOTU	46.5	44.9	1.3	1.0	34	9/29
DOUGLAS	46.7	47.3	1.0	1.0	36	10/4
FRANKLIN[b]	41.4	41.5	3.0	3.0	39	10/3
G-3443	43.4	41.2	1.8	1.7	39	9/27
GOLD TAG 1440	-	51.4	-	1.7	38	10/9
J-125	48.5	48.4	2.0	2.3	39	10/2
J-130	-	48.9	-	3.7	42	10/4
JMS 4982	-	47.0	-	2.7	42	10/5
MIGRO HP-4800	-	47.5	-	1.3	34	10/1
MILES	41.8	42.5	1.7	1.7	34	9/30
MITCHELL	47.6	48.4	1.5	2.0	37	10/3
MITCHELL 450	45.2	48.0	1.3	1.3	44	10/10
PIXIE	46.3	47.7	1.0	1.0	21	9/29
RA-401	44.7	43.0	1.8	2.3	44	10/8
RA-480	42.5	40.4	2.0	3.0	42	10/17
RA-481	-	41.4	-	1.3	44	10/17
SCOTT BRAND 8047	-	46.6	-	3.0	42	10/5
SEEDMAKER'S 9-E	-	39.4	-	1.3	39	9/30
SRF-450P	-	40.4	-	2.0	41	10/9
STEVENS	-	43.3	-	3.7	44	10/4
UNION	43.0	42.3	2.8	2.0	39	9/24
VORIS 465	46.7	45.7	1.8	2.3	43	10/1
VORIS 495	-	43.2	-	2.7	42	10/6
VR 4004[d]	-	46.2	-	4.0	42	10/3
WILLIAMS 82	-	49.4	-	1.0	35	9/26
WILSTAR 430	42.5	44.8	1.7	1.3	42	10/11
LATE (GROUPS V AND VI)						
AGRIPRO AP 55	-	40.0	-	4.3	39	10/18
BAY	45.1	41.0	1.7	2.0	38	10/17
BEDFORD[c]	41.4	40.5	3.0	3.7	44	-[e]
ESSEX	45.9	42.9	1.3	1.0	34	10/17
FFR 559	-	37.5	-	1.7	34	10/20
FORREST[b]	49.1	48.2	2.3	2.7	35	10/22
NATHAN[c]	40.7	42.3	2.3	3.0	42	10/19
VR 8027	-	44.9	-	4.7	35	10/20
WILSTAR 550	-	33.6	-	2.0	36	-[e]
YORK	44.7	44.3	1.2	1.3	35	10/19
GRAND AVERAGE	45.2	44.6	1.7	2.0	38	10/5
LSD (.10)	4.4	6.3	1.3	1.4	3.9	4.0

[a]Plant height.
[b]Resistant to the soybean cyst nematode (Race 3).
[c]Resistant to the soybean cyst nematode (Race 4).
[d]Blend, see Table 3.
[e]Not mature when frost occurred on 10/24.