

Kentucky Soybean Progress Report 275 Performance Tests—1983

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Kentucky Soybean Performance Tests—1983

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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 1983 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 1983 SOYBEAN PERFORMANCE TESTS



Table 1.—Location, Planting Date, and Climatic Data for the 1983 Performance Tests.*

	1 Henderson	2 Hartford	3 Princeton	4 Princeton Double-Crop	5 Paducah	6 Lexington	7 Bowling Green Double-Crop
Farmer Cooperator	James McConathy	Dane Milligan	Exp. Sta.	Exp. Sta.	Mike Boatwright	Exp. Sta.	James & Mike Reynolds
Extension Agent	William Hendrick	John Kavanaugh			George Martin		Kelcy Driskill
Soil Type	Wakeland Silt Loam	Melvin Silt Loam	Crider Silt Loam	Crider Silt Loam	Grenada Silt Loam	Maury Silt Loam	Pembroke Silt Loam
Date of Planting	6/13	6/14	5/27	7/1 ¹	6/8	5/27	6/29 ¹
Row Width (inches)	30	30	30	15	30	30	15
4 Herbicides ²	2 pt. Treflan 6 pt. Lasso	3 pt. Treflan	1½ pt. Treflan 6 pt. Lasso	6 pt. Lasso 1 pt. Lorox 4L 1½ pt. Paraquat	4 pt. Lasso 1 pt. Lorox 4L	6 pt. Lasso	6 pt. Lasso 1 pt. Lorox 4L 2 pt. Paraquat
Soil Test							
P	188	73	130	130	97	200+	200+
K	349	469	485	485	211	300	392
pH	6.8	6.1	6.6	6.6	7.0	6.3	6.6
Fertilizer Applied ²	None	None	None	None	None	None	None
50% Chance of Killing Frost ³	10/26	10/13	10/19	10/19	10/24	10/26	10/23

¹No-till double-cropped after wheat.

²Amount per acre.

³Based on a 30-year average.

*Trade names or 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 Paducah 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 to 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.

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 THE 1983 TESTS

Kentucky soybean growers experienced the worst weather conditions in recent years. Heavy early rains which delayed planting, followed by excessive temperatures and extreme dryness, resulted in very poor yields over most of the state. Yields at all test locations were lower than normal, with Lexington and Paducah being the worst damaged. Hartford and Henderson yields were not as severely affected, due to timely showers in August. Yields in both double-crop tests (Princeton and Bowling Green) were reduced appreciably.

SPECIAL NOTES

No data were taken at Lexington in 1983 due to extreme drought conditions. Only data from 1981 and 1982 are presented. Only 1983 data are presented for Bowling Green and Paducah as these are new locations.

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. 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. No blends were tested in 1983.

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 1983 Soybean Performance Tests was acquired from the following sources:

Entry	Source
A3659, A3966, A4268, A4997, A5618	Asgrow Seed Company, 7000 Portage Road, Kalamazoo, MI 49001
J-112, J-125, J-130	Jacques Seed Company, Box 370, Lincoln, IL 62656
RA-481, RA-502, RA-580, Mitchell, Mitchell 450	Ring Around Products, Inc., 12000 Ford Road, Suite 300, Dallas, TX 75234
Voris 465	Voris Seeds, Inc., Box 457, Windfall, IN 46076
Wilstar 550, Stevens, Helena 401	Helena Chemical Company, 5100 Poplar Avenue, Suite 3200, Memphis, TN 38137
FFR 339, FFR 561, SS 443	Southern States Coop., Inc., P.O. Box 26234, Richmond, VA 23260
JMS 4982	J.M. Schultz Seed Company, 105 Pine Street, Dietrich, IL 62424
Agripro AP 350, Agripro AP 420	North American Plant Breeders, Highway 30 East, Ames, IA 50010
Pioneer 3981, Pioneer 5482, Pioneer 9561	Pioneer Hi-Bred International, Inc., 1000 West Jefferson Street, Tipton, IN 46072
CA 8450	Taylor-Evans Seed Company, Route 2, Danville, KY 40422
S 45-01	Northrup King Company, Route 3, Box 153, Shelbyville, IN 46176
Coker 355, Coker 393	Coker's Pedigreed Seed Company, Box 340, Hartsville, SC 29550
Bay, Bedford, Cumberland, DeSoto, Douglas, Elf, Essex, Fayette, Forrest, Franklin, Lawrence, Nathan, Pella, Pixie, Union, Williams, Williams 82, York, Sparks	Kentucky Foundation Seed Project, P.O. Box 21950, Lexington, KY 40579

TABLE 3.—AVERAGE PERFORMANCE ACROSS YEARS and LOCATIONS

Variety	Hartford and Henderson		Paducah ^a and Princeton		Bowling Green ^b and Poulter-Cox		Approx. seed/lb	Approx. % maturity
	Yield Bu/Ac 82-83	Log/acre 82-83	Yield Bu/Ac 82-83	Log/acre 82-83	Yield Bu/Ac 82-83	Log/acre 82-83		
Early (Group II & III)								
A3559	47.2	1.1	34.0	1.0	28.7	1.0	2600	41
Coker 393	49.0	1.7	34.3	1.0	27.1	1.0	3300	41
Cumberland	45.1	2.5	32.1	1.1	25.7	1.0	2600	41
EIF	51.7	1.7	33.6	1.0	29.9	1.0	2600	43
Fayette	45.6	2.9	28.8	1.0	28.1	1.0	2500	44
FTN 339	46.5	2.7	28.6	1.0	29.1	1.0	2800	41
Pella	46.6	2.2	34.2	1.0	28.1	1.0	2600	-3
Williams	46.0	3.2	31.0	1.1	28.1	1.1	2100	0
Williams 82	49.3	2.5	33.8	1.1	29.9	1.2	2600	0
Mid-season (Group IV)								
Artipro AP 350	47.5	1.2	35.2	1.4	27.4	1.1	2200	49
Artipro AP 420	47.3	1.6	29.7	2.0	31.4	1.4	2450	48
A4266	47.4	1.9	35.3	1.0	28.2	1.0	2700	43
Douglas	46.6	3.3	31.1	1.2	29.6	1.0	2700	46
Douglas	51.3	2.4	29.4	1.1	26.9	1.0	2600	40
Franklin	43.7	3.1	29.2	1.6	25.9	1.2	2600	48
GA 8450	44.3	2.8	30.9	1.4	28.4	1.0	2550	48
Helena 401	48.4	3.9	32.2	1.9	30.0	1.1	2500	41
J-125	49.4	2.9	30.5	1.2	21.4	1.0	2500	47
J-130	48.7	3.7	32.1	1.7	26.9	1.3	2900	41
JMS 982	48.0	3.1	31.0	1.4	28.1	1.1	2600	41
Lawrence	50.1	2.0	31.4	1.0	31.1	1.2	2900	46
Mitchell	46.7	3.2	31.1	1.7	28.1	1.0	2600	40
Mitchell 490	43.6	2.3	28.2	1.0	30.8	1.2	2600	43
Platte	48.5	3.6	30.6	1.0	29.7	1.0	2600	45
Spartan	48.4	2.6	31.3	1.5	27.7	1.1	2500	45
Stevens	43.7	2.8	28.6	1.2	27.4	1.2	2000	42
Union	45.6	3.0	27.4	1.4	27.1	1.0	2600	46
York 345	48.7	2.6	30.3	1.2	26.9	1.1	2600	48
Late (Group V & VI)								
A50-B	46.9	2.5	31.2	1.2	30.5	1.1	2400	42
Bay	46.0	2.7	29.4	1.3	27.8	1.6	2800	48
Bedford	37.1	3.8	27.9	2.3	20.6	2.2	3500	42
Kasee	49.9	2.0	37.2	1.3	30.5	1.7	3500	45
Perennial	44.3	3.4	27.5	1.7	23.1	1.4	3500	42
Pioneer 5482	44.9	3.2	26.1	2.1	24.6	2.3	3500	43
Pioneer 5482	45.1	3.2	31.2	1.0	30.7	1.3	3000	42
MA-502	42.4	2.6	26.0	2.3	23.8	2.8	3000	43
Millar 550	38.8	3.1	23.1	1.4	23.2	1.6	3500	43
York	40.8	3.0	26.7	1.2	26.1	1.2	2600	42
Grand Average	46.5	2.8	30.5	1.4	27.7	1.2		
LSD (.10)	6.3	0.8	6.2	0.8	6.0	0.8		

a 1983 data only for Bowling Green double-crop.
 b days earlier (-) or later (+) than Williams.
 c Data based on 1983 observations at Princeton and Paducah.
 d Resistant to the soybean cyst nematode (Race 3).
 e Resistant to the soybean cyst nematode (Race 3 and Race 4).
 f 1983 data only for Paducah.

TABLE 4.—SOYBEAN VARIETY TESTS—HENDERSON

VARIETY	YIELD YIELD		YIELD		L006		L006		L006		L006		MTg		MTg	
	BU/Ac 81-83	BU/Ac 82-83	BU/Ac 81-83	BU/Ac 82-83	-TNG	-TNG	-TNG	-TNG	-TNG	-TNG	-TNG	-TNG	-TNG	1983	1983	
EARLY (GROUPS II AND III)																
A3559	48.3	49.0	36.0	36.0	1.1	1.2	1.0	1.0	2.6	4.0	5.3	5.3	5.3			
A3966	-	41.1	37.6	-	-	1.5	1.5	2.0	4.5	4.5						
COKER 393	-	47.1	28.3	2.4	1.9	1.3	2.5	3.0	5.3	5.3						
CUMBERLAND	47.1	42.6	35.7	1.4	1.7	1.0	1.6	2.0	4.7	4.7						
EIF	49.7	47.0	35.7	2.9	2.4	1.2	3.4	4.7	4.7							
FAYETTE	45.2	44.5	35.8	2.9	2.4	1.7	3.5	4.7	4.7							
FFA 358	-	45.6	39.4	-	-	1.8	4.1	6.5	4.7							
J-125	-	48.9	38.9	-	-	1.9	4.1	3.7	4.7							
PHELLA	49.2	46.0	38.6	1.9	1.9	1.3	4.1	3.7	4.7							
PIQUEUR 3491	44.0	45.5	37.1	3.1	2.7	1.7	3.5	4.5	4.5							
PILLIAMS	49.6	47.2	40.7	2.1	1.9	1.7	3.5	4.7	4.0							
ATLILWAS 42	-	40.7	40.7	-	-	1.3	4.3	4.0	4.0							
MID-SEASON (GROUP IV)																
AUTIPRO 350	50.3	46.8	40.6	2.9	2.7	1.4	3.6	6.3	6.3							
AUTIPRO 420	-	49.0	47.0	-	3.0	2.0	4.5	5.0	5.0							
A4266	46.8	49.0	44.2	2.3	1.7	1.5	2.5	4.0	4.0							
A4997	-	40.4	40.4	-	1.5	2.7	7.7	5.0	5.0							
HE301	50.0	49.3	43.2	2.8	2.2	2.0	3.8	5.7	5.7							
INDIGLAP	50.9	53.1	49.5	2.7	2.2	1.7	3.6	5.0	5.0							
PIQUEUR 3491	46.8	47.3	46.5	4.0	3.1	2.5	4.3	6.0	6.0							
MA 4430	-	44.5	39.5	-	2.5	1.7	3.1	5.0	5.0							
HELLENA 401	-	47.5	46.5	-	3.5	4.2	4.6	5.3	5.3							
J-125	53.1	51.4	45.9	3.0	2.5	1.9	3.6	5.0	5.0							
J-130	48.7	49.4	39.7	3.4	3.2	2.0	4.1	6.0	6.0							
JMS 982	48.7	49.4	43.9	3.4	3.1	2.5	4.1	5.3	5.3							
LAWRENCE	50.0	49.1	43.6	2.1	1.9	1.3	3.3	6.3	6.3							
MITCHELL 490	46.7	49.7	44.6	3.0	2.8	2.5	3.9	6.0	6.0							
PLATTE	46.6	46.5	38.4	2.1	1.7	2.0	4.0	4.0	4.0							
PIKEE	48.0	48.3	38.5	1.5	1.7	1.0	1.4	1.3	1.3							
MA-502	-	44.1	44.1	-	1.7	2.0	4.3	4.3	4.3							
Spartan	49.0	47.2	39.4	3.2	2.4	2.0	3.4	5.0	5.0							
STEYRER 58	46.4	44.3	42.3	2.9	2.7	2.0	4.1	5.0	5.0							
UNION	49.4	42.1	32.1	2.8	2.2	1.7	3.6	6.0	6.0							
YORK 345	44.3	45.7	40.9	2.2	1.4	1.5	4.0	4.0	4.0							
LATE (GROUPS V AND VI)																
A50-B	46.2	47.1	41.9	-	2.7	1.8	3.6	4.7	4.7							
Bay	46.2	47.4	43.9	2.9	2.7	2.0	4.0	5.7	5.7							
BEDFORD	34.8	34.9	37.5	4.2	3.9	3.2	3.9	6.3	6.3							
COKER 393	-	47.4	47.4	-	3.5	3.5	4.5	6.3	6.3							
ESSEX	50.7	50.2	42.7	3.5	3.1	2.0	4.0	6.0	6.0							
FFR-251	-	46.2	46.2	-	1.9	3.2	6.7	6.7	6.7							
FURNESS	48.8	47.9	43.2	3.3	3.4	2.8	3.6	6.0	6.0							
NATHAN	46.0	49.5	49.8	3.0	3.0	2.8	4.3	6.0	6.0							
PIQUEUR 3492	-	47.5	43.2	-	2.0	2.9	5.7	5.7	5.7							
PIVILLE 4561	-	46.4	46.4	-	2.5	4.1	6.3	6.3	6.3							
MA-502	-	45.5	40.4	-	3.6	5.0	4.0	6.3	6.3							
MA-500	34.0	39.5	35.2	5.4	3.2	2.3	3.7	7.0	7.0							
MILLSTAR 350	43.1	41.8	35.0	4.3	3.2	2.3	4.1	7.7	7.7							
YORK	44.0	41.8	35.0	4.3	3.2	2.3	4.1	7.7	7.7							
GRAND AVERAGE	44.0	45.3	40.4	2.8	2.6	1.9	3.5	6.0	6.0							
LSD (.10)	5.9	7.5	7.3	0.7	0.7	0.5	5.8	1.7	1.7							

a Plant height.
 b Resistant to the soybean cyst nematode (Race 3).
 c Resistant to the soybean cyst nematode (Race 3 and Race 4).

TABLE 5.—SOYBEAN VARIETY TESTS—HARTFORD

VARIETY	YIELD		LUNG	LUNG	LUNG	HT ^a	POD
	BU/AC	BU/AC					
EARLY (GROUPS II AND III)	55.5	50.5	47.9	1.1	1.1	1.0	41
A396b	-	-	47.1	-	-	2.5	37 7.3
COCKER 593	-	50.9	49.5	-	1.6	1.0	35 6.0
CONRE-FLAN	-	47.4	47.9	-	2.8	1.7	37 6.0
ELF	50.7	47.4	52.9	1.5	1.7	1.0	10 4.0
FAYETTE ^c	50.5	46.4	41.9	2.5	2.8	2.2	43 6.0
FFP 559	-	47.5	45.5	-	3.0	2.2	41 5.8
J-112	-	-	37.2	-	-	3.2	47 7.7
PELLA	49.5	46.4	40.0	-	2.1	2.6	1.5 37 4.7
PIONEER 3941	49.7	46.5	50.6	-	-	5.0	37 6.5
MILLARS 92	51.9	49.5	42.5	2.4	3.8	5.5	40 7.5
MILLARS 92	51.9	51.5	49.4	2.4	3.0	2.5	40 7.5
MID-SEASON (GROUP IV)	53.2	44.7	47.7	5.5	4.7	5.2	46 7.7
ACRIPER 4830	-	46.5	44.4	-	4.2	4.2	47 9.0
ACRIPER 4940	52.0	50.9	50.6	1.0	2.1	1.5	35 6.4
A826b	-	-	49.7	-	-	3.2	33 9.0
A8907	-	47.0	41.9	-	4.4	4.5	44 6.0
DE 501	51.2	49.4	46.4	2.5	2.5	1.8	40 6.7
DOUGLAS	49.6	49.1	48.5	2.7	5.2	2.5	47 7.0
FRANKLIN ^b	-	45.1	40.8	-	3.1	2.0	40 6.0
GA 4820	-	45.1	49.7	-	-	4.5	49 7.5
HELENA 401	49.5	47.5	45.2	1.2	3.5	2.7	43 7.4
J-125	54.4	54.1	49.9	5.4	4.2	4.3	43 9.0
J-150	43.5	48.7	47.0	3.4	4.8	4.2	52 4.0
JAN 2884	54.0	52.1	51.7	1.0	2.0	1.5	39 7.5
LABOR 405	51.6	49.4	47.0	5.5	3.7	2.8	45 6.7
MITCHELL 430	40.0	41.2	39.9	2.4	2.0	1.1	42 9.7
MITCHELL 430	52.8	52.7	47.5	1.4	1.5	2.1	47 2.7
MA-401	-	45.7	-	-	-	2.5	47 10.2
SPARKS	52.0	49.4	47.2	4.4	4.5	4.5	46 9.7
SR-405	-	52.5	-	-	-	1.2	55 7.5
STEVENS	49.7	45.1	45.5	2.4	2.0	1.8	49 6.7
S85-01	48.4	49.2	49.4	-	-	2.7	46 6.7
UNION	51.5	49.4	49.4	5.0	3.4	3.4	45 7.0
WATTS 465	51.5	50.4	47.4	5.5	5.5	5.5	48 7.7
LATE (GROUPS V AND VI)	44.7	40.7	40.7	-	2.5	2.0	49 12.5
BAR	44.1	44.6	41.0	2.4	2.4	2.4	46 10.0
DEFOUR ^c	54.2	55.0	54.1	4.0	3.7	3.5	50 13.0
COCKER 595	-	54.9	-	-	-	2.5	46 10.7
ESSX	48.5	44.6	44.6	2.5	2.4	2.0	37 9.7
FFP-551	-	44.9	-	-	-	1.7	40 9.7
FINCH ^b	49.6	47.5	38.4	5.2	4.0	4.2	47 10.5
KATY ^b	41.0	42.2	38.4	2.4	2.4	2.5	54 11.7
MINIFEC 5942	-	40.4	40.2	-	3.5	3.5	44 12.3
PIONEER 5442	-	54.5	-	-	-	2.4	53 9.7
PIONEER 9561	-	54.5	-	-	-	3.0	46 9.5
24-502	-	54.5	-	-	-	2.7	45 11.7
24-504	-	54.5	-	-	-	2.7	45 11.7
MILSTAR 550	40.2	46.2	35.0	2.7	2.8	2.5	44 9.0
YORK	-	-	-	-	-	-	-
GRAND AVERAGE	44.6	46.4	48.0	2.4	3.1	2.4	45 8.0
LSD (.10)	4.6	5.1	3.8	0.6	0.8	0.8	3.6

a Plant height.
 b Resistant to the soybean cyst nematode (Race 3).
 c Resistant to the soybean cyst nematode (Race 3 and Race 4).

TABLE 6.—SOYBEAN VARIETY TESTS—PRINCETON

VARIETY	YIELD		LUNG	LUNG	LUNG	HT ^a	MAT.
	BU/AC	BU/AC					
EARLY (GROUPS II AND III)	45.9	40.9	35.2	1.1	1.0	1.0	26 9/15
A396b	-	-	30.2	-	-	1.0	51 9/16
COCKER 593	-	40.5	32.6	-	1.0	1.0	29 9/19
CONRE-FLAN	44.0	40.5	29.1	1.2	1.2	1.0	29 9/10
ELF	47.5	41.5	35.4	1.0	1.0	1.0	18 9/14
FAYETTE ^c	40.2	34.6	27.1	1.7	1.0	1.0	31 9/12
FFP 559	-	33.0	25.9	-	1.0	1.0	50 9/9
J-112	-	32.1	-	-	-	1.0	41 9/14
PELLA	47.0	41.9	34.1	1.1	1.0	1.0	31 9/10
PIONEER 3941	41.6	37.5	28.8	1.9	1.5	1.5	32 9/11
MILLARS 92	45.4	40.5	32.4	1.8	1.2	1.2	33 9/12
MID-SEASON (GROUP IV)	43.6	39.0	26.7	2.3	1.7	1.5	33 9/22
ACRIPER 4830	-	35.8	28.1	-	2.5	2.3	37 9/15
ACRIPER 4940	48.8	45.6	34.7	1.2	1.0	1.0	30 9/15
A826b	-	-	27.6	-	-	1.0	26 9/24
A8907	44.5	37.9	26.7	2.2	1.5	1.5	33 9/29
DE 501	41.0	36.5	23.4	2.0	1.2	1.0	51 9/20
DOUGLAS	41.5	34.1	25.5	2.9	2.2	2.0	37 9/17
FRANKLIN ^b	-	39.0	24.7	-	1.7	1.5	35 9/22
GA 4820	-	34.0	24.7	-	-	2.0	35 9/22
HELENA 401	44.5	37.5	26.7	1.4	1.4	1.4	35 9/27
J-125	44.7	37.0	22.4	1.4	1.4	1.0	31 9/19
J-150	44.7	37.0	22.4	2.6	2.0	1.5	56 9/21
JAN 2884	48.1	39.2	24.9	2.2	1.7	1.7	39 9/22
LABOR 405	44.7	37.9	31.1	1.1	1.0	1.0	50 9/20
MITCHELL 430	44.3	34.6	22.2	1.6	2.0	1.7	56 9/20
MITCHELL 430	41.3	34.6	22.2	1.6	1.0	1.0	39 10/1
MA-401	41.6	35.5	31.0	1.0	1.0	1.0	16 10/2
SPARKS	43.2	37.2	25.1	1.7	1.5	1.0	34 10/2
SR-405	-	32.1	-	-	-	1.0	35 9/15
STEVENS	39.4	33.1	23.0	2.6	1.3	1.0	56 9/24
S85-01	39.2	33.0	22.0	2.3	1.7	1.0	35 9/15
UNION	41.1	37.0	24.0	1.9	1.4	1.5	34 9/15
WATTS 465	41.1	37.0	24.0	1.9	1.4	1.0	34 9/16
LATE (GROUPS V AND VI)	35.8	19.6	19.2	-	1.5	1.0	37 10/13
BAR	41.5	32.8	19.2	1.9	1.5	1.5	32 10/16
DEFOUR ^c	41.3	41.0	14.0	3.0	2.3	2.3	41 10/13
COCKER 595	-	12.2	-	-	-	1.5	33 10/17
ESSX	40.5	42.5	20.4	1.6	1.5	1.0	28 10/11
FFP-551	-	24.2	-	-	-	1.0	31 10/4
FINCH ^b	41.4	31.6	20.4	2.0	1.7	1.7	54 10/13
KATY ^b	40.2	30.3	20.3	2.9	2.7	2.0	41 10/1
MINIFEC 5942	-	34.2	20.5	-	1.0	1.0	29 10/13
PIONEER 5442	-	12.1	-	-	-	1.0	36 10/17
PIONEER 9561	-	29.0	14.4	-	1.0	1.0	37 10/16
24-502	-	9.6	-	-	-	3.7	40 10/13
24-504	-	7.0	-	-	-	1.0	33 10/21
MILSTAR 550	39.2	30.2	15.5	1.6	1.5	1.0	29 10/12
YORK	-	-	-	-	-	-	-
GRAND AVERAGE	41.0	36.5	24.9	1.9	1.5	1.4	33 9/24
LSD (.10)	6.6	9.0	7.8	0.8	0.6	0.8	4.4

a Plant height.
 b Resistant to the soybean cyst nematode (Race 3).
 c Resistant to the soybean cyst nematode (Race 3 and Race 4).

TABLE 7.—SOYBEAN VARIETY TESTS—PADUCAH

VARIETY	YIELD LOG ₁₀ HT ^a		
	BU/AC	1983	1984 1985
EARLY (GROUPS II AND III)			
A355 ^a	21.0	1.0	19
A356 ^b	18.1	1.0	23
CONKEY 495	21.4	1.0	23
CUMBERLAND	15.5	1.0	20
ELF	17.5	1.0	16
FAYETTE ^c	17.0	1.0	27
FFW 544	19.7	1.0	27
J-112	15.0	1.0	27
PELLA	18.8	1.0	25
PIVOTAL 3941	18.7	1.0	22
WILLIAMS	18.1	1.0	23
WILLIAMS 82	20.4	1.0	25
MID-SEASON (GROUP IV)			
AGRIPRO AP150	21.7	1.0	24
AGRIPRO AP420	17.4	1.0	29
AW268	18.7	1.0	29
AW268	14.0	1.0	23
AW267	17.5	1.0	23
DESNOR	15.6	1.0	24
DOUGLAS	19.5	1.0	24
FRANKLIN ^b	18.9	1.0	23
GB 8450	19.0	1.0	23
HELENA 401	19.0	1.0	27
J-125	19.4	1.0	23
J-130	19.1	1.0	23
J-130	17.4	1.0	27
J-135 4442	15.4	1.0	22
LAURENCE	18.1	1.0	27
MITCHELL	15.4	1.0	24
MITCHELL 450	19.2	1.0	26
PIXIE	19.2	1.0	26
SPARKS	22.1	1.0	26
SPARKS	19.4	1.0	26
STEVENS	19.5	1.0	21
STEVENS	19.9	1.0	29
UNION	14.0	1.0	26
VORIS 465	15.4	1.0	25
LATE (GROUP V AND VI)			
AS618	22.0	1.0	24
BAV	24.5	1.0	24
BEDFORD ^c	21.4	1.0	25
ESSEX	25.4	1.0	24
FORREST ^b	27.0	1.0	27
MATHAN ^c	23.9	1.0	27
PIONEER 5482	19.4	1.0	30
RA-502	15.5	1.0	12
WILSTAR 550	24.5	1.0	26
YORK	24.7	1.0	14
YORK	15.4	1.0	12
YORK	21.4	1.0	12
YORK	19.5	1.0	27
YORK	19.5	1.0	27
GRAND AVERAGE			
	19.0	1.0	26
LSD (.10)			
	4.4	0	3.6

^a Plant height.
^b Resistant to the soybean cyst nematode (Race 3).
^c Resistant to the soybean cyst nematode (Race 3 and Race 4).
^d Not mature when frost occurred on 10/17.
^e Only 1983 varieties common to the 1983 test presented.

TABLE 8.—SOYBEAN VARIETY TESTS—LEXINGTON (NO 1983 DATA)

VARIETY ^a	YIELD YIELD YIELD			LOG ₁₀ LOG ₁₀ LOG ₁₀ HT ^a			DATE HAR- VESTED
	BU/AC	BU/AC	BU/AC	1982	1982	1982	
EARLY (GROUPS II AND III)							
A355 ^a	45.4	46.0	51.5	1.1	1.1	1.2	34
CORCER 393	46.1	46.8	49.1	1.6	1.5	1.7	40
CUMBERLAND	46.4	46.4	46.4	1.2	1.3	1.8	37
ELF	44.0	46.4	46.4	1.2	1.2	2.2	42
FAYETTE ^c	45.9	46.4	46.5	1.2	2.3	2.3	45
FFW 339	44.4	45.8	46.5	1.3	1.7	3.9	39
PELLA	44.4	45.8	46.8	1.3	1.2	1.5	38
WILLIAMS	42.4	43.7	43.8	1.8	1.8	1.7	41
WILLIAMS 82	45.5	48.9	48.9	1.4	1.4	1.5	42
MID-SEASON (GROUP IV)							
AGRIPRO AP150	47.5	49.9	52.7	2.1	1.8	1.5	50
AGRIPRO AP420	46.3	47.1	47.1	1.4	1.4	2.2	48
A4268	43.2	45.6	49.6	2.3	2.2	2.2	43
DESNOR	45.1	45.9	49.0	1.8	1.9	1.8	45
DOUGLAS	40.6	43.2	45.9	2.3	2.2	2.3	52
FRANKLIN ^b	50.2	—	50.2	—	—	2.3	45
GB 8450	43.3	44.9	47.9	1.8	2.0	2.0	44
HELENA 401	46.8	47.1	47.1	1.9	2.1	2.3	41
J-125	47.9	47.1	47.1	1.9	1.9	1.8	46
J-130	45.5	46.6	46.6	2.1	2.2	1.5	45
JMS 4982	46.0	47.0	52.3	2.1	2.2	2.5	45
LAURENCE	44.8	47.2	46.0	1.3	1.6	1.5	47
MITCHELL	44.8	46.1	46.0	1.3	1.4	2.8	10/13
MITCHELL 450	44.3	46.1	51.0	2.1	2.2	2.7	50
PIXIE	44.3	48.8	48.9	2.5	2.5	3.0	50
SPARKS	42.4	45.1	46.3	2.6	2.7	2.3	48
STEVENS	45.4	47.2	48.3	2.0	2.2	2.7	48
UNION	45.4	47.2	48.3	2.0	2.2	2.7	48
VORIS 465	45.4	47.2	48.3	2.0	2.2	2.7	48
LATE (GROUP V AND VI)							
AS618	34.2	39.1	50.6	—	—	2.0	47
BAV	24.3	27.2	43.5	3.6	3.7	2.7	47
BEDFORD ^c	41.9	48.1	58.8	2.8	2.6	2.2	42
ESSEX	30.5	34.6	49.7	3.6	3.5	3.3	45
FORREST ^b	33.1	32.8	43.8	3.9	4.0	3.7	49
MATHAN ^c	—	—	51.2	—	—	2.8	43
PIONEER 5482	—	—	49.6	—	—	3.2	46
RA-502	—	28.0	43.7	—	—	3.0	45
WILSTAR 550	33.3	36.9	47.2	2.8	2.9	2.7	45
YORK	—	—	—	—	—	—	—
YORK	—	—	—	—	—	—	—
YORK	—	—	—	—	—	—	—
YORK	—	—	—	—	—	—	—
GRAND AVERAGE							
	41.1	43.2	47.8	2.2	2.2	2.2	44
LSD (.10)							
	7.6	8.3	6.1	0.5	0.7	0.6	4.1

^a Data for 1983 not reported owing to drought damage.
^b Plant height.
^c Resistant to the soybean cyst nematode (Race 3).
^d Resistant to the soybean cyst nematode (Race 3 and Race 4).
^e Not mature when frost occurred on 10/17.
^f Only 1983 varieties common to the 1983 test presented.

TABLE 9.—SOYBEAN VARIETY TESTS, BOWLING GREEN—
NO-TILL, DOUBLE-CROPPED

VARIETY	YIELD		LDRG	HT ^a	HT ^b	POD
	R/U/AC	-TNG (IN)				
EARLY (Groups 11 AND 111)						
A3959	20.7	1.0	1.0	16	4.7	4.7
A3966	22.4	1.0	2.4	24	5.3	5.3
COKEB 395	20.2	1.0	1.7	17	4.7	4.7
COKEB (CLAND)	17.9	1.0	1.9	19	4.3	4.3
ELF	21.6	1.0	1.6	16	5.0	5.0
FAYETTE C	16.7	1.0	2.1	21	6.7	6.7
FFR 359	19.1	1.0	1.9	19	5.3	5.3
J-112	15.5	1.0	2.1	21	5.7	5.7
PELLA	24.0	1.0	2.5	25	6.0	6.0
PIONEER 3981	22.2	1.0	2.0	20	5.7	5.7
WILLIAMS 42	17.6	1.0	2.0	20	5.0	5.0
MID-SEASON (GROUP 1V)						
AGRIPEX1 A9150	22.5	1.0	2.7	27	7.0	7.0
AGRIPEX1 A9220	22.5	1.0	2.6	26	7.0	7.0
A9266	14.9	1.0	1.9	19	6.3	6.3
A9268	25.6	1.4	2.5	25	7.7	7.7
DESOIJ	14.5	1.0	2.1	21	6.7	6.7
DOUGLAS	14.7	1.0	2.1	21	5.7	5.7
FRANKLIN b	14.6	1.0	2.6	26	5.5	5.5
GA 8420	17.8	1.0	2.2	22	5.7	5.7
HELIOR 401	24.9	1.0	2.6	26	6.7	6.7
J-125	15.4	1.0	2.2	22	5.1	5.1
J-130	22.4	1.0	2.7	27	6.3	6.3
J95 4922	22.9	1.0	2.6	26	6.3	6.3
LANEYCC	20.7	1.0	2.1	21	6.0	6.0
MITCHELL	21.8	1.0	2.5	25	7.0	7.0
MITCHELL 450	21.7	1.4	2.6	26	7.2	7.2
MIXE	22.0	1.0	2.1	21	6.7	6.7
WA-401	22.8	1.0	3.0	30	9.3	9.3
SPARKS	20.8	1.0	2.4	24	5.7	5.7
SS-483	21.9	1.0	1.8	18	5.5	5.5
S95-01	14.9	1.0	2.5	25	6.7	6.7
00179	21.2	1.0	2.3	23	5.7	5.7
V0415 405	22.7	1.0	2.4	24	7.0	7.0
LATE (Groups V AND VI)						
4557R	25.4	1.4	3.0	30	10.0	10.0
441	21.2	1.5	2.7	27	9.7	9.7
LEUFU-C	14.0	1.7	3.5	35	11.0	11.0
COKEB 395	15.1	1.6	3.1	31	11.0	11.0
ESSE1	22.9	1.4	2.5	25	9.0	9.0
FFR-551 b	25.2	1.4	2.6	26	6.3	6.3
PIONEER 3	14.7	1.7	3.1	31	10.7	10.7
WATNAVC	19.0	2.3	3.6	36	11.0	11.0
PIONEER 5342	22.1	1.5	3.1	31	6.7	6.7
WATNAVC	14.1	1.5	3.2	32	6.5	6.5
MA-502	14.2	2.7	3.6	36	11.3	11.3
PIONEER 9551	14.8	1.7	4.2	42	10.7	10.7
WA-502	15.4	1.7	3.1	31	9.3	9.3
MILSTAR 530	19.0	1.5	2.7	27	8.0	8.0
YORK	19.0	1.5	2.7	27	8.0	8.0
GRAND AVERAGE	20.0	1.2	2.5	25	7.2	7.2
LSD (.10)	3.0	0.4	3.1	1.4		

a Plant height.
b Resistant to the soybean cyst nematode (Race 3).
c Resistant to the soybean cyst nematode (Race 3 and Race 4).

TABLE 10.—SOYBEAN VARIETY TESTS, PRINCETON—
NO-TILL, DOUBLE-CROPPED

VARIETY	YIELD		LDRG	L375	L376	L378 (E4)	DATE	POD
	R/U/AC	R/U/AC						
EARLY (Groups 11 AND 111)								
A3959	17.9	31.7	31.6	1.0	1.0	1.0	27	10.5
A3966	-	35.4	35.4	-	-	-	26	10.5
COKEB 395	-	30.5	30.0	-	-	-	26	10.5
COKEB (CLAND)	34.1	28.5	25.0	1.0	1.0	1.0	27	10.7
ELF	80.0	33.6	24.4	1.0	1.0	1.0	19	10.7
FAYETTE C	57.7	43.4	50.9	1.0	1.0	1.0	29	10.7
FFR 359	-	40.3	43.0	-	-	-	28	9.5
J-112	-	25.9	25.9	-	-	-	32	10.7
PELLA	40.5	39.1	47.7	1.0	1.0	1.0	32	10.7
PIONEER 3981	37.4	33.6	35.2	1.0	1.0	1.0	26	10.7
WILLIAMS 42	37.0	30.8	32.4	1.2	1.2	1.2	29	10.7
MID-SEASON (GROUP 1V)								
AGRIPEX1 A9150	35.6	30.4	32.0	1.4	1.4	1.4	31	10.7
AGRIPEX1 A9220	36.7	30.0	30.7	-	-	-	37	10.7
A9266	37.1	32.0	30.7	1.0	1.0	1.0	26	10.7
A9268	-	29.5	-	-	-	-	52	10.7
DESOIJ	37.7	30.7	30.1	1.4	1.0	1.0	32	10.7
DOUGLAS	47.0	33.0	32.5	1.0	1.0	1.0	23	10.7
FRANKLIN b	31.8	27.0	27.0	1.3	1.3	1.3	35	10.7
GA 8420	-	33.4	34.8	-	-	-	35	10.7
HELIOR 401	-	33.1	34.0	-	-	-	52	10.7
J-125	33.4	28.1	28.1	1.3	1.0	1.0	25	10.7
J-130	32.4	29.2	28.1	1.6	1.6	1.6	57	10.7
J95 4922	37.4	30.3	27.6	1.0	1.0	1.0	23	10.7
LANEYCC	37.1	32.1	32.5	1.0	1.0	1.0	26	10.7
MITCHELL	38.0	32.2	32.2	1.6	1.3	1.3	36	10.5
MITCHELL 450	33.0	35.8	34.0	1.1	1.2	1.3	47	10.7
PITL	35.0	28.9	28.9	1.0	1.0	1.0	16	10.7
WATNAVC	44.5	44.5	44.5	-	-	-	60	10.5
SPARKS	39.2	31.4	30.5	1.2	1.2	1.0	30	10.5
SS-483	-	31.3	31.3	-	-	-	32	10.7
S95-01	33.0	27.6	28.7	1.0	1.2	1.3	52	10.7
00179	-	26.4	-	-	-	-	52	10.7
V0415 405	35.1	30.1	31.2	1.1	1.0	1.0	33	10.7
YORK	30.8	29.0	28.2	1.4	1.2	1.4	33	10.7
LATE (Groups V AND VI)								
4557R	-	33.9	21.8	-	-	-	40	11.3
441	30.5	31.2	19.1	2.0	1.7	2.3	52	10.7
LEUFU-C	22.5	21.0	2.0	2.5	2.5	4.0	46	11.3
COKEB 395	-	15.6	-	-	-	-	35	11.3
ESSE1	39.1	34.3	18.0	1.0	1.0	1.0	26	10.5
FFR-551 b	-	31.3	31.3	-	-	-	54	10.5
PIONEER 3	27.0	25.4	13.4	2.1	1.4	1.7	40	11.2
WATNAVC	29.4	27.3	14.6	2.8	2.3	3.7	45	10.2
MA-502	-	35.0	19.0	-	-	-	34	11.3
PIONEER 9551	-	15.1	-	-	-	-	38	11.3
WA-502	-	23.0	13.5	-	-	-	46	11.5
MA-500	-	10.6	-	-	-	-	49	11.5
MILSTAR 531	22.5	26.7	11.2	2.7	1.5	2.0	33	11.3
YORK	31.9	29.7	16.0	1.8	1.0	1.0	35	11.2
GRAND AVERAGE	35.0	31.6	25.1	1.5	1.5	1.5	32	10.7
LSD (.10)	9.4	10.5	9.7	0.8	1.0	1.0	6.1	4.1

a Plant height.
b Resistant to the soybean cyst nematode (Race 3).
c Resistant to the soybean cyst nematode (Race 3 and Race 4).

