Kentucky Soybean Performance Tests—1982

Progress Report 268

J. M. Wood, Charles Tutt, and Todd Pfeiffer

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

CONTENTS

ACKNOWLEDGMENTS

In addition to the county agents and farm cooperators mentioned in Table 1, several people have contributed greatly to the production of this publication. They are: Eugene Lacefield, Jenny Carey, Jose Carlos, and John Byars.

The College of Agriculture is an Equal Opportunity Organization with respect to education and employment and authorization to provide research, educational information and other services only to individuals and institutions that function without regard to race, color, national origin, sex, religion, age and handicap. Inquiries regarding compliance with Title VI and Title VII of the Civil Rights Act of 1964, Title IX of the Educational Amendments, Section 504 of the Rehabilitation Act and other related matters should be directed to Equal Opportunity Office, College of Agriculture, University of Kentucky, Room S-105, Agricultural Science Building-North, Lexington, Kentucky 40546.

Kentucky Soybean Performance Tests—1982

J. M. Wood, Charles Tutt and Todd Pfeiffer

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 1982 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 1982 SOYBEAN PERFORMANCE TESTS

Table 1.—Location, Planting Date, and Climatic Data for the 1987 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	6/14	6/10	6/7	6/24[1]	6/2	5/13	6/22[1]
Row width (inches)	30	30	30	15	30	30	15
Herbicides[2]	2 pt Treflan 3 qt Lasso	3 pt Treflan	1½ pt Treflan 6 pt Lasso	3 qt Lasso 1½ lb Lorox 2½ pt Paraquat	1½ pt Treflan	6 pt Lasso	1 lb Lorox 6 pt Lasso 2 pt Paraquat
Soil test							
P	128	61	107	107	56	200 +	200 +
K	342	473	457	457	216	285	500 +
pH	6.6	5.7	6.1	6.1	5.9	6.5	6.7
Fertilizer[2] applied	None	300 lb 0-23-30	None	None	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 THE 1982 TESTS

Growing conditions for soybeans in Kentucky in 1982 were generally good. Heavy rainfall in late May and early June delayed planting over most of the state. Rainfall during the growing season was generally adequate, with the period of late August and early September receiving unusually high amounts. Coupled with the late frost this made for quite good yields, particularly of the later (Group V) varieties. This was especially true at the Lexington location; therefore, use of the three-year average is stressed.

SPECIAL NOTES

Data are not presented for some varieties at the Russellville location, in 1982, due to poor stand establishment.

No data were taken at Russellville in 1981 due to poor stand, caused by dry weather and johnsongrass competition. Therefore, only data for 1980 and 1982 are presented for this location.

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 1982 and the components of the mixture.

Table 3.—Percentage Composition of Each Variety in the Soybean Blends Tested in 1982.

Name	Variety 1	Variety 2
Multivar 3267	33% Woodworth	67% 51333
Multivar 95	50% 34-WM	50% 61940
RA-36	50% SB 27	50% Union

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 1982 Soybean Performance Tests was acquired from the following sources:

Entry	Source
A3659, A4268 A5474, A5618	Asgrow Seed Co., 634 E. Lincoln Way, Ames, IA 50010
J-125, J-130	Jacques Seed Company, Prescot, WI 54021
RA-36, RA-401, RA-403, RA-480, RA-502, Mitchell, Mitchell 450	Ring Around Products, Inc., P. O. Box 1629, Plainview, TX 79072
Voris 465, Voris 495	Voris Seeds, Inc., Box 457, Windfall, IN 46076
Callahan 1450, Callahan 2410	Callahan Seeds, 700 W. 169th St., Westfield, IN 46074
Wilstar 550, Stevens, Helena 401	Helena Chemical Co., 5100 Poplar Ave., Suite 3200, Memphis, TN 38117
FFR 559, FFR 339, FFR 447	Southern States Coop., P. O. Box 26234, Richmond, VA 23260
Agrosoy 69	Uphoff Bro. Seed, Box 647, Charleston, IL 61920
JMS 4982	Jim Schultz Seed Co., 106 Pine St., Dietrich, IL 62424
Agripro AP 350, Agripro AP 420	North American Plant Breeders, Route 2, Ames, IA 50010

Entry	Source
Agripro AP 55	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, Mission, KS 66205
Adler's 302	Adler's Seeds Inc., R. R. #1, Box 296, Sharpsville, IN 46068
Seedmaker's 9-E	Seedmaker's, Box 88, Sydney, IL 61877
Pioneer 5482, Pioneer 4880	Pioneer Hi-Bred International Inc., 3261 W. Airline Highway, Waterloo, IA 50701
GA 8450 GA 8490	Taylor-Evans Seed Co., Route 2, Danville, KY 40422
S4044, MV3267 MV 95	Northrup King Co., Route 3, Box 153, Shelbyville, IN 46176
Coker 393	Coker's Pedigreed Seed Co., Box 205, Richland, IN 47634
Bay, Bedford, Cumberland, DeSoto, Douglas, Elf, Essex, Forrest, Franklin, Nathan, Pella, Pixie, Union, Williams, Williams 82, York, Sparks, Lawrance, Fayette	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[a] Double-crop			
	Yield Bu/Ac 81-82	Lodging 81-82	Yield Bu/Ac 81-82	Lodging 81-82	Yield Bu/Ac 81-82	Lodging 81-82	Approx. seed/lb	Approx.[b,c] Maturity
Early (Groups II & III)								
AJ659	51.8	1.1	50.3	1.4	44.3	1.1	2600	-2
Adler 302	53.3	2.4	47.6	2.1	43.1	1.3	2400	+3
Cumberland	51.8	2.6	50.9	2.1	44.7	1.3	2600	+1
Elf	53.6	1.6	53.0	1.1	47.7	1.0	2600	0
Migro HP-3700	52.3	2.7	47.0	2.4	40.1	1.2	2350	+3
Pella	51.3	1.9	48.1	1.8	43.0	1.2	2100	-3
RA-36[h]	49.6	3.0	46.1	2.8	43.8	1.3	2600	+2
Williams	50.0	3.0	45.9	2.6	40.1	1.3	2600	0
Fayette[e]	50.5	2.9	43.6	2.8	39.5	1.3	2500	-3
Williams 82	50.8	2.2	49.7	2.3	39.2	1.1	2600	0
Mid-Season (Group IV)								
Agripro AP350	53.7	2.9	48.9	3.0	52.1	1.3	2200	+13
A4268	50.6	2.1	53.4	2.0	38.2	1.0	2700	+6
Callahan 1450	51.6	3.4	51.3	3.8	48.8	1.5	2900	+16
Desoto	49.5	3.0	49.6	2.8	48.3	1.2	2700	+9
Douglas	52.3	2.6	49.9	2.5	52.0	1.1	2600	+13
Franklin[d]	46.8	2.8	44.6	3.3	45.4	1.2	2600	+13
J-125	51.1	3.0	50.9	2.5	44.7	1.3	2100	+11
J-130	52.2	3.2	51.5	3.8	43.6	1.3	2600	+16
JMS 6982	51.4	3.2	48.4	3.2	48.7	1.8	2900	+13
Lawrence	50.9	1.9	49.4	1.9	39.1	1.1	2600	+5
Migro HP-4800	49.2	2.6	51.4	2.3	44.2	1.3	2700	+12
Mitchell	51.5	3.2	52.0	3.3	48.3	1.2	2900	+15
Mitchell 450	48.7	2.2	48.6	2.3	43.0[g]	1.0[g]	2600	+24
Pixie	54.4	1.6	46.0	1.0	45.3	1.0	2600	+3
RA-401	44.9	2.6	46.5	2.5	45.0	1.3	2600	+18
RA-480	43.0	3.0	45.5	3.5	52.9	1.2	2700	+21
Seedmakers 3-E	49.7	2.6	45.6	2.4	44.7	1.2	2850	+5
Sparks	52.8	3.2	49.9	3.0	41.9	1.5	2500	+5
Stevens	46.8	3.1	44.7	3.6	39.4	1.3	2800	+14
Union	49.1	3.2	44.5	3.2	43.0	1.4	2600	+4
Voris 465	50.7	2.8	48.9	3.0	36.3	1.3	2400	+11
Voris 495	46.4	3.2	46.6	3.3	47.3	1.3	2500	+15
Late (Groups V & VI)								
Agripro AP55	41.9	4.0	42.8	4.4	35.3[g]	1.0[g]	3500	+21
Bay	44.1	3.0	48.3	2.7	51.5	1.5	2800	—[f]
Bedford[e]	34.6	3.9	45.2	3.8	42.8	1.8	3500	—[f]
Essex	51.3	3.3	53.7	2.3	49.7[g]	1.7[g]	3500	+26
FFR 559	42.4	3.8	42.6	2.9	35.2[g]	2.2[g]	3400	+20
Forrest[d]	42.1	3.4	47.2	2.9	33.6[g]	1.9[g]	3500	—[f]
Nathan[e]	41.1	3.9	45.9	3.4	42.8	1.8	3500	+21
Wilstar 550	36.0	3.4	40.4	2.6	45.9	2.2	3500	—[f]
York	42.3	3.2	46.5	2.3	55.3	1.7	2600	—[f]
Grand Average	48.5	2.8	47.9	2.7	44.9	1.3		
LSD (.10)	6.1	0.8	4.3	0.9	6.2	0.8		

[a]1982 data only for Russellville Double-crop.
[b]Days earlier (-) or later (+) than Williams.
[c]Data based on 1982 observations at Lexington, Princeton, and Clinton.
[d]Resistant to the soybean cyst nematode (Race 3).
[e]Resistant to the soybean cyst nematode (Race 4).
[f]Varieties not mature at killing frost date at Lexington (10/17) and Princeton (10/24).
[g]Data based only on two-year Princeton Double-crop results.
[h]Blend, see Table 3.

TABLE 5.—SOYBEAN VARIETY TESTS—HENDERSON

VARIETY	YIELD BU/AC 80-82	YIELD BU/AC 81-82	YIELD BU/AC 1982	LODG -ING 80-82	LODG -ING 81-82	LODG -ING 1982	HT.[a] (IN) 1982	POD HT. 1982
EARLY (GROUPS II AND III)								
A 3659	55.9	54.5	52.0	1.2	1.2	1.3	31	5.3
ADLER 302	-	57.5	58.8	-	3.3	2.3	34	6.0
COKER 393	-	-	56.7	-	-	1.7	32	5.7
CUMBERLAND	57.6	56.4	57.4	2.9	2.9	2.5	32	5.7
ELF	59.0	56.3	57.3	1.4	1.7	2.3	23	7.0
FAYETTE[c]	-	50.9	52.1	-	3.6	4.2	39	8.3
FFR 339	-	-	51.3	-	-	3.5	38	7.3
HIGRO HP-3700	-	54.5	55.6	-	3.2	2.7	36	7.0
MULTIVAR 3267[d]	-	-	53.8	-	-	4.2	36	7.7
PELLA	56.7	54.6	55.2	2.1	2.2	2.5	37	6.3
RA-36[d]	52.8	50.5	50.9	3.6	3.7	3.7	39	9.0
S4044	-	-	50.6	-	-	1.0	31	6.0
WILLIAMS	53.8	53.4	54.0	3.0	3.7	3.8	36	7.7
WILLIAMS 82	-	54.0	53.6	-	2.4	2.5	34	5.0
MID-SEASON (GROUP IV)								
AGRIPRO AP550	53.6	55.4	52.3	3.3	3.5	3.5	47	9.3
AGRIPRO AP420	-	-	50.7	-	-	4.0	45	10.3
AGROSOY 69	-	-	52.4	-	-	4.5	47	8.3
A4268	-	52.9	54.9	-	2.7	1.8	31	6.3
CALLAHAN 1450	-	56.2	54.6	-	4.4	4.3	42	8.7
CALLAHAN 2810	-	-	57.4	-	-	3.2	41	7.7
DESOTO	55.2	53.4	55.4	2.8	3.2	2.5	34	6.7
DOUGLAS	58.1	57.7	56.6	2.8	3.2	2.8	38	8.0
FFR 447	-	-	48.5	-	-	2.2	42	9.0
FRANKLIN[b]	49.4	49.3	48.1	3.1	3.3	3.8	45	8.3
GA 8450	-	-	50.6	-	-	3.3	39	7.0
GA 8490	-	-	51.6	-	-	4.2	43	8.0
HELENA 401	-	-	48.4	-	-	4.5	40	9.0
J-125	56.2	56.7	56.9	3.2	3.6	3.2	39	6.0
J-130	-	53.2	49.2	-	4.2	4.3	47	10.3
JHS 4982	-	55.4	54.8	-	4.0	3.8	44	6.7
LAWRENCE	-	53.2	52.6	-	2.4	2.5	36	8.7
MIGRO HP-4800	-	56.6	56.6	-	2.4	2.0	30	7.0
MITCHELL	52.9	53.8	54.7	3.6	3.9	3.3	40	7.0
MITCHELL 450	53.8	52.1	54.4	2.3	2.2	1.3	42	11.0
MULTIVAR 95[d]	-	-	52.4	-	-	4.0	43	7.3
PIONEER 4990	-	-	51.1	-	-	4.3	36	9.3
PIXIE	59.7	59.0	60.0	1.5	1.7	2.3	24	6.0
RA-401	48.1	46.9	46.0	2.9	3.2	3.5	41	10.7
RA-403	-	-	48.0	-	-	4.3	42	9.3
RA-480	48.7	45.6	47.4	3.3	3.7	3.5	45	7.7
SEEDMAKER'S 9-E	-	53.4	52.9	-	3.1	3.0	40	6.7
SPARKS	54.3	53.7	54.8	3.3	3.7	3.7	41	8.3
STEVENS	-	48.5	46.3	-	3.4	3.3	44	8.7
UNION	53.2	51.1	52.2	3.3	3.5	3.0	37	9.0
VORIS 465	53.3	52.0	52.6	2.7	2.9	2.2	42	6.7
VORIS 495	-	48.6	50.7	-	4.0	3.8	44	9.3
LATE (GROUPS V AND VI)								
AGRIPRO AP 55	-	49.8	46.7	-	4.3	4.3	50	10.0
A5474	-	-	49.9	-	-	4.0	42	11.7
A5A1A	-	-	52.4	-	-	3.5	45	9.3
BAY	48.9	47.6	51.3	3.1	3.3	3.5	48	7.0
BEDFORD[c]	46.7	48.9	48.0	4.2	4.6	4.5	52	11.7
ESSEX	56.6	54.7	57.7	3.8	4.2	4.2	35	9.0
FFR 559	-	46.8	49.1	-	4.2	4.2	43	8.7
FORREST[b]	54.4	51.5	52.5	3.6	3.5	4.0	48	11.7
NATHAN[c]	49.7	47.4	51.8	4.0	4.5	4.2	57	11.3
PIONEER 5482	-	-	54.7	-	-	4.0	43	11.7
RA-502	-	-	50.3	-	-	4.2	46	9.0
WILSTAR 550	-	39.4	43.9	-	4.0	4.2	46	6.7
YORK	47.9	47.2	47.8	3.6	3.7	4.0	42	7.3
GRAND AVERAGE	53.2	52.0	52.4	3.0	3.3	3.3	40	8.2
LSD (.10)	3.7	4.9	4.6	0.7	1.0	0.8	4.3	2.2

[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 6.—SOYBEAN VARIETY TESTS—HARTFORD

VARIETY	YIELD BU/AC 80-82	YIELD BU/AC 81-82	YIELD BU/AC 1982	LODG -ING 80-82	LODG -ING 81-82	LODG -ING 1982	HT.[a] (IN) 1982	POD HT. 1982
EARLY (GROUPS II AND III)								
A 3659	55.5	55.0	52.7	1.1	1.1	1.2	32	5.0
ADLER 302	-	55.4	55.0	-	2.5	2.8	36	8.7
COKER 393	-	-	52.3	-	-	2.7	36	7.3
CUMBERLAND	53.5	52.2	47.0	2.8	3.4	4.3	36	7.0
ELF	55.2	58.2	60.0	1.5	1.7	2.5	23	6.0
FAYETTE[c]	-	54.7	51.7	-	2.7	3.5	43	10.0
FFR 339	-	-	49.7	-	-	3.8	40	8.3
HIGRO HP-3700	-	56.7	55.4	-	3.0	3.2	40	8.7
MULTIVAR 3267[d]	-	-	53.1	-	-	4.8	43	8.0
PELLA	54.0	53.4	51.9	2.0	2.4	3.7	42	8.7
RA-36[d]	55.4	53.6	52.5	2.8	3.2	3.8	44	10.0
S4044	-	-	53.5	-	-	1.7	37	9.0
WILLIAMS	53.3	52.8	49.5	2.7	3.3	4.0	42	9.0
WILLIAMS 82	-	52.9	52.8	-	2.7	3.5	41	6.3
MID-SEASON (GROUP IV)								
AGRIPRO AP550	57.2	55.9	49.6	3.1	3.4	4.3	50	11.0
AGRIPRO AP420	-	-	42.3	-	-	4.3	44	10.0
AGROSOY 69	-	-	59.1	-	-	4.5	48	7.7
A4268	-	52.6	51.1	-	2.1	2.8	34	8.7
CALLAHAN 1450	-	52.9	50.8	-	3.5	4.5	47	10.0
CALLAHAN 2810	-	-	54.0	-	-	3.5	45	7.7
DESOTO	50.9	49.6	46.1	3.1	3.5	4.3	39	10.3
DOUGLAS	54.2	53.3	52.1	2.2	2.4	3.3	43	8.3
FFR 447	-	-	49.8	-	-	2.7	52	13.3
FRANKLIN[b]	48.5	47.7	41.8	2.5	2.8	4.0	46	9.0
GA 8450	-	-	49.4	-	-	4.2	45	10.0
GA 8490	-	-	53.2	-	-	4.3	48	9.0
HELENA 401	-	-	48.8	-	-	4.3	48	9.0
J-125	51.7	51.6	49.8	3.2	3.5	4.0	44	9.7
J-130	-	56.7	56.2	-	3.3	4.2	46	9.0
JHS 4982	-	50.8	50.4	-	3.7	4.5	50	7.3
LAWRENCE	-	54.2	50.6	-	2.2	2.5	36	8.7
MIGRO HP-4800	-	51.9	51.4	-	3.6	4.2	38	8.7
MITCHELL	54.0	53.8	52.1	3.1	3.5	4.5	46	8.3
MITCHELL 450	50.3	46.6	43.4	2.7	2.8	3.2	47	12.3
MULTIVAR 95[d]	-	-	53.6	-	-	4.0	46	8.7
PIONEER 4980	-	-	50.3	-	-	3.7	42	9.7
PIXIE	59.0	59.3	58.1	1.4	1.7	2.2	23	5.7
RA-401	50.4	47.7	45.0	2.2	2.7	3.5	47	11.7
RA-403	-	-	43.2	-	-	4.3	41	10.3
RA-480	48.6	44.8	39.5	2.7	3.1	3.8	47	10.0
SEEDMAKER'S 9-E	-	52.0	49.0	-	3.2	4.0	46	9.0
SPARKS	56.4	55.8	52.1	3.0	3.7	4.5	45	8.7
STEVENS	-	47.3	40.8	-	3.2	4.0	46	10.3
UNION	51.8	51.2	51.9	3.2	3.4	4.0	48	7.3
VORIS 465	54.6	53.0	53.4	2.7	3.2	3.3	47	9.0
VORIS 495	-	45.3	45.9	-	3.2	3.8	45	10.0
LATE (GROUPS V AND VI)								
AGRIPRO AP 55	-	41.5	45.4	-	3.7	3.8	51	11.0
A5474	-	-	35.0	-	-	3.8	45	15.3
A5A1A	-	-	52.7	-	-	2.7	44	11.7
BAY	48.0	45.6	46.1	2.4	2.8	3.2	49	10.0
BEDFORD[c]	41.3	37.2	36.6	3.1	3.4	3.8	51	14.3
ESSEX	55.9	51.1	54.6	2.6	2.9	3.7	36	10.0
FFR 559	-	44.3	46.4	-	3.8	4.2	48	9.0
FORREST[b]	45.0	40.2	43.3	2.9	3.2	3.7	48	12.0
NATHAN[c]	46.7	43.0	45.7	3.1	3.1	3.5	60	12.7
PIONEER 5482	-	-	40.8	-	-	3.5	44	11.7
RA-502	-	-	39.9	-	-	4.0	51	11.3
WILSTAR 550	-	40.6	41.4	-	3.2	3.3	47	9.0
YORK	46.4	42.7	45.3	2.4	2.8	3.3	45	9.7
GRAND AVERAGE	51.9	50.4	49.1	2.6	3.0	3.6	44	9.5
LSD (.10)	6.0	6.4	5.6	0.6	0.7	0.6	4.0	1.9

[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 7.—SOYBEAN VARIETY TESTS—PRINCETON

VARIETY	YIELD BU/AC 80-82	YIELD BU/AC 81-82	YIELD BU/AC 1982	LODG -ING 80-82	LODG -ING 81-82	LODG -ING 1982	HT.[a] (IN) 1982	MAT. DATE 1982	POD HT. 1982
EARLY (GROUPS II AND III)									
A 3659	46.2	52.7	45.5	1.1	1.2	1.0	32	9/18	4.0
ADLER 302	-	47.4	43.8	-	1.7	1.0	35	9/20	5.3
COKER 393	-	-	48.3	-	-	1.0	32	9/24	4.7
CUMBERLAND	48.5	54.4	51.9	1.4	1.3	1.3	37	9/21	3.7
ELF	45.6	53.1	47.3	1.0	1.0	1.0	20	9/22	2.0
FAYETTE[c]	-	46.7	42.1	-	2.0	1.0	38	9/19	4.0
FFR 339	-	-	42.1	-	-	1.0	37	9/19	4.0
MIGRO HP-3700	-	49.0	44.4	-	2.0	1.3	37	9/21	4.0
MULTIVAR 3267[d]	-	-	47.9	-	-	1.3	37	9/20	4.0
PELLA	44.8	51.5	45.6	1.1	1.2	1.0	37	9/18	3.7
PA-36[d]	41.4	47.0	42.0	2.2	2.5	1.3	39	9/23	4.0
54044	-	-	51.8	-	-	1.0	35	9/24	4.3
WILLIAMS	42.5	47.3	44.0	1.8	2.0	1.3	39	9/23	4.0
WILLIAMS 82	-	52.3	48.2	-	1.7	1.3	38	9/25	3.7
MID-SEASON (GROUP IV)									
AGRIPRO AP350	45.5	52.6	51.3	2.8	2.8	2.0	43	10/3	4.0
AGRIPRO AP420	-	-	48.5	-	-	2.7	41	10/2	5.0
AGROSOY 69	-	-	52.8	-	-	2.0	42	10/5	3.3
A4268	-	55.9	52.4	-	1.3	1.0	38	9/28	3.7
CALLAHAN 1450	-	55.9	50.1	-	3.2	2.7	44	10/6	3.7
CALLAHAN 2410	-	-	52.2	-	-	1.3	39	10/2	4.0
DESOTO	45.5	53.4	49.1	2.1	2.7	1.3	38	10/1	4.7
DOUGLAS	43.7	49.6	48.8	2.0	2.5	1.3	39	10/5	4.3
FFR 447	-	-	43.1	-	-	1.0	43	10/1	4.0
FRANKLIN[b]	42.7	49.5	42.7	2.6	3.3	2.3	43	10/1	4.0
GA 8450	-	-	50.1	-	-	2.0	39	10/1	4.0
GA 8490	-	-	50.9	-	-	1.7	41	10/4	3.0
HELENA 401	-	-	51.0	-	-	2.7	42	10/3	3.7
J-125	46.7	55.5	52.5	1.4	1.7	1.7	42	10/4	4.3
J-130	-	55.9	51.7	-	3.2	2.7	41	10/6	3.7
JMS 4982	-	54.7	49.4	-	2.5	1.7	42	10/4	3.7
LAWRENCE	-	51.5	44.8	-	1.2	1.0	34	9/23	3.3
MIGRO HP-4800	-	53.9	51.8	-	1.5	1.3	39	10/4	4.0
MITCHELL	45.1	54.0	49.3	2.8	3.0	2.3	41	10/3	3.3
MITCHELL 450	43.2	50.9	47.0	1.4	1.8	1.0	39	10/17	4.0
MULTIVAR 95[d]	-	-	49.8	-	-	2.0	40	10/5	3.3
PIONEER 4880	-	-	49.2	-	-	2.7	38	10/6	3.7
PIXIE	41.4	46.4	40.7	1.0	1.0	1.0	21	9/22	2.3
RA-401	40.6	47.6	46.7	1.7	1.8	1.0	40	10/6	5.0
RA-403	-	-	43.0	-	-	1.0	37	9/30	4.0
RA-480	46.5	52.2	48.5	2.3	3.0	1.3	41	10/19	5.0
SEEDMAKER'S 9-E	-	49.9	48.3	-	1.8	1.7	43	10/2	3.7
SPARKS	46.1	52.3	49.4	1.7	2.0	2.0	41	9/26	3.7
STEVENS	-	48.0	43.2	-	3.3	1.7	44	10/4	3.3
UNION	40.9	44.7	44.0	2.2	2.8	2.0	41	9/24	5.0
VORIS 465	44.6	50.6	47.7	2.1	2.3	1.7	44	9/29	3.3
VORIS 495	-	48.3	44.5	-	2.8	1.7	42	10/5	5.0
LATE (GROUPS V AND VI)									
AGRIPRO AP 55	-	47.1	38.3	-	4.2	3.3	43	10/15	4.0
A5474	-	-	47.1	-	-	2.3	43	10/20	5.0
A5618	-	-	51.7	-	-	1.7	41	10/18	5.3
BAY	48.1	54.9	50.0	1.9	2.2	1.7	40	10/19	3.7
BEDFORD[c]	43.6	49.7	43.5	2.6	3.3	3.7	46	10/21	4.3
ESSEX	53.1	63.8	63.7	1.9	1.8	2.0	32	10/18	4.7
FFR 559	-	50.0	42.1	-	2.7	2.3	38	10/15	4.3
FORREST[b]	45.2	51.4	42.8	1.8	2.2	2.3	42	10/17	4.7
NATHAN[c]	42.7	50.2	42.6	2.6	2.8	2.3	45	10/18	4.7
PIONEER 5482	-	-	48.7	-	-	1.0	39	10/17	5.3
RA-502	-	-	43.6	-	-	3.0	45	10/19	4.3
WILSTAR 550	-	47.1	40.9	-	2.3	2.3	39	10/20	3.7
YORK	44.5	51.1	45.2	1.6	1.8	1.7	37	10/19	4.0
GRAND AVERAGE	44.8	51.2	47.3	1.9	2.2	1.7	39	10/3	4.0
LSD (.10)	4.7	5.2	7.4	1.0	1.2	0.9	2.4	3.1	1.0

[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.

TABLE 8.—SOYBEAN VARIETY TESTS—CLINTON

VARIETY	YIELD BU/AC 80-82	YIELD BU/AC 81-82	YIELD BU/AC 1982	LODG -ING 80-82	LODG -ING 81-82	LODG -ING 1982	HT.[a] (IN) 1982	MAT. DATE 1982
EARLY (GROUPS II AND III)								
A 3659	49.3	47.9	44.8	1.4	1.7	2.3	32	9/14
ADLER 302	-	47.8	49.2	-	2.5	4.0	37	9/13
COKER 393	-	-	45.9	-	-	3.7	37	9/18
CUMBERLAND	48.4	47.3	46.3	2.3	2.8	4.7	36	9/15
ELF	50.7	52.9	56.0	1.1	1.2	1.3	19	9/20
FAYETTE[c]	-	40.6	39.5	-	3.7	4.7	43	9/15
FFR 339	-	-	42.9	-	-	5.0	39	9/15
MIGRO HP-3700	-	45.0	45.7	-	2.8	4.7	41	9/15
MULTIVAR 3267[d]	-	-	42.3	-	-	5.0	41	9/13
PELLA	45.9	44.8	44.4	2.0	2.5	4.0	38	9/13
PA-36[d]	45.2	45.3	47.6	2.7	3.0	4.3	43	9/18
54044	-	-	50.4	-	-	3.7	40	9/13
WILLIAMS	44.1	44.4	43.1	2.8	3.2	4.7	39	9/14
WILLIAMS 82	-	47.0	44.6	-	3.0	5.0	42	9/16
MID-SEASON (GROUP IV)								
AGRIPRO AP350	43.7	45.2	46.5	3.1	3.2	4.7	47	9/19
AGRIPRO AP420	-	-	46.9	-	-	5.0	44	9/21
AGROSOY 69	-	-	46.1	-	-	4.7	42	9/25
A4268	-	51.0	50.5	-	2.7	4.3	35	9/17
CALLAHAN 1450	-	46.8	46.7	-	4.3	5.0	45	9/30
CALLAHAN 2410	-	-	48.1	-	-	4.0	42	9/20
DESOTO	46.5	45.7	46.5	2.6	3.0	5.0	41	9/19
DOUGLAS	48.8	50.1	52.9	2.0	2.5	4.0	40	9/23
FFR 447	-	-	49.0	-	-	3.7	44	9/19
FRANKLIN[b]	40.2	39.7	37.8	3.1	3.2	3.3	42	9/20
GA 8450	-	-	43.1	-	-	4.3	43	9/24
GA 8490	-	-	46.5	-	-	4.7	45	9/26
HELENA 401	-	-	41.4	-	-	4.0	43	9/27
J-125	47.1	46.3	44.2	2.8	3.3	4.3	45	9/27
J-130	-	47.0	45.1	-	4.3	5.0	44	9/30
JMS 4982	-	42.1	37.3	-	3.8	5.0	43	9/25
LAWRENCE	-	47.2	51.3	-	2.7	4.3	40	9/18
MIGRO HP-4800	-	49.0	50.5	-	3.2	5.0	35	9/23
MITCHELL	48.9	50.0	51.5	2.7	3.5	5.0	42	9/29
MITCHELL 450	45.0	46.3	44.5	2.2	2.7	4.0	45	10/6
MULTIVAR 95[d]	-	-	41.3	-	-	4.7	43	9/28
PIONEER 4880	-	-	45.4	-	-	4.7	44	9/29
PIXIE	45.4	45.6	43.4	1.0	1.0	1.0	20	9/19
RA-401	45.8	45.5	47.9	2.6	3.2	4.0	44	9/28
RA-403	-	-	40.7	-	-	5.0	40	9/22
RA-480	40.6	38.7	36.9	3.0	4.0	5.0	45	10/5
SEEDMAKER'S 9-E	-	41.4	43.4	-	3.0	4.7	46	9/19
SPARKS	47.4	47.5	49.5	3.1	4.0	5.0	44	9/17
STEVENS	-	41.4	39.5	-	3.8	4.0	45	9/29
UNION	44.0	44.2	46.0	3.6	3.5	5.0	42	9/18
VORIS 465	47.3	47.2	48.7	2.9	3.7	5.0	46	9/18
VORIS 495	-	48.8	46.4	-	3.7	4.7	42	9/28
LATE (GROUPS V AND VI)								
AGRIPRO AP 55	-	38.4	36.9	-	4.7	5.0	47	10/12
A5474	-	-	40.1	-	-	3.7	45	10/11
A5618	-	-	48.7	-	-	4.0	43	10/11
BAY	44.4	42.0	42.9	2.6	3.2	4.3	42	10/13
BEDFORD[c]	41.2	40.6	40.8	3.7	4.3	5.0	46	10/13
ESSEX	45.3	43.5	44.2	2.3	2.7	4.3	38	10/10
FFR 559	-	35.2	32.9	-	3.2	4.7	38	10/4
FORREST[b]	45.4	43.1	38.1	3.1	3.7	4.7	42	10/13
NATHAN[c]	40.8	41.7	41.0	3.2	4.0	5.0	47	10/7
PIONEER 5482	-	-	46.1	-	-	4.3	40	10/12
RA-502	-	-	41.0	-	-	5.0	43	10/13
WILSTAR 550	-	33.6	33.6	-	2.8	3.7	43	10/13
YORK	42.9	41.8	39.4	2.1	2.7	4.0	42	10/11
GRAND AVERAGE	45.4	44.5	44.5	2.6	3.2	4.3	41	9/26
LSD (.10)	4.1	5.2	7.2	1.0	1.3	1.0	3.5	3.6

[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.