

1993 Kentucky Soybean Performance Tests

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Acknowledgements

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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 varieties that will give the highest total production in a specific situation.

Soybean tests in 1993 were planted at seven locations in Kentucky. The testing locations, soil types, planting dates, and other information are shown in Table 1.

Methods

All tests were planted in a randomized complete block design with two replications (plots) of each variety. Individual plots were 20 feet long and four rows wide with 30 inches between rows in the conventional tests; in the double-crop tests the plots were 20 feet long and eight rows wide with 15 inches between rows. The seeding rate for the conventional tests was eight to 10 viable seeds per foot of row and for the double-crop tests was five to six 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.

One test (SCN test at Henderson) was planted at a site infested with soybean cyst nematode. Except for susceptible check varieties, only varieties with some genetic resistance to SCN were tested at this site.

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 percent 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 percent down; 4 = all plants over considerably or 50 to 80 percent down; 5 = all plants over badly.

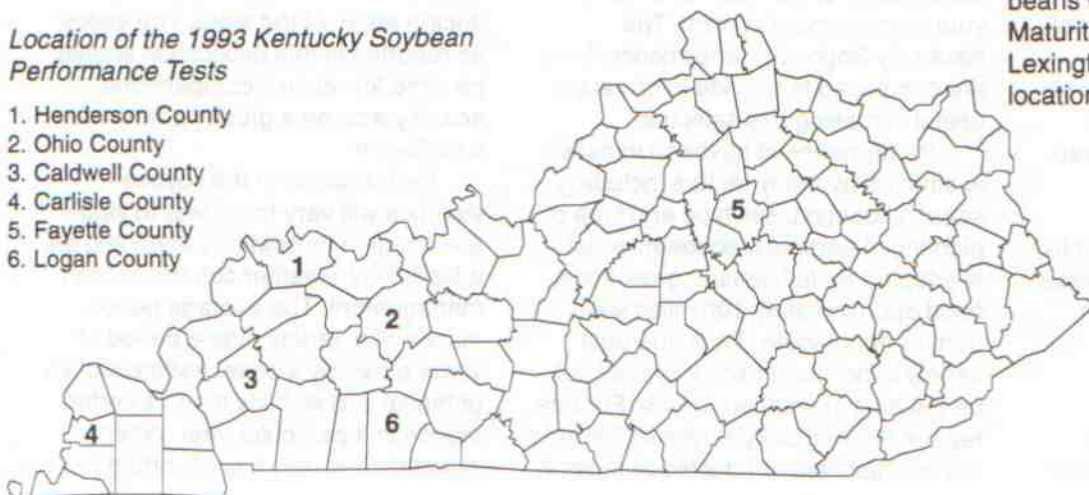
Maturity date — A variety was considered mature when 95 percent of the pods had turned their normal mature color. One to two weeks of good drying weather will be needed beyond the date given before the beans will be ready to combine. Maturity dates were recorded at the Lexington, Bardwell, and Princeton 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.

Location of the 1993 Kentucky Soybean Performance Tests

1. Henderson County
2. Ohio County
3. Caldwell County
4. Carlisle County
5. Fayette County
6. Logan County



1. Location, Planting Date, and Climatic Data for 1993 Soybean Performance Tests*.

	Henderson	Hartford	Princeton	Princeton Double-Crop	Bardwell	Lexington	Russellville ¹ Double-Crop
Farmer	Lyndsey Embry	Dane Milligan	Exp. Sta.	Exp. Sta.	Roger Hobbs	Exp. Sta.	Denny & Ed Price
Extension	Michael Smith	Greg Comer			Michael Williams, Jr.		Rodney Haines
Soil Type	Carnack Silt Loam	Melvin Silt Loam	Crider Silt Loam	Crider Silt Loam	Adler Silt Loam	Lanton Silt Loam	Pembroke Silt Loam
Date of Planting	5/27	5/28	5/20	6/24	6/2	5/24	7/2
Row Width	30	30	30	15	30	30	15
Herbicides ²	2.3 pt Tri-Sept	2 pt Treflan 1/2 pt. Scepter	2.5 pt Dual 1/2 lb Canopy	2 pt Dual 3 pt Roundup 2 pt Lorox	2/3 pt Scepter	8 pt Lasso	1.5 pt Roundup 2 pt Dual 1.5 pt Storm 2 oz. Butyrac
Soil Test							
P	171	60	108	108	96	200+	149
K	393	190	501	501	204	288	414
pH	6.3	6.4	5.9	5.9	7.2	6.0	6.3
Fertilizer Applied	1 T. Lime	None	None	None	None	100 lb/KCL	100 lb P ₂ O ₅ 100 lb K ₂ O
50% Chance of Killing Frost ³	10/25	10/20	10/19	10/19	10/19	10/26	10/23

¹No-till double cropped after wheat.

²Amount per acre.

³Based on 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.

Soybean cyst nematode — The number of viable cysts in a pint of soil were counted at planting and at harvest. Cysts were collected from six 6-inch deep soil probes from each plot. Cysts were counted after extraction from the soil using a sucrose density centrifugation floatation method. These data were provided by Don Hershman and the Plant Disease Diagnostic Laboratory at Princeton, Kentucky.

Interpretation

An important step in profitable soybean production is selecting good

quality seed of the best varieties 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. The yields as reported in this publication should be used for relative comparisons; actual yields on a grower's farm may be different.

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.

The performance data presented in *Table 3* have been averaged across all locations. The across years and locations data are combined across all locations to better predict yielding ability. (See *Agronomy Notes*, Volume 21, No. 3, "Using Performance Test Results in Soybean Variety Selection in Kentucky.") 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 3* can be expected to have satisfactory field performance under similar conditions in Kentucky.

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.

Yield is only one factor to consider in selecting a variety for your production system. Maturity, lodging resistance, disease resistance, and time and equipment availability are other factors that need to be considered. The data provided have been divided into maturity groups. Due to weather patterns at a location, maturity alone can affect yield; this will be reflected by large differences in the maturity group averages. Selecting varieties from several maturity groups can reduce the impact of these maturity group fluctuations (see *Agronomy Notes*, Volume 25, No. 3, "Growing Soybean Varieties from Multiple Maturity Groups Can Reduce Yearly Yield Volatility").

The date of a 50 percent chance of a fall killing frost is important in determining which variety you select to plant. 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 one year out of 10 chance of a fall killing frost subtract 13-18 days from the dates in *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, Bardwell, and Lexington locations, and in the one-year summary table.

If you have soybean cyst nematode (SCN) problems a resistant variety should be used in your production system in conjunction with a recommended crop rotation program (see Kentucky Cooperative Extension Service publication PPA-3, "Soybean Cyst Nematode," available at your county Extension office). The level of SCN infestation as well as the SCN race can be determined through the SCN laboratory at Princeton. Contact your county Extension office for more information on collecting and submitting samples. The importance of resistant varieties has increased as the number of acres affected by SCN has increased. When evaluating the performance of resistant varieties in the SCN infested location, note the change in cyst numbers as well as the yield presented in this table.

Growing Conditions

Soybean growing conditions were near optimum over most of the state this year. This was reflected in good yields at most locations. The Bardwell and Russellville locations received inadequate rainfall during the July-August period, thereby reducing yields.

Special Notes

1991 yields from the Franklin double-crop location were affected by a moderate infestation of SCN. 1991 Henderson and Hartford yields were affected by a heavy SCN infestation. 1992 yields at Bardwell were affected by a heavy SCN infestation.

Soybean Production Information

The Kentucky Cooperative Extension Service has a series of publications, "Soybean Production in Kentucky," which contain a more detailed discussion of soybean production practices:
Part I. Status, Uses, and Planning (AGR 128);
Part II. Seed Selection, Variety Selection, and Fertilization (AGR 129);
Part III. Planting Practices and Double Cropping (AGR 130); and
Part IV. Weed, Disease, and Insect Control (AGR 131).
A soybean planting rate guide, reproduced from this series, is provided below for your convenience (*Table 2*).

2. Soybean Planting Guide

Row Spacing (inches)	7	15	20	30	36
	Seeding Rate (seeds per ft. of row)				
	2 - 3	5 - 6	6 - 8	8 - 10	9 - 11
Viable seeds per pound	Pounds of Seed per Acre				
	2000	80-110	85-105	78-104	70-87
2200	73-100	77-95	71-95	64-79	59-72
2400	66-93	71-88	65-87	58-73	54-66
2600	61-86	65-81	60-80	54-67	50-61
2800	57-80	61-75	56-75	50-62	46-56
3000	53-75	57-70	52-70	46-58	43-53
3200	50-70	53-66	49-65	44-54	41-49
3400	47-66	50-62	46-61	41-51	38-46
3600	44-62	47-58	44-58	39-48	36-44
3800	42-59	45-55	41-55	37-46	34-42
4000	40-56	43-53	39-52	35-44	33-40

Oil and Protein Data

The average protein and oil concentration for all soybean varieties entered in the Kentucky Soybean Performance Tests is presented in Table 13. The Federal Grain Inspection Service is offering soybean oil and protein testing as official criteria for grade. At this time the testing is optional. Soybean varieties differ in their protein and oil concentrations, and the protein and oil concentrations are influenced by the production environments. Because soybean is grown primarily for its oil and protein, these data are provided to indicate differences which exist between varieties produced in Kentucky.

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 percent 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. The term "variety unknown" may no longer be used in place of a variety designation for soybean, as all soybean seed must be labeled by variety name.

Sources of Seed

The seed planted in the 1993 Soybean Performance Tests was acquired from the following sources:

Adler Seeds Inc.
Route 1 Box 403
Sharpsville, IN 46068
Adler 364

Asgrow Seed Company,
PO Box 7570

Des Moines, IA 50322
A4715 A4138
A4539 A5560
A5112

Agratech Seeds Inc.
5559 N 500 W
McCordsville, IA 46055
AT455 AT520
AT495

Callahan Seeds
1122 E 169th Street
Westfield, IN 46074
Callahan 1410
Callahan 3444X
Callahan 4477NX
Callahan 3484
Callahan 3500X
Callahan 7510N
Callahan 3545NX

Ciba-Geigy Seed Division
PO Box 18300
Greensboro, NC
Ciba-Seeds 3411
Ciba-Seeds 3482
Ciba-Seeds 4805-Y

DeKalb-Pfizer Genetics
3100 Sycamore Road
DeKalb, IL 60115
DeKalb CX 404
DeKalb CX 458
DeKalb CX 394C
DeKalb CX 469C

Jacob Hartz Seed Company
PO Box 946
Stuttgart, AR 72160
Hartz H4464
Hartz H5350

Jacques Seed Company
Highway 10E
Lincoln, IL 62656
Jacques J-467
Jacques J-445
Jacques J-380C

JMS Seed Company
105 Pine Street
Dieterich, IL 62424
JMS Brand 4515
JMS Brand 5350
JMS Brand 5309
JMS Brand 4688
JMS Brand 4909
JMS Brand 4809
JMS Brand 4409
JMS Brand 4509

Kentucky Foundation
Seed Project
PO Box 11950
Lexington, KY 40579

<i>Calhoun</i>	<i>Hutcheson</i>
<i>Chesapeake</i>	<i>Jack</i>
<i>Corsica</i>	<i>KS 5292</i>
<i>Delsoy 4210</i>	<i>KS 4694</i>
<i>Delsoy 4710</i>	<i>Linford</i>
<i>Delsoy 4900</i>	<i>Manokin</i>
<i>Edison</i>	<i>Nile</i>
<i>Essex</i>	<i>Pharaoh</i>
<i>Fayette</i>	<i>Pennyrile</i>
<i>Flyer</i>	<i>Stafford</i>
<i>Hartwig</i>	<i>Spry</i>
<i>Holladay</i>	<i>TN 4-86</i>

Miles Seed
2760 Keller Rd
Owensboro, KY 42301
Jacob Samuel
Abel Daniel
David Joshua

Northrup-King Company
705 Woodbridge Dr
Somerville, TN 38068
Northrup-King Coker 425
Northrup-King S 48-84
Northrup-King S 46-44
Northrup-King S 42-40
Northrup-King S 39-11

Pioneer Hi-Bred Int.
1000 West Jefferson St.
Tipton, IN 46072
Pioneer Brand 9392
Pioneer Brand 9442
Pioneer Brand 9451
Pioneer Brand 9501
Pioneer Brand 9521
Pioneer Brand 9551

Ridgway Seed Company
Box 212
Ridgway, IL 62979
Jader 4730
Jader 4881
Jader 2451
Jader 5131
Jader 5230

Scott Seed Co.
709 East 4th Street
New Albany, IN 47119
BT 429 JMS 4909
JMS 4688 Voris V394
BT 484

Southern States Coop.
PO Box 26234
6606 W Broad
Richmond, VA 23260

S.States FFR-401N
S.States FFR-542
S.States SS-461
S.States FFR-Ex. 19921
S.States FFR-439
S.States FFR-471
S.States FFR-493
S.States FFR-553
S.States FFR-563
S.States FFR-398
S.States SS-390
S.State FFR-464
S.States SS-487
S.States FFR-500
S.States FFR-561

Stine Seed Company
PO Box 231
Sheridan, IN 46069
Stine Brand 4350
Stine Brand 5310
Stine Brand 3790

Terra Int. Inc.
PO Box 171376
Memphis, TN 38187
Riverside 499
Terra 4792
Terra 4292

3. Summary for all Full-Season Locations¹.

VARIETY	YIELD (BU/AC)			LODGING			HT. ^a	MAT. ^a	POD HT.	APPROX
	91-93	92-93	1993	91-93	92-93	1993	(IN)	DATE	1993	SEED/LB
EARLY (GROUPS II AND III)										
DANIEL	-	-	51.6	-	-	1.4	34	9/20	6	2650
PIONEER BRAND 9392	49.1	54.0	50.7	1.4	1.4	1.6	36	9/20	6	2900
S.STATES SS-390	46.1	50.3	49.6	1.5	1.4	1.6	36	9/20	6	2800
CORSICA	46.1	50.6	48.4	1.6	1.6	1.6	36	9/20	7	3000
FLYER	45.7	50.2	48.0	1.5	1.4	1.7	34	9/18	5	3400
EDISON	45.3	50.1	47.6	1.3	1.1	1.2	33	9/15	5	3400
N.KING S39-11 ^c	47.9	51.1	47.3	2.3	2.3	2.5	41	9/22	7	2500
CIBA SEED 3411	47.5	51.4	46.8	1.4	1.3	1.5	34	9/22	5	2750
LINFORD ^c	45.1	49.9	46.7	2.7	2.9	3.2	41	9/20	7	2500
JACK ^c	-	-	46.1	-	-	3.1	40	9/17	6	3300
S.STATES FFR-398	45.7	48.0	44.8	1.6	1.4	1.4	34	9/20	6	3000
FAYETTE ^c	43.1	46.8	44.0	2.2	2.5	2.5	41	9/20	6	2500
GROUP III AVERAGE	46.2	50.2	47.3	1.8	1.7	2.0	37	9/20	6	
MID-SEASON (GROUP IV)										
JOSHUA	-	-	54.8	-	-	2.2	44	9/28	7	3250
ASGROW A4138 ^c	-	-	52.7	-	-	2.7	39	9/24	7	2800
CALLAHAN 3484	-	54.5	52.6	-	2.0	1.7	41	9/29	7	3000
VORIS V394	-	-	52.4	-	-	2.2	35	9/21	6	2800
CIBA SEED 4805Y	-	-	52.3	-	-	1.9	44	9/30	7	2875
ASGROW A4715 ^c	51.7	55.1	51.5	1.4	1.3	1.2	40	9/27	7	2800
ASGROW A4539 ^c	-	-	51.3	-	-	1.4	38	9/25	7	2800
JADER 4730	-	-	51.0	-	-	2.1	43	9/28	7	2800
DAVID ^c	-	-	50.8	-	-	1.4	42	9/24	7	2400
S.STATES FFR-493	-	-	50.5	-	-	1.8	42	9/29	7	2600
BT 429	-	-	50.4	-	-	1.4	36	9/24	5	2800
S.STATES FFR-471	-	52.5	50.2	-	1.4	1.4	36	9/26	6	2700
DEKALB CX404	-	-	50.0	-	-	1.9	34	9/22	6	2600
CALLAHAN 1410	49.0	53.1	49.8	1.7	1.7	2.1	35	9/21	5	2200
CALLAHAN 3444X	-	53.9	49.8	-	2.0	2.5	42	9/25	7	2350
BT 484	-	-	49.7	-	-	1.9	43	9/29	7	2800
CALHOUN	49.2	52.8	49.5	1.3	1.3	1.1	27	9/22	6	3200
JACQUES J-445	-	50.1	49.5	-	1.8	1.7	42	9/25	7	2800
DEKALB CX458	47.6	51.8	49.1	1.5	1.5	1.5	39	9/27	7	2650
JMS 4688	-	-	48.6	-	-	2.8	43	9/26	7	2800
S.STATES FFR-439	-	-	48.4	-	-	2.0	46	9/27	8	3000
KS 4694	-	-	48.2	-	-	1.3	35	9/28	6	3600
PIONEER BRAND 9442 ^b	48.9	51.7	48.2	1.6	1.6	2.1	35	9/22	7	3400
DELLOY 4210 ^c	-	49.6	47.9	-	2.4	2.3	42	9/25	7	2600
MANOKIN ^b	-	48.9	47.9	-	3.2	3.1	37	10/4	8	3200
DELLOY 4710 ^c	-	48.5	47.7	-	3.6	2.8	44	9/28	7	2550
CALLAHAN 3500X	-	48.6	47.4	-	1.7	1.6	47	9/28	7	2200
JACOB	48.2	51.0	47.2	2.3	2.4	2.6	43	9/25	6	2800
PIONEER BRAND 9451 ^b	-	-	46.4	-	-	2.8	43	9/22	8	2650
DELLOY 4900 ^b	-	-	46.1	-	-	3.2	42	10/3	8	3450
PHARAOH ^c	44.3	48.2	46.0	2.3	2.6	2.0	38	9/26	8	3300
S.STATES FFR-19921	-	-	46.0	-	-	2.0	43	9/27	7	2900
PENNYRILE	45.1	47.7	45.7	1.7	1.6	1.4	46	9/27	8	2800
SPRY	-	46.0	45.7	-	2.6	2.1	39	9/27	7	2600
N.KING S42-40	45.6	47.5	45.6	1.5	1.4	1.2	36	9/21	7	2900
NILE ^b	-	-	45.4	-	-	2.1	44	9/22	8	2800
HARTZ H4464 ^b	46.4	48.6	45.3	2.4	2.6	2.1	45	9/28	8	3400
CHESAPEAKE	-	-	44.8	-	-	2.5	41	9/30	6	2950
CALLAHAN 4477NX ^c	-	-	44.8	-	-	2.2	48	9/27	8	2800
S.STATES FFR-464	44.5	48.4	44.7	1.9	2.0	2.6	40	9/24	8	2800

VARIETY	YIELD (BU/AC)			LODGING			HT. ^a	MAT. ^a	POD HT.	APPROX
	91-93	92-93	1993	91-93	92-93	1993	(IN)	DATE	1993	SEED/LB
N.KING S46-44 ^c	-	-	44.4	-	-	2.1	40	9/26	7	2800
JADER 4881 ^c	-	48.1	44.3	-	2.9	2.5	41	9/28	7	3500
S.STATES SS-487	44.5	47.6	44.2	1.5	1.5	1.6	39	9/27	7	2800
TERRA 4792 ^c	-	-	44.1	-	-	2.3	47	9/29	8	3500
AGRATECH AT455	45.8	48.1	44.0	1.7	1.7	1.8	41	9/23	8	3350
AGRATECH AT495 ^c	43.8	46.9	42.8	2.6	2.8	2.4	42	9/29	8	2950
CIBA SEED 3482 ^c	-	46.5	42.8	-	2.9	2.5	41	9/27	8	3200
JACQUES J-467	47.2	49.8	42.6	2.7	3.0	3.5	43	9/24	8	3000
N.KING S48-84 ^c	43.4	46.7	42.1	2.4	2.6	2.5	42	9/29	9	2900
TN 4-86 ^c	44.2	45.7	42.0	2.0	2.1	2.0	48	9/27	8	3800
ABEL ^c	-	-	41.5	-	-	3.4	39	9/22	8	2400
RIVERSIDE 499	-	-	41.4	-	-	2.7	51	10/2	8	3500
TERRA 4292 ^c	-	-	40.8	-	-	2.1	35	9/22	6	3500
STAFFORD	40.9	42.2	39.7	2.2	2.4	1.7	38	9/29	8	3300
GROUP IV AVERAGE	46.1	49.3	47.2	1.9	2.2	2.1	41	9/26	7	
LATE (GROUPS V AND VI)										
PIONEER BRAND 9521 ^c	45.5	48.9	47.6	2.3	2.5	2.4	39	9/28	8	3300
KS 5292 ^b	46.6	49.6	47.4	2.3	2.4	2.2	38	10/4	9	2700
ASGROW A5112 ^c	-	-	47.0	-	-	1.4	36	9/28	7	3000
N.KING COKER 425	44.2	46.7	46.4	1.8	1.9	1.7	31	10/1	8	3000
JADER 5131 ^b	-	-	46.1	-	-	2.1	38	10/1	7	3000
PIONEER BRAND 9501	-	-	46.1	-	-	2.1	44	9/30	8	2760
HOLLADAY	-	-	46.0	-	-	2.3	36	10/2	7	3300
S.STATES FFR-500	46.5	48.5	45.6	1.6	1.7	1.5	37	10/1	7	3000
PIONEER BRAND 9551 ^c	44.0	45.2	45.0	1.9	2.0	1.9	41	10/6	8	3000
S.STATES FFR-561 ^c	42.0	45.5	44.4	2.1	2.1	2.1	43	10/9	9	3400
CALLAHAN 7510N ^b	43.9	47.1	44.1	1.9	2.0	1.7	37	10/2	10	2900
JADER 5230	-	-	43.4	-	-	1.9	39	10/5	8	3100
HUTCHESON	44.9	47.4	43.2	2.4	2.8	2.6	38	10/6	8	3000
S.STATES FFR-553	-	-	43.1	-	-	1.8	40	10/5	9	3100
CALLAHAN 3545NX ^c	-	44.7	43.1	-	2.2	1.9	42	10/5	9	3150
ESSEX	43.1	46.1	42.9	1.9	1.8	1.3	32	10/2	7	3400
ASGROW A5560 ^c	-	-	42.5	-	-	2.5	40	10/6	8	3000
HARTZ 5350 ^c	-	-	42.1	-	-	2.7	39	10/12	9	2900
S.STATES FFR-563 ^c	-	-	41.7	-	-	1.9	40	10/8	9	3000
JADER 2451 ^b	-	-	39.8	-	-	2.0	41	9/29	9	3000
HARTWIG ^d	-	37.0	35.5	-	3.4	3.0	39	10/8	9	3470
GROUPS V AND VI AVG	44.5	46.1	44.0	2.0	2.3	2.1	39	10/4	8	
GRAND AVERAGE	45.7	48.8	46.4	1.9	2.1	2.1	40	9/27	7	
LSD (0.10)	2.3	3.0	3.6	0.3	0.3	0.4	2		0.7	

^a Plant height.

^b Resistant to the soybean cyst nematode (Race 3).

^c Resistant to the soybean cyst nematode (Race 3 and Race 14).

^d Resistant to all known races of the soybean cyst nematode.

^e Maturity data based on observations at Lexington, Henderson and Carlisle.

^f Henderson and Hartford 1991 affected data by the soybean cyst nematode.

Bardwell 1992 data affected by the soybean cyst nematode.

4. Summary for all Double-Crop Locations^a.

VARIETY	YIELD (BU/AC)			LODGING			HT. ^a	POD
	91-93	92-93	1993	91-93	92-93	1993	(IN) 1993	HT. 1993
EARLY (GROUPS II AND III)								
S. STATES SS-390	41.1	43.1	33.2	1.6	1.3	1.0	36	7
PIONEER BRAND 9392	41.2	43.8	31.6	1.2	1.0	1.0	35	7
DANIEL	-	-	30.5	-	-	1.0	30	6
EDISON	37.7	40.1	30.0	1.2	1.0	1.0	31	7
CORSICA	40.3	41.2	30.0	1.2	1.0	1.0	32	7
CIBASEED 3411	41.1	43.4	29.4	1.6	1.4	1.5	36	7
FLYER	38.6	41.5	28.2	1.2	1.0	1.0	31	8
S. STATES FFR-398	38.5	40.1	27.1	1.5	1.2	1.5	39	8
N.KINGS 39-11 ^c	37.6	38.0	26.8	1.7	1.2	1.0	33	8
LINFORD ^c	34.9	35.8	23.0	2.1	2.0	1.7	40	8
JACK ^c	-	-	21.8	-	-	1.0	31	6
FAYETTE ^c	32.1	33.2	21.2	1.4	1.5	1.2	44	8
GROUP III AVERAGE	38.3	40.0	27.5	1.5	1.3	1.2	35	7
MID-SEASON (GROUP IV)								
CALLAHAN 3500X	-	45.6	38.5	-	1.2	1.0	41	9
S. STATES FFR-493	-	-	35.1	-	-	1.4	37	10
DELISOY 4710 ^c	-	42.0	34.8	-	2.0	1.5	45	9
JOSHUA	-	-	34.7	-	-	1.2	40	8
N.KINGS 42-40	42.8	44.5	34.5	1.3	1.3	1.2	41	8
JACQUES J-445	-	46.1	34.3	-	1.0	1.0	40	8
S.STATES FFR-19921	-	-	33.7	-	-	1.5	40	8
JADER 4730	-	-	33.4	-	-	2.0	44	8
S.STATES SS-487	40.7	42.7	32.8	1.2	1.1	1.2	37	7
BT 429	-	-	32.8	-	-	1.5	41	8
JACQUES J-467	41.3	43.4	32.6	1.8	1.8	2.0	39	8
BT 484	-	-	32.3	-	-	2.0	44	8
CALHOUN	41.4	44.7	32.3	1.4	1.0	1.0	31	8
HARTZ H4464 ^b	41.0	42.9	32.2	2.0	2.2	1.5	38	8
S.STATES FFR-471	-	42.5	32.1	-	1.0	1.0	34	7
CALLAHAN 3444X	-	44.7	31.9	-	1.6	1.5	41	8
KS4694	-	-	31.9	-	-	1.0	35	8
JACOB	40.6	41.7	31.7	2.1	2.0	1.5	41	9
CALLAHAN 3484	-	44.3	31.6	-	1.8	1.0	39	7
PENNYRILE	39.7	40.5	31.4	1.3	1.0	1.0	39	9
DAVID ^c	-	-	31.4	-	-	1.2	43	10
CIBA SEED 4805Y	-	-	31.0	-	-	1.0	36	8
CHESAPEAKE	-	-	30.9	-	-	1.2	35	10
JMS 4688	-	-	30.7	-	-	1.0	36	7
CALLAHAN 1410	38.4	42.2	30.4	1.2	1.0	1.0	35	7
MANOKIN ^b	-	38.9	30.2	-	3.4	2.6	36	11
PIONEER BRAND 9442 ^b	43.7	44.3	30.2	1.4	1.0	1.0	28	8
S.STATES FFR-439	-	-	29.9	-	-	1.0	41	8
STAFFORD	37.7	36.7	29.9	2.4	2.4	2.1	41	10
N.KINGS 46-44 ^c	-	-	29.7	-	-	1.2	43	8
ASGROW A4539 ^c	-	-	29.4	-	-	1.0	30	8
DELISOY 4900 ^b	-	-	29.3	-	-	2.5	40	10
VORIS V394	-	-	29.0	-	-	1.0	30	6
CALLAHAN 4477NX ^c	-	-	28.2	-	-	1.0	36	9
JADER 4881 ^c	-	36.3	28.2	-	3.0	2.5	41	11
ABEL ^c	-	-	27.7	-	-	1.2	35	7
ASGROW A4138 ^c	-	-	27.6	-	-	1.0	32	7
N.KINGS 48-84 ^c	41.5	40.4	27.5	1.8	1.4	1.0	39	10
SPRY	-	39.2	27.4	-	3.3	2.7	38	10
ASGROW A4715 ^c	42.1	41.8	27.4	1.1	1.0	1.0	34	8
DELISOY 4210 ^c	-	40.3	27.3	-	1.5	1.2	40	9
PIONEER BRAND 9451 ^b	-	-	27.2	-	-	1.0	37	9
PHARAOH ^c	39.7	38.3	26.9	2.9	2.8	2.2	40	11
TERRA 4792 ^c	-	-	26.9	-	-	1.2	40	10

