Pfeiffer

Progress Report 348

1992 Kentucky Soybean Performance Tests

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

University of Kentucky • College of Agriculture
Agricultural Experiment Station • Department of Agronomy • Lexington 40546

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Tables

Acknowledgements

In addition to the county agents and farm cooperators mentioned in Table 1, several people have contributed greatly to the production of this publication: Eugene Lacefield, John Byars, and Sallie Wood.

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 1992 were planted at seven locations in Kentucky. The testing locations, soil types, planting dates and other information are shown on the following page.

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 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.

Location of the 1992 Kentucky Soybean Performance Tests

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1. Location, Planting Date, and Climatic Data for 1992 Soybean Performance Tests.

	Henderson	Hartford	Princeton	Princeton Double-Crop	Bardwell	Lexington	Franklin Double-Crop	
Farmer	Grossman Bros.	Darrell Jackson	Exp. Sta.	Exp. Sta.	Roger Hobbs	Exp. Sta.	Fred Bullock	
Extension	Michael Smith	Greg Comer			Gordon Henshaw		Don Kessler	
Soil Type	Patton Silt Clay (overwash)	Stendale Silt Loam	Crider Silt Loam	Crider Silt Loam	Adler Silt Loam	Lanton Silt Loam	Pembroke Silty Clay Loam	
Date of Planting	6/11	5/27	5/19	5/22	5/20	6/7		
Row Width	30	30	30	15	30	30	15	
Herbicides[2]	8 pt Freedom	4 oz Canopy 2 pt Lasso	2 pt Dual	2 pt Dual 3 pt Roundup 20 oz Canopy	2/3 pt Scepter	8 pt Lasso 2/3 pt Scepter	1 pt Roundup 12 oz Fusilade 4 oz Pursuit	
Soil Test P	111	40	90	90	131	200+	200+	
K	345	225	501	501	214	288	500	
pH	7.0	6.0	6.0	6.0	7.7	6.0	6.3	
Fertilizer Applied	2 T. Lime	None	None	None	None	100 lb/ KCL	None	
50% Chance of Killing Frost[3]	10/25	10/20	10/19	10/19	10/19	10/26	10/23	

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.

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.

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 have been provided 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, number 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 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 cooperative extension service 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 Hartford location 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 Bardswell were affected by a heavy SCN infestation.

Soybean Production Information

The Kentucky Cooperative Extension Service has a series of publications which contain a more detailed discussion of soybean production practices: Soybean Production in Kentucky 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).

Oil and Protein Data

The average protein and oil concentration for all soybean varieties entered in the Kentucky Soybean Performance Tests will be provided in a separate report available from the agriculture extension agents at a later date. 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

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	65-80
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

soybean is grown primarily for its oil and protein, these data will be 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.

Source of Seed, 1992

The seed planted in the 1992 Soybean Performance Tests was acquired from the following sources:

Asgrow Seed Company
PO Box 7570
Des Moines, IA 50322
A3935 *A4595*
A4715 *A5403*
A4138 *A5560*

Agratech Seeds Inc.
5559 N 500 W
McCordsville, IA 46055
AT 455 *AT 495*
AT 415 *AT 390*
AT 2520

Callahan Seeds
1122 E 169th Street
Westfield, IN 46074
Callahan 1410
Callahan 3393 NX
Callahan 751ON
Callahan 8464
Callahan 3444X
Callahan 3484X
Callahan 3545NX
Callahan 350OX

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

DeKalb-Pfizer Genetics
3100 Sycamore Road
DeKalb, IL 60115
DeKalb CX 415
DeKalb CX 458

Jacob Hartz Seed Company
PO Box 946
Stuttgart, AR 72160
Hartz H4242
Hartz H5070
Hartz H4464

Jacques Seed Company
Highway 1OE
Lincoln, IL 62656
Jacques J-467
Jacques J-445
Jacques J-380

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
Burlison *Corsica*
Delsoy 4210 *Delsoy 4710*
Edison *Essex*
Fayette *Flyer*
Hamilton *Hartwig*
Hutcheson *KS 5292*
Kunitz *Linford*
Manokin *Pharaoh*
Pennyrile *Stafford*
Spry *TN 5-85*
TN 4-86

Miles Seed
2760 Keller Rd
Owensboro, KY 42301
Jacob
Samson

Northrup-King Company
705 Woodbridge Dr
Somerville, TN 38068
Northrup-King Coker 425
Northrup-King S 48-84
Northrup-King S 42-30
Northrup-King S 39-11
Northrup-King S 42-40

Pioneer Hi-Bred Int.
1000 West Jefferson St.
Tipton, IN 46072
Pioneer Brand 9442
Pioneer Brand 9461
Pioneer Brand 9392
Pioneer Brand 9521
Pioneer Brand 9551

Ridgway Seed Company
Box 212
Ridgway, IL 62979
Jader 461
Jader 467
Jader 4881

Southern States Coop.
PO Box 26234
6606 W Broad
Richmond, VA 23260
S.States SS-390
S.States SS-516
S.States SS-391
S.States SS-487
S.States FFR-398
S.States FFR-561
S.States FFR-401N
S.States FFR-EX 38108
S.States FFR-500
S.States FFR-464
S.States FFR-471
S.States SS-461

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

3. Summary for all Full-Season Locations[f]

VARIETY	YIELD BU/AC 90-92	YIELD BU/AC 91-92	YIELD BU/AC 1992	LODG -ING 90-92	LODG -ING 91-92	LODG -ING 1992	HT.[a] (IN) 1992	MAT.[e] DATE 1992	POD HT. 992	APPROX. SEED/LB
EARLY (GROUPS II AND III)										
PIONEER BRAND 9392	-	48.5	56.2	-	1.4	1.3	36	9/18	6	2900
CIBA-GEIGY 3411	-	47.8	54.4	-	1.4	1.2	35	9/22	5	2750
STINE BRAND 3790	-	-	53.8	-	-	1.3	36	9/16	6	2700
N.KING S39-11[c]	-	48.1	53.6	-	2.2	2.2	39	9/23	7	2500
CALLAHAN 3393NX[c]	-	-	53.3	-	-	2.2	40	9/22	5	2950
N.KING S42-30	-	47.4	52.9	-	1.4	1.2	37	9/19	5	2900
LINFORD[c]	44.8	44.5	52.1	2.3	2.5	2.7	43	9/21	6	2500
CORSICA	-	45.3	52.1	-	1.6	1.6	37	9/19	6	3000
EDISON	-	44.5	51.7	-	1.3	1.1	33	9/15	6	3400
FLYER	45.6	44.9	51.7	1.3	1.4	1.2	35	9/19	6	3400
ASGROW A3935	46.7	46.3	51.5	1.5	1.5	1.3	37	9/21	6	3000
S.STATES SS-390	46.3	44.9	50.7	1.5	1.5	1.2	37	9/21	6	2800
S.STATES SS-391	46.5	46.2	50.4	1.5	1.6	1.4	36	9/21	6	2500
S.STATES FFR-398	47.0	46.0	50.0	1.5	1.6	1.3	35	9/20	6	3000
FAYETTE[c]	42.8	42.9	48.6	2.0	2.1	2.4	42	9/20	7	2500
BURLISON	-	-	46.1	-	-	1.3	31	9/10	4	2670
KUNITZ	39.6	37.2	42.5	1.6	1.6	1.4	36	9/18	5	2500
GROUP III AVERAGE	44.9	45.3	51.3	1.7	1.7	1.6	37	9/19	6	
MID-SEASON (GROUP IV)										
ASGROW A4715[c]	51.4	51.8	57.5	1.5	1.5	1.4	42	9/29	7	2800
CALLAHAN 3444X	-	-	56.7	-	-	1.7	40	9/25	6	2350
CALLAHAN 3484X	-	-	55.7	-	-	2.2	42	9/30	7	3000
CALLAHAN 1410	49.2	48.8	55.3	1.5	1.6	1.5	35	9/22	5	2200
PIONEER BRAND 9461	48.9	48.8	55.0	1.4	1.4	1.4	34	9/22	6	3600
AGRATECH AT415	-	-	54.9	-	-	1.5	36	9/23	6	2750
JACQUES J-467	-	48.7	54.6	-	2.4	2.7	42	9/28	6	3000
PIONEER BRAND 9442	49.4	49.1	54.1	1.4	1.5	1.2	35	9/21	6	3400
S.STATES FFR-471	-	-	54.0	-	-	1.3	38	9/26	6	2700
DEKALB CX458	48.1	47.0	53.7	1.5	1.5	1.6	39	9/25	7	2650
JACOB	48.5	48.5	53.6	2.2	2.2	2.3	42	9/26	7	3000
STINE BRAND 4350	-	-	53.4	-	-	2.5	45	9/26	6	2600
CALLAHAN 8464	48.5	47.7	53.1	2.0	2.0	2.0	41	9/23	6	2600
S.STATES FFR-401N[c]	-	-	51.7	-	-	2.9	42	9/23	6	3300
ASGROW A4595	47.7	47.1	51.5	1.8	1.8	1.9	39	9/25	6	2900
DEKALB CX 415	46.8	46.1	51.3	1.7	1.7	1.7	40	9/19	6	2600
JMS BRAND 4688	-	48.1	51.1	-	2.0	2.1	40	9/28	7	3000
KS 5292[b]	-	46.3	51.1	-	2.3	2.5	36	10/7	8	3550
S.STATES FFR-464	45.3	44.4	50.9	1.7	1.6	1.6	39	9/27	8	2800
AGRATECH AT455	47.0	46.5	50.8	1.6	1.6	1.6	40	9/29	8	2950
HARTZ H4464[b]	47.0	46.8	50.7	2.3	2.5	3.0	44	10/1	8	3340
DELSOY 4210[c]	-	-	50.7	-	-	2.4	41	9/25	7	2600
JMS BRAND 4809[c]	-	-	50.7	-	-	2.7	40	10/3	9	2800
JADER 4881[c]	-	-	50.6	-	-	3.2	41	10/3	6	3200
JMS BRAND 4515	-	-	50.6	-	-	2.2	47	9/27	6	3000
JACQUES J-445	-	-	50.6	-	-	1.8	40	9/25	7	2800
JADER 467	46.4	44.4	50.4	2.4	2.5	2.7	46	10/2	7	3100
S.STATES SS-487	46.3	44.6	50.0	1.4	1.5	1.4	37	9/27	7	2800
JADER 461	47.0	46.0	49.8	1.7	1.7	1.7	41	9/30	8	2700

VARIETY	YIELD BU/AC 90-92	YIELD BU/AC 91-92	YIELD BU/AC 1992	LODG -ING 90-92	LODG -ING 91-92	LODG -ING 1992	HT.[a] (IN) 1992	MAT.[e] DATE 1992	POD HT. 992	APPROX. SEED/LB
MID-SEASON (GROUP IV)										
N.KING S48-84[c]	45.4	43.8	49.7	2.3	2.3	2.6	42	10/4	8	2800
PHARAOH[c]	44.3	43.7	49.7	2.4	2.4	3.0	40	10/5	9	3300
AGRATECH AT495[c]	45.1	44.1	49.6	2.5	2.6	3.0	39	10/2	8	2950
MANOKIN[b]	-	-	49.5	-	-	3.3	38	10/7	7	3200
CALLAHAN 3500X	-	-	49.4	-	-	1.8	47	10/4	7	2200
S.STATES SS-461[c]	45.9	45.8	49.1	1.5	1.5	1.2	44	9/30	7	3000
DELSOY 4710[c]	-	-	49.1	-	-	4.1	44	10/1	8	2550
PENNYRILE	46.6	44.9	49.0	1.6	1.7	1.7	43	9/29	8	2800
CIBA-GEIGY 3482[c]	-	-	49.0	-	-	3.2	41	10/4	8	3000
N.KING S42-40	45.3	45.6	48.7	1.5	1.6	1.4	37	9/22	7	2600
JMS BRAND 4909[c]	-	46.2	48.5	-	2.9	3.5	39	10/2	7	3500
HAMILTON	44.2	43.0	48.4	1.6	1.7	1.3	32	9/19	6	2200
SAMSON	-	-	48.4	-	-	1.7	39	10/1	7	3250
TN 4-86[c]	45.2	44.9	48.2	1.9	2:0	2.1	48	9/30	7	3800
SPRY	-	-	46.2	-	-	3.0	36	9/29	7	2600
STAFFORD	44.3	41.3	43.8	2.2	2.3	2.8	38	10/3	8	3300
HARTZ H4242	-	-	43.1	-	-	2.0	35	10/1	7	3400
GROUP IV AVERAGE	46.8	46.2	50.9	1.8	1.9	2.2	40	9/28	7	
LATE (GROUPS V AND VI)										
S.STATES FFR-500[c]	-	46.9	50.5	-	1.7	1.8	35	10/7	8	3400
HUTCHESON	48.1	45.5	50.3	2.2	2.3	2.9	39	10/12	8	3000
ASGROW A5403[c]	47.9	45.8	49.9	1.9	2.0	2.1	39	10/8	9	2900
PIONEER BRAND 9521[c]	-	44.8	49.8	-	2.3	2.6	37	10/5	8	3300
STINE BRAND 5310	-	-	49.8	-	-	1.7	33	10/5	7	2800
CALLAHAN 7510N[b]	45.6	43.8	49.2	1.8	1.9	2.2	39	10/6	8	2900
ESSEX	45.0	43.1	48.2	2.0	2.0	2.1	34	10/6	8	3400
S.STATES FFR-38108[c]	-	-	47.5	-	-	2.6	41	10/10	9	3000
N.KING COKER 425	45.8	43.4	46.9	1.8	1.9	2.0	31	10/7	7	3000
JMS BRAND 5350	-	-	46.8	-	-	1.4	31	10/7	6	3200
S.STATES FFR-561	44.7	41.1	46.3	1.9	2.1	2.2	41	10/11	8	3400
CALLAHAN 3545NX[c]	-	-	45.8	-	-	2.4	40	10/7	9	3150
S.STATES SS-516[c]	44.5	42.4	45.8	1.7	1.8	1.8	41	10/8	8	3000
PIONEER BRAND 9551[c]	-	43.7	45.4	-	1.9	2.0	36	10/9	8	3000
HARTZ H5070	-	-	42.2	-	-	2.6	41	10/10	8	3300
TN 5-85[b]	40.8	38.9	40.4	2.7	2.7	2.9	41	10/11	8	3300
HARTWIG[d]	-	-	38.1	-	-	3.7	38	10/11	8	3470
GROUPS V & VI AVG	45.3	43.6	46.6	2.0	2.1	2.3	37	10/8	8	
GRAND AVERAGE	46.1	45.4	50.1	1.8	1.9	2.1	39	9/28	7	
LSD (.10)	3.0	3.0	5.0	0.3	0.3	0.4	1		1	

[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 Bardwell.
[f]Henderson and Hartford 1991 data affected by the soybean cyst nematode.
Bardwell 1992 data affected by the soybean cyst nematode.

4. Summary for all Double-Crop Locations

VARIETY	YIELD BU/AC 90-92	YIELD BU/AC 91-92	YIELD BU/AC 1992	LODG -ING 90-92	LODG -ING 91-92	LODG -ING 1992	HT.[e] (IN) 1992	POD HT. 1992
EARLY (GROUPS II AND III)								
CIBA-GEIGY 3411	-	45.0	52.7	-	1.6	1.3	34	4
PIONEER BRAND 9392	-	44.4	52.0	-	1.2	1.0	30	4
ASGROW A3935	41.3	45.2	51.3	1.4	1.3	1.0	33	4
FLYER	39.1	42.1	50.4	1.4	1.2	1.0	31	5
S.STATES SS-390	41.9	43.7	49.7	1.7	1.8	1.5	29	4
CALLAHAN 3393NX[c]	-	-	49.4	-	-	1.5	37	5
S.STATES FFR-398	40.0	42.3	48.7	1.4	1.5	1.1	30	6
CORSICA	-	43.7	48.7	-	1.3	1.0	32	5
S.STATES SS-391	38.6	41.7	48.2	1.3	1.2	1.0	32	5
STINE BRAND 3790	-	-	47.1	-	-	1.1	32	6
EDISON	-	40.2	46.8	-	1.2	1.0	27	4
N.KING S39-11[c]	-	41.2	45.5	-	2.0	1.4	35	6
LINFORD[c]	36.7	38.8	44.2	2.2	2.2	2.2	37	4
N.KING S42-30	-	39.4	43.6	-	1.4	1.0	29	4
BURLISON	-	-	41.1	-	-	1.1	29	4
FAYETTE[c]	35.1	35.7	41.2	1.4	1.5	1.7	40	5
KUNITZ	32.2	34.4	38.7	1.9	1.9	1.5	32	5
GROUP III AVERAGE	38.1	41.3	47.0	1.6	1.5	1.3	32	5
MID-SEASON (GROUP IV)								
JADER 467	44.2	46.5	53.5	2.2	2.4	2.2	41	5
PIONEER BRAND 9442	44.6	48.3	53.7	1.5	1.5	1.1	31	5
CALLAHAN 3444X	-	-	53.3	-	-	1.7	37	6
JACQUES J-445	-	-	53.9	-	-	1.1	38	6
CALLAHAN 3484X	-	-	52.7	-	-	2.3	39	5
ASGROW A4715[c]	45.2	47.1	51.5	1.2	1.2	1.1	36	5
PIONEER BRAND 9461	41.1	43.9	51.1	1.2	1.2	1.1	30	4
N.KING S42-40	43.0	45.5	51.2	1.3	1.3	1.3	34	5
HARTZ H4464[b]	41.2	43.9	50.0	1.9	2.2	2.7	40	7
CALLAHAN 1410	41.2	41.1	50.1	1.4	1.2	1.1	32	4
CALLAHAN 8464	41.7	45.0	50.8	2.0	2.0	2.0	36	6
JACQUES J-467	-	44.2	50.7	-	1.8	1.7	37	5
CALLAHAN 3500X	-	-	50.3	-	-	1.4	41	6
S.STATES FFR-464	41.3	42.0	49.6	1.5	1.6	1.3	37	6
DEKALB CX458	42.2	44.8	49.6	1.3	1.2	1.2	35	5
DELSOY 4210[c]	-	-	48.9	-	-	1.7	38	5
S.STATES FFR-471	-	-	49.5	-	-	1.1	30	4
DEKALB CX 415	40.3	43.3	49.5	1.5	1.5	1.2	36	5
N.KING S48-84[c]	44.2	46.2	49.0	1.9	2.1	1.7	35	7
S.STATES SS-487	41.1	43.3	49.3	1.2	1.2	1.1	35	6
STINE BRAND 4350	-	-	48.4	-	-	2.2	41	5
JACOB	40.1	43.6	48.5	2.2	2.3	2.3	40	6
AGRATECH AT455	41.5	41.5	48.1	1.4	1.4	1.2	39	7
ASGROW A4595	39.5	41.5	48.2	1.5	1.5	1.1	37	5
AGRATECH AT415	-	-	47.3	-	-	1.3	32	4
JMS BRAND 4688	-	42.9	47.4	-	2.5	2.2	38	5
JADER 461	42.1	43.2	46.7	1.4	1.5	1.2	29	5
SPRY	-	-	47.0	-	-	3.7	39	7
PHARAOH[c]	40.4	43.9	45.9	2.6	3.1	3.2	38	9