

NEW JERSEY GRAIN AND FORAGE JOURNAL

*A COMPILATION OF RESEARCH AND
EXTENSION PROJECTS IN CORN, SOYBEAN, SMALL
GRAIN AND FORAGE*

SUPPORTED BY:

NEW JERSEY SOYBEAN BOARD

**GRAIN AND FORAGE PRODUCERS' ASSOCIATION
OF NEW JERSEY**

RUTGERS COOPERATIVE EXTENSION

**COOK COLLEGE, RUTGERS – THE STATE
UNIVERSITY OF NEW JERSEY**

THE STATE UNIVERSITY OF NEW JERSEY
RUTGERS

**1999
VOLUME 6**

NEW JERSEY GRAIN AND FORAGE JOURNAL - 1999

PREFACE

This is the sixth edition of the New Jersey Grain and Forage Journal, an annual journal highlighting research and extension projects in field crops. Traditionally the publication has presented work conducted in New Jersey. This year articles from Delaware and Pennsylvania are included as a result of collaborative efforts by field and forage crop agents, specialists and researchers from the Mid-Atlantic region.

Grain and forage production represents the largest agricultural acreage in the Mid-Atlantic States, adding significantly to and supporting related industries. Not only does this support the local and regional economy, but also provides the benefits of open space to the residents of the region.

We would like to acknowledge and thank the New Jersey Soybean Board and Grain and Forage Producers' Association for their financial support. The Soybean Board allocates soybean checkoff funds for research and promotional activities that benefit the soybean industry. The Grain and Forage Producers' Association promotes research, marketing, legislation and education related to the grain and forage industry.

We hope that these results will be helpful to you as you plant and produce crops in the 2000 growing season and beyond. Your suggestions for research and educational projects are always welcome, as it is our desire to develop programs that serve you most important needs.

Coordinator and Editor	Daniel Kluchinski, Rutgers Cooperative Extension	
Reviewers	William J. Bamka, Rutgers Cooperative Extension Daniel Kluchinski, Rutgers Cooperative Extension Greg Roth, Penn State Cooperative Extension Jeremy W. Singer, Rutgers Cooperative Extension Richard Taylor, University of Delaware	
Contributing Authors	Wayne L. Anastasia William J. Bamka Everett A. Chamberlain Dennis Haines Joseph R. Heckman Miles Huffaker Joseph Ingerson-Mahar Daniel Kluchinski David Lee Nicole S. Mendoker Robert P. Mulrooney Greg W. Roth	Allan Shoener Jeremy W. Singer Larry Swartz Bob Uniatowski Delbert Voight

TABLE OF CONTENTS

MULTI-YEAR RESEARCH PROJECT RESULTS

Evaluation of Spring Malting Barley Production	p. 1-5
W. J. Bamka	
Summary p. 1-2	
Research Paper p. 3-5	
Crop Safety of Foliar Applied Potassium Fertilizers on Soybean	p. 6-11
J. R. Heckman, W. L. Anastasia and D. Haines	
Summary p. 6-8	
Research Paper p. 9-11	
Corn Yield Response to Plant Populations in a High Yield Environment	p. 12-15
A. Shoener and G. W. Roth	
Roundup Ready® and Traditional Soybean Variety Performance Trials in Delaware	p. 16-42
B. Uniatowski, R. W. Taylor and R. P. Mulrooney	

SINGLE-YEAR RESEARCH AND DEMONSTRATIONS

Survey Results Imply Improper Soil pH and Liming Material Management	p. 43-44
D. Kluchinski and J. R. Heckman	
Analysis of Soil Variability in Four Southern New Jersey Corn Fields	p. 45-49
J. Ingerson-Mahar, D. Lee and M. Huffaker	
Comparison of Fall and Spring Bait Trapping of Wireworms in New Jersey Corn Fields .	p. 50-52
J. Ingerson-Mahar, D. Lee and M. Huffaker	
Analysis of Wireworm Distribution in Two Salem County Corn Fields	p. 53-58
J. Ingerson-Mahar, D. Lee and M. Huffaker	
Summary of the 1998 Field Scouting for the South Jersey Crop Improvement Association	p. 59-60
J. Ingerson-Mahar, D. Lee and M. Huffaker	
Performance of Bt Corn Hybrids in Pennsylvania and New Jersey	p. 61-64
L. Swartz, E. Chamberlain, D. Voight and G. W. Roth	
Grass Species and Nitrogen Effects on Hay Yields, Quality, and Profitability	p. 65-71
J. W. Singer and N. S. Mendoker	

FIELD OBSERVATIONS

Two-Spotted Spider Mites in Alfalfa	p. 72
J. Ingerson-Mahar and D. Lee	

Roundup Ready® and Traditional Soybean Variety Performance Trials in Delaware

Bob Uniatowski, Field Crops Associate
Dr. Richard W. Taylor, Extension Agronomist
Robert P. Mulrooney, Extension Plant Pathologist
Department of Plant and Soil Sciences
University of Delaware

- Research Questions** How do commercial and public soybean varieties that express the Roundup Ready® trait compare in a single-crop (full-season) and double-crop system with weed control provided by using Roundup Ultra? How do traditional commercial and public soybean varieties compare in a single-crop (full-season) and double-crop system? How do traditional or Roundup Ready commercial and public soybean cyst nematode (SCN) resistant soybean varieties compare when grown on fields infested with race 3 of the soybean cyst nematode?
- Literature Summary** In 1998, a second year of Roundup Ready soybean variety evaluations and the first year for SCN-resistant Roundup Ready variety trials were conducted. For the traditional commercial (private) and public variety trials (SCN and non-SCN trials), Delaware has conducted trials and reported the results on an annual basis.
- Study Description** All trials were planted in 15-inch rows with 5 to 6 seeds per foot of row. Plots were 5 rows wide and 22.5 long but were trimmed to 18 feet long prior to harvest to remove border effects. A randomized, complete block design with four replications was used. The single-crop and double-crop Roundup Ready trials were conducted on ground rented by Baker Farms near Middletown, DE (Matapeake silt loam soil) and at the University of Delaware Research and Education Center near Georgetown, DE (under irrigation) on a loamy sand soil. Traditional varieties were tested at four single-crop locations (Middletown, Rising Sun, Georgetown, and Selbyville) and at two double-crop locations (Middletown and Georgetown). All trials at the Georgetown location were irrigated. This report contains the detailed summary for only the Middletown location for non-SCN resistant varieties and the Rising Sun location for the SCN-resistant varieties. In each table, a column labeled 1998 pooled yield average and

1998 pooled rank integrates yield results from all locations and cropping systems to assist in the evaluation of varieties for wide adaptation.

Entry of public varieties was supported by a grant from the Delaware Soybean Board. Commercial entries were supported in part by a grant from the Delaware Soybean Board and in part by an entry fee paid by the owner of the variety.

The single-crop trials with traditional commercial and public varieties were conducted at the Middletown location (reported herein) as well at Rising Sun, Research Education Center at Georgetown (irrigated), and at Selbyville, DE. Double-crop trials were conducted at the Middletown and Georgetown (irrigated) locations. The race 3 SCN trial location was on a farm near Rising Sun, DE.

In the Roundup Ready trials, 59 varieties were tested. In the traditional variety trial, 35 varieties (16 were public varieties) from maturity group III, 51 varieties (21 were public) from maturity group IV, and 22 varieties (14 were public) from maturity group V were tested. In the SCN trials, 10 from group III, 20 from group IV, and 20 from group V were tested plus in a separate study for SCN resistant Roundup Ready varieties, five from group III, seven from group IV, and seven from group V were tested.

All single-crop trials and the double-crop trial at the Middletown location were planted in a conventionally-prepared seedbed using an Almaco small-plot, cone seeder. Double-crop trials at the Georgetown location were planted with a Great Plains no-till drill with a cone system mounted on the drill. All Roundup Ready trials were sprayed once with Roundup Ultra. Other trials had 1 quart Dual/A plus 6 oz Canopy/A applied for weed control. The Rising Sun location was treated postemergence with 1.6 quart Typhoon/A plus 1 percent v/v crop oil concentrate and the Selbyville location received one postemergence application of Fusion (10 oz/A) plus crop oil concentrate at 1 percent v/v. Morningglories were a problem at the SCN Rising Sun location and were controlled by hand weeding. Near harvest time, lodging ratings, plant height, and maturity date were taken. For SCN-trials, a soil sample was obtained from each plot (bulked across replications in the Roundup Ready SCN trial)

at planting and after harvest. SCN-egg counts were made and a reproductive index calculated.

Applied Questions

What is the best way to choose a soybean variety with the best chance of it performing well on my farm?

For a first step, growers should evaluate their fields and determine if there are special circumstances that should be considered when choosing a variety. Are soybean cyst nematodes present in the field? If so, what race of SCN is present? Will the field be irrigated? What is the major soil type? Are there special problems for that field—drought always occur early in the season but late season rains usually occur. The answers to these questions should guide you in evaluating variety trial information.

Next, gather as much variety performance information as you can get. Do not limit your evaluation of results to only the location nearest you. A variety that performs well at most or all locations in your state and nearby states is one that is widely adapted and is much more likely to perform well on your farm. In the Delaware trial results, we have begun reporting a pooled yield and yield rank to assist growers in choosing varieties that perform well at many locations. For New Jersey growers, variety information from New Jersey should be evaluated along with data from southeastern Pennsylvania, New York, Maryland, Delaware, eastern Virginia, and commercial company comparisons. Although not all states will evaluate the same varieties, you often can obtain from their reports valuable information that will improve your chances of choosing an outstanding variety.

After collecting the information, go through and list varieties that did well at each location for both the current year and for long-term yield averages. Evaluate each list to find the varieties that performed well at many locations and for both current yield performance and long-term yield. Finally, eliminate from the list any varieties that do not fit your special circumstances such as SCN-resistance, suitability for double-cropping, lodging resistance, early maturity, etc. At the end of the process, you should have a short list of varieties that will do well on any of your fields.

Should I look only at this past year's performance of a variety?

No, not if the variety has been in trials for more than one year. Variety development is occurring so rapidly now that a specific variety may not be available for more than a couple of years before a company replaces it with an "improved" variety. Improved does not always mean the new variety will perform better or even as good as the one it is replacing. Companies base their decisions on results from the majority of their testing locations. Most testing sites are found in the large soybean-producing states. The humid mid-Atlantic region can be a difficult, stressful environment for many of these new varieties.

For varieties that are new in variety testing programs, you only will be able to use one year's results to evaluate their adaptation to our area. For these, it is very important to choose a variety that does well at numerous locations so it will be as widely adapted as possible. For varieties that have been tested two or more years, you should look for these characteristics:

1. A variety that performed near the top at many locations this past year.
2. A variety with the best long-term yield average at the nearest location.
3. A variety showing long-term yield averages near the top at many locations.

Recommendations

Roundup Ready Variety Performance

How did Roundup Ready varieties perform compared with traditional varieties?

Although the trials were conducted in the same locations, the results could not be compared statistically. We did look at the yield averages and ranges and these indicated that there was little to no difference between Roundup Ready variety yield potential and traditional variety potential except for possible irrigated double-cropped beans. Under irrigation, yield averages were four or five bu/A lower for Roundup Ready varieties compared to traditional varieties. Yield drag

no longer should be considered a major problem for Roundup Ready varieties. By choosing the top yielding varieties from either the Roundup Ready or the traditional variety category, you will get equivalent yield potential.

In 1998, 59 Roundup Ready varieties were tested but only ten of these had been in the trials in 1997. Results for the Roundup Ready, single-crop variety performance trial at the Middletown location are listed in Tables 8 to 10. For the double-crop variety performance trials at the Middletown location only varieties from maturity group III and IV were tested and results are reported in Tables 19 and 20. Of the ten tested for two years, the varieties with the best yield averages over two years and that performed well at both locations in 1998 were:

- Group III: Southern States brand RT386
Hoffman brand R366

- Group IV: Southern States brand RT466N
Northrup King brand S42-K2
Pioneer brand 94B41
Southern States brand RT447
Southern States brand EXP RT24813

- Group V: Southern States brand RT540N

Varieties new (and old) to the trials but ranked at the top when yields were pooled across locations and cropping systems were as follows:

- Group III: Hytest brand HTS4000RR
Terra brand TS3900RR
Southern States brand RT3975
Southern States brand RT3976
Southern States brand RT386
Terra brand TS396RR
DynaGro brand UAPX254RR
DynaGro brand DG3398RR
Terra brand E3680RR
Pioneer brand 93B71

- Group IV: Dekalb brand CX444CRR
Southern States brand RT446N

Chemgro brand 4799RR
Clark's brand CL42RR
Terra brand E4280RR
Terra brand E4680RR
Dekalb brand CX485RR
Terra brand TS466RR
Hyttest brand HTS4301RR
Dekalb brand CX419RR

Group V: Southern States brand RT540N
Pioneer brand 95B41
Terra brand TS566RR
UniSouth brand USG EXP502
Southern States brand RT517
Southern States brand RT557
Southern States brand RT560

Traditional Variety Performance

The best choice for a variety without conducting extensive variety tests on your own farm is to choose a variety that performs well across locations and across years (environments). Because of the rapid turnover in varieties, this is becoming harder to do. Below, we will list both varieties new to the trials that did well across many locations and both cropping systems and varieties that have been around at least two years and have done well in multiple locations.

Results from the Middletown location for the traditional variety performance trials are shown in Tables 5 to 7 for the single-crop trials and Tables 17 and 18 for the double-crop trials (maturity group V varieties were not tested in a double-crop system at the Middletown location due to space limitations).

First, what new varieties performed well?

In the list below, the variety brand and name is followed in parenthesis by the pooled yield average in bushels per acre.

Group III: Terra brand E394 (44)
Terra brand TS387 (44)
Pioneer brand P93B81 (43)
Mycogen brand J399 (42)

Hoffman brand 7353 (42)
Dekalb brand CX400 (42)
(Public) Croton 3.9 (42)

Group IV: Clark's brand CL48 (50)
UniSouth Brand EXP401 (50)
Deltapine brand DP3478 (48)
Mycogen brand 5404 (46)
DynaGro brand UAPX253N (46)
Mycogen brand 5430 (44)

Group V: Southern States brand FFR563 (44)
Deltapine brand DP5354 (42)
(Public) R93-171 (42)
Terra brand TS504 (40)
Southern States brand X46631STS (38)
Southern States brand HT527STS (38)

What varieties in the trials for at least two years performed well?

Listed below are varieties that did well at several locations for multiple year yields and in the current year.

Group III: Southern States brand HT381STS
(Public) General
Hoffman brand 7403
(Public) Pana
Dekalb brand CX375
Terra brand TS364T
Pioneer brand P93B82*
(Public) Linford**
Southern States brand FFR396**

Group IV: Terra brand TS474
Terra brand TS415
Dekalb brand CX470
Dekalb brand CX494
Clark's brand Dolphin
Chemgro brand 4859***
Pioneer brand 9421*
(Public) Stressland
(Public) KS4895

Group V: Hytest brand HTS5000

Pioneer brand 9552
Southern States brand FFR563
(Public) Hutcheson
(Public) Clifford
(Public) KS5292
(Public) TN5-95^{***}
(Public) Accomac

* Performed best at the Middletown location.

** Performed best at the Rising Sun location.

*** Performed best at the Georgetown and Selbyville locations.

Soybean Cyst Nematode Resistance Varieties Traditional and Roundup Ready

Detailed information on the performance of traditional varieties is given in Tables 11 to 13. Roundup Ready variety performance is reported in Tables 14 to 16. The tables include a calculated reproductive index. The smaller the index the greater the reduction in SCN egg numbers by the end of the season.

For maturity group III, there were no significant differences among varieties for yield but there were significant differences for end-of-season SCN-egg counts (Table 11). The two varieties with the lowest end-of-season egg counts and lowest reproductive indexes were Terra brand E359STS and E388STS.

For maturity group IV, there were significant differences among varieties for yield, lodging, and SCN-egg counts at planting and at harvest (Table 12). Six varieties were within one LSD interval (10.2 bu/A at $P < 0.05$) of the top yielding variety. These were Manokin (a late group IV variety), Pharoah, Terra brand TS4792 and E438, and Dekalb brand CX496C and CX444CRR. All are resistant to race 1 and Manokin also is resistant to race 1. In maturity group V, the top six varieties were within one LSD interval (6.8 bu/A at $P < 0.05$) of the top yielding variety. These included Accomac, TN5-95, Wicomico, Dekalb brand CX570C, Delsoy 5710, and DeltaPine brand DP5354. Accomac and Wicomico are resistant to both race 3 and race 1 and Delsoy 5710 is

resistant to all known races of SCN. All of the top six varieties had low reproductive indexes (<0.40). In the Roundup Ready, cyst resistant variety trials, drought conditions caused a high degree of variability in the trials. As a result, no significant differences were detected among varieties for yield. Using the reproductive index and yield to evaluate varieties, the best group III varieties were Terra brand TS3680RR and DynaGro brand UAPX252NRR (Table 14). The best group IV varieties were Chemgro brand 4799RR, Southern States brand RT446N, and Terra brand TS466RR (Table 15). The best group V varieties were Terra brand TS556RR, Southern States brand RT517N and RT557N, and Hytest brand GTS541RR (Table 16).

Complete results from all the University of Delaware Soybean Performance trials are available on the University of Delaware College of Agriculture and Natural Resources Extension web site. The web site address is:

<http://bluehen.ag.s.udel.edu/decrec/variety%20trals/index.html>

Copies of past and current reports are available from the authors. Write to one of the authors at the Department of Plant and Soil Sciences, University of Delaware, Newark, DE 19717-1303 or call Bob Uniatowski at (302) 831-1370 or Richard Taylor at (302) 831-1383.

Table 5.

Full Season Soybean Variety Performance Summary

New Castle County - Baker Farms - Middletown, Delaware

Planted 5/28/98

Harvested 10/16/98 - **Group III Maturity**

Brand	Variety	Yield Bu/A.	Lodging*	Plant Height (in.)	Maturity Date	New Castle Rank	Kent Rank	Sussex Rank	Selbyville Rank	Sussex Dbl/crp Rank	New Castle Dbl/crp Rank	2-Year Avg. Bu/A.	3-Year Avg. Bu/A.	1998 Pooled Yld.Avg	1998 Pooled Rank
DEKALB	CX400	63	1.0	28	09/22	1	4	17	6	34	12	-	-	42	10
TERRA	TS387	62	1.3	26	09/22	2	6	14	19	5	7	-	-	44	2
PUBLIC	THORNE	62	1.3	27	09/17	3	32	32	5	23	21	45	50	40	22
PUBLIC	GENERAL	61	1.0	26	09/20	4	9	22	8	6	18	44	48	43	5
PIONEER	P93B82	60	1.3	30	09/20	5	22	20	34	11	2	47	-	41	17
MYCOGEN	J399	59	1.3	31	09/27	6	13	11	12	28	4	-	-	42	7
DYNAGRO	DG3378N	59	1.0	27	09/19	7	27	18	29	9	8	-	-	41	16
PIONEER	P93B81	59	1.3	29	09/15	8	16	1	25	15	9	-	-	43	6
HOFFMAN	7353	58	1.0	26	09/18	9	8	19	30	2	15	-	-	42	9
TERRA	TS364T	58	1.0	25	09/17	10	25	13	32	10	19	48	-	40	19
PUBLIC	FLINT	58	1.0	27	09/13	11	18	30	20	20	20	39	42	39	26
SOUTHERNSTATES	HT381STS	57	2.0	26	09/22	12	7	12	18	22	31	48	52	40	20
HOFFMAN	7403	57	1.7	28	09/23	13	15	16	11	12	27	47	50	41	15
HOFFMAN	3396	57	1.7	31	09/20	14	3	8	21	27	16	-	-	42	12
PUBLIC	MAVERICK	57	1.7	33	09/14	15	14	7	10	3	28	43	-	42	11
PUBLIC	MACON	57	1.0	26	09/20	16	19	25	22	31	5	44	45	40	24
PUBLIC	PANA	56	2.3	33	09/16	17	2	2	13	8	17	45	-	44	4
DEKALB	CX375	56	1.0	27	09/20	18	17	34	24	16	23	44	47	38	28
MYCOGEN	5337	56	1.0	25	09/16	19	12	10	14	14	29	-	-	40	18
PUBLIC	CROTON3.9	55	1.0	31	09/21	20	21	28	2	21	1	-	-	42	8
HYTEST	ADMIRAL	55	1.3	32	09/17	21	11	23	9	17	6	40	-	41	13
TERRA	E394	55	1.7	31	09/18	22	10	4	1	1	33	-	-	44	1
PUBLIC	LINFORD	54	3.3	33	09/17	23	5	9	3	24	3	42	-	44	3
PUBLIC	SANDUSKY	54	1.0	26	09/12	24	23	33	35	32	14	37	41	36	30
PUBLIC	FG2	54	1.3	28	09/11	25	24	29	36	26	35	42	-	35	34
DYNAGRO	DG3395	54	1.0	26	09/20	26	29	6	7	25	26	-	-	40	21
PUBLIC	IROQUOIS	53	1.0	27	09/13	27	31	26	16	7	11	38	42	39	27
PUBLIC	FG1	52	1.0	25	09/12	28	28	24	15	35	30	35	-	35	33

Table 5 Continued.

DEKALB	CX393C	51	1.0	25	09/18	29	30	15	26	4	13	39	-	39	25
PUBLIC	SALINE	51	1.7	30	09/19	30	1	3	27	29	10	42	43	41	14
PUBLIC	PROBST	51	1.0	27	09/16	31	26	5	4	13	34	38	45	40	23
HYTEST	HTS3500STS	51	1.3	26	09/15	32	33	21	28	19	22	-	-	38	29
SOUTHERNSTATES	FFR396	50	1.0	24	09/20	33	34	31	23	33	25	42	46	35	32
PUBLIC	NE3297	49	1.0	28	09/13	34	20	35	17	18	32	-	-	36	31
PUBLIC	KS3494	48	1.0	26	09/13	35	35	27	33	30	24	37	-	35	35
	Avg.	55.7	1.3	27.9											
	L.S.D.(.05)	-	0.7	4.5											
	%C.V.	10.9	31.7	10.0											

* 1=All Plants Erect, 9=All Plants Lodged

Table 6.

Full Season Soybean Variety Performance Summary

New Castle County - Baker Farms - Middletown, Delaware

Planted 5/28/98

Harvested 10/16/98 - **Group IV Maturity**

Brand	Variety	Yield Bu/A.	Lodging*	Plant Height (in.)	Maturity Date	New Castle Rank	Kent Rank	Sussex Rank	Selbyville Rank	Sussex Dbl/crp Rank	New Castle Dbl/crp Rank	2-Year Avg. Bu/A.	3-Year Avg. Bu/A.	1998 Pooled Yld.Avg	1998 Pooled Rank
DEKALB	CX400	59	1.5	31	09/21	1	44	35	9	44	48	-	-	40	38
PUBLIC	REND	59	3.5	32	09/20	2	29	44	36	33	28	-	-	41	31
CAVERNDALEFARMS	CF461	57	4.3	36	09/27	3	17	24	34	15	42	49	52	43	21
TERRA	TS474	57	3.8	33	09/30	4	10	10	5	29	1	50	53	48	3
PUBLIC	HS93-4118	57	1.3	26	09/17	5	42	40	25	8	7	-	-	44	19
SOUTHERNSTATES	FFR439	56	2.5	37	09/23	6	38	41	16	18	24	44	51	42	26
PIONEER	9421	56	2.0	33	09/18	7	23	21	46	14	23	47	-	43	20
PUBLIC	STRESSLAND	55	1.8	31	09/22	8	18	27	11	5	11	48	53	46	8
HYTEST	HTS4110STS	55	5.0	22	09/21	9	47	32	32	13	17	-	-	43	25
CLARK'S	CL48	55	2.5	33	09/25	10	3	34	1	1	4	-	-	50	1
UNISOUTH	USG-EXP402	55	1.0	31	09/24	11	36	39	28	19	31	-	-	41	29
UNISOUTH	USG-EXP403	54	1.3	29	09/24	12	43	43	13	24	45	-	-	40	40
DYNAGRO	UAPX253N	54	2.3	33	09/22	13	27	8	14	3	29	-	-	46	11
DELTAPINE	DP3478	54	2.0	33	09/26	14	6	17	12	4	9	-	-	48	4
UNISOUTH	USG-EXP401	54	2.5	32	09/24	15	5	6	6	2	10	-	-	50	2
TERRA	TS415	53	2.0	31	09/24	16	16	18	4	23	2	43	-	47	6
PUBLIC	CISNE	53	1.5	26	09/24	17	33	50	20	25	33	45	50	40	37
PUBLIC	KS4895	53	2.8	35	09/30	18	2	19	7	32	21	45	50	46	10
PUBLIC	CORSICA	52	1.5	27	09/20	19	41	48	22	41	43	44	-	39	45
UNISOUTH	USG-EXP400N	52	1.5	28	09/21	20	21	36	29	48	20	-	-	41	28
NORTHROPKING	S42-60	51	2.0	29	09/23	21	37	42	30	49	37	-	-	39	46
MYCOGEN	5430	51	1.0	29	09/27	22	25	16	31	7	18	-	-	44	16
TERRA	TS4792	51	3.3	39	09/26	23	1	4	38	39	46	41	-	43	22
MYCOGEN	5404	51	1.8	32	09/23	24	19	25	8	12	3	-	-	46	9
SOUTHERNSTATES	FFR478N	50	1.5	31	09/28	25	32	30	35	10	8	43	-	43	24
CHEMGRO	4859	50	3.3	30	09/27	26	31	13	2	6	36	42	-	45	12
SOUTHERNSTATES	FFR493	50	1.8	36	09/29	27	11	26	24	26	13	42	-	44	15
CLARK'S	DOLPHIN	49	3.3	39	09/25	28	22	1	21	38	35	43	50	44	17

Table 6 Continued.

PUBLIC	INA	49	4.5	38	09/21	29	30	9	19	36	15	-	-	44	18
PUBLIC	TN4-94	49	3.0	39	09/29	30	7	37	41	47	27	44	49	41	33
PUBLIC	SN92-6633	49	1.8	30	09/23	31	51	38	18	37	26	-	-	39	43
PUBLIC	KS4997	49	2.0	30	10/01	32	35	20	48	43	47	-	-	38	49
PIONEER	9452	48	1.5	24	09/25	33	39	31	42	51	32	44	48	38	47
DEKALB	CX470C	48	2.0	34	09/24	34	14	2	15	9	6	44	-	47	5
PUBLIC	KS4694	48	2.0	31	09/26	35	20	7	45	45	40	42	46	41	32
DEKALB	CX494	48	2.0	36	09/27	36	12	11	3	16	14	42	50	47	7
PUBLIC	DEFIANCE	47	1.8	26	09/13	37	24	46	10	21	39	40	45	40	36
PUBLIC	CHESAPEAKE	47	2.5	33	09/26	38	9	29	37	22	34	41	48	42	27
PUBLIC	BRONSON	47	2.5	33	09/23	39	50	23	26	50	38	38	42	38	48
PUBLIC	CALHOUN	46	1.0	23	09/25	40	49	51	51	28	-	42	44	37	51
CHEMGRO	4559	46	1.3	32	09/22	41	45	45	33	31	12	40	-	40	41
DYNAGRO	DG3444N	45	1.8	32	09/27	42	46	49	47	35	22	40	-	38	50
PUBLIC	TN4-86	45	2.5	38	09/27	43	28	14	27	30	-	37	41	44	14
CAVERNDALEFARMS	CF492	45	1.8	26	09/28	44	26	28	43	11	25	41	47	41	34
HYTEST	BHS4500	44	1.8	30	09/25	45	34	47	44	20	16	-	-	40	39
PUBLIC	DELSOY4710	43	3.8	37	09/26	46	13	22	40	46	30	36	42	41	35
PUBLIC	NILE	43	2.8	34	09/18	47	40	33	50	40	5	38	41	39	42
PUBLIC	KY91-1214	43	2.3	32	09/29	48	48	12	23	42	41	-	-	39	44
PUBLIC	PHARAOH	40	3.3	38	09/28	49	15	15	49	34	-	37	43	43	23
PUBLIC	MANOKIN	38	3.8	38	10/05	50	4	5	17	27	19	34	39	45	13
SOUTHERNSTATES	EXP46616STS	35	5.3	40	10/03	51	8	3	39	17	44	-	-	41	30
	Avg.	49.9	2.4	31.9											
	L.S.D.(.05)	7.5	1.5	4.9											
	%C.V.	10.7	46.4	11.1											

* 1=All Plants Erect, 9=All Plants Lodged

Table 7.

Full Season Soybean Variety Performance Summary

New Castle County - Baker Farms - Middletown, Delaware

Planted 5/28/98

Harvested 10/16/98 - **Group V Maturity**

Brand	Variety	Yield Bu/A.	Lodging*	Plant Height (in.)	Maturity Date	New Castle Rank	Kent Rank	Sussex Rank	Selbyville Rank	Sussex Dbl/crp Rank	2-Year Avg. Bu/A.	3-Year Avg. Bu/A.	1998 Pooled Yld.Avg	1998 Pooled Rank
HYTEST	HTS5000	51	3.5	33	09/28	1	5	12	2	1	45	-	47	1
PUBLIC	KS5292	43	3.0	35	10/02	2	20	7	3	2	34	41	42	5
PUBLIC	HUTCHESON	43	2.3	32	10/08	3	4	9	14	3	32	39	44	3
TERRA	TS504	42	3.5	32	10/02	4	22	5	6	10	-	-	40	13
PUBLIC	R93-171	42	4.7	35	10/13	5	10	21	5	-	-	-	42	8
PUBLIC	CLIFFORD	41	5.0	37	10/07	6	7	17	8	5	32	39	42	4
SOUTHERNSTATES	HT527STS	40	2.8	35	10/03	7	17	11	9	19	-	-	38	16
PUBLIC	DELISOY5500	40	2.5	34	10/12	8	12	19	4	12	34	-	41	9
PIONEER	9552	39	3.0	37	10/11	9	3	1	18	15	34	-	42	7
PUBLIC	ESSEX	39	2.0	29	10/03	10	13	20	7	17	36	41	39	14
SOUTHERNSTATES	FFR563	39	3.8	40	10/13	11	11	15	12	9	32	36	41	10
PUBLIC	TN93-99	38	4.0	35	10/09	12	2	6	11	-	-	-	44	2
DELTAPINE	DP5354	38	6.3	42	10/11	13	15	8	1	8	-	-	42	6
PUBLIC	ACCOMAC	37	4.7	37	10/14	14	14	2	13	13	32	37	40	12
DELTAPINE	DP3519S	36	3.5	37	10/11	15	18	3	20	11	-	-	37	19
SOUTHERNSTATES	X46631STS	36	5.3	36	10/18	16	19	16	10	7	-	-	38	15
PUBLIC	WICOMICO	34	4.0	37	10/08	17	16	10	21	6	30	35	36	20
PUBLIC	FORREST	34	3.5	40	10/15	18	9	14	17	14	30	35	38	18
PUBLIC	TN5-95	34	3.5	38	10/09	19	8	13	19	4	30	34	38	17
PUBLIC	HARTWIG	32	5.3	35	10/03	20	1	4	16	18	27	29	40	11
PUBLIC	CHOSKA	29	3.0	38	10/13	21	21	18	22	20	28	-	31	22
PUBLIC	DELISOY5710	24	5.0	43	10/18	22	6	22	15	16	-	-	36	21
	Avg.	37.8	3.8	36.2										
	L.S.D.(.05)	5.1	1.4	5.5										
	%C.V.	9.6	24.8	10.5										

* 1=All Plants Erect, 9=All Plants Lodged

Table 8.

Roundup Ready Soybean Variety Performance Summary

New Castle County - Baker Farms - Middletown, Delaware

Planted 5/28/98

Harvested 10/16/98 - **Group III Maturity**

Brand	Variety	Yield Bu/A.	Lodging *	Plant Height (in.)	Maturity Date	New Castle Rank	New Castle Dbl/Crp Rank	Sussex Rank	Sussex Dbl/Crp Rank	2-Year Avg. Bu/A	1998 Pooled Avg.	1998 Pooled Rank
HYTEST	HTS4000RR	55	1.5	33.3	09/19	1	3	7	4	-	43	1
TERRA	TS398RR	55	2.3	33.0	09/19	2	10	10	19	-	38	12
HYTEST	HTS3900RR	54	1.5	33.3	09/22	3	19	2	2	-	43	2
TERRA	TS387RR	53	1.0	25.3	09/20	4	18	13	15	-	37	16
DYNAGRO	DG3398RR	53	1.5	30.0	09/22	5	17	5	14	-	39	8
PIONEER	9396	53	1.0	27.3	09/18	6	16	18	12	43	35	19
DEKALB	CX392RR	53	1.5	30.8	09/21	7	20	4	13	-	38	11
TERRA	TS396RR	52	1.0	27.3	09/21	8	14	9	3	-	41	6
HOFFMAN	R366	52	1.0	25.3	09/17	9	13	12	9	51	38	13
PIONEER	93B71	52	1.3	28.8	09/18	10	5	6	20	-	38	10
TERRA	E3680RR	51	1.0	27.5	09/17	11	7	17	5	-	38	9
DYNAGRO	UAPX254RR	51	1.0	28.8	09/20	12	6	8	11	-	40	7
TERRA	TS356RR	51	1.3	26.8	09/19	13	11	14	16	-	37	15
SOUTHERNSTATES	RT386	51	1.3	31.3	09/22	14	12	3	8	46	41	5
SOUTHERNSTATES	RT3975	50	1.0	29.0	09/21	15	2	15	1	-	43	3
DYNAGRO	UAPX246NRR	50	1.0	26.5	09/17	16	4	19	6	-	37	14
DYNAGRO	DG3368RR	48	1.0	26.0	09/18	17	15	20	10	-	34	20
SOUTHERNSTATES	RT3976	48	1.0	26.0	09/21	18	1	1	17	-	42	4
NORTHRUPKING	S39-D9	48	1.0	27.5	09/21	19	9	11	18	-	36	18
DYNAGRO	UAPX252NRR	46	1.0	27.5	09/18	20	8	16	7	-	36	17
	Avg.	51.2	1.2	28.5								
	L.S.D.(.05)	-	0.5	2.6								
	%C.V.	8.2	30.6	6.4								

* 1=All Plants Erect, 9=All Plants Lodged

Table 9 Continued.

	%C.V.	8.8	31.2	7.7
--	-------	-----	------	-----

* 1=All Plants Erect, 9=All Plants Lodged

Table 10.

Roundup Ready Soybean Variety Performance Summary

New Castle County - Baker Farms - Middletown, Delaware

Planted 5/28/98

Harvested 10/16/98 - **Group V Maturity**

Brand	Variety	Yield Bu/A.	Lodging *	Plant Height (in.)	Maturity Date	New Castle Rank	Sussex Rank	Sussex Dbl/Crp Rank	2-Year Avg. Bu/A	1998 Pooled Avg.	1998 Pooled Rank
SOUTHERNSTATES	RT517	38	5.0	36.8	10/04	1	9	9	-	41	5
TERRA	TS566RR	36	5.0	41.3	10/11	2	5	7	-	42	3
SOUTHERNSTATES	RT540N	36	5.8	39.5	10/08	3	10	3	32	42	1
UNISOUTH	USGEXP502	35	4.8	36.5	10/12	4	7	6	-	41	4
HYTEST	HTS5410RR	35	5.0	39.3	10/09	5	12	10	-	39	11
SOUTHERNSTATES	RT557	34	5.8	41.3	10/10	6	11	5	-	40	6
DEKALB	CX550RR	34	6.3	39.5	10/09	7	13	12	-	38	12
UNISOUTH	USGEXP501	32	5.5	41.0	10/15	8	4	11	-	39	10
SOUTHERNSTATES	RT560	31	5.3	37.5	10/12	9	3	8	-	40	7
PIONEER	95B41	31	4.0	36.3	10/06	10	8	1	-	42	2
SOUTHERNSTATES	RTX46652	28	4.5	39.3	10/10	11	2	4	-	40	8
UNISOUTH	USGEXP500	27	5.5	40.3	10/16	12	1	13	-	38	13
DELTAPINE	DP5644RR	24	5.3	41.8	10/12	13	6	2	-	40	9
	Avg.	32.4	5.2	39.2							
	L.S.D.(.05)	6.4	-	-							
	%C.V.	13.8	17.4	7.7							

* 1=All Plants Erect, 9=All Plants Lodged

Table 11.

Soybean Cyst Variety Performance Summary (RACE 3)

Kent County - Jackewicz Farms - Rising Sun, Delaware

Planted 5/28/98

Harvested 11/9/98 - **Group III Maturity**

Brand	Variety	Yield Bu/A.	Lodging *	Plant Height (in.)	Maturity Date	Egg Counts At Planting	Egg Counts At Harvest	Reproductive Index***	Race 3 Rank	Race 1 Rank	SCN Reaction
TERRA	E359STS	21.7	1.5	21.3	09/18	13464	1140	0.08	1	6	R 3 MS 4
TERRA	E388STS	20.7	1.5	22.5	09/19	8904	996	0.12	2	5	MR 3,4
PIONEER	9396	20.4	1.3	21.3	09/14	7566	2676	0.90	3	4	R 3,14
MYCOGEN	5331	19.1	1.3	22.3	09/16	8088	2982	0.38	4	8	R 3,14
PUBLIC	MAVERICK	18.1	1.0	25.0	09/15	11688	3828	0.34	5	9	R 3,14
HYTEST	HTS3900RR	18.1	1.0	22.8	09/23	20876	6900	0.81	6	7	R 3,M
PUBLIC	LINFORD	17.7	2.0	23.0	09/22	9780	2184	0.33	7	2	R 3
DEKALB	CX393C	16.8	1.0	20.5	09/19	11820	4038	0.48	8	3	R 3
TERRA	TR390SCN	16.3	1.0	22.0	09/19	5412	2856	0.72	9	1	R 3,4
PUBLIC	GENERAL	13.2	1.0	18.5	09/18	9106	10260	2.20	10	10	SUS.
	Avg.	18.1	1.3	21.9		10599	3786	0.65			
	L.S.D.(.05)	-	-	-		-	2414	-			
	%C.V.	27.9	35.8	11.1		92.4	44.0	133			

* 1=All Plants Erect, 9=All Plants Lodged

** Number of Eggs/0.5 pt. of Soil

*** Harvest Egg Counts/At Planting Egg Counts

Table 12.

Soybean Cyst Variety Performance Summary (RACE 3)

Kent County - Jackewicz Farms - Rising Sun, Delaware

Planted 5/28/98

Harvested 11/9/98 - **Group IV Maturity**

Brand	Variety	Yield Bu/A.	Lodging *	Plant Height (in.)	Maturity Date	Egg Counts At Planting	Egg Counts At Harvest	Reproductive Index	Race 3 Rank	Race 1 Rank	Race 5 Rank	SCN Reaction
PUBLIC	MANOKIN	41.9	2.8	29.0	10/04	9228	3012	0.44	1	10	5	R 1,3
PUBLIC	PHAROAH	36.5	1.3	25.8	10/03	17460	2808	0.15	2	18	-	R 3,14
TERRA	TS4792	33.7	1.8	28.3	09/30	14760	3576	0.28	3	12	9	R 3,14
DEKALB	CX496C	33.4	1.5	27.0	09/27	20126	1248	0.10	4	3	15	R 3
TERRA	E438	32.4	1.5	25.5	09/26	9960	2406	0.24	5	1	20	R 3,MR 14
DEKALB	CX444CRR	31.7	1.5	25.8	09/30	19380	1884	0.14	6	13	7	R 3
SOUTHERNSTATES	FFR478N	30.6	1.0	26.5	09/29	14160	1374	0.10	7	5	1	R 3,14
PIONEER	9492	29.7	1.0	24.3	09/28	8928	894	0.12	8	17	6	R 3,14
PUBLIC	DELSOY4710	29.5	1.8	24.8	10/02	11220	1680	1.17	9	20	8	R 3,14
SOUTHERNSTATES	RT446N	28.9	1.8	26.3	09/29	5088	822	0.15	10	19	11	R 3
HYTEST	HTS4301RR	27.3	1.3	24.3	09/29	8880	4926	1.43	11	6	10	R 3,4
HYTEST	BHS4500	27.2	1.3	24.8	09/29	13260	2286	0.21	12	16	16	R 3, 14
PUBLIC	REND	27.0	1.3	25.5	09/28	12780	1134	0.10	13	8	14	R 3,4
PUBLIC	CHESAPEAKE	26.7	1.3	27.3	09/30	13980	14100	1.25	14	9	12	SUS.
DEKALB	CX450C	26.6	1.5	25.3	09/27	6456	1560	0.36	15	15	13	R 3
DEKALB	CX420C	24.4	1.8	25.5	09/25	11282	2304	0.27	16	11	19	R 3
PUBLIC	INA	23.1	1.5	25.5	09/27	14220	1921	0.14	17	14	4	R 1,2,3,4,5,MS 14
MYCOGEN	429	22.9	1.0	22.8	09/25	9990	1296	0.15	18	4	21	R 3,14
PUBLIC	STRESSLAND	22.2	1.0	25.5	09/24	12840	10050	0.82	19	7	3	SUS.
MYCOGEN	5474	18.0	1.0	25.8	09/30	10152	1548	0.33	20	2	17	R 3,14
	Avg.	28.8	1.4	25.8		12249	3041	0.40				
	L.S.D.(.05)	10.2	0.6	-		8199	2032	-				
	%C.V.	24.5	31.5	10.1		46.9	47.2	174				

* 1=All Plants Erect, 9=All Plants Lodged

** Number of Eggs/0.5 pt. of Soil

*** Harvest Egg Counts/At Planting Egg Counts

Table 13.

Soybean Cyst Variety Performance Summary (RACE 3)

Kent County - Jackewicz Farms - Rising Sun, Delaware

Planted 5/28/98

Harvested 11/9/98 - **Group V Maturity**

Brand	Variety	Yield Bu/A.	Lodging *	Plant Height (in.)	Maturity Date	Egg Counts At Planting	Egg Counts At Harvest	Reproductive Index	Race 3 Rank	Race 1 Rank	Race 5 Rank	SCN Reaction
PUBLIC	ACCOMAC	43.3	2.5	30.8	10/12	12240	1374	0.16	1	9	2	R 1,3
PUBLIC	TN5-95	40.0	2.8	30.5	10/14	10440	2856	0.38	2	3	4	R 3,14
PUBLIC	WICOMICO	39.0	2.8	30.0	10/09	11700	1104	0.11	3	4	8	R 1,3
DEKALB	CX570C	38.3	2.3	32.5	10/14	6360	2094	0.34	4	8	6	R 3
PUBLIC	DELISOY5710	37.9	2.0	31.3	10/16	12798	1422	0.14	5	16	1	ALL RACES
DELTAPINE	DP5354	36.9	2.8	29.5	10/16	8880	1650	0.22	6	6	15	R 3
SOUTHERNSTATES	RT540N	36.4	1.5	26.5	10/13	11880	912	0.08	7	14	21	R 3,14
TERRA	TS504	35.6	2.0	27.3	10/11	9600	1458	0.25	8	5	5	R 3
PUBLIC	HARTWIG	35.0	2.8	29.8	10/15	10880	1032	0.07	9	17	7	R 1,3,5,9,14
PUBLIC	DELISOY5500	34.9	1.5	27.5	10/13	7800	2916	0.43	10	7	14	R 3,14
HYTEST	HTS5410RR	34.1	1.3	27.0	10/12	12320	2370	0.19	11	13	18	R 3,14
DELTAPINE	DP3519S	33.7	1.8	27.3	10/12	9180	2898	0.68	12	19	16	ALL RACES
PUBLIC	FORREST	33.2	2.7	30.0	10/13	7683	7014	1.14	13	18	3	R 1,3
DEKALB	CX510C	32.4	1.0	23.0	10/11	10160	2733	0.29	14	1	11	R 3
SOUTHERNSTATES	RT517N	32.3	1.5	26.5	10/10	7152	2718	1.35	15	10	12	R 3,14
PUBLIC	KS5292	31.1	1.5	23.8	10/12	10740	1032	0.11	16	2	10	R 1,3
SOUTHERNSTATES	FFR563N	27.5	1.3	25.3	10/16	8988	3216	0.49	17	11	13	R3,14
PUBLIC	CLIFFORD	24.3	1.5	24.5	10/11	12780	9672	0.80	18	20	20	SUS.
PIONEER	95B41	18.5	1.0	26.0	10/11	8640	16740	2.72	19	15	9	SUS.
PUBLIC	ESSEX	14.9	1.0	22.3	10/11	10920	8766	0.91	20	12	17	SUS.
	Avg.	33.0	1.8	27.5		10016	3699	0.56				
	L.S.D.(.05)	6.8	0.7	4.3		-	1646	0.89				
	%C.V.	14.6	25.8	10.9		49.0	31.4	110				

* 1=All Plants Erect, 9=All Plants Lodged

** Number of Eggs/0.5 pt. of Soil

*** Harvest Egg Counts/At Planting Egg Counts

Table 14.

Roundup-Ready Soybean Cyst Variety Performance Summary (RACE 3)

Kent County - Jackewicz Farms - Rising Sun, Delaware

Planted 5/28/98

Harvested 11/9/98 - **Group III Maturity**

Brand	Variety	Yield Bu/A	Lodging *	Plant Height (in.)	Maturity Date	SCN Egg** Counts At Planting	SCN Egg** Counts At Harvest	Reproductive Index ***	SCN Reaction
DYNAGRO	UAPX246NRR	28.1	1.0	20.3	09/27	2160	1992	0.92	R 3,14
TERRA	TS3680RR	24.0	1.0	21.8	09/21	5040	1944	0.39	R 3,MR 4
DYNAGRO	UAPX252NRR	22.6	1.0	21.0	09/22	10080	3336	0.33	R 3
TERRA	TS387RR	21.5	1.0	18.0	09/24	2160	2328	1.08	MR 3,14
HYTEST	HTS3900RR	18.0	1.0	19.5	09/24	5280	1848	0.35	R 3
	Avg.	22.8	1.0	20.1		4944	2290	0.61	
	L.S.D.(.05)	-		2.0					
	%C.V.	22.5		6.6					

* 1=All Plants Erect, 9=All Plants Lodged

** Number of Eggs/0.5 pt. of Soil

*** Harvest Egg Counts/At Planting Egg Counts

Table 15.

Roundup-Ready Soybean Cyst Variety Performance Summary (RACE 3)

Kent County - Jackewicz Farms - Rising Sun, Delaware

Planted 5/28/98

Harvested 11/9/98 - **Group IV Maturity**

Brand	Variety	Yield Bu/A	Lodging *	Plant Height (in.)	Maturity Date	SCN Egg** Counts At Planting	SCN Egg** Counts At Harvest	Reproductive Index ***	SCN Reaction
CHEMGRO	4799RR	52.7	1.5	28.0	10/02	3120	192	0.06	R3, MR 14
SOUTHERN STATES	RT446N	42.4	1.8	25.3	09/30	3600	552	0.15	R3
DEKALB	CX444CRR	41.4	1.0	24.8	10/02	2160	1566	0.73	R3
TERRA	TS466RR	40.0	1.3	27.0	10/02	5520	1104	0.20	R3, MR14
CHEMGRO	4399RR	34.6	1.0	25.3	09/30	4080	4416	1.08	R3,4
HYTEST	HTS4301RR	30.0	1.0	23.5	10/01	4080	3744	0.92	R3,4
PIONEER	94B41	28.9	1.0	22.0	09/30	960	1464	1.53	R3,14
	Avg.	38.6	1.2	25.1		3360	1863	0.67	
	L.S.D. (0.5)	-		2.6					
	% C.V.	28.5		6.9					

* 1=All Plants Erect, 9=All Plants Lodged

** Number of Eggs/0.5 pt. of Soil

*** Harvest Egg Counts/At Planting Egg Counts

Table 16.

Roundup-Ready Soybean Cyst Variety Performance Summary (RACE 3)

Kent County - Jackewicz Farms - Rising Sun, Delaware

Planted 5/28/98

Harvested 11/9/98 - **Group V Maturity**

Brand	Variety	Yield Bu/A	Lodging *	Plant Height (in.)	Maturity Date	SCN Egg** Counts At Planting	SCN Egg** Counts At Harvest	Reproductive Index ***	SCN Reaction
TERRA	TS556RR	52.1	1.5	28.5	10/18	4560	456	0.10	MR 3
SOUTHERN STATES	RT517N	50.2	1.8	25.5	10/13	5520	768	0.14	R3,14
SOUTHERN STATES	RT540N	49.1	1.5	26.3	10/12	3600	2424	0.67	R3,14
SOUTHERN STATES	RT557N	48.3	2.3	28.5	10/14	5520	528	0.10	R3
HYTEST	HTS541RR	45.5	2.0	27.8	10/18	6480	1464	0.23	R3,14
DELTAPINE	5644RR	45.3	2.3	29.3	10/22	6960	8582	1.23	R3,14
PIONEER	95B41	43.6	2.3	27.3	10/15	1920	8784	4.58	SUS.
	Avg.	47.7	1.9	27.6		4937	3287	1.01	
	L.S.D(.05)	-	-						
	%C.V.	14.0		7.4					

* 1=All Plants Erect, 9=All Plants Lodged

** Number of Eggs/0.5 pt. of Soil

*** Harvest Egg Counts/At Planting Egg Counts

Table 17.

Double-cropped Soybean Variety Performance Summary

New Castle County - Baker Farms - Middletown, Delaware

Planted 7/14/98

Harvested 11/17/98 - **Group III Maturity**

Brand	Variety	Yield Bu/A.	Lodging *	Plant Height (in.)	Maturity Date	New Castle Dbl/crp Rank	Kent Rank	Sussex Rank	Selbyville Rank	Sussex Dbl/crp Rank	New Castle Rank	1998 Pooled Yld. Avg.	1998 Pooled Rank
PUBLIC	CROTON3.9	33	1.0	27	10/15	1	21	28	2	21	20	42	8
PIONEER	P93B82	33	1.0	22	10/14	2	22	20	34	11	5	41	17
PUBLIC	LINFORD	33	1.5	31	10/14	3	5	9	3	24	23	44	3
MYCOGEN	J399	31	1.0	23	10/17	4	13	11	12	28	6	42	7
PUBLIC	MACON	30	1.0	21	10/16	5	19	25	22	31	16	40	24
HYTEST	ADMIRAL	30	1.3	26	10/13	6	11	23	9	17	21	41	13
TERRA	TS387	29	1.0	22	10/15	7	6	14	19	5	2	44	2
DYNAGRO	DG3378N	29	1.0	22	10/14	8	27	18	29	9	7	41	16
PIONEER	P93B81	28	1.0	23	10/17	9	16	1	25	15	8	43	6
PUBLIC	SALINE	28	1.3	25	10/12	10	1	3	27	29	30	41	14
PUBLIC	IROQUOIS	27	1.0	23	10/12	11	31	26	16	7	27	39	27
DEKALB	CX400	27	1.0	23	10/17	12	4	17	6	34	1	42	10
DEKALB	CX393C	27	1.0	21	10/15	13	30	15	26	4	29	39	25
PUBLIC	SANDUSKY	27	1.0	24	10/11	14	23	33	35	32	24	36	30
HOFFMAN	7353	26	1.0	23	10/14	15	8	19	30	2	9	42	9
HOFFMAN	3396	26	1.0	24	10/16	16	3	8	21	27	14	42	12
PUBLIC	PANA	26	1.0	25	10/10	17	2	2	13	8	17	44	4
PUBLIC	GENERAL	25	1.0	20	10/14	18	9	22	8	6	4	43	5
TERRA	TS364T	25	1.0	21	10/14	19	25	13	32	10	10	40	19
PUBLIC	FLINT	25	1.0	23	10/12	20	18	30	20	20	11	39	26
PUBLIC	THORNE	25	1.0	21	10/12	21	32	32	5	23	3	40	22
HYTEST	HTS3500STS	24	1.0	23	10/13	22	33	21	28	19	32	38	29
DEKALB	CX375	23	1.0	22	10/14	23	17	34	24	16	18	38	28
PUBLIC	KS3494	23	1.0	25	10/11	24	35	27	33	30	35	35	35
SOUTHERNSTATES	FFR396	23	1.0	21	10/16	25	34	31	23	33	33	35	32
DYNAGRO	DG3395	23	1.0	24	10/15	26	29	6	7	25	26	40	21
HOFFMAN	7403	22	1.0	21	10/17	27	15	16	11	12	13	41	15
PUBLIC	MAVERICK	21	1.0	27	10/12	28	14	7	10	3	15	42	11

Table 17 Continued.

MYCOGEN	5337	21	1.0	22	10/12	29	12	10	14	14	19	40	18
PUBLIC	FG1	19	1.0	22	10/12	30	28	24	15	35	28	35	33
SOUTHERNSTATES	HT381STS	18	1.0	25	10/17	31	7	12	18	22	12	40	20
PUBLIC	NE3297	18	1.3	25	10/12	32	20	35	17	18	34	36	31
TERRA	E394	18	1.0	25	10/15	33	10	4	1	1	22	44	1
PUBLIC	PROBST	17	1.0	21	10/13	34	26	5	4	13	31	40	23
PUBLIC	FG2	14	1.0	22	10/10	35	24	29	36	26	25	35	34
	Avg.	24.8	1.0	23.3									
	L.S.D.(.05)	6.8	-	3.5									
	%C.V.	16.8	18.4	9.1									

* 1=All Plants Erect, 9=All Plants Lodged

Table 18.

Double-cropped Soybean Variety Performance Summary

New Castle County - Baker Farms - Middletown, Delaware

Planted 7/14/98

Harvested 11/17/98 - **Group IV Maturity**

Brand	Variety	Yield Bu/A.	Lodging *	Plant Height (in.)	Maturity Date	New Castle Dbl/crp Rank	Kent Rank	Sussex Rank	Selbyville Rank	Sussex Dbl/crp Rank	New Castle Rank	1998 Pooled Yld. Avg.	1998 Pooled Rank
TERRA	TS474	40	2.0	26	10/23	1	10	10	5	29	4	48	3
TERRA	TS415	38	1.0	26	10/18	2	16	18	4	23	16	47	6
MYCOGEN	5404	38	1.3	26	10/16	3	19	25	8	12	24	46	9
CLARK'S	CL48	37	1.3	27	10/21	4	3	34	1	1	10	50	1
PUBLIC	NILE	37	1.3	29	10/14	5	40	33	50	40	47	39	40
DEKALB	CX470C	35	1.3	28	10/21	6	14	2	15	9	34	47	5
PUBLIC	HS93-4118	35	1.0	26	10/14	7	42	40	25	8	5	44	18
SOUTHERNSTATES	FFR478N	34	1.0	28	10/24	8	32	30	35	10	25	43	22
DELTAPINE	DP3478	34	1.3	27	10/21	9	6	17	12	4	14	48	4
UNISOUTH	USG-EXP401	34	1.0	25	10/19	10	5	6	6	2	15	50	2
PUBLIC	STRESSLAND	34	1.7	28	10/20	11	18	27	11	5	8	46	8
CHEMGRO	4559	34	1.0	27	10/21	12	45	45	33	31	41	40	39
SOUTHERNSTATES	FFR493	33	1.0	28	10/29	13	11	26	24	26	27	44	14
DEKALB	CX494	33	1.3	26	10/22	14	12	11	3	16	36	47	7
PUBLIC	INA	33	1.7	30	10/18	15	30	9	19	36	29	44	17
HYTEST	BHS4500	32	1.3	26	10/22	16	34	47	44	20	45	40	37
HYTEST	HTS4110STS	32	1.0	24	10/19	17	47	32	32	13	9	43	23
MYCOGEN	5430	32	1.0	25	10/21	18	25	16	31	7	22	44	15
PUBLIC	MANOKIN	32	3.7	31	10/30	19	4	5	17	27	50	45	13
UNISOUTH	USG-EXP400N	32	1.0	26	10/21	20	21	36	29	48	20	41	26
PUBLIC	KS4895	32	1.3	26	10/29	21	2	19	7	32	18	46	10
DYNAGRO	DG3444N	31	1.0	26	10/22	22	46	49	47	35	42	38	48
PIONEER	9421	30	1.0	25	10/20	23	23	21	46	14	7	43	19
SOUTHERNSTATES	FFR439	29	1.3	30	10/21	24	38	41	16	18	6	42	24
CAVERNDALEFARMS	CF492	28	1.0	21	10/26	25	26	28	43	11	44	41	32
PUBLIC	SN92-6633	27	1.3	26	10/20	26	51	38	18	37	31	39	41
PUBLIC	TN4-94	27	1.3	27	10/25	27	7	37	41	47	30	41	31
PUBLIC	REND	27	1.3	27	10/18	28	29	44	36	33	2	41	29

Table 18 Continued.

DYNAGRO	UAPX253N	26	1.7	25	10/20	29	27	8	14	3	13	46	11
PUBLIC	DELSOY4710	26	1.7	28	10/21	30	13	22	40	46	46	41	33
UNISOUTH	USG-EXP402	26	1.0	27	10/21	31	36	39	28	19	11	41	27
PIONEER	9452	26	1.0	22	10/21	32	39	31	42	51	33	38	45
PUBLIC	CISNE	24	1.0	23	10/20	33	33	50	20	25	17	40	35
PUBLIC	CHESAPEAKE	24	1.3	28	10/22	34	9	29	37	22	38	42	25
CLARK'S	DOLPHIN	24	2.0	31	10/20	35	22	1	21	38	28	44	16
CHEMGRO	4859	24	1.0	26	10/22	36	31	13	2	6	26	45	12
NORTHROPKING	S42-60	24	1.0	24	10/21	37	37	42	30	49	21	39	44
PUBLIC	BRONSON	23	1.7	27	10/17	38	50	23	26	50	39	38	46
PUBLIC	DEFIANCE	23	1.0	22	10/14	39	24	46	10	21	37	40	34
PUBLIC	KS4694	23	1.3	26	10/21	40	20	7	45	45	35	41	30
PUBLIC	KY91-1214	22	1.0	25	10/20	41	48	12	23	42	48	39	42
CAVERNDALEFARMS	CF461	20	1.3	27	10/20	42	17	24	34	15	3	43	20
PUBLIC	CORSICA	20	1.3	25	10/20	43	41	48	22	41	19	39	43
SOUTHERNSTATES	EXP46616STS	19	3.7	32	11/01	44	8	3	39	17	51	41	28
UNISOUTH	USG-EXP403	16	1.0	25	10/20	45	43	43	13	24	12	40	38
TERRA	TS4792	16	1.3	29	10/21	46	1	4	38	39	23	43	21
PUBLIC	KS4997	15	1.3	27	10/26	47	35	20	48	43	32	38	47
DEKALB	CX400	15	1.0	23	10/18	48	44	35	9	44	1	40	36
	Avg.	28.2	1.3	26.5									
	L.S.D.(.05)	8.9	0.8	3.4									
	%C.V.	19.3	36.0	7.8									

* 1=All Plants Erect, 9=All Plants Lodged

Table 19.

Double-cropped Roundup Ready Soybean Variety Performance Summary

New Castle County - Baker Farms - Middletown, Delaware

Planted 7/14/98

Harvested 11/19/98 - **Group III Maturity**

Brand	Variety	Yield Bu/A.	Lodging *	Plant Height (in.)	Maturity Date	New Castle Rank	New Castle Dbl/Crp Rank	Sussex Rank	Sussex Dbl/Crp Rank	1998 Pooled Avg.	1998 Pooled Rank
SOUTHERNSTATES	RT3976	36	1.0	25.3	10/15	18	1	1	17	42	4
SOUTHERNSTATES	RT3975	33	1.0	25.7	10/14	15	2	15	1	43	3
HYTEST	HTS4000RR	27	1.0	27.3	10/14	1	3	7	4	43	1
DYNAGRO	UAPX246NRR	27	1.0	23.0	10/13	16	4	19	6	37	14
PIONEER	93B71	27	1.0	23.0	10/14	10	5	6	20	38	10
DYNAGRO	UAPX254RR	26	1.0	23.7	10/11	12	6	8	11	40	7
TERRA	E3680RR	25	1.0	23.3	10/15	11	7	17	5	38	9
DYNAGRO	UAPX252NRR	24	1.0	23.0	10/14	20	8	16	7	36	17
NORTHROPKING	S39-D9	24	1.0	22.7	10/16	19	9	11	18	36	18
TERRA	TS398RR	24	1.0	23.7	10/17	2	10	10	19	38	12
TERRA	TS356RR	24	1.0	21.0	10/13	13	11	14	16	37	15
SOUTHERNSTATES	RT386	23	1.0	23.7	10/19	14	12	3	8	41	5
HOFFMAN	R366	22	1.0	22.0	10/15	9	13	12	9	38	13
TERRA	TS396RR	21	1.0	23.0	10/19	8	14	9	3	41	6
DYNAGRO	DG3368RR	21	1.0	21.3	10/15	17	15	20	10	34	20
PIONEER	9396	20	1.0	23.3	10/14	6	16	18	12	35	19
DYNAGRO	DG3398RR	20	1.0	23.7	10/20	5	17	5	14	39	8
TERRA	TS387RR	19	1.0	19.3	10/14	4	18	13	15	37	16
HYTEST	HTS3900RR	19	1.0	25.3	10/20	3	19	2	2	43	2
DEKALB	CX392RR	16	1.0	25.0	10/14	7	20	4	13	38	11
	Avg.	23.9	1.0	23.4							
	L.S.D.(.05)	8.3		3.0							
	%C.V.	21.0		7.6							

* 1=All Plants Erect, 9=All Plants Lodged

Table 20.

Double-cropped Roundup Ready Soybean Variety Performance Summary

New Castle County - Baker Farms - Middletown, Delaware

Planted 7/14/98

Harvested 11/19/98 - **Group IV Maturity**

Brand	Variety	Yield Bu/A.	Lodging *	Plant Height (in.)	Maturity Date	New Castle Rank	New Castle Dbl/Crp Rank	Sussex Rank	Sussex Dbl/Crp Rank	1998 Pooled Avg.	1998 Pooled Rank
TERRA	E4280RR	34	1.0	25.3	10/20	1	1	25	3	42	5
CLARK'S	CL42RR	33	1.0	26.3	10/18	2	2	23	23	42	4
DEKALB	CX444CRR	32	1.0	24.7	10/22	6	3	2	2	46	1
SOUTHERNSTATES	RT467	30	1.0	25.7	10/22	15	4	14	19	40	11
DELTAPINE	DP4750RR	27	1.0	29.7	10/25	24	5	8	7	40	12
CHEMGRO	4799RR	27	1.0	29.3	10/22	10	6	9	4	42	3
NORTHRUPKING	S42-K2	26	1.0	24.7	10/21	4	7	21	17	39	15
DEKALB	CX419RR	26	1.0	28.3	10/14	11	8	4	22	40	10
DEKALB	CX485RR	25	1.0	24.3	10/22	22	9	3	15	41	7
SOUTHERNSTATES	RT446N	25	1.0	25.3	10/20	3	10	11	1	42	2
HYTEST	HTS4301RR	25	1.0	24.0	10/20	16	11	7	13	40	9
TERRA	TS466RR	25	1.0	27.7	10/22	20	12	5	8	41	8
CHEMGRO	4399RR	24	1.0	26.7	10/18	9	13	26	5	36	23
DEKALB	CX456RR	23	1.0	27.3	10/21	19	14	24	9	35	24
TERRA	E4680RR	23	1.0	25.3	10/23	21	15	1	12	41	6
NORTHRUPKING	S46-W8	22	1.0	25.0	10/21	23	16	15	24	37	19
CLARK'S	CL44RR	22	1.0	28.7	10/21	8	17	16	10	39	13
PIONEER	94B41	19	1.0	24.3	10/20	17	18	13	16	38	17
DEKALB	CX460RR	19	1.0	29.7	10/22	13	19	10	21	38	16
DYNAGRO	UAPX245	18	1.0	22.0	10/21	12	20	17	14	37	18
SOUTHERNSTATES	RT447	18	1.0	24.0	10/20	14	21	18	26	36	21
DYNAGRO	3463RR	17	1.0	27.0	10/22	18	22	20	20	36	22
SOUTHERNSTATES	EXPRT24813	17	1.0	24.7	10/22	7	23	19	18	37	20
DELTAPINE	DP4969RR	17	1.3	28.3	10/23	26	24	12	25	32	26
PIONEER	94B81	17	1.0	27.7	10/22	25	25	22	11	34	25
DELTAPINE	DP4344RR	15	1.0	31.3	10/22	5	26	6	6	39	14
	Avg.	23.1	1.0	26.4							
	L.S.D.(.05)	8.6	-	3.0							

Table 20 Continued.

	%C.V.	22.4	11.2	6.9
--	-------	------	------	-----

* 1=All Plants Erect, 9=All Plants Lodged

Mention or display of a trademark, proprietary product, or firm in text or figures does not constitute an endorsement by Rutgers Cooperative Extension and does not imply approval to the exclusion of other suitable products or firms.

**Rutgers Cooperative Extension
N. J. Agricultural Experiment Station
Rutgers, The State University of New Jersey
New Brunswick**

Distributed in cooperation with U. S. Department of Agriculture in furtherance of the Acts of Congress of May 8 and June 30, 1914. Cooperative Extension work in agriculture, family and consumer sciences, and 4-H. Zane R. Helsel, director of Extension. Rutgers Cooperative Extension provides information and educational services to all people without regard to sex race, color, national origin, disability or age. Rutgers Cooperative Extension is an Equal Opportunity Employer.

THE STATE UNIVERSITY OF NEW JERSEY
RUTGERS
