12-1987

Soybean Variety Tests, 1987

University of Tennessee Agricultural Experiment Station

Charles R. Graves

Albert Y. Chambers

Melvin A. Newman

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Research Report 87-17
December 1987

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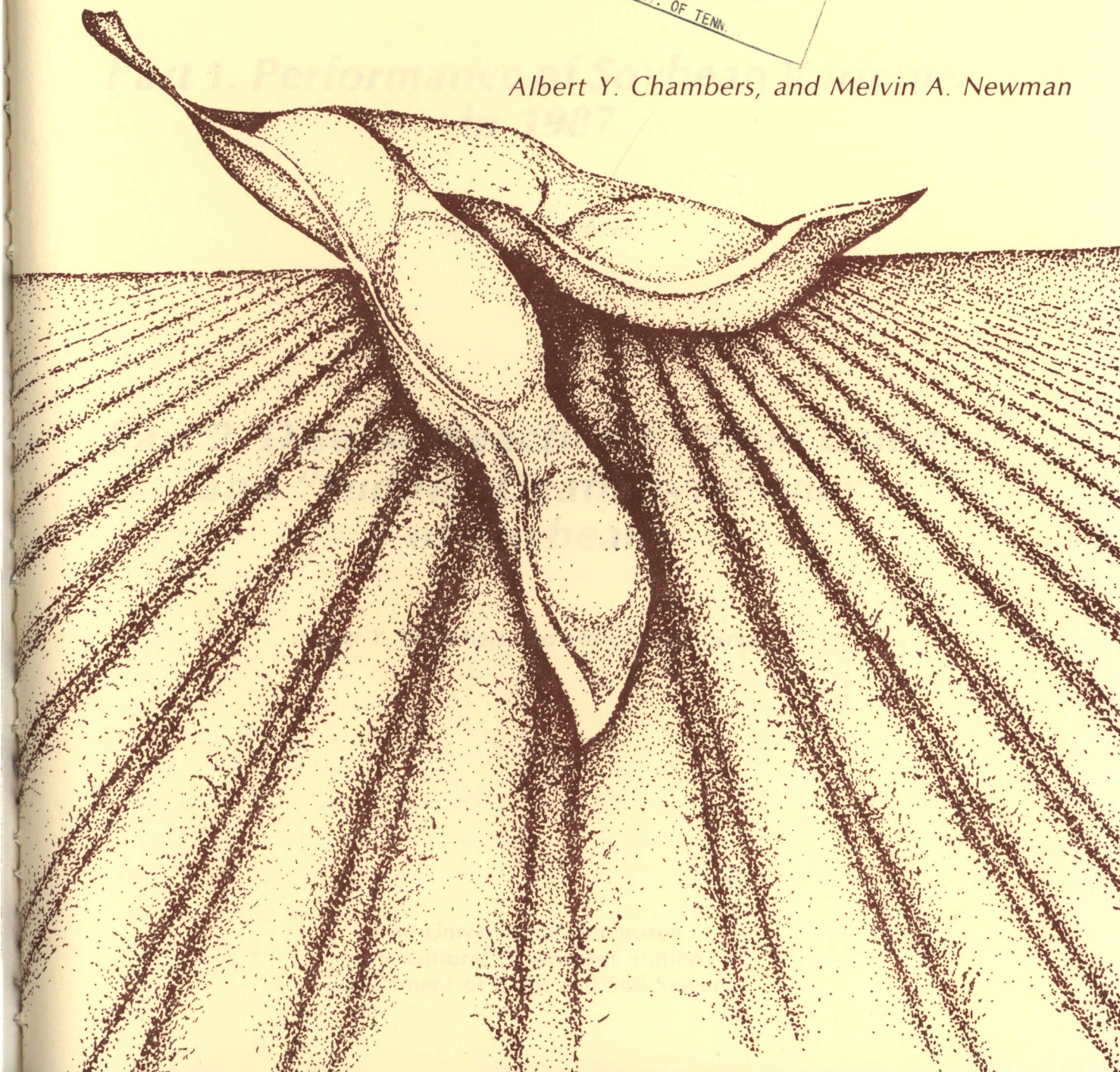

Soybean Variety Tests, 1987

Part 1. Performance of Soybean Varieties in 1987

Charles R. Graves

Part 2. Disease Reaction to Stem Canker and "Sudden Death Syndrome" of Soybeans

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Soybean Variety Tests, 1987

PERFORMANCE OF SOYBEAN VARIETIES IN 1987

DISEASE REACTION TO STEM CANKER AND 'SUDDEN DEATH SYNDROME' OF SOYBEANS

CONTENTS

Personnel:

Charles R. Graves, Professor of Plant and Soil Science

Cooperators:

J. M. Anderson, Superintendent, Ames Plantation, Grand Junction

John Bradley, Superintendent, Milan Experiment Station, Milan

James F. Brown, Superintendent, West Tennessee Experiment Station, Jackson

Robert D. Freeland, Superintendent, Plateau Experiment Station, Crossville

Harry A. Henderson, Superintendent, Martin Experiment Station, Martin

Joe W. High, Jr., Superintendent, Middle Tennessee Experiment Station, Spring Hill

John Hodges III, Superintendent, Middle Tennessee Experiment Station, Springfield

Albert Y. Chambers, Professor of Entomology and Plant Pathology, Agricultural Experiment Station, Jackson

Melvin A. Newman, Professor of Entomology and Plant Pathology, Agricultural Extension Service, Jackson

B. Hathcock, Associate Professor of Agronomy, University of Tennessee at Martin

Gordon Percell, Senior Research Assistant, University of Tennessee, Jackson

Roy Thompson, Senior Research Assistant, University of Tennessee, Spring Hill

M. Smith, Research Associate, Ames Plantation, Grand Junction

Lawrence D. Young, Research Plant Pathologist, USDA-ARS, West Tennessee Experiment Station, Jackson

University of Tennessee
Agricultural Experiment Station
John I. Sewell, Acting Dean, Knoxville

Performance of Soybean Varieties in 1987

Charles R. Graves
Professor of Plant and Soil Science

The soybean variety trials (Maturity Group V) were conducted at seven locations across the state in 1987 (Tables 1 and 2). No data from Springfield are reported for Maturity Group V because of missing plots resulting from animal injury. The yields were good at Knoxville, Martin, and Milan. Low yields were obtained at Greeneville, Spring Hill, and Ames Plantation due to dry weather during the flowering and pod filling periods.

The leading medium-maturing varieties (Maturity Group V) in 1987 were Deltapine 415, Deltapine 105, Coker 485, FFR 562, and N.K. S53-34. Using a three-year average, the five highest-yielding varieties were Coker 485, FFR 561, Deltapine 105, FFR 562, and Essex.

Thirty-four late-maturing (Maturity Group VI & VII) varieties were evaluated at four locations in 1987 (Tables 7 and 8). Asgrow A6785, Coker RA 606, Yield King 593, Yield King 613, and Winner were the leading late-maturing varieties in 1987. Deltapine 417 did not perform well at most locations.

Early-maturing varieties (Maturity Group IV) were evaluated at five locations in 1987 (Tables 13 and 14). The five leading varieties in yield using the average across all locations were Asgrow A4906, Pioneer brand 9442, Coker RA 452, Pennyrile, and Pershing. TN 4-86 performed well at Milan, Ames Plantation, and Knoxville, but was next to last in average yield at Crossville. Pershing and Coker RA 452 have performed well for several years with good resistance to lodging; however, both varieties are on the late side of Maturity Group IV.

At Jackson, forty-seven soybean strains were evaluated in 1987. Seventeen were in Maturity Group V, nine in Maturity Group IV, and twelve in Maturity Group VI or later.

In 1987, Lawrence D. Young evaluated several soybean varieties at Jackson in the greenhouse during the summer for susceptibility to soybean cyst nematodes (Tables 22 to 24). The rating was based on a scale of 0, 1, 2, 3, and 4, with 4 being most severe. A mean severity rating was obtained by multiplying the rating times the number of plants with that rating divided by the total number of plants.

Example 1:

8 plants with a rating of 4 each = 8 x 4 = 32/8 = 4.0 mean severity index

Example 2:

(3 plants x 2 rating = 6) + (2 plants x 1 rating = 2) + (3 plants x 0 rating = 0) =

6 + 2 + 0 = 8 divided by 8 total plants = 1.0 mean severity index.

Recommended Soybean Varieties for 1988

Brand	Variety	Resistant to: Cyst Nematode Races	Resistant to: Stem Canker Rating[1]	Brand	Variety	Resistant to: Cyst Nematode Races	Resistant to: Stem Canker Rating[1]
		(3 or 4)	(0-5)			(3 or 4)	(0-5)
			Medium Maturity Group V				
Asgrow	A5474	3,4	4.0	Pioneer	9561	3	---[2]
Asgrow	A5980	3,4	4.0	Tenn.	TN 5-85	3	2.0
	Bedford	3,4	4.0	Va.	Bay	None	0.3
Coker	355[3]	3,4	4.0	Coker	425	None	3.2
Pioneer	9571	3,4	---[2]	Deltapine	105	None	4.0
Coker	485	3	2.5	Va.	Essex	None	2.3
	Forrest	3	4.2	FFR	561	None	0.2
Hartz	5171	3	4.5	FFR	562	None	0.2
Hartz	5252	3	4.1	Pioneer	5482	None	3.8
Hartz	5370	3	2.5	Coker	RA 502[3]	None	---[2]
			Late and Very Late Maturity Groups VI & VII				
Asgrow	A6520[3]	3,4	3.0	Hartz	7126[3]	3	4.2
Asgrow	A6242	3,4	4.3	Yield King	593	3	4.8
	Leflore	3,4	---[2]	Yield King	613	3	3.5
HyPer.	Shiloh	3,4	0.0				
	Centennial	3	2.0	Coker	156[3]	None	---[2]
Coker	RA 604	3	4.8	Deltapine	566	None	1.7
Hartz	6383R[3]	3	3.5	N.K.	S69-96[3]	None	4.7
			Early Maturing Group IV				
Tenn.	TN 4-86	3,4	0.5	Pioneer	9471	None	1.5
Coker	RA 452	None	0.5	Mo.	Pershing	None	2.5

[1] Ratings made by Albert Chambers Professor of Plant Pathology, West Tennessee Experiment Station, Jackson. Stem Canker ratings based on a scale of 0 through 5 with 0 = no disease and 5 = severe.

[2] --- space means variety was not included in the disease test due to various reasons.

[3] Present plans indicate that this variety will not be recommended after 1988.

Table 1. Soybeans: Yield of varieties (Maturity Group V) evaluated at six locations in 1987.

Brand	Variety	Avg.	1/ Knox-ville	2/ Greene-ville	3/ Spring Hill	4/ Milan	4/ Martin	5/ Ames Plantation
					Bushels per acre			
Deltapine	415	38	44	32	29	59	39	23
Deltapine	105	37	43	30	29	52	43	24
Coker	485	36	44	35	28	55	38	19
FFR	562	36	44	34	29	49	40	19
N.K.	S53-34	36	50	22	34	49	40	18
AgraTech	AT575	35	39	29	27	57	41	19
Pioneer	9541	35	44	31	30	47	37	23
Capehart	5636	35	49	20	30	49	40	22
Capehart	5896	35	36	31	31	54	36	19
FFR	561	34	44	25	29	47	37	23
FFR	565	34	40	29	26	49	39	22
Va.	Bay	34	44	27	33	49	31	21
Coker	425	34	41	22	34	48	36	22
Hartz	5370	34	48	22	26	48	40	19
Pioneer	5482	34	46	23	26	52	36	20
Tenn.	TN 5-85	34	45	26	28	52	34	18
Hartz	5164	34	48	30	23	51	33	18
Capehart	5646	33	44	25	26	53	33	19
Hartz	5171	33	38	35	28	50	30	19
Va.	Essex	33	36	24	35	48	35	21
Yield King	577	33	38	28	28	51	36	17
Asgrow	A5980	33	46	28	27	49	27	19
Hartz	5252	33	43	28	28	50	32	17
Coker	Co82-372	33	41	28	27	48	34	18
Asgrow	A5474	32	41	25	28	45	35	21
Funk	M82-572403	32	42	30	25	48	31	18
AgraTech	AT550	32	44	21	27	51	34	16
Coker	80R-49	32	39	24	29	49	32	19
Pioneer	9581	32	39	19	27	45	40	20
FFR	560	32	41	27	21	48	31	21
N.K.	S59-19	31	40	22	27	45	33	21
	Forrest	31	38	28	25	45	31	20
	Bedford	31	40	23	24	41	38	19
	Epps	31	41	22	23	45	35	20
Coker	355	31	41	26	22	48	32	17
Pioneer	9531	31	34	19	30	51	31	20
Tenn. Exp	83-26	28	37	20	27	41	28	18
Deltapine	675	27	39	20	24	42	24	14
L.S.D. (.05)		3.2	9.2	8.2	4.2	7.9	6.4	3.7
C.V.%		16.7	15.7	22.4	10.8	11.6	13.3	13.5
Avg.		33.1	41.8	26.0	27.7	48.9	34.8	19.6

1/Sequatchie silt loam (2% to 5% slopes).
2/Waynesboro loam (2% to 5% slopes).
3/Maury silt loam (2% to 5% slopes).
4/Collins silt loam (2% to 5% slopes).
5/Loring silt loam (2% to 5% slopes).

Table 2. Soybeans: Yield and other characteristics of varieties (Maturity Group V) evaluated at six locations in 1987.

Brand	Variety	Avg. Yield	Date Full Bloom	Date Mature	Plant Ht.	Lodging	Flower Color	Pubes-cence Color	Date Last Flower	Date First Pod
		Bu/A			in.	%				
Deltapine	415	38	7-5	9-23	39	3	P	G	7-26	8-14
Deltapine	105	37	7-10	9-29	41	3	P	G	8-6	8-26
Coker	485	36	7-9	9-29	37	6	P	T	8-2	8-22
FFR	562	36	7-9	9-29	43	4	P	G	8-10	8-27
N.K.	S53-34	36	7-9	9-20	34	3	P	G	8-1	8-19
AgraTech	AT575	35	7-11	9-28	40	3	W	G	8-10	8-19
Pioneer	9541	35	7-8	9-15	33	2	P	G	7-22	8-11
Capehart	5636	35	7-7	9-23	38	3	W	G	8-1	8-15
Capehart	5896	35	7-9	9-28	41	2	W	G	8-10	8-23
FFR	561	34	7-4	9-25	38	2	W	G	7-24	8-11
FFR	565	34	7-6	9-24	39	4	W	T	8-6	8-17
Va.	Bay	34	7-5	9-24	38	1	P	G	7-29	8-18
Coker	425	34	7-3	9-15	32	2	P	T	7-23	8-11
Hartz	5370	34	7-9	9-28	42	3	W	T	8-5	8-26
Pioneer	5482	34	7-5	9-21	35	2	W	T	7-22	8-10
Tenn. 8-18	TN 5-85	34	7-7	9-22	39	6	W	G	7-26	
Hartz	5164	34	7-7	9-27	39	8	W	T	7-26	8-23
Capehart	5646	33	7-5	9-24	38	3	W	T	8-1	8-12
Hartz	5171	33	7-10	9-29	40	12	W	G	8-7	8-23
Va.	Essex	33	7-4	9-18	31	2	P	G	7-25	8-10
Yield King	577	33	7-8	9-27	41	11	W	G	8-9	8-23
Asgrow	A5980	33	7-7	9-23	43	11	P	T	8-3	8-23
Hartz	5252	33	7-79	9-24	38	6	P	T	7-31	8-21
Coker	Co82-372	33	7-10	9-27	45	5	W	T	8-7	8-20
Asgrow	A5474	32	7-5	9-22	40	2	W	T	7-25	8-14
Funk	M82-572403	32	7-8	9-23	37	2	W	G	8-2	8-18
AgraTech	AT550	32	7-9	9-28	44	4	P	T	8-10	8-18
Coker	80R-49	32	7-4	9-18	34	1	P	T	7-23	8-13
Pioneer	9581	32	7-5	9-25	38	4	W	T	7-29	8-21
FFR	560	32	7-5	9-29	43	12	W	T	8-10	8-25
N.K.	S59-19	31	7-7	9-21	39	7	W	T	7-26	8-18
	Forrest	31	7-7	9-26	37	4	W	T	8-3	8-19
	Bedford	31	7-10	9-26	47	10	W	T	8-7	8-21
	Epps	31	7-8	9-23	37	15	P	G	7-29	8-24
Coker	355	31	7-84	9-25	39	3	P	T	7-29	8-26
Pioneer	9531	31	7-47	9-22	37	2	P	T	7-26	8-11
Tenn. Exp	83-26	28	7-36	9-23	45	2	W	T	7-29	8-17
Deltapine	675	27	7-10	9-25	43	2	W	T	8-6	8-21

Table 3. Soybeans: Yield of varieties (Maturity Group V) evaluated at six locations for two years (1986-87).

Brand	Variety	Avg.	Knox-ville	Greene-ville	Spring Hill	Milan	Martin	Ames Plantation
				Bushels per acre				
Deltapine	415	42	51	37	39	58	40	25
Coker	485	41	49	38	36	57	44	21
Deltapine	105	40	48	36	35	53	44	25
FFR	562	40	48	37	38	50	43	21
FFR	561	40	48	31	38	51	43	26
Va.	Essex	39	44	33	39	52	41	23
Coker	425	39	47	27	39	55	41	22
Pioneer	5482	38	50	31	35	51	41	23
Yield King	577	38	51	30	33	53	43	21
Hartz	5370	38	54	31	35	48	41	22
	TN 5-85	38	52	30	34	51	39	22
Hartz	5252	38	52	32	36	50	38	19
Hartz	5171	38	48	36	37	50	36	19
Pioneer	9581	37	48	29	35	48	42	22
Coker	80R-49	37	48	31	33	49	37	20
Asgrow	A5980	36	50	32	34	49	33	19
Asgrow	A5474	36	48	29	33	47	37	21
	Forrest	36	50	30	35	44	36	20
N.K.	S59-19	36	43	28	35	48	36	23
FFR	560	36	47	31	30	47	37	22
Coker	355	35	47	32	31	45	38	20
	Epps	35	45	30	30	43	38	23
	Bedford	35	44	29	30	42	41	22
Exp.	TN83-26	33	43	26	30	44	35	19
Deltapine	675	32	48	27	31	43	28	17
L.S.D. (.05)		2.2	6.5	5.2	4.2	4.9	6.0	2.7
C.V. %		15.0	13.7	16.8	12.3	10.0	15.6	13.1
Avg.		37.2	48.2	31.3	34.5	49.2	39.0	21.4

Table 4. Soybeans: Yield and other characteristics of varieties (Maturity Group V) evaluated at six locations for two years (1986-87).

Brand	Variety	Avg. Yield	Date Full Bloom	Date Last Flower	Date Mature	Plant Height	Lodging	Flower Color	Pubescence Color
		Bu/A				in.	%		
Deltapine	415	42	7-14	7-26	9-26	37	3	P	G
Coker	485	41	7-16	8-2	10-5	36	11	P	T
Deltapine	105	40	7-18	8-6	9-30	40	10	P	G
FFR	562	40	7-18	8-10	10-2	42	3	P	G
FFR	561	40	7-12	7-24	9-30	37	1	W	G
Va.	Essex	39	7-12	7-25	9-24	31	2	P	G
Coker	425	39	7-10	7-23	9-26	30	1	P	T
Pioneer	5482	38	7-13	7-22	9-28	37	5	W	T
Yield King	577	38	7-16	8-9	9-30	40	20	W	G
Hartz	5370	38	7-17	8-5	10-2	40	3	W	T
	TN 5-85	38	7-13	7-26	9-26	39	6	W	G
Hartz	5252	38	7-15	7-30	9-28	38	5	P	T
Hartz	5171	38	7-18	8-7	10-2	40	12	W	G
Pioneer	9581	37	7-13	7-29	9-29	38	7	W	T
Coker	80R-49	37	7-12	7-23	9-25	33	2	P	T
Asgrow	A5980	36	7-16	8-3	9-28	41	17	P	T
Asgrow	A5474	36	7-14	7-25	9-25	39	3	W	T
	Forrest	36	7-14	8-3	9-28	37	3	W	T
N.K.	S59-19	36	7-16	7-26	9-24	36	5	W	T
FFR	560	36	7-16	8-10	9-29	42	18	W	T
Coker	355	35	7-16	7-29	9-29	39	4	P	T
	Epps	35	7-15	7-29	9-26	37	16	P	G
	Bedford	35	7-19	8-7	9-29	44	16	W	T
Exp.	TN83-26	33	7-11	7-29	9-25	43	1	P	T
Deltapine	675	32	7-18	8-6	9-28	42	3	W	T

Table 5. Soybeans: Yield of varieties (Maturity Group V) evaluated at five locations for three years (1985-87).

Brand	Variety	Avg.	Knox-ville	Greene-ville	Spring Hill	Milan	Ames Plantation
				Bushels per acre			
Coker	485	44	50	37	40	60	32
FFR	561	43	46	36	45	52	38
Deltapine	105	43	49	39	41	49	36
FFR	562	43	48	39	42	50	34
Va.	Essex	43	44	37	45	52	36
Tenn.	TN 5-85	42	50	32	40	55	34
Coker	425	42	47	33	44	54	33
Pioneer	5482	42	49	35	41	52	34
Hartz	5252	42	51	35	40	52	31
Asgrow	A5980	41	50	35	40	51	31
Hartz	5171	41	47	36	41	51	32
Hartz	5370	41	51	32	39	51	33
	Forrest	41	50	33	42	47	32
Asgrow	A5474	41	47	34	40	50	32
FFR	560	39	47	33	36	50	32
Coker	355	39	48	33	37	48	31
	Bedford	39	45	31	36	48	33
	Epps	38	46	33	33	47	32
L.S.D. (.05)		2.1	5.4	4.8	3.6	4.2	2.8
C.V. %		13.9	14.0	17.3	11.2	10.2	10.4
Avg.		41.3	48.0	34.7	40.0	51.0	33.0

Table 6. Soybeans: Yield and other characteristics of varieties (Maturity Group V) evaluated at five locations for three years (1985-87).

Brand	Variety	Avg. Yield	Date Full Bloom	Date Last Flower	Date Mature	Plant Height	Lodging	Flower Color	Pubescence Color
		Bu/A				in.	%		
Coker	485	44	7-17	8-4	10-5	36	16	P	T
FFR	561	43	7-13	7-30	9-29	36	2	W	G
Deltapine	105	43	7-18	8-6	10-1	40	14	P	G
FFR	562	43	7-18	8-9	10-2	42	6	P	G
Va.	Essex	43	7-12	7-26	9-25	31	5	P	G
Tenn.	TN 5-85	42	7-14	7-31	9-27	39	12	W	G
Coker	425	42	7-12	7-29	9-27	30	2	P	T
Pioneer	5482	42	7-13	8-1	10-1	39	11	W	T
Hartz	5252	42	7-16	8-3	9-23	38	10	P	T
Asgrow	A5980	41	7-16	8-5	9-31	42	21	P	T
Hartz	5171	41	7-18	8-7	10-2	41	13	W	G
Hartz	5370	41	7-17	8-6	10-2	40	8	W	T
	Forrest	41	7-14	8-3	9-29	38	5	W	T
Asgrow	A5474	41	7-15	7-31	9-27	39	5	W	T
FFR	560	39	7-17	8-11	10-2	43	20	W	T
Coker	355	39	7-16	8-3	10-1	38	9	P	T
	Bedford	39	7-21	8-8	10-2	45	19	W	T
	Epps	38	7-16	8-3	9-28	37	27	P	G

Table 7. Soybeans: Yield of varieties (Maturity Group VI & VII) evaluated at four locations in 1987.

Brand	Variety	Avg.	1/ Knoxville	2/ Spring Hill	3/ Milan	4/ Ames Plantation
				Bushels per acre		
Asgrow	A6785	41	41	31	43	50
Funk	M82-57206	41	38	36	47	42
Coker	RA 606	39	27	31	47	52
Yield King[5/]	593	39	28	34	45	48
Hartz	X6200	39	34	28	51	42
Yield King[5/]	613	39	34	31	49	41
Tide[6/]	Winner	38	35	27	47	42
N.K.	S69-54	37	34	27	50	39
Asgrow	A6242	37	35	28	42	44
Ga.	Twiggs	37	31	26	50	42
Hartz	7126	37	32	27	42	47
Hartz	6130	37	33	28	44	43
Coker	RA 604	37	33	27	39	48
	Sampson	36	30	29	42	44
Deltapine	726	36	32	27	47	37
N.K.	S72-60	36	37	30	40	36
Funk	M82-722611	36	32	31	41	40
AgraTech	AT 685	36	28	28	44	42
Tide[6/]	Rally	36	34	31	36	42
	Centennial	36	33	23	43	44
HCS	Baldwin	35	30	25	44	42
Yield King[5/]	696	34	26	25	45	41
Deltapine	566	34	35	27	41	32
Funk	Exp. 1409	34	30	24	44	36
Hartz	X6372[7/]	34	29	24	44	37
Hartz	6385	33	33	23	44	34
Funk	G-Exp 3305	33	28	26	43	35
Coker	686	33	35	24	43	29
HyPerformer	Shiloh	33	31	23	45	32
Yield King[5/]	707	33	29	21	38	42
Tide[6/]	Victory	31	24	25	41	35
HyPerformer	Sanalona	31	23	28	41	30
Deltapine	497	30	28	21	33	38
Deltapine	417	27	23	20	32	31
L.S.D. (.05)		3.7	8.4	6.4	5.8	7.2
C.V. %		15.1	19.2	16.8	9.6	13.0
Avg.		35.4	31.3	27.1	43.2	40.0

[1/]Sequatchie silt loam (2% to 5% slopes).
[2/]Maury silt loam (2% to 5% slopes).
[3/]Collins silt loam (2% to 5% slopes).
[4/]Loring silt loam (2% to 5% slopes).
[5/]Terra International.
[6/]Tide Products Inc., Edinburg, TX.
[7/]Tested in previous years as X6370 or H81-1587.

Table 8. Soybeans: Yield and other characteristics of varieties (Maturity Group VI & VII) evaluated at four locations in 1987.

Brand	Variety	Avg. Yield	Date Full Bloom	Date Mature	Plant Ht.	Lodging	Flower Color	Pubescence Color	Date Last Flower
		Bu/A			in.	%			
Asgrow	A6785	41	7-23	10-16	39	15	W	G	9-1
Funk	M82-57206	41	7-14	10-16	37	8	P	T	8-14
Coker	RA 606	39	7-20	10-9	42	13	W	G	8-22
Yield King[1/]	593	39	7-14	10-9	41	4	P	T	8-22
Hartz	X6200	39	7-10	10-1	39	9	W	T	8-12
Yield King[1/]	613	39	7-25	10-8	45	8	P	T	8-25
Tide[2/]	Winner	38	7-15	10-18	43	8	P	T	8-26
N.K.	S69-54	37	7-13	10-13	39	9	P	G	8-14
Asgrow	A6242	37	7-12	10-11	38	8	P	T	8-21
Ga.	Twiggs	37	7-10	10-1	39	0	P	T	8-14
Hartz	7126	37	7-15	10-21	44	6	P	T	8-18
Hartz	6130	37	7-11	10-12	41	4	P	T	8-26
Coker	RA 604	37	7-13	10-9	40	1	P	T	8-14
HyPerformer	Sampson	36	7-18	10-21	39	5	P	T	8-26
Deltapine	726	36	7-18	10-19	43	9	P	T	9-1
N.K.	S72-60	36	7-14	10-18	40	24	P	T	8-28
Funk	M82-722611	36	7-20	10-20	38	2	W	G	8-22
AgraTech	AT 685	36	7-22	10-12	46	18	W	T	8-30
Tide[2/]	Rally	36	7-20	10-22	41	5	W	T	9-1
	Centennial	36	7-17	10-21	41	4	P	T	8-23
HCS	Baldwin	35	7-18	10-22	42	5	P	T	8-26
Yield King[1/]	696	34	7-15	10-20	40	4	P	T	8-26
Deltapine	566	34	7-14	10-21	41	3	W	T	8-22
Funk	Exp. 1409	34	7-17	10-21	42	3	P	T	8-29
Hartz	X6372[3/]	34	7-20	10-20	39	14	W	T	9-1
Hartz	6385	33	7-18	10-20	40	7	P	G	8-23
Funk	G-Exp 3305	33	7-10	10-7	41	6	W	T	8-21
Coker	686	33	7-21	10-17	42	4	P	T	8-28
HyPerformer	Shiloh	33	7-10	10-7	38	2	W	T	8-11
Yield King[1/]	707	33	8-2	10-22	46	20	W	T	9-1
Tide[2/]	Victory	31	7-10	10-6	40	2	P	T	8-18
HyPerformer	Sanalona	31	7-20	10-8	36	11	P	T	8-25
Deltapine	497	30	7-27	10-22	43	2	W	T	9-2
Deltapine	417	27	7-29	10-22	45	9	W	G	9-3

[1/]Terra International.
[2/]Tide Products Inc., Edinburg, TX.
[3/]Tested in previous years as X6370 or H81-1587.

Table 9. Soybeans: Yield of varieties (Maturity Group VI & VII) evaluated at four locations for two years (1986-87).

Brand	Variety	Avg.	Knox-ville	Spring Hill	Milan	Ames Plantation
			Bushels per acre			
Asgrow	A6785	43	50	39	47	34
HyPerformer	Sampson	41	43	38	44	37
Yield King	593	40	45	39	44	34
Coker	606	40	38	37	47	38
Hartz	7126	40	43	33	44	37
Asgrow	A6242	40	46	32	46	35
Coker	686	40	47	33	51	27
Yield King	613	39	44	36	48	30
	Centennial	39	42	32	47	36
Deltapine	566	39	45	36	44	29
Hartz	6385	38	45	34	46	29
Yield King	696	38	42	33	44	33
HyPerformer	Shiloh	37	42	32	47	27
Yield King	707	37	41	29	41	35
Deltapine	497	35	38	29	40	31
HyPerformer	Sanalona	34	36	36	40	25
Deltapine	417	33	34	32	38	28
L.S.D. (.05)		3.8	5.7	4.8	4.6	4.7
C.V. %		14.2	13.7	14.0	10.3	14.8
Avg.		38.3	42.4	34.2	44.7	31.9

Table 10. Soybeans: Yield and other characteristics of varieties (Maturity Group VI & VII) evaluated at four locations for two years (1986-87).

Brand	Variety	Avg. Yield	Date Full Bloom	Date Last Flower	Date Mature	Plant Height	Lodging	Flower Color	Pubescence Color
		Bu/A				in.	%		
Asgrow	A6785	43	7-29	9-1	10-19	38	11	W	G
HyPerformer	Sampson	41	7-27	8-26	10-22	38	5	P	T
Yield King	593	40	7-24	8-22	10-14	40	3	P	T
Coker	606	40	7-27	8-22	10-18	41	10	W	G
Hartz	7126	40	7-26	8-18	10-23	43	5	P	T
Asgrow	A6242	40	7-23	8-21	10-13	37	7	P	T
Coker	686	40	7-28	8-28	10-20	40	3	P	T
Yield King	613	39	7-30	8-25	10-14	43	6	P	T
	Centennial	39	7-27	8-23	10-20	41	3	P	T
Deltapine	566	39	7-25	8-22	10-21	40	2	W	T
Hartz	6385	38	7-27	8-23	10-20	39	5	P	G
Yield King	696	38	7-25	8-26	10-19	39	3	P	T
HyPerformer	Shiloh	37	7-22	8-11	10-8	37	1	W	T
Yield King	707	37	8-5	9-1	10-24	47	19	W	T
Deltapine	497	35	8-2	9-2	10-23	44	3	W	T
HyPerformer	Sanalona	34	7-28	8-25	10-13	36	9	P	T
Deltapine	417	33	8-1	9-3	10-24	46	8	W	G

Table 11. Soybeans: Yield of varieties (Maturity Group VI & VII) evaluated at four locations for three years (1985-87).

Brand	Variety	Avg.	Knoxville	Spring Hill	Milan	Ames Plantation
				Bushels per acre		
Asgrow	A6242	43	48	38	47	40
Yield King	593	42	46	42	44	38
Hartz	7126	42	43	38	47	40
	Centennial	41	44	34	47	39
Yield King	613	40	42	39	46	34
Deltapine	566	40	44	38	45	33
	Shiloh	40	43	35	48	35
Deltapine	417	35	37	36	39	29
L.S.D. (.05)		2.2	5.2	4.2	3.6	3.0
C.V. %		13.5	14.6	13.6	9.8	10.1
Avg.		40.5	43.3	37.5	45.2	36.0

Table 12. Soybeans: Yield and other characteristics of varieties (Maturity Group VI & VII) evaluated for three years (1985-87).

Brand	Variety	Avg. Yield	Date Full Bloom	Date Mature	Plant Height	Lodging	Flower Color	Pubescence Color
		Bu/A			in.	%		
Asgrow	A6242	43	7-22	10-12	38	9	P	T
Yield King	593	42	7-24	10-14	41	3	P	T
Hartz	7126	42	7-26	10-21	43	5	P	T
	Centennial	41	7-26	10-18	41	4	P	T
Yield King	613	40	7-31	10-14	45	7	P	T
Deltapine	566	40	7-25	10-19	40	2	W	T
	Shiloh	40	7-22	10-8	38	2	W	T
Deltapine	417	35	8-2	10-24	46	6	W	G

Table 13. Soybeans: Yield of varieties (Maturity Group IV) evaluated at five locations in 1987.

Brand	Variety	Avg.	1/ Cross-ville	2/ Knox-ville	3/ Spring-field	4/ Milan	5/ Ames Plantation
			Bushels per acre				
Asgrow	A4906	41	37	39	34	56	41
Pioneer	9442	41	37	31	33	57	45
Coker	RA452	40	39	36	30	56	40
Ky.	Pennyrile	40	32	36	40	52	41
Mo.	Pershing	40	38	35	29	61	36
Pioneer	9471	38	33	29	28	56	43
Coker	393	38	36	28	34	49	42
	TN 4-86	37	26	38	29	54	40
Dekalb-Pfizer	CX 415	36	31	25	29	57	40
FFR	451	36	33	25	29	49	42
Coker	RA451	34	31	32	21	53	34
Dekalb-Pfizer	CX 380	34	29	25	28	50	38
HyPerformer	Stevens	30	19	24	29	42	35
L.S.D (.05)		3.3	6.7	8.1	7.8	7.2	6.0
C.V. %		14.0	14.5	18.3	18.0	9.5	10.6
Avg.		37.3	32.4	31.1	30.2	53.1	39.7

1/Hartsells loam (2% to 5% slopes).
2/Sequatchie silt loam (2% to 5% slopes).
3/Dickson silt loam (2% to 5% slopes).
4/Collins silt loam (2% to 5% slopes).
5/Loring silt loam (2% to 5% slopes).

Table 14. Soybeans: Yield and other characteristics of varieties (Maturity Group IV) evaluated at five locations in 1987.

Brand	Variety	Avg. Yield	Date First Flower	Date Mature	Plant Height	Flower Color	Pubes-cence color	Date Last Flower
		Bu/A			in.			
Asgrow	A4906	41	7-8	9-13	44	P	G	7-30
Pioneer	9442	41	6-23	9-4	31	P	T	7-24
Funk	RA452	40	7-4	9-11	42	W	G	7-29
Ky.	Pennyrile	40	6-27	9-9	40	W	T	7-26
Mo.	Pershing	40	7-3	9-16	31	W	G	7-28
Pioneer	9471	38	6-26	9-8	38	W	T	7-27
Coker	393	38	6-24	9-3	34	P	T	7-24
	TN 4-86	37	6-26	9-11	47	P	T	7-29
Dekalb-Pfizer	CX 415	36	6-24	9-2	37	W	T	7-24
FFR	451	36	6-24	9-6	36	P	T	7-25
Coker	RA451	34	6-27	9-18	43	P	T	7-28
Dekalb-Pfizer	CX 380	34	6-24	9-1	35	W	T	7-25
HyPerformer	Stevens	30	6-24	9-7	43	P	T	7-28

Table 15. Soybeans: Yield of varieties (Maturity Group IV) evaluated at five locations for two years (1986-87).

Brand	Variety	Avg.	Knox-ville	Spring-field	Cross-ville	Milan	Ames Plantation
				Bushels per acre			
Coker	RA 452	40	40	26	40	58	36
Mo.	Pershing	39	37	27	38	62	32
Tenn.	TN 4-86	36	38	25	29	56	34
Pioneer	9471	36	32	22	31	57	37
Coker	RA 451	34	31	19	32	56	32
Coker	393	34	32	26	33	49	29
Dekalb-Pfizer	CX 415	33	28	25	30	54	31
Dekalb-Pfizer	CX 380	31	24	22	29	52	28
HyPerformer	Stevens	31	29	23	25	47	30
L.S.D. (.05)		2.2	4.6	5.6	4.0	5.2	5.1
C.V. %		14.5	14.0	23.1	12.6	9.4	15.8
Avg.		34.9	32.4	24.0	31.7	54.2	32.0

Table 16. Soybeans: Yield and other characteristics of varieties (Maturity Group IV) evaluated at five locations for two years (1986-87).

Brand	Variety	Avg. Yield	Date First Flower	Date Last Flower	Date Mature	Plant Height	Lodging	Flower Color	Pubescence Color
		Bu/A				in.	%		
Coker	RA 452	40	6-25	7-27	9-15	40	1	W	G
Mo.	Pershing	39	6-24	7-26	9-19	29	0	W	G
Tenn.	TN 4-86	36	6-20	7-27	9-12	43	1	P	T
Pioneer	9471	36	6-20	7-26	9-9	36	1	W	T
Coker	RA 451	34	6-21	7-27	9-21	42	1	P	T
Coker	393	34	6-18	7-22	9-3	31	0	P	T
Dekalb	CX 415	33	6-18	7-23	9-3	35	1	W	T
Dekalb	CX 380	31	6-17	7-22	8-31	33	0	W	T
HyPer[1/]	Stevens	31	6-19	7-26	9-10	41	0	P	G

[1/]HyPerformer.

Table 17. Soybeans: Yield of varieties (Maturity Group IV) evaluated at five locations for three years (1985-87).

Brand	Variety	Avg.	Knox-ville	Cross-ville	Spring-field	Milan	Ames Plantation
				Bushels per acre			
Mo.	Pershing	42	44	40	35	59	35
Coker	RA 452	42	45	42	37	50	38
Pioneer	9471	40	39	34	34	56	38
	TN 4-86	39	44	30	34	56	33
Coker	RA 451	39	39	36	30	54	34
HyPerformer	Stevens	35	35	29	32	49	32
L.S.D. (.05)		2.3	3.6	3.3	4.0	5.0	5.4
C.V. %		14.4	10.8	11.4	14.4	11.2	19.0
Avg.		39.8	40.8	35.1	33.7	54.0	35.0

Table 18. Soybeans: Yield and other characteristics of varieties (Maturity Group IV) evaluated at five locations for three years (1985-87).

Brand	Variety	Avg. Yield	Date Full Bloom	Date Last Flower	Date Mature	Plant Ht.	Lodging	Flower Color	Pubescence Color
		Bu/A				in.	%		
Mo.	Pershing	42	6-25	7-26	9-20	30	0	1	1
Coker	RA 452	42	6-26	7-28	9-18	40	3	1	1
Pioneer	9471	40	6-18	7-26	9-10	37	6	1	2
	TN 4-86	39	6-18	7-26	9-13	43	4	2	2
Coker	RA 451	39	6-19	7-26	9-23	42	10	2	2
HyPerformer	Stevens	35	6-18	7-25	9-11	42	13	2	1

Table 19. Soybeans: Yield and other characteristics of strains (Maturity Group V) evaluated at Jackson in 1987.

Brand	Variety	Avg. Yield	1/ Date Full Bloom	2/ Date Mature	Plant Height	Lodging	3/ Flower Color	4/ Pubescence Color
		Bu/A	Days	Days	in.	%		
Esco	B22	38	112	185	41	16	2	2
Asgrow	A5474	35	116	188	43	16	1	2
Esco	B16	34	112	194	36	6	2	1
Esco	B52	32	126	198	46	20	1	1
Esco	594-175	31	121	187	45	17	1	2
Esco	B8	30	119	198	45	32	2	1
Capehart	6836	30	126	210	43	8	2	1
Tenn.	TN85-55	29	116	185	41	5	2	2
Esco	B24	29	116	189	41	6	2	2
Esco	B11	28	116	186	37	6	2	1
Esco	B21	28	116	188	40	17	2	2
Esco	B23	27	116	191	41	13	2	1
Tenn.	TN85-121	27	120	189	44	26	2	1
	Essex	26	109	179	32	10	2	1
	Forrest	26	116	186	38	8	1	2
Capehart	7636	25	134	214	44	11	1	2
Esco	B48	19	128	198	47	32	1	2
L.S.D. (.05)		6.5						
C.V. %		15.7						
Avg.		29.1						

1/ Number of days from April 1 until Full flower.
2/ Number of days from April 1 until Mature.
3/ 1 = White flowers and 2 = Purple flowers.
4/ 1 = Grey Pubescence and 2 = Tawny Pubescence in color.

Table 20. Soybean: Yield and other characteristics of strains (Maturity Group VI and VII) evaluated at Jackson in 1987.

Brand	Variety	Avg. Yield	1/ Date Full Bloom	2/ Date Mature	Plant Height	Lodging	3/ Flower Color	4/ Pubes-cence Color
		Bu/A	Days	Days	In.	%		
Yield King	699	39	119	198	48	7.5	1	1
Esco	65-73	37	119	191	49	27.5	1	2
TerraVig	515	36	119	199	39	16.2	2	2
	Centennial	36	126	202	47	22.5	2	2
TerraVig	553	35	119	198	40	1.7	1	2
TerraVig	616	35	134	201	46	35.0	2	1
	Lee 74	34	126	198	39	47.5	2	2
Y.K.	ES6-87-B2J	34	119	198	44	13.0	2	2
Coker	C-82-824	32	119	191	41	9.5	1	2
Esco	65-62	31	126	198	47	35.0	2	2
	Spartan	29	134	204	46	27.5	2	2
Deltapine	1017	27	126	198	45	20.0	1	2
L.S.D. (.05)		5.4						
C.V. %		11.1						
Avg.		33.8						

1/ Number of days from April 1 until Full flower.
2/ Number of days from April 1 until Mature.
3/ 1 = White flowers and 2 = Purple flowers.
4/ 1 = Grey Pubescence and 2 = Tawny Pubescence in color.

Table 21. Soybeans: Yield and other characteristics of strains (Maturity Group IV) evaluated at Jackson in 1987.

Brand	Variety	Avg. Yield	1/ Date Full Bloom	2/ Date Mature	Plant Height	Lodging	3/ Flower Color	4/ Pubescence Color
		Bu/A			in.	%		
Exp.	TN85-32	38	106	188	43	3.8	1	2
Mo.	Pershing	32	112	185	34	3.5	1	1
Exp.	TN85-48	32	110	178	32	6.5	2	2
Exp.	TN85-13	26	110	180	35	15.0	3	1
Exp.	TN85-117	25	116	185	42	4.0	1	1
Exp.	TN83-58	24	106	173	45	11.7	1	1
Pioneer	9471	24	106	173	36	7.5	1	2
Exp.	TN 4-86	21	106	173	47	13.0	2	2
L.S.D. (.05)		5.2						
C.V. %		12.8						
Avg.		27.8						

1/Number of days from April 1 until Full flower.
2/Number of days from April 1 until Maturity.
3/ 1 = White flowers and 2 = Purple flowers.
4/ 1 = Grey pubescence and 2 = Tawny Pubescence in color.

Table 22. Soybeans: Soybean Cyst Nematode ratings made by Lawrence D. Young on Maturity Group V varieties grown in the greenhouse at Jackson during the summer of 1987.

Brand	Variety	Soybean Cyst Nematode Race 3	Soybean Cyst Nematode Race 4	Brand	Variety	Soybean Cyst Nematode Race 3	Soybean Cyst Nematode Race 4
		Mean Severity Index[1] (0-4)				Mean Severity Index[1] (0-4)	
	Forrest	0.7	4.0	FFR	565	0.5	2.1
	Essex	4.0	4.0	FFR	560	0.3	0.7
	Bedford	0.3	0.8	FFR	561	4.0	4.0
	Bay	4.0	4.0	FFR	562	4.0	3.6
Asgrow	A5474	0.8	2.3	Hartz	5171	0.1	4.0
Asgrow	A5980	0.7	3.6	Hartz	5370	0.2	3.8
AgraTech	AT575	4.0	4.0	Hartz	5252	0.2	4.0
AgraTech	550	0.5	1.8	Hartz	5164	1.0	1.2
Coker	355	0.6	2.0	Funk	M82-572403	0.1	4.0
Coker	485	0.25	4.0	N.K.	S59-19	1.2	1.6
Coker	425	4.0	3.8	N.K.	S53-34	4.0	4.0
Coker	80R-49	1.8	4.0	Pioneer	5482	4.0	4.0
Coker	Co82-372	0.6	2.7	Pioneer	9581	0.25	1.5
Capehart	5646	0.6	2.8	Pioneer	9541	4.0	4.0
Capehart	5636	4.0	4.0	Pioneer	9531	0.75	2.0
Capehart	5896	4.0	4.0	Exp.	TN 5-85	0.1	3.8
Deltapine	105	4.0	4.0	Exp.	TN83-26	0.8	2.8
Deltapine	675	0.4	1.0	Yld. King	577	0.57	4.0
Deltapine	415	0.6	3.8		Shenandoah	4.0	4.0
	Epps	0.5	1.6				

[1]The mean severity index is the sum of the values obtained by multiplying the rating times the number of plants with that rating, divided by the total number of plants. Rating was based on a scale of 0 through 4 with four being the most susceptible. A rating above 3 should be classified as susceptible.

Table 23. Soybeans: Soybean Cyst Nematode ratings made by Lawrence D. Young on Maturity Group VI & VII varieties grown in the greenhouse at Jackson during the summer of 1987.

Brand	Variety	Soybean Cyst Nematode Race 3	Soybean Cyst Nematode Race 4	Brand	Variety	Soybean Cyst Nematode Race 3	Soybean Cyst Nematode Race 4
		Mean Severity Index[1] (0-4)				Mean Severity Index[1] (0-4)	
	Centennial	0.8	4.0	Y.K.[3]	707	0.7	2.8
Coker	RA606	2.0	4.0	N.K.	S72-60	4.0	4.0
Coker	RA604	0.6	4.0	N.K.	S69-54	0.0	4.0
Coker	686	0.4	4.0	Funk	G-Exp 3305	4.0	4.0
Deltapine	566	4.0	3.8	Funk	G-M82-722611	4.0	4.0
Deltapine	497	4.0	4.0	Funk	G-1409	4.0	4.0
Deltapine	726	0.4	4.0	Funk	G-M82-57206	4.0	4.0
Asgrow	A6242	0.6	2.7	AgraTech	AT685	0.8	3.0
Asgrow	A6785	4.0	4.0	HP[4]	Sanalona	4.0	4.0
Hartz	7126	0.3	4.0	HP[4]	HSC Baldwin	0.1	4.0
Hartz	6385	0.3	4.0	Ga	Twiggs	0.0	4.0
Hartz	X6372	0.8	3.8	T.P.[5]	Victory	4.0	4.0
Hartz	625	0.6	2.6	T.P.[5]	Rally	4.0	4.0
Y.K.[3]	613	1.0	3.8	T.P.[5]	Winner	0.1	4.0
Y.K.[3]	593	0.4	4.0	HP[3]	Sampson	4.0	4.0
Y.K.[3]	696	0.4	4.0				

[1]The mean severity index is the sum of the values obtained by multiplying the rating times the number of plants with that rating, divided by the total number of plants. Rating was based on a scale of 0 through 4 with four being the most susceptible. A rating above 3 should be classified as susceptible.
[2]Deltapine 417, Shiloh, and Hartz Z6200 were not screened for Soybean Cyst Nematodes because seed samples were not included for some unknown reason.
[3]Yield King.
[4]HyPerformer Seed Co.
[5]Tide Products.

Table 24. Soybeans: Soybean Cyst Nematode ratings made by Lawrence D. Young on Maturity Group IV or less varieties grown in the greenhouse at Jackson during the summer of 1987.

Brand	Variety	Soybean Cyst Nematode Race	
		3	4
		Mean Severity Index[1] (0-4)	
Coker	RA452	4.0	4.0
Coker	RA451	4.0	4.0
Coker	393	4.0	4.0
HyPerformer	Stevens	4.0	4.0
Mo	Pershing	4.0	4.0
Asgrow	A4906	4.0	4.0
Ky	Pennyrile	4.0	4.0
FFR	451	4.0	4.0
Pioneer	9442	4.0	4.0
Pioneer	9471	4.0	4.0
DeKalb-Pfizer	CX380	4.0	4.0
DeKalb-Pfizer	CX415	4.0	4.0
Exp.	TN 4-86	0.6	3.2

[1]The mean severity index is the sum of the values obtained by multiplying the rating times the number of plants with that rating, divided by the total number of plants. Rating was based on a scale of 0 through 4 with four being the most susceptible. A rating above 3 should be classified as susceptible.

STEM CANKER AND 'SUDDEN DEATH SYNDROME' OF SOYBEANS

Albert Y. Chambers and Melvin A. Newman
Professors, Entomology and Plant Pathology, Agricultural Experiment Station and Agricultural Extension Service, respectively

Stem Canker

Stem canker, caused by the fungus Diaporthe phaseolorum var. caulivora, was first identified as a problem in soybeans in Tennessee in 1981. The disease has continued to spread from the original area in Madison County and cause serious yield losses in soybean production in much of the State. Stem canker has the potential to become the most destructive disease attacking soybeans in Tennessee and other states in the Mid-South and Southeast. Dry weather for the last two seasons appears to have reduced losses from stem canker, but early-planted soybeans were severely damaged in 1986. Estimated yield losses in 1986 due to stem canker were 620,000 bushels.

Small, brown lesions on the cotyledons of emerging seedlings are the first symptom of stem canker. Severe injury and more striking symptoms are seen from midseason to maturity. The first symptom usually noticed is dead plants with dry leaves still attached. Leaves with yellow or brown areas between veins may be noted earlier. Lesions, usually reddish-brown, develop at leaf petioles on the surface of lower portions of stems. Sunken cankers, dark brown in color, enlarge from the lesions and may girdle the stem. Cankers interfere with or may completely block water and nutrient movement and cause death of part or all of the plant. Presence of large cankers on the stem causes brittleness and possible lodging. When infected stems are cut lengthwise, light brown discoloration may be seen in the pith and other tissues. Yield losses depend on the stage of maturity when plants are killed.

The stem canker fungus persists on infected plant residue for at least 14-15 months and also may be carried on seed harvested from diseased plants. Although spread of the disease by seed is limited, it is probably responsible for most long-range movement. The fungus usually enters the plant through the lower leaves. Stem wounds and leaf scars may also provide areas for entry. Splashing of spores from plant residue on the soil surface or infected cotyledons is necessary for disease development. Diseases such as brown spot which cause dropping of bottom leaves may reduce stem canker injury by removing infection sites. Plant stresses, such as dry weather, cyst nematodes, weed competition, or herbicide damage at the reproductive stage, tend to increase stem canker severity.

Soybean cultivars have been evaluated in West Tennessee since 1982 for resistance or susceptibility to stem canker. Six cultivars (Mitchell, Mitchell 450, Bay, York, Tracy, and Tracy M) were found to have very high disease resistance in 1982-83, but none of these have resistance to the soybean cyst nematode. Only Bay is presently recommended for grower use. Several cultivars evaluated in 1982-83 were very susceptible to stem canker including RA 604, Nathan, and Forrest. A breeding line, J77-339, is extremely susceptible and has been used as a comparison standard. Results of cultivar evaluation in 1986 and 1987 at the Milan Experiment Station in an area that has a high level of stem canker infestation are shown in Table 1. In the experiment, three cultivars in addition to the six above exhibited a very high level of disease resistance - Shiloh, FFR 561, and FFR 562. Shiloh also has resistance to races 3 and 4 of the cyst nematode. TN 4-86, TN 5-85, and Hartz 5370 showed some stem canker tolerance. Other cultivars ranged from moderately to extremely susceptible.

'Sudden Death Syndrome'

"Sudden death syndrome" (SDS) is a tentative name that has been given to a problem affecting soybeans in Tennessee and seven other states. The problem currently is confined to states along the Mississippi and Ohio Rivers including Tennessee, Indiana, Illinois, Kentucky, Missouri, Arkansas, Mississippi, and Louisiana. The problem in Tennessee was first found in Obion County but is now found over most of West Tennessee. Soybeans on the Milan Experiment Station and the West Tennessee Experiment Station at Jackson are affected with SDS.

SDS has probably been present for several years but was not recognized as a problem. A similar condition was seen in the late 1960's and early 1970's but was very limited in extent and was not seen again until considerable damage was noted in 1984. More affected areas were found in 1985. Due to the late appearance of SDS in 1985, losses were less than in 1984. In 1986 and 1987, dry weather appeared to limit the prevalence of SDS.

At present, the cause of SDS has not been fully established. Recent work in Arkansas and Mississippi and our work in Tennessee indicate that a soilborne fungus, Fusarium solani, is the causal agent. Workers in Illinois have obtained symptoms and injury with a Xanthomonas-like bacterium. Different strains or races of F. solani may be involved in Tennessee since several cultivars have reacted differently at various locations in the State.

Foliar symptoms of SDS resemble those of stem canker and brown stem rot. SDS was first identified as being a distinctly different problem in 1984. Early leaf symptoms consist of yellowing and browning between leaf veins with eventual death and drop of the leaves. Upper leaves are affected first followed by rapid movement of symptoms downward to the lower leaves. In some cultivars, early leaf symptoms look much like those of a virus. Blooms and young pods may be aborted. If the problem appears late in the season, only seed size may be affected. Vascular tissues in the lower stem are discolored and range from reddish-brown to gray. Roots deteriorate due to lack of transfer of food from leaves to roots. Severely affected plants may be easily lifted from the soil due to rotted roots.

Several conditions appear to favor severity of SDS. Soybean cyst nematodes have been found in most, if not all, fields affected with SDS. A cool, wet period shortly before flowering appears to increase the extent of damage. Planting soybeans after corn appears to increase severity of SDS. Later planting within the normal recommended planting dates has been found to reduce injury.

Soybean cultivars were evaluated for their reaction to SDS at several locations during 1986 and 1987. Results obtained at the Milan Experiment Station and on a grower's farm in Henry County are shown in Tables 2 and 3. Twenty to 25 cultivars were found in 1986-87 to have good resistance to SDS. Most of these cultivars also have some resistance to the soybean cyst nematode. A few were found to be very susceptible to SDS including Deltapine 417, Deltapine 105, Deltapine 506, Deltapine 566, FFR 668, and FFR 562. Others cultivars had varying levels of tolerance to SDS.

The authors greatly appreciate and acknowledge the assistance of John F. Bradley, Superintendent of the Milan Experiment Station; Gary Clark, Henry County soybean producer; and Ken J. Goddard, Ronald E. Blair, and Michael P. Page of the Henry County Extension Office.

Table 1. Reaction of soybean cultivars to stem canker, Milan Experiment Station, Milan, TN, 1986-87.

Cultivar or Line	Stem Canker Incidence (0-10)[1] 1986	1987	Stem Canker Severity (0-10)[1] 1986	1987
Maturity Group IV:				
Mitchell 450	0.0	---[2]	0.0	---
Pershing	---	5.0	---	4.3
TN 4-86	---	1.0	---	0.8
Maturity Group V:				
Asgrow A5474	7.0	7.8	8.0	5.3
Bay	0.0	0.0	0.0	0.0
Bedford	6.8	---	7.8	---
Coker 355	---	7.8	---	6.0
Coker 425	---	6.3	---	5.5
Coker 485	---	5.5	---	5.5
Deltapine 105	8.2	7.8	7.8	7.6
Epps	6.3	---	7.3	---
Essex	7.3	5.3	7.3	4.8
Forrest	6.8	8.3	8.3	7.5
FFR 560	8.0	---	8.3	---
FFR 561	0.0	0.0	0.0	0.0
FFR 562	---	0.0	---	0.0
Hartz 5171	9.4	9.0	9.2	7.4
Hartz 5252	7.0	7.5	8.5	6.5
Hartz 5370	---	3.8	---	5.0
Pioneer 5482	7.8	7.5	8.3	6.3
TN 5-85	3.5	3.5	6.5	4.0
York	0.0	---	0.0	---
Maturity Groups VI and VII:				
Asgrow A6242	---	8.5	---	8.3
Asgrow A6520	7.1	5.8	8.5	5.8
Centennial	8.1	3.5	9.1	5.5
Deltapine 566	---	4.3	---	6.5
Hartz 6383R	8.0	7.6	9.4	8.5
Hartz 7126	8.2	8.5	9.0	7.8
Jeff	9.8	---	9.9	---
J77-339	9.7	9.0	10.0	9.4
NK S69-96	9.5	---	9.9	---
RA 604	---	9.5	---	8.8
Shiloh	0.0	0.0	0.0	0.0
Tracy M	0.0	0.0	0.0	0.0
Yield King 593	---	9.3	---	9.0

[1]Plants in plots rated from 0 to 10 (0 = none, 10 = 100%) according to incidence (percentage of plants with symptoms of stem canker) and severity (percent damage to plants affected with stem canker). [2]A number of cultivars evaluated one year only.

Table 2. Reaction of soybean cultivars to 'sudden death syndrome' (SDS), Milan Experiment Station, Milan, TN, 1986-87.

Cultivar or Line	SDS Incidence (0-10)[1]		SDS Severity (0-10)[1]	
	1986	1987	1986	1987
Maturity Group IV:				
Mitchell 450	0.3	---[2]	1.0	---
Pershing	0.3	---	1.0	---
RA 452	0.2	2.2	1.0	1.4
TN 4-86	---	0.0	---	0.0
TN 83-26	0.8	---	1.0	---
TN 84-111	0.2	---	0.8	---
Maturity Group V:				
Asgrow A5474	0.4	0.1	1.0	0.1
Bay	0.3	1.0	1.0	0.8
Bedford	0.1	0.1	1.0	0.1
Coker 355	---	0.3	---	0.2
Coker 425	0.7	8.6	1.0	3.2
Coker 485	---	0.2	---	0.2
Deltapine 105	5.8	9.4	4.0	5.8
Epps	0.1	---	1.0	---
Essex	0.6	9.1	1.2	3.8
Forrest	0.2	0.1	1.0	0.1
FFR 561	0.4	6.6	1.0	3.0
FFR 562	---	9.3	---	4.0
Hartz 5171	0.1	0.2	1.0	0.2
Hartz 5252	0.1	0.1	1.0	0.1
Hartz 5370	---	0.1	---	0.1
Pioneer 5482	0.4	3.3	1.0	1.2
Pioneer 9571	---	0.4	---	0.4
TN 5-85	0.3	0.5	1.0	0.5
Maturity Groups VI and VII:				
Asgrow A6242	---	0.2	---	0.2
Asgrow A6520	0.2	0.1	1.0	0.1
Centennial	0.2	---	1.0	---
Deltapine 417	9.8	9.5	4.2	5.0
Deltapine 566	---	8.8	---	2.1
Hartz 6383R	---	0.1	---	0.1
Hartz 7126	0.2	---	1.0	---
Jeff	3.4	---	2.0	---
NK S69-96	6.4	---	2.4	---
Shiloh	---	0.4	---	0.3
Yield King 593	---	0.5	---	0.4

[1]Plants in plots rated from 0 to 10 (0 = none, 10 = 100%) according to incidence (percentage of plants with symptoms of SDS) and severity (precent damage to plants affected with SDS). [2]A number of cultivars evaluated one year only.

Table 3. Reaction of soybean cultivars to 'sudden death syndrome' (SDS), Gary Clark Farm, Henry County, TN, 1986-87.

Cultivar or Line	SDS Incidence (0-10)[1]		SDS Severity (0-10)[1]	
	1986	1987	1986	1987
Maturity Group IV:				
Asgrow A4906	---[2]	7.2	---	5.0
RA 451	7.6	7.8	4.2	3.6
TN 4-86	---	T[3]	---	0.3
Maturity Group V:				
Asgrow A5149	7.2	---	4.8	---
Asgrow A5474	0.3	2.7	1.4	2.6
Asgrow A5980	3.2	7.8	2.8	4.0
Bay	4.0	5.0	3.2	2.4
Bedford	0.1	---	0.8	---
Coker 355	0.2	0.6	1.0	0.9
Coker 425	6.0	4.9	3.6	2.4
Coker 485	---	2.1	---	1.8
Deltapine 105	9.0	8.7	4.4	4.8
Deltapine 345	7.4	7.8	3.0	3.4
Deltapine 675	0.5	0.3	1.4	1.0
Essex	4.2	---	3.0	---
Forrest	0.1	0.1	1.0	0.8
FFR 560	0.2	0.3	1.0	1.2
FFR 561	1.1	2.8	1.4	2.0
FFR 562	7.6	9.0	3.2	4.7
FFR 565	0.3	---	0.8	---
Hartz 5171	0.3	0.2	1.2	0.8
Hartz 5252	0.1	0.6	1.2	2.0
Hartz 5370	0.2	1.6	1.4	1.6
Pioneer 5482	---	5.4	---	1.7
Pioneer 9531	0.2	4.7	1.8	2.5
Pioneer 9571	0.2	---	1.2	---
Pioneer 9581	0.3	0.3	1.2	0.8
TN 5-85	0.2	0.2	1.4	1.1
Maturity Groups VI and VII:				
Asgrow A6242	0.3	0.4	1.0	1.2
Asgrow A6520	2.2	---	2.0	---
Asgrow A6785	---	0.7	---	1.3
Deltapine 417	10.0	9.8	8.3	6.9
Deltapine 506	9.2	6.8	5.8	3.6
Deltapine 566	9.8	8.2	5.2	3.2
FFR 631	0.3	---	1.4	---
FFR 668	9.8	---	6.6	---
Hartz 6130	0.2	0.1	1.2	0.8
Hartz 6383R	---	0.3	---	1.0
Shiloh	---	8.8	---	4.0
Yield King 593	---	2.4	---	1.6

[1]Plants in plots rated from 0 to 10 (0 = none, 10 = 100%) according to incidence (percentage of plants with symptoms of SDS) and severity (precent damage to plants affected with SDS). [2]A number of cultivars evaluated one year only. [3]T = Trace.