4-1987

Evaluation of Herbicides, Growth Regulators, and Harvest Aids for Cotton Production in Tennessee, 1986

University of Tennessee Agricultural Experiment Station

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Agricultural Experiment Station

Research Report 87-10
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Department of Plant and Soil Science

THE UNIVERSITY OF TENNESSEE
AGRICULTURAL EXPERIMENT STATION

RESEARCH REPORT 87-10
APRIL 1987

EVALUATION OF HERBICIDES, GROWTH REGULATORS, AND HARVEST AIDS FOR COTTON PRODUCTION IN TENNESSEE 1986

R. M. Hayes, P. E. Hoskinson, and G. A. Mitchell

DEPARTMENT OF PLANT AND SOIL SCIENCE

TABLE OF CONTENTS

INTRODUCTION

This report is a summary of herbicide, growth regulator, and harvest aid research in cotton conducted by the authors during 1986. This publication contains results of individual experiments that have not been summarized over time or locations; therefore, data should not be taken out of context or used in any type of commercial release without the express written approval of the Dean of the Agricultural Experiment Station.

DISCLAIMER

Many of the uses of chemicals contained herein have not been authorized by Federal and State Environmental Protection Agencies and are not recommended by the University of Tennessee Institute of Agriculture. The use of any particular chemical or formulation over another is not to be construed as an endorsement or recommendation of any specific product.

GROWING SEASON IN BRIEF

Late April and May were drier and warmer than normal, while early June was cool, cloudy and wet. The remainder of the growing season was characterized by hot, dry weather with light infrequent rainfall. Very hot days and warmer than normal nights occurred during August. From April 1 to harvest, 2377, 2514, and 2542 DD 60's were accumulated at Milan, Ames Plantation, and Jackson, respectively. Early maturity of the crop and ideal harvest conditions during October permitted efficient harvest of the crop.

Explanation of Terms and Abbreviations

lb ai/A = pounds active ingredient per acre

COC = crop oil concentrate (80-83% oil; 15-17% surfactant)

% open = 0 to 100% with 0 = no bolls open and 100 = all bolls open

Regrowth rating = 1-10 with 10 = most regrowth

Staple = fiber length in 1/32 of an inch

% Gin Turnout = percent of ginned lint from seed cotton

% First Harvest = percent of total lint yield obtained at first picking

Micronaire = measure of fiber maturity with no reduction in price from 3.5 to 4.9

Grade = see following two pages

Weeds - Bayer codes are used for weed designations and corresponding common names are provided in the comments section for individual experiments. Cotton injury designations are also provided under this section.

CODES AND SYMBOLS FOR GRADE, STAPLE LENGTH, AND PREPARATION OF UPLAND COTTON

GRADES	SYMBOLS	CODE NO.
WHITE - 0 for Plus, 1 for Full Grade		
Strict Good Middling	SGM	01
Good Middling	GM	11
Strict Middling	SM	21
Middling Plus	Mid Plus	30
Middling	Mid	31
Strict Low Middling Plus	SLM Plus	40
Strict Low Middling	SLM	41
Low Middling Plus	LM Plus	50
Low Middling	LM	51
Strict Good Ordinary Plus	SGO Plus	60
Strict Good Ordinary	SGO	61
Good Ordinary Plus	GO Plus	70
Good Ordinary	GO	71
LIGHT SPOTTED -2		
Good Middling Light Spotted	GM Lt Sp	12
Strict Middling Light Spotted	SM Lt Sp	22
Middling Light Spotted	Mid Lt Sp	32
Strict Low Middling Light Spotted	SLM Lt Sp	42
Low Middling Light Spotted	LM Lt Sp	52
SPOTTED -3		
Good Middling Spotted	GM Sp	13
Strict Middling Spotted	SM Sp	23
Middling Spotted	Mid Sp	33
Strict Low Middling Spotted	SLM Sp	43
Low Middling Spotted	LM Sp	53
TINGED -4		
Good Middling Tinged	GM Tg	14
Strict Middling Tinged	SM Tg	24
Middling Tinged	Mid Tg	34
Strict Low Middling Tinged	SLM Tg	44
Low Middling Tinged	LM Tg	54
YELLOW STAINED -5		
Good Middling Yellow Stained	GM YS	15
Strict Middling Yellow Stained	SM YS	25
Middling Yellow Stained	Mid YS	35
LIGHT GRAY -6		
Good Middling Light Gray	GM Lt Gray	16
Strict Middling Light Gray	SM Lt Gray	26
Middling Light Gray	Mid Lt Gray	36
Strict Low Middling Light Gray	SLM Lt Gray	46
GRAY -7		
Good Middling Gray	GM Gray	17
Strict Middling Gray	SM Gray	27
Middling Gray	Mid Gray	37
Strict Low Middling Gray	SLM Gray	47

CODES AND SYMBOLS FOR GRADE, STAPLE LENGTH, AND PREPARATION OF UPLAND COTTON CONT'D

GRADES	SYMBOLS	CODE NO.
BELOW GRADE -8		
Below Grade (Below Good Ordinary)	BG	81
Below Grade (Below Low Middling Light Spotted)	BG	82
Below Grade (Below Low Middling Spotted)	BG	83
Below Grade (Below Low Middling Tinged)	BG	84
Below Grade (Below Middling Yellow Stained)	BG	85
Below Grade (Below Strict Low Middling Light Gray)	BG	86*
Below Grade (Below Strict Low Middling Gray)	BG	87

*Used only when a sample is reduced below SLM Lt Gray because of reduction factor.

MIXED PACKED -99

STAPLE LENGTHS	CODE NO.
Perished staple	0
Below 13/16	24
13/16	26
7/8	28
29/32	29
15/16	30
31/32	31
1"	32
1-1/32	33
1-1/16	34
1-3/32	35
1-1/8	36
1-5/32	37
1-3/16	38
1-7/32	39
1-1/4	40
1-9/32	41
1-5/16	42
1-11/32	43
1-3/8	44

CODES FOR PREPARATION OF UPLAND COTTON	CODE NO.
Smooth	1
Normal 1/	-
Rough - Reduced One grade	3
Very rough - Reduced two grades	4
Gin cut - Reduced three grades	5
Gin cut - Reduced four grades	6
Gin cut - Reduced five grades	7
Gin cut - Reduced six grades	8

1/If preparation is normal no code number will be shown but may be designated with a "--".

SUMMARY OF RESULTS

I. Herbicides

SN 582

SN 582 + Cotoran was injurious to cotton early. However, cotton lint yield was not adversely affected. SN 582 + Cotoran provided season-long control of smooth pigweed, broadleaf signalgrass, and goosegrass, but entireleaf morningglory escaped.

Cinch

Cinch + Cotoran provided excellent season-long control of smooth pigweed, goosegrass, and broadleaf signalgrass, but entireleaf morningglory escaped. Cinch provided excellent control of annual grasses, but has very little activity on broadleaf species and therefore must be used in combination with a product such as Cotoran. Cinch seems to require less rainfall for activation than some of the other preemergence cotton herbicides on the market today.

RE40885

There was slight injury to cotton from RE40885 at the 1.0 lb ai/A rate in the PPI test. RE40885 was weak on annual grasses and entireleaf morningglory when applied preemergence. It was weak on entireleaf morningglory at the 0.5 lb ai/A and the 0.25 lb ai/A followed by 0.25 lb ai/A rates in the PPI test.

II. Growth Regulators and Harvest Aids

All harvest aids performed very well during the dry, warm fall. Warm rains during October stimulated regrowth after most of the harvest had ended.

We noted little or no yield differences between the twelve growth regulator treatments at Milan. Higher grades were obtained on Pix-treated plots. This phenomenon may have resulted from the smaller plants growing on plots that had been treated with Pix.

Earlier planting resulted in significantly higher yields. Pix at lower rates was most helpful to early planted cotton, while higher rates of Pix were more helpful to later planted cotton. These results were reflected by a significant Pix by date of planting interaction.

Higher grades were obtained from the 30-inch row spacing at first harvest. Prep-treated plots were earlier. Pix followed by Prep-treated cotton had higher grades than plots receiving the other treatments.

PROJ. NUM.: INTERIM DATA UNITS: LBai/A
FILE NAME: WPPICOT6 PRINTED: 03/15/87

W E S T E R N T E N N E S S E E A G R I E X P S T A T I O N

COTTON PPI HERBICIDE EVALUATION

EXPERIMENT COMMENTS

KEY TO DATA HEADERS

1.%CRSTUN VISUAL=%VISUAL CROP STUNTING.
2.%AMACH CONTROL=%SMOOTH PIGWEED CONTROL.
3.%ELEIN CONTROL=%GOOSEGRASS CONTROL.
4.%IPOHG CONTROL=%IVYLEAF MORNINGGLORY CONTROL.
5.%POLPY CONTROL=%PENNSYLVANIA SMARTWEED CONTROL.
6.%CYPES CONTROL=%YELLOW NUTSEDGE CONTROL.
7.%BRAPP CONTROL=%BROADLEAF SIGNALGRASS CONTROL.
8.SAME AS NUMBER THREE.
9.SC.YLD. LB/ACRE=SEED COTTON YIELD IN POUNDS PER ACRE.
10.%GIN TURNOUT=%GIN TURNOUT(LINT WEIGHT DIVIDED BY SEED COTTON WEIGHT
11.LINT/YD LB/ACRE=LINT YIELD IN POUNDS PER ACRE.
13.COTTON GRADE=COTTON GRADE AS DETERMINED BY THE MEMPHIS COTTON CLASSING OFFICE.
14.GRADE REDUCT=COTTON GRADE REDUCTION.
(12) REDUCED TWO FULL GRADES DUE TO BARK.
(21) REDUCED ONE FULL GRADE DUE TO GRASS.
15.STAPLE LENGTH=COTTON STAPLE LENGTH.
16.MICRO- NAIRE=COTTON MICRONAIRE.
*TREATMENT 9,(WEEDY CK),WAS NOT HARVESTED BECAUSE OF WEEDS.

SUMMARY

There was slight injury to cotton from RE40885 at the 1.0 lb ai/A rate. Injury appeared to be similar to that of a chlorophyll inhibitor. Smooth pigweed control was poor with RE40885 and Treflan when used alone. Only the Treflan, Cotoran, and Treflan + Cotoran combinations provided excellent goosegrass control. RE40885 at 1.0 lb ai/A and Treflan + Cotoran provided 91% morningglory control. RE40885 and Cotoran had activity on smartweed. RE40885 applied ppi alone was weak on annual grasses. RE40885 (split application) with a sequential application of Select, Cotoran, or Treflan + Cotoran produced lint yields equal to the weed free check. The grade was reduced on those treatments with poor smooth pigweed and annual grass control.

PROJ. NUM.: INTERIM DATA UNITS: LBai/A
FILE NAME: WPPICOT6 PRINTED: 03/15/87

W E S T E R N T E N N E S S E E A G R I E X P S T A T I O N

COTTON PPI HERBICIDE EVALUATION

RESEARCH BY: R.M. HAYES COUNTY: MADISON ST: TN COUNTRY: USA
COOPERATOR : P.E. HOSKINSON LAST UPDATE: 03/15/87 INITIATED: 04/28/86
TOTAL REPS : 4 EXPT. STATUS: 4 COMPLETED: 09/23/86
APPL: PPI =04/28/86 POST =06/12/86

TRT. NO.	PESTICIDE NAME	FORMU.	LBai/A	APPLI-CATION TYPE	%CRSTUN VISUAL 5/30/86	%AMACH CONTROL 5/30/86	%ELEIN CONTROL 5/30/86	%IPOMG CONTROL 5/30/86	%POLPY CONTROL 5/30/86	%BRAPP CONTROL 9/25/86	%ELEIN CONTROL 9/25/86	SC.YLD. LB/ACRE 9/23/86	% GIN TURNOUT 9/23/86	LINT/YD LB/ACRE 9/23/86
01	RE 40885	EC	1.5 0.5	PPI	4	78	85	65	46	60	60	1495	38.23	572
02	RE 40885	EC	1.5 1.0	PPI	18	96	81	91	96	86	54	1644	37.94	624
03	RE 40885	EC	1.5 0.25	PPI	8	97	73	64	95	94	76	2156	37.32	805
	RE 40885	EC	1.5 0.25	PRE										
04	RE 40885	EC	1.5 0.25	PPI	8	96	83	78	73	97	91	2460	38.52	947
	RE 40885	EC	1.5 0.25	PRE										
	SELECT	EC	2.0 0.06	POST										
	AGRIDEX	%A	100% 1.25%	POST										
05	RE 40885	EC	1.5 0.5	PPI	1	98	84	97	96	98	98	2917	38.12	1112
	RE 40885	EC	1.5 0.25	PRE										
	SELECT	EC	2.0 0.125	POST										
	AGRIDEX	%A	100% 1.25%	POST										
06	TREFLAN	EC	4.0 0.75	PPI	5	77	97	0	0	99	96	1713	38.72	663
07	COTORAN	FL	4.0 1.5	PRE	6	99	98	76	96	99	98	2993	39.41	1180
08	TREFLAN	EC	4.0 0.75	PPI	13	99	99	91	97	99	99	2971	37.56	1116
	COTORAN	FL	4.0 1.5	PRE										
09	WEEDY CK				0	0	0	0	0	0	0	NA	NA	NA
10	WEEDFREE				0	99	99	99	99	99	98	2602	35.96	936
				LSD(0.05) =	11	18	11	30	32	21	22	643	NA	242
				STANDARD DEVIATION =	8	13	8	21	22	15	15	443	NA	167
				COEFF. OF VARIABILITY =	128	15	10	32	32	18	20	22	NA	22

PROJ. NUM.: INTERIM DATA UNITS: LBai/A
FILE NAME: WPPICOT6 PRINTED: 03/15/87

W E S T E R N T E N N E S S E E A G R I E X P S T A T I O N

COTTON PPI HERBICIDE EVALUATION

RESEARCH BY: R.M. HAYES COUNTY: MADISON ST: TN COUNTRY: USA
COOPERATOR : P.E. HOSKINSON LAST UPDATE: 03/15/87 INITIATED: 04/28/86
TOTAL REPS : 4 EXPT. STATUS: 4 COMPLETED: 09/23/86
APPL: PPI =04/28/86 POST =06/12/86

TRT. NO.	PESTICIDE NAME	FORMU.	LBai/A	APPLICATION TYPE	COTTON GRADE 1/20/87	GRADE REDUCT 1/20/87	STAPLE LENGTH 1/20/87	MICRONAIRE 1/20/86
01	RE 40885	EC	1.5 0.5	PPI	51	NA	35	4.5
02	RE 40885	EC	1.5 1.0	PPI	51	21	35	4.4
03	RE 40885	EC	1.5 0.25	PPI	52	21	35	4.5
	RE 40885	EC	1.5 0.25	PRE				
04	RE 40885	EC	1.5 0.25	PPI	51	NA	34	4.6
	RE 40885	EC	1.5 0.25	PRE				
	SELECT	EC	2.0 0.06	POST				
	AGRIDEX	%A	100% 1.25%	POST				
05	RE 40885	EC	1.5 0.5	PPI	50	NA	35	4.5
	RE 40885	EC	1.5 0.25	PRE				
	SELECT	EC	2.0 0.125	POST				
	AGRIDEX	%A	100% 1.25%	POST				
06	TREFLAN	EC	4.0 0.75	PPI	50	NA	35	4.2
07	COTORAN	FL	4.0 1.5	PRE	51	NA	35	4.4
08	TREFLAN	EC	4.0 0.75	PPI	51	NA	35	4.5
	COTORAN	FL	4.0 1.5	PRE				
09	WEEDY CK				81	12	34	4.1
10	WEEDFREE				51	NA	35	4.5
				LSD(0.05) =	NA	NA	NA	NA
				STANDARD DEVIATION =	NA	NA	NA	NA
				COEFF. OF VARIABILITY =	NA	NA	NA	NA

PROJ. NUM.: INTERIM DATA UNITS: LBai/A
FILE NAME: WPRECOT6 PRINTED: 03/15/87

W E S T E R N T E N N E S S E E A G R I E X P S T A T I O N

COTTON PRE HERBICIDE EVALUATION

RESEARCH BY: R.M. HAYES
COOPERATOR : P.E. HOSKINSON
TOTAL REPS : 4
REPORTED BY: R.M. HAYES

COUNTY: MADISON
LAST UPDATE: 03/15/87
EXPT. STATUS: 4
RELATED FILE: **NONE**

ST: TN COUNTRY: USA
INITIATED: 04/28/86
COMPLETED: 09/23/86
SOURCE: UNIVER.

PREVIOUS CROP: SOYBEANS
PREVIOUS TILL: CONVENTIONAL
FERTILITY: 60-60-60 + 0.5# BORON/A
MISC. 1: TRIPLE TREATED SEED
MISC. 2: TEMIK-TSX AT 10 LBS/A IN FURROW

PLOT SIZE(LxW): 10.0x 30.0 SOIL pH :6.7
SOIL TEXTURE: GRENADA SIL SOIL OM%: 01.1
ROW WIDTH: 040 EXPERIMENTAL DESIGN: RCB
NUMBER OF REPS: 4
REPORT TYPE: INTERIM

PLANTING DATE: 04/28/86
HARVEST DATE : 09/23/86
RESIDUE TAKEN: N

CROP CULTIVAR: STONEVILLE 825
SEASONAL RAINFALL DURING EXPERIMENT
EARLY: OPT MID: WET LATE: DRY

APPLICATION INFO	APPLIC. 1	APPLIC. 2	APPLIC. 3	APPLIC. 4	APPLIC. 5
APPLICATION DATE	04/28/86	/ /	/ /	/ /	/ /
JULIAN DATE/YEAR	J118/86	J 0/00	J 0/00	J 0/00	J 0/00
GEN. APPLIC TYPE	PRE				
AIR/SOIL TEMP(F)	077/080	/	/	/	/
% REL. HUMIDITY	%				
WIND DIR/VELOC.	W/05	/	/	/	/
ROOT/LEAF MOIST.	OPT/	/	/	/	/
INCORP. EQUIP.					
INCORP. DEPTH in	.	.	.	.	.
SPRAYER TYPE	CO2BACKPACK				
SPRAYER GPA/PSI	18.0/032	. /	. /	. /	. /
NOZZLE TYPE	FLATFAN8002				
RAIN / IRRIG. in					
0-24 hr/1-3 days	. /00.8	. / .	. / .	. / .	. / .
4-7 days/2nd wk	. / .	. / .	. / .	. / .	. / .
3rd / 4th week	01.3/01.1	. / .	. / .	. / .	. / .

SPEC. CODE	SPECIES	DEN-SITY	APPLIC. 1 HTin/STG.	APPLIC. 2 HTin/STG.	APPLIC. 3 HTin/STG.	APPLIC. 4 HTin/STG.	APPLIC. 5 HTin/STG.
*****	**** CROP *****	****	**********	**********	**********	**********	**********
GOSHI	COTTON		/	/	/	/	/
*****	**** PEST *****	****	**********	**********	**********	**********	**********
AMACH	SMOOTH PIGWEED		/	/	/	/	/
IPOHG	ENTIRELEAF MG		/	/	/	/	/
BRAPP	B. SIGNALGRASS		/	/	/	/	/
CYPES	YELLOW NUTSEDGE		/	/	/	/	/
ABUTH	VELVETLEAF		/	/	/	/	/
			/	/	/	/	/
			/	/	/	/	/
			/	/	/	/	/
			/	/	/	/	/
			/	/	/	/	/

PROJ. NUM.:
FILE NAME: WPRECOT6

INTERIM DATA

UNITS: LBai/A
PRINTED: 03/15/8

W E S T E R N T E N N E S S E E A G R I E X P S T A T I O N

COTTON PRE HERBICIDE EVALUATION

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EXPERIMENT COMMENTS

KEY TO DATA HEADERS

1. %CRSTUN VISUAL=PERCENT VISUAL CROP STUNTING.
2. %AMACH CONTROL=PERCENT SMOOTH PIGWEED CONTROL.
3. %IPOHG CONTROL=PERCENT ENTIRELEAF MORNINGGLORY CONTROL.
4. %BRAPP CONTROL=PERCENT BROADLEAF SIGNALGRASS CONTROL.
5. %ELEIN CONTROL=PERCENT GOOSEGRASS CONTROL.
6. %BRAPP CONTROL=PERCENT BROADLEAF SIGNALGRASS CONTROL
7. SC.YLD. LB/ACRE=SEED COTTON YIELD IN POUNDS PER ACRE.
8. %GIN TURNOUT=LINT WEIGHT DIVIDED BY SEED COTTON WEIGHT.
9. LINT/YD LB/ACRE=LINT YIELD IN POUNDS PER ACRE.
10. COTTON GRADE=GRADE AS DETERMINED BY THE MEMPHIS CLASSING OFFICE.
11. GRADE REDUCT=COTTON GRADE REDUCTION
    (11)REDUCED ONE FULL GRADE DUE TO BARK.
    (12)REDUCED TWO FULL GRADES DUE TO BARK.
    (21)REDUCED ONE FULL GRADE DUE TO GRASS.
12. STAPLE LENGTH=COTTON STAPLE LENGTH.
13. MICRO- NAIRE=COTTON MICRONAIRE.

*TREATMENT 15,(WEEDY CK),WAS NOT HARVESTED BECAUSE OF WEEDS.

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SUMMARY

SN582 plus Cotoran was injurious to cotton early; however, cotton lint yield was not adversely affected. All treatments expect RE40885 alone and in combination with Prowl or Select provided excellent smooth pigweed and annual grass control. Prowl + Cotoran and Prowl + Cotoran + Bladex provided the best morningglory control. Grade was reduced in those treatments with poor smooth pigweed and annual grass control.

PROJ. NUM.: INTERIM DATA UNITS: LBai/A
FILE NAME: WPRECOT6 PRINTED: 03/15/87

W E S T E R N T E N N E S S E E A G R I E X P S T A T I O N

COTTON PRE HERBICIDE EVALUATION

RESEARCH BY: R.M. HAYES COUNTY: MADISON ST: TN COUNTRY: USA
COOPERATOR : P.E. HOSKINSON LAST UPDATE: 03/15/87 INITIATED: 04/28/86
TOTAL REPS : 4 EXPT. STATUS: 4 COMPLETED: 09/23/86
APPL: PRE =04/28/86

TRT. NO.	PESTICIDE NAME	FORMU.	LBai/A	APPLI-CATION TYPE	%CRSTUN VISUAL 5/30/86	%AMACH CONTROL 5/30/86	%IPONG CONTROL 5/30/86	%BRAPP CONTROL 5/30/86	%ELEIN CONTROL 5/30/86	%BRAPP CONTROL 9/25/86	SC.YLD. LB/ACRE 9/23/86	% GIN TURNOUT 9/23/86	LINT/YD LB/ACRE 9/23/86
01	DUAL	EC 8	1.5	PRE	6	99	0	99	99	87	2373	35.68	847
02	COTORAN	FL 4	1.5	PRE	4	99	71	94	95	85	2721	35.89	977
03	DUAL	EC 8	1.5	PRE	8	99	79	98	98	98	3179	38.19	1214
	COTORAN	FL 4	1.5	PRE									
04	PROWL	EC 4	0.75	PRE	11	99	95	98	99	96	2547	36.39	927
	COTORAN	FL 4	1.5	PRE									
05	PROWL	EC 4	0.75	PRE	15	99	96	97	98	92	2863	37.55	1075
	COTORAN	FL 4	1.5	PRE									
	BLADEX	FL 4	0.67	PRE									
06	CINCH	EC 7	1	PRE	4	99	52	99	99	98	3287	36.79	1209
	COTORAN	FL 4	1.5	PRE									
07	SN 582	EC 8	1.5	PRE	41	99	64	99	98	96	3059	36.63	1120
	COTORAN	FL 4	1.5	PRE									
08	COTORAN	FL 4	1.5	PRE	10	99	65	95	98	97	2775	36.59	1015
	BLADEX	FL 4	0.67	PRE									
09	PROWL	EC 4	0.75	PRE	6	98	70	97	99	88	2797	38.27	1070
	ZORIAL	DF 80%	1.5	PRE									
10	PROWL	EC 4	0.75	PRE	9	90	66	36	87	51	2090	37.77	790
	RE 40885	EC 1.5	0.5	PRE									
11	RE 40885	EC 1.5	0.5	PRE	4	86	43	58	61	41	1634	36.10	664
12	RE 40885	EC 1.5	1.0	PRE	6	94	60	55	53	41	2014	35.89	723
13	SELECT	EC 2	0.125	PRE	4	71	45	38	30	47	1721	37.25	718
	RE 40885	EC 1.5	0.5	PRE									
14	SELECT	EC 2	0.125	PRE	9	99	66	97	92	92	2689	36.80	990
	COTORAN	FL 4	1.5	PRE									

PROJ. NUM.: INTERIM DATA UNITS: LBai/A
FILE NAME: WPRECOT6 PRINTED: 03/15/87

W E S T E R N T E N N E S S E E A G R I E X P S T A T I O N

COTTON PRE HERBICIDE EVALUATION

APPL: PRE =04/28/86

TRT. NO.	PESTICIDE NAME	FORMU.	APPLI-CATION TYPE	%CRSTUN VISUAL 5/30/86	%AMACH CONTROL 5/30/86	%IPOHG CONTROL 5/30/86	%BRAPP CONTROL 5/30/86	%ELEIN CONTROL 5/30/86	%BRAPP CONTROL 9/25/86	SC.YLD. LB/ACRE 9/23/86	% GIN TURNOUT 9/23/86	LINT/YD LB/ACRE 9/23/86
15	WEEDY CK	LBai/A		0	0	0	0	0	0	NA	NA	NA
16	WEEDFREE	LBai/A		0	99	99	99	99	97	2624	35.99	944
	LSD(0.05) =			11	10	39	28	NA	24	661	NA	207
	STANDARD DEVIATION =			8	7	27	20	NA	16	458	NA	143
	COEFF. OF VARIABILITY =			92	8	44	25	NA	22	19	NA	16

PROJ. NUM.:
FILE NAME: WPRECOT6

INTERIM DATA

UNITS: LBai/A
PRINTED: 03/15/87

W E S T E R N T E N N E S S E E A G R I E X P S T A T I O N

COTTON PRE HERBICIDE EVALUATION

RESEARCH BY: R.M. HAYES
COOPERATOR : P.E. HOSKINSON
TOTAL REPS : 4
APPL: PRE =04/28/86

COUNTY: MADISON
LAST UPDATE: 03/15/87
EXPT. STATUS: 4

ST: TN COUNTRY: USA
INITIATED: 04/28/86
COMPLETED: 09/23/86

TRT. NO.	PESTICIDE NAME	FORMU.	LBai/A	APPLI-CATION TYPE	COTTON GRADE 1/20/87	GRADE REDUCT 1/20/87	STAPLE LENGTH 1/20/87	MICRO-NAIRE 1/20/87
01	DUAL	EC 8	1.5	PRE	51	NA	35	4.4
02	COTORAN	FL 4	1.5	PRE	51	21	34	4.5
03	DUAL	EC 8	1.5	PRE	51	NA	35	4.6
	COTORAN	FL 4	1.5	PRE				
04	PROWL	EC 4	0.75	PRE	50	NA	34	5.0
	COTORAN	FL 4	1.5	PRE				
05	PROWL	EC 4	0.75	PRE	51	NA	35	4.5
	COTORAN	FL 4	1.5	PRE				
	BLADEX	FL 4	0.67	PRE				
06	CINCH	EC 7	1	PRE	50	NA	35	4.4
	COTORAN	FL 4	1.5	PRE				
07	SN 582	EC 8	1.5	PRE	50	NA	34	4.5
	COTORAN	FL 4	1.5	PRE				
08	COTORAN	FL 4	1.5	PRE	51	NA	35	4.5
	BLADEX	FL 4	0.67	PRE				
09	PROWL	EC 4	0.75	PRE	50	NA	34	4.5
	ZORIAL	DF 80%	1.5	PRE				
10	PROWL	EC 4	0.75	PRE	61	21	35	4.3
	RE 40885	EC 1.5	0.5	PRE				
11	RE 40885	EC 1.5	0.5	PRE	52	21	35	4.3
12	RE 40885	EC 1.5	1.0	PRE	61	11	35	4.1
13	SELECT	EC 2	0.125	PRE	61	21	35	4.4
	RE 40885	EC 1.5	0.5	PRE				
14	SELECT	EC 2	0.125	PRE	50	NA	35	4.6
	COTORAN	FL 4	1.5	PRE				

PROJ. NUM.: INTERIM DATA UNITS: LBai/A
FILE NAME: WPRECOT6 PRINTED: 03/15/87

W E S T E R N T E N N E S S E E A G R I E X P S T A T I O N

COTTON PRE HERBICIDE EVALUATION

APPL: PRE =04/28/86

TRT. NO.	PESTICIDE NAME	FORMU.	LBai/A	APPLI-CATION TYPE	COTTON GRADE 1/20/87	GRADE REDUCT 1/20/87	STAPLE LENGTH 1/20/87	MICRO-NAIRE 1/20/87							
15	WEEDY CK				81	12	34	4.1							
16	WEEDFREE				50	NA	34	4.5							
				LSD(0.05) =	NA	NA	NA	NA							
				STANDARD DEVIATION =	NA	NA	NA	NA							
				COEFF. OF VARIABILITY =	NA	NA	NA	NA							

PROJ. NUM.: INTERIM DATA UNITS: LBai/A
FILE NAME: CASOROT1 PRINTED: 03/15/87

W E S T E R N T E N N E S S E E A G R I E X P S T A T I O N

SICKLEPOD CONTROL IN COTTON

RESEARCH BY: R.M. HAYES
COOPERATOR :
TOTAL REPS : 4
REPORTED BY: R.M. HAYES

COUNTY: MADISON ST: TN COUNTRY: USA
LAST UPDATE: 03/15/87 INITIATED: 05/11/84
EXPT. STATUS: 4 COMPLETED: 10/09/86
RELATED FILE: **NONE** SOURCE: UNIVER.

PREVIOUS CROP: COTTON
PREVIOUS TILL: CONVENTIONAL/NO-TILL
FERTILITY: P-VH,K-VH./0-40-40
MISC. 1: COTTON 60LB/N/A,
MISC. 2:

PLOT SIZE(LxW): 13.3x 30.0 SOIL pH :6.2
SOIL TEXTURE: COLLINS S.L. SOIL OM%: 01.0
ROW WIDTH: 040 EXPERIMENTAL DESIGN: RCBD
NUMBER OF REPS: 4
REPORT TYPE: INTERIM

PLANTING DATE: 04/30/86
HARVEST DATE : 10/09/86
RESIDUE TAKEN: N

CROP CULTIVAR: STONEVILLE 825
SEASONAL RAINFALL DURING EXPERIMENT
EARLY: OPT MID: WET LATE: DRY

APPLICATION INFO	APPLIC. 1	APPLIC. 2	APPLIC. 3	APPLIC. 4	APPLIC. 5
APPLICATION DATE	04/30/86	06/12/86	/ /	/ /	/ /
JULIAN DATE/YEAR	J120/86	J163/86	J 0/00	J 0/00	J 0/00
GEN. APPLIC TYPE	PRE	POST			
AIR/SOIL TEMP(F)	/	079/	/	/	/
% REL. HUMIDITY	%				
WIND DIR/VELOC.	/	/	/	/	/
ROOT/LEAF MOIST.	OPT/	WET/DRY	/	/	/
INCORP. EQUIP.	NONE				
INCORP. DEPTH in	.	.	.	.	.
SPRAYER TYPE	CO2BACKPACK	CO2BACKPACK			
SPRAYER GPA/PSI	018.0/032	018.0/032	. /	. /	. /
NOZZLE TYPE	FLATFAN8002	FLATFAN8002			
RAIN / IRRIG. in					
0-24 hr/1-3 days	. /0.80	. / .	. / .	. / .	. / .
4-7 days/2nd wk	. /0.63	. / .	. / .	. / .	. / .
3rd / 4th week	0.56/1.81	0.28/0.35	. / .	. / .	. / .

SPEC. CODE	SPECIES	DEN-SITY	APPLIC. 1 HTin/STG.	APPLIC. 2 HTin/STG.	APPLIC. 3 HTin/STG.	APPLIC. 4 HTin/STG.	APPLIC. 5 HTin/STG.
*****	**** CROP *****	****	*********	*********	*********	*********	*********
GOSHI	COTTON		/	03 /V4	/	/	/
*****	**** PEST *****	****	*********	*********	*********	*********	*********
CASOB	SICKLEPOD		/	01 /1TRLV	/	/	/
			/	/	/	/	/
			/	/	/	/	/
			/	/	/	/	/
			/	/	/	/	/
			/	/	/	/	/
			/	/	/	/	/
			/	/	/	/	/
			/	/	/	/	/
			/	/	/	/	/

PROJ. NUM.:
FILE NAME: CASOROT1

INTERIM DATA

UNITS: LBai/A
PRINTED: 03/15/87

W E S T E R N T E N N E S S E E A G R I E X P S T A T I O N

SICKLEPOD CONTROL IN COTTON

EXPERIMENT COMMENTS

ENTIRE EXPERIMENTAL AREA TREATED WITH DUAL 8E (1.5PT/A)FOR ANNUAL GRASS AND BROADLEAF WEEDS. (PARAQUAT AT 0.5 LB/A ON NO-TILL PORTION). COTTON PLOTS RECIEVED TEMIK+TSX,0.5+1.0 LB AI/A.

KEY TO DATA HEADERS

1. %CASOB CONTROL=%SICKLEPOD CONTROL.
2. %CRINJU VISUAL=%VISUAL CROP INJURY.
3. NUM/CAS /M2 N-T=NUMBER OF SICKLEPOD PER METER SQUARE NO-TILL.
4. NUM/CAS /M2 C-T=NUMBER OF SICKLEPOD PER METER SQUARE CONV.TILL.
5. GR./CAS /M2 N-T=SICKLEPOD WEIGHT IN GRAMS PER METER SQUARE NO-TILL.
6. GR./CAS /M2 C-T=SICKLEPOD WEIGHT IN GRAMS PER METER SQUARE CONV.TILL
7. SC. YLD.LB/ACRE=SEED COTTON YIELD IN POUNDS PER ACRE.
8. %GIN TURNOUT=LINT COTTON WEIGHT DIVIDED BY SEED COTTON WEIGHT.
9. LINT/CT LB/ACRE=LINT COTTON YIELD IN POUNDS PER ACRE.
10. COTTON GRADE=COTTON GRADE AS DETERMINED BY THE MEMPHIS COTTON CLASSING OFFICE.
11. STAPLE LENGTH=COTTON STAPLE LENGTH.
12. MICRO- NAIRE=COTTON MICRONAIRE.

SUMMARY

Cotoran preemergence provided effective early season sicklepod control, but after about 3-4 weeks emerging sicklepod survived. A sequential postemergence application improved control by about 10% with little cotton injury when applied at the first true leaf stage. Cotton yield was reduced 89% by sicklepod. Even where a pre-emergence application of Cotoran was made, yields were 14% lower than the weed free check, but where sequential Cotoran applications were made lint yield was 81 lb/A higher than the weed free check. Similar results have been obtained in two previous years of research.

PROJ. NUM.: INTERIM DATA UNITS: LBai/A
FILE NAME: CASOROT1 PRINTED: 03/15/87

W E S T E R N T E N N E S S E E A G R I E X P S T A T I O N

SICKLEPOD CONTROL IN COTTON

RESEARCH BY: R.M. HAYES COUNTY: MADISON ST: TN COUNTRY: USA
COOPERATOR : LAST UPDATE: 03/15/87 INITIATED: 05/11/84
TOTAL REPS : 4 EXPT. STATUS: 4 COMPLETED: 10/09/86
APPL: PRE =04/30/86 POST =06/12/86

TRT. NO.	PESTICIDE NAME	FORMU.	LBai/A	APPLI-CATION TYPE	%CASOB CONTROL 6/04/86	%CRINJU VISUAL 6/04/86	NUM/CAS /M2 8/18/86	NUM/CAS /M2 8/18/86	GR./CAS /M2 8/18/86	GR./CAS /M2 8/18/86						
							N-T	C-T	N-T	C-T						
01	COTTON/ COTORAN	FL	4.0 1.5	PRE	84	0	84	48	35	34						
02	COTTON/ COTORAN COTORAN	FL FL	4.0 1.5 4.0 1.5	PRE POST1	95	5	42	42	7	33						
03	COTTON/ WEEDY-CK				0	0	82	60	259	259						
04	COTTON/ WEEDFREE				99	0	0	0	0	0						
	Whole plot mean				70	1	52	37	75	81	0	0	0	0	0	0
	LSD(0.05) =				9	NA	57	33	75	59						
	STANDARD DEVIATION =				5	NA	36	21	47	37						
	COEFF. OF VARIABILITY =				8	NA	69	56	62	45						

PROJ. NUM.: INTERIM DATA UNITS: LBai/A
FILE NAME: CASOROT1 PRINTED: 03/15/87

W E S T E R N T E N N E S S E E A G R I E X P S T A T I O N

SICKLEPOD CONTROL IN COTTON

RESEARCH BY: R.M. HAYES COUNTY: MADISON ST: TN COUNTRY: USA
COOPERATOR : LAST UPDATE: 03/15/87 INITIATED: 05/11/84
TOTAL REPS : 4 EXPT. STATUS: 4 COMPLETED: 10/09/86
APPL: PRE =04/30/86 POST =06/12/86

TRT. NO.	PESTICIDE NAME	FORMU.	LBai/A	APPLI-CATION TYPE	SC. WT. LB/ACRE 10/09/*	% GIN TURNOUT 0/00/00	LINT/CT LB/ACRE 10/09/*	COTTON GRADE 1/20/87	STAPLE LENGTH 1/20/87	MICRO-NAIRE 1/20/87						
01	COTTON/ COTORAN	FL	4.0 1.5	PRE	2075	39.32	816	41	35	4.6						
02	COTTON/ COTORAN COTORAN	FL FL	4.0 1.5 4.0 1.5	PRE POST1	2672	38.40	1026	41	34	4.3						
03	COTTON/ WEEDY-CK				257	41.19	106	41	35	4.0						
04	COTTON/ WEEDFREE				2461	38.36	944	41	35	4.3						
	Whole plot mean				1866	39.32	723	41	35	4.3	.0	.0	.0	.0	.0	.0
	LSD(0.05) =				310	NA	121	NA	NA	NA						
	STANDARD DEVIATION =				194	NA	75	NA	NA	NA						
	COEFF. OF VARIABILITY =				10	NA	10	NA	NA	NA						

Project: H778-W-7

Title: Effects of Date of Planting and Sequential Pix Treatments on Cotton
Location of Research: West Tennessee Experiment Station
Cultivar: Stoneville 825
Experimental Design: RCB split plot with 5 replications
Main Plots: Dates of planting
Sub-Plots: Pix treatments
Plot size: 4 rows 30' long, harvest 2 center rows for yield.

Previous crop: Cotton

Soil type: Memphis silt loam (0% to 2% slopes)

Fertility: pH 6.2, P (H), K (H)

Fertilizer: 60-60-60 (NPK) + 0.5 Boron

Date	Temp Max/Min
6/16	88/66
6/23	95/72
7/01	91/75
7/15	91/69
7/21	97/74
7/28	91/75
8/04	85/62

Treatments

	Application dates			
A - Planted May 6				
1. Check				
2. 1 pt/A at early bloom	7/15			
3. .5 pt/A at early bloom	7/15			
4. .5 pt/A at early bloom + .5 pt/A at mid-bloom	7/15	7/28		
5. 2 oz/A at 6-7 true leaves, applied 4 times to early bloom	6/16	6/23	7/01	7/15
6. 4 oz/A at 6-7 true leaves, applied 4 times to early bloom	6/16	6/23	7/01	7/15
B - Planted May 16				
1. Check				
2. 1 pt/A at early bloom	7/21			
3. .5 pt/A at early bloom	7/21			
4. .5 pt/A at early bloom + .5 pt/A at mid-bloom	7/21	8/04		
5. 2 oz/A at 6-7 true leaves, applied 4 times to early bloom	6/23	7/01	7/15	7/21
6. 4 oz/A at 6-7 true leaves, applied 4 times to early bloom	6/23	7/01	7/15	7/21

Sprayed with high clearance IH660 sprayer; hollow cone nozzles, 1 TX-18/row; 14 gpa, 40 psi, 2.8 mph. On 7/01 went to 2 nozzles/row; 2 TX-12/row, 20 gpa, 30 psi, 2.8 mph. Harvested: 09/30 and 10/21.

Early-planted cotton matured earlier and yielded more than late-planted cotton. Pix did significantly influence yields in 1986. However, a significant Pix by date of planting interaction indicated that various Pix treatments affected cotton planted on May 6 and May 16 differently. The data suggest that one pint of Pix applied at early bloom or as a total of four sequential treatments was most valuable to late-planted cotton. The opposite was true for cotton planted May 6 when 0.5 pint total Pix was most valuable. Late-planted cotton was significantly taller and had small bolls. Pix reduced gin turnout and tended to improve grades of cotton that had not been defoliated.

Lint yield and other characteristics of Stoneville 825 cotton that had been subjected to two planting dates and six Pix treatments.

Treatments		Yield per Acre			Plant Height	Gin Turnout	Lint Quality		
Planting date	Pix	Total	First Harvest				Grade	Staple	Micro-naire
		LBS	LBS	%	Inches	%		32's	
May 6									
Check		1127	964	86	36.0	34.2	52	34	5.2
1 pt Pix	Early bloom	985	842	85	32.4	31.9	50	35	5.0
0.5 pt Pix	Early bloom	1117	958	86	32.1	34.1	51	36	5.1
0.5 pt Pix + 0.5 pt Pix	Early bloom + Mid-bloom	1043	881	84	33.1	32.2	52	35	4.7
0.125 pt Pix + 3 more treatments at 7-10 day intervals	7 true leaves	1193	1030	86	31.0	34.5	42	35	4.8
0.25 pt Pix at 7 true leaves + 3 more treatments at 7-10 day intervals		1114	957	86	29.1	33.7	50	35	4.9
Average for May 6		1096	939	85.7	32.3	33.4		35.0	4.95
May 16									
Check		1046	831	79	37.5	35.5	50	36	4.8
1 pt Pix	Early bloom	1038	848	82	34.5	33.9	41	36	4.6
0.5 pt Pix	Early bloom	971	774	80	34.7	33.3	50	36	4.6
0.5 pt Pix + 0.5 pt Pix	Early bloom + Mid-bloom	985	808	82	35.5	33.0	42	35	4.6
0.125 pt Pix + 3 more treatments at 7-10 day intervals	7 true leaves	921	733	80	35.7	31.0	50	36	4.5
0.25 pt Pix + 3 more treatments at 7-10 day intervals	7 true leaves	1046	864	83	33.0	34.3	42	35	4.4
Average for May 16		1001	810	80.9	35.2	33.5		35.5	4.58
Date of planting									
LSD .05		84.2	96.0		2.5				
CV %		11.2	6.3		5.8				
Pix									
LSD .05		NS	NS		1.1				
CV %					3.6				
Pix by date of planting									
LSD .05		64.3	58.3						
CV %		6.7	6.3						

Note: Late planted cotton was defoliated early by mistake.

Project: H778-W-8

Title: Effects of Row Spacing and Pix on Cotton

Location of Research: West Tennessee Experiment Station

Cultivar: Stoneville 825

Experimental Design: RCB split plot with 4 replications

Main Plots: Rows 40" apart
Rows 30" apart

Sub-Plots: No Pix followed by Prep 6 (1.33 pt/A)
Pix (1 pt/A) followed by Prep 6 (1.33 pt/A)
Pix (0.5 pt/A) followed by Prep 6 (1.33 pt/A)
Check

Plot size: 4 rows 50' long, harvest 2 center rows for yield

Soil type: Dexter silt loam (2% to 5% slopes)

Soil test: pH - 7.0, P (H) K (VH)

Fertilizer: 60-60-60

Planted: 40" rows - 05/06/86
30" rows - 05/08/86

		Temperature F	Max	Min	Rainfall
Application dates:	Pix - 07/17		93	73	No rain for 7 days
	Prep - 09/12		90	58	No rain until 9/18

Sprayer type: (Pix & Prep) High Clearance IH660, GPA 20; PSI 30; MPH 2.8.

Nozzle types and number: Hollow cone for both chemicals. TX-12, 2/row overtop (3 nozzles/row could not be used over rows 30" apart.)

Harvested: 09/23 and 10/20

Row spacing did not influence yield or maturity. Cotton planted in rows 30 inches apart had 1.4 percent lower gin turnout, while plants grown in the narrow-rows were 2.8 inches taller.

Neither Prep nor Pix, applied alone or in combination, increased total yield. Earliest plots were treated with Prep. Both plant growth regulators improved the grade at first harvest. Grades were better for cotton grown in 30-inch rows. Grades, staple length, and micronaire values declined sharply at second harvest.

Project: H778-W-8
Effects of Row Spacing and Pix on Lint Yield of Stoneville 825 Cotton at Jackson, TN in 1986.

Treatment*	Row Width	Yield Per Acre Total	1st Harvest		Plant Height	Gin Turnout
	Inches	LBS	LBS	%	Inches	%
Check	40	1374	1175	86	42.7	34.5
	30	1457	1145	79	46.5	33.7
No Pix fb Prep 6	40	1468	1318	90	44.8	35.1
(1.33 pt/A)	30	1425	1287	90	43.8	35.2
Pix (1 pt/A) fb Prep 6	40	1429	1296	91	39.6	37.1
(1.33 pt/A)	30	1324	1169	88	40.6	32.7
Pix (0.5 pt/A) fb Prep 6	40	1447	1324	92	40.1	34.7
(1.33 pt/A)	30	1313	1221	93	41.0	34.4
LSD .05		ns	ns		2.9	
CV %		6.5	8.5		6.5	
Check		1415	1160	82	44.6	34.1
No Pix fb Prep 6 (1.33 pt/A)		1447	1303	90	44.3	35.1
Pix (1 pt/A) fb Prep 6 (1.33 pt/A)		1377	1233	90	40.1	34.9
Pix (0.5 pt/A) fb Prep 6 (1.33 pt/A)		1380	1272	92	40.6	34.6
Average	40	1396	1252	90	41.8	35.4
	30	1413	1231	87	43.0	34.0
LSD .05		ns	ns		ns	
CV %		6.3	10.7		7.0	

*fb = followed by
Prep 6 - 1.33 pt/A is equal to 1.0 lb ai/A.
Pix - 0.5 pt/A is equal to 0.02 lb ai/A or 10 g ai/ha.
Pix - 1 pt/A is equal to 0.04 lb ai/A or 20 g ai/ha.

Lint quality for the row spacing test grown at Jackson, TN in 1986

Treatment*	Row Space	First Harvest Grade	First Harvest Staple	First Harvest Micronaire	Second Harvest Grade	Second Harvest Staple	Second Harvest Micronaire
	In.		32's			32's	
Check	40	52	35	4.9	52	34	3.8
No Pix fb Prep 6 (1.33 pt/A)	40	52	34	4.4	62	33	3.0
Pix (1 pt/A) fb Prep 6 (1.33 pt/A)	40	50	35	4.7	52	33	3.1
Pix (0.5 pt/A) fb Prep 6 (1.33 pt/A)	40	51	34	4.5	52	33	3.1
Average			34.5	4.63		33.3	3.33
Check	30	51	35	4.7	52	33	3.6
No Pix fb Prep 6 (1.33 pt/A)	30	50	35	4.7	52	34	3.1
Pix (1 pt/A) fb Prep 6 (1.33 pt/A)	30	50	35	4.5	52	33	2.8
Pix (0.5 pt/A) fb Prep 6 (1.33 pt/A)	30	42	35	4.6	52	33	2.9
Average			35.0	4.63		33.3	3.10

*fb = followed by

Project: H778-MES-7

Title: Plant Growth Regulators on Cotton

Location of Research: Milan Experiment Station

Cultivar: Stoneville 825

Experimental Design: RCB with 4 replications

Plot size: 4 rows 30' long, 2 center rows harvested for yield

Previous crop: Soybeans

Soil type: Collins silt loam (0% to 2% slopes)

Soil fertility: pH 6.9, P (H), K (M)

Planted: April 28, 1986

Fertilizer: 60-60-60 PGR's applied 7/11/86 at early bloom; second application applied 7/25/86 at mid-bloom

Sprayer type: Spirit high clearance, 20 gpa, 35 psi, 3 mph. Hollow-cone nozzles, TX-10, 3/row.

Air temperature, F, day of application

Date	Max	Min
7/11/86	92	76
7/25/86	94	72

Rainfall:	7/12	7/14	7/26	8/7	9/1
	0.58	0.25	3.05	0.48	0.12

Harvested October 7 and October 17.

No significant yield differences were observed in this experiment. Each chemical tended to improve earliness. A split application of Burst tended to increase lint yields while a split application of Pix tended to decrease yields. Earliest plots were treated with one pint of Pix at early bloom. Best grades were obtained from Pix-treated plots. Pix significantly decreased plant heights. Seed index of Pix-treated plots was five percent larger than those from untreated check.

Project No: H778-MES-7 Interim data
Title: Plant Growth Regulators on Cotton

Lint yield and other characteristics of the Plant Growth Regulator Experiment grown at Milan, TN[1] in 1986.

Treatment	Yield Per Acre Total	Yield Per Acre First Harvest		Gin Turnout	Plant height	Bolls/10 Consecutive Plants	Gin and Boll Lint %	Gin and Boll Seed Index	Gin and Boll Boll Size	Lint Quality Grade	Lint Quality Staple	Lint Quality Micronaire
	LBS	LBS	%	%	In.	No.	%	Gms/100	Gms/boll		32's	
Burst 1/2 Pt EB*	1105	911	83	33.3	46.8	117	37.8	12.2	6.12	50	36	4.5
Burst 1/2 Pt MB	1046	866	83	32.1	48.0	102	37.3	12.4	6.94	50	35	4.3
Burst 1/2 Pt EB + 1/2 Pt MB	1228	1029	84	34.4	44.5	100	38.3	11.7	6.76	50	35	4.5
Average	1127	935	83	33.3	46.4	106	37.8	12.1	6.61			
Pix 1/2 Pt EB	1136	930	82	31.7	41.5	104	37.6	12.4	6.03	41	35	4.2
Pix 1 Pt EB	1180	1021	87	33.0	39.5	103	38.5	12.9	5.90	41	35	4.2
Pix 1/2 Pt EB + 1/2 Pt MB	1079	907	84	32.0	40.8	92	38.2	12.3	6.53	50	36	4.4
Average	1131	953	84	32.2	40.6	100	38.1	12.5	6.45			
BL2142 1/2 Pt EB	1142	960	84	33.4	42.5	96	38.6	11.1	6.58	51	35	4.3
BL2142 1 Pt EB	1214	1018	84	33.5	41.1	102	37.3	12.6	6.08	50	36	4.4
BL2142 1/2 Pt EB + 1/2 Pt MB	1181	1010	86	32.5	43.8	99	38.5	12.4	6.49	50	36	4.3
Average	1179	996	84	33.2	42.5	99	38.1	12.0	6.38			
BL186 1/2 Pt EB	1206	995	83	33.5	46.3	98	37.7	12.4	6.26	51	35	4.3
BL186 1 Pt EB	1123	927	83	32.3	43.8	100	37.7	11.9	6.62	50	36	4.4
BL186 1/2 Pt EB + 1/2 Pt MB	1171	983	84	33.4	44.8	101	38.0	12.4	6.21	42	35	4.4
Average	1166	969	83	33.1	44.9	100	37.8	12.3	6.36			
Check	1114	894	80	32.2	47.0	102	38.3	11.9	6.76	50	35	4.5
Average	1148	958	83	32.9	43.9	101.2						
L.S.D. .05	N.S.	N.S.			5.1	N.S.						
C.V. %	7.5	9.4			8.2	15.6						

*EB = Early bloom, MB = Mid-bloom

[1]Collins silt loam (0 to 2% slopes)

Stoneville 825 planted April 28, applied P.G.R.'s 7/11 and 7/25, harvested 10/7 and 10/17. Applied P.G.R.'s with spirit self-propelled sprayer, 3 MPH, 35 PSI, 20 gal H_2O, 3 TX-10 nozzles/row.

Project: H778-W-7
Title: Defoliation and Harvest Aids in Jackson
Location of Research: West Tennessee Experiment Station
Cultivar: McNair 235
Experimental Design: RCB with 4 replications.
Plot size: 4 rows 50' long, harvest 2 center rows.
Previous crop: Cotton
Soil type: Dexter silt loam (2% to 5% slopes)
Soil fertility: pH 6.1, P (H), K (H)
Fertilizer: 60-60-60 + B broadcast, 34 lbs N sidedressed on June 16.
Planted: April 30
Harvested: Sept. 24 and Oct. 16

Harvest aids applied Sept. 10, 1986. CO_2 bottle with 4-row boom mounted on IH660 high clearance sprayer; 17.2 gpa, 30 psi, 2.2 mph. Hollow cone, 3 TX-8's nozzles/row.

Weather conditions during and immediately after application:

Date	Temp F Max	Min	Rainfall, inches
Sept. 10	88	73	
11	90	58	
12	81	52	
13	83	51	None
14	87	62	
15	88	68	
16	90	66	
17	91	70	

Number of degree days 60's	Cumulative from April 1	DD-60's available from:	
Date of planting, April 30	146		
Date of first bloom, July 2	1014	May 1 to July 2	868
4 weeks blooming period	1639	July 3 to July 30	625
Blooming to 60% open	2314	July 31 to Sept 10	675
Chemicals applied to harvest	2542	Sept 11 to Sept 24	228

This experiment was judged to be 62% open on September 8. Only 21% of leaf drop had occurred on September 8. Harvest aids were applied on September 10, and 90 to 95% of the crop was harvested on September 24. All grades were 32 or 41, and staple lengths were 34 or 35. Extreme maturity was indicated by micronaire values ranging from 4.9 to 5.6.

Plots treated with Dropp and tank mixes with Dropp had significantly less regrowth on October 7 than plots treated with other harvest aids. No regrowth differences due to harvest aids were found on October 29. No yield or maturity differences were noted in this experiment.

Influence of 20 harvest aids on McNair 235 cotton grown at West Tennessee Experiment Station, Jackson, TN, in 1986.

No.	Treatment	Rate lb ai/A	Formulation/A	Leaf Drop 09/08	Leaf Drop 09/17	Percent Open 09/08	Percent Open 09/17	Regrowth** 10/07	Regrowth** 10/29
				%					
1	Harvade 5F + COC	0.3	8 oz + 1 pt	21	75	64	88	7.0	7.0
2	UBI-1677*	0.3	43 oz	26	81	65	91	4.8	5.8
3	UBI-1677 + COC	0.3	43 oz + 1 pt	19	74	60	90	5.3	7.0
4	UBI 1823 + COC	0.3	8 oz + 1 pt	19	69	61	86	6.0	6.8
5	DEF 6	1.125	1.5 pts	19	81	55	86	6.0	6.5
6	Check	--	--	25	46	68	83	6.8	7.0
7	Prep	2.0	42.7 oz	16	89	63	95	5.5	6.8
8	Prep	1.0	21.33 oz	23	79	68	93	6.3	7.3
9	Dropp 50W	0.15	0.3 lbs	24	69	66	88	3.0	5.3
10	Prep + UBI 1823 + COC	1.0 + 0.24	21.33 oz + 8 oz + 1 pt	23	86	66	93	5.8	6.8
11	DEF 6 + Dropp 50W	0.75 + 0.075	1 pt + .15 lbs	29	84	64	89	4.0	5.5
12	DEF 6 + Harvade 5F + COC	0.60 + 0.24	12 oz + 6.4 oz + 1 pt	20	83	61	91	4.3	6.5
13	Harvade 5F + Prep + COC	0.24 + 1.0	8 oz + 21.33 oz + 1 pt	24	89	64	93	5.0	6.8
14	Prep + DEF 6	1.0 + 0.75	21.33 oz + 1 pt	21	78	63	93	6.0	7.3
15	Prep + Dropp 50W	1.0 + 0.075	21.33 oz. + 0.15 lbs	29	76	66	94	3.5	6.5
16	Prep	0.5	10.67 oz	16	50	59	86	7.5	7.5
17	Prep	1.5	32 oz	26	86	64	93	4.8	6.3
18	DEF 6 + Dropp 50W	0.75 + 0.05	1 pt + 0.1 lb	20	76	63	88	3.5	6.3
19	Harvade 5F + Dropp 50W + COC	0.24 + 0.075	6.4 oz + .15 lb + 1 pt	19	79	63	89	4.0	5.8
20	Prep + DEF 6	0.5 + 0.75	10.67 oz + 1 pt	16	85	64	91	4.5	6.0
	Average			21.4	76.8	61.8	90.0	5.21	6.51
	LSD .05							2.05	ns
	CV %							28.3	14.7

*UBI-1677 is a formulated mixture of Harvade polyethylene glycol and crop oil concentration.
**Based on subjective 1-10 rating, large figures denote more regrowth.

Effects of 20 harvest aids on McNair 235 cotton grown at West Tenn. Experiment Station, Jackson, TN, in 1986.

No.	Treatment	Rate lb ai/A	Formulation/A	Lint Yield/A Total	Lint Yield/A 1st Harvest		Gin Turnout	Lint Quality Grade	Lint Quality Staple	Lint Quality Micronaire
				LBS	LBS	%	%		32's	
1	Harvade 5F + COC	0.3	8 oz + 1 pt	1076	1001	93	35.7	41	34	5.5
2	UBI-1677*	0.3	43 oz	1107	1038	94	37.4	32	34	5.4
3	UBI-1677 + COC	0.3	43 oz + 1 pt	1108	1014	92	34.8	32	35	5.2
4	UBI 1823 + COC	0.3	8 oz + 1 pt	1199	1119	93	36.0	41	34	5.1
5	DEF 6	1.125	1.5 pts	1231	1132	92	36.4	41	35	4.9
6	Check	--	--	1000	900	90	35.8	32	34	5.6
7	Prep	2.0	42.7 oz	1236	1175	95	36.8	32	34	5.2
8	Prep	1.0	21.33 oz	1120	1049	94	35.8	41	35	5.1
9	Dropp 50W	0.15	0.3 lbs	1132	1044	92	35.2	32	35	5.4
10	Prep + UBI 1823 + COC	1.0 + 0.24	21.33 oz + 8 oz + 1 pt	1152	1091	95	36.7	32	35	4.9
11	DEF 6 + Dropp 50W	0.75 + 0.075	1 pt + .15 lbs	971	908	94	36.3	32	35	5.1
12	DEF 6 + Harvade 5F + COC	0.60 + 0.24	12 oz + 6.4 oz + 1 pt	1084	1013	93	35.3	32	35	5.1
13	Harvade 5F + Prep + COC	0.24 + 1.0	8 oz + 21.33 oz + 1 pt	1063	1012	95	37.5	32	34	5.6
14	Prep + DEF 6	1.0 + 0.75	21.33 oz + 1 pt	1086	1023	94	35.6	41	34	5.2
15	Prep + Dropp 50W	1.0 + 0.075	21.33 oz. + 0.15 lbs	1127	1069	95	35.6	32	34	5.6
16	Prep	0.5	10.67 oz	1136	1044	92	35.7	32	34	5.1
17	Prep	1.5	32 oz	1140	1078	95	35.4	32	34	5.0
18	DEF 6 + Dropp 50W	0.75 + 0.05	1 pt + 0.1 lb	1185	1120	94	36.4	32	34	5.3
19	Harvade 5F + Dropp 50W + COC	0.24 + 0.075	6.4 oz + .15 lb + 1 pt	1187	1108	93	37.2	41	34	5.4
20	Prep + DEF 6	0.5 + 0.75	10.67 oz + 1 pt	1100	1031	94	34.5	41	34	5.0
	Average			1122	1048	93.4	36.0		34.3	5.22
	LSD .05			ns	ns					
	CV %			12.3	11.9					

*UBI-1677 is formulated mixture of Harvade, polyethylene glycol and crop oil concentrate.

PROJ. NUM.: INTERIM DATA UNITS: LBai/A
FILE NAME: PREPCOT6 PRINTED: 03/15/87

W E S T E R N T E N N E S S E E A G R I E X P S T A T I O N

EFFECT OF HARVEST AIDS ON COTTON

RESEARCH BY: HAYES&HOSKINSON
COOPERATOR :
TOTAL REPS : 4
REPORTED BY: R.M.HAYES

COUNTY: MADISON ST: TN COUNTRY: USA
LAST UPDATE: 03/15/87 INITIATED: 09/15/86
EXPT. STATUS: 3 COMPLETED: 10/03/86
RELATED FILE: **NONE** SOURCE: UNIVER.

PREVIOUS CROP: COTTON
PREVIOUS TILL: CONVENTIONAL
FERTILITY: 60-60-60+0.5 LB BORON
MISC. 1:
MISC. 2:

PLOT SIZE(LxW): 10.0x 30.0 SOIL pH :6.2
SOIL TEXTURE: SILT LOAM SOIL OM%: 1.0
ROW WIDTH: 40 EXPERIMENTAL DESIGN: SPPL
NUMBER OF REPS: 4
REPORT TYPE: INTERIM

PLANTING DATE: 04/28/86
HARVEST DATE : / /
RESIDUE TAKEN: N

CROP CULTIVAR: STONEVILLE 825
SEASONAL RAINFALL DURING EXPERIMENT
EARLY: WET MID: DRY LATE: DRY

APPLICATION INFO	APPLIC. 1	APPLIC. 2	APPLIC. 3	APPLIC. 4	APPLIC. 5
APPLICATION DATE	09/08/86	09/15/86	09/22/86	/ /	/ /
JULIAN DATE/YEAR	J251/86	J258/86	J265/86	J 0/00	J 0/00
GEN. APPLIC TYPE	POST	POST	POST		
AIR/SOIL TEMP(F)	063/	/	/	/	/
% REL. HUMIDITY	70 %				
WIND DIR/VELOC.	N /06	/	/	/	/
ROOT/LEAF MOIST.	DRY/DRY	DRY/DRY	OPT/DRY	/	/
INCORP. EQUIP.					
INCORP. DEPTH in	.	.	.	.	.
SPRAYER TYPE	HI-CYCLE	HI-CYCLE	HI-CYCLE		
SPRAYER GPA/PSI	20 /30	20 /30	20 /40	. /	. /
NOZZLE TYPE	H.C.-TX 8	H.C.-TX 8	H.C.-TX 8		
RAIN / IRRIG. in					
0-24 hr/1-3 days	. / .	. / .	. / .	. / .	. / .
4-7 days/2nd wk	. / .	. / .	. / .	. / .	. / .
3rd / 4th week	. / .	. / .	. / .	. / .	. / .

SPEC. CODE	SPECIES	DEN-SITY	APPLIC. 1 HTin/STG.	APPLIC. 2 HTin/STG.	APPLIC. 3 HTin/STG.	APPLIC. 4 HTin/STG.	APPLIC. 5 HTin/STG.
*****	**** CROP *****	****	**********	**********	**********	**********	**********
GOSHI	COTTON		/	/	/	/	/
*****	**** PEST *****	****	**********	**********	**********	**********	**********
			/	/	/	/	/
			/	/	/	/	/
			/	/	/	/	/
			/	/	/	/	/
			/	/	/	/	/
			/	/	/	/	/
			/	/	/	/	/
			/	/	/	/	/
			/	/	/	/	/

PROJ. NUM.: INTERIM DATA UNITS: LBai/A
FILE NAME: PREPCOT6 PRINTED: 03/15/87

W E S T E R N T E N N E S S E E A G R I E X P S T A T I O N

EFFECT OF HARVEST AIDS ON COTTON

EXPERIMENT COMMENTS

KEY TO DATA HEADERS

1.HARVEST DATE=DATE PLOTS WERE HARVESTED.
3-6.SC./YLD=SEED COTTON YIELD IN POUNDS PER ACRE FOR SUBPLOTS A-D.
8.%GIN TURNOUT=LINT YIELD DIVIDED BY SEED COTTON YIELD.
13-16.LINT LB/A=LINT YIELD IN POUNDS PER ACRE FOR SUBPLOTS A-D.
17-20.GRADE=COTTON GRADE AS DETERMINED BY THE MEMPHIS COTTON CLASSING OFFICE FOR SUBPLOTS A-D.
22.STAPLE LENGTH=COTTON STAPLE LENGTH.
24.MICRO- NAIRE=COTTON MICRONAIRE.

SUMMARY

ESTIMATED PERCENT OPEN BOLLS RECORDED SEPTEMBER 8 WERE 56,49,48, AND 34 PERCENT FOR SUBPLOTS A THROUGH D,RESPECTIVELY.YIELD DECLINED AS PERCENT OPEN BOLLS DECLINED ON THE 9/29 HARVEST DATE,BUT THE REVERSE WAS TRUE ON 10/03 HARVEST DATE.THIS YIELD DECLINE WAS DUE TO WEIGHT LOSS OF THE OPEN COTTON REMAINING IN THE FIELD THE LONGEST PERIOD OF TIME BEFORE HARVEST.PREP AT 2.0 LBai/A EFFECTIVELY OPENED AND DEFOLIATED THE COTTON.WHERE PREP WAS APPLIED AND COTTON WAS HARVESTED ONCE ON 9/16 YIELDS WERE EQUAL TO WHERE NO CHEMICAL WAS APPLIED AND COTTON HARVESTED ON 10/3/87.COTTON TREATED WITH PREP ON 9/22 AND HARVESTED ON 9/29 WAS THE HIGHEST YIELDING WITH THE DIFFERENCE BEING GREATER AS THE % OPEN BOLLS AT APPLICATION WAS LOWER. THERE SEEMED TO BE A LINT YIELD LOSS BETWEEN THE 9/29 AND 10/03 HARVEST. THE REDUCED GRADE OF THE EARLY HARVEST WAS DUE TO SAMPLE STORAGE.

FILE NAME:PREPCOT6.EXP INTERIM PRINTED:04/29/87

W E S T T E N N E S S E E E X P E R I M E N T S T A T I O N

EFFECT OF HARVEST AIDS ON COTTON

EXPT. LOCATION:MADISON, TN USA
RESEARCH BY:HAYES&HOSKINSON INITIATED:09/15/86 COMPLETED:10/03/86

TRT. NO.	PESTICIDE NAME	FORMU.	LBai/A	APPLICATION Date	HARVEST DATE	SC./YLD SUB A 9/29/86	SC./YLD SUB B 9/29/86	SC./YLD SUB C 9/29/86	SC./YLD SUB D 9/29/86
01	CONTROL				9/29	2820	3115	3285	2740
02	CONTROL				10/03	2305	2940	3110	2900
	Whole plot mean					2563	3028	3198	2478
03	PREP	EC 6.0	2.0	09/08	9/16	2630	3045	3270	2780
04	PREP	EC 6.0	2.0	09/08	10/03	2275	2750	2735	2710
	Whole plot mean					2453	2898	3003	2745
05	PREP	EC 6.0	2.0	09/15	9/23	2880	3210	3370	2780
06	PREP	EC 6.0	2.0	09/15	10/03	2385	3030	3095	2940
	Whole plot mean					2633	3120	3233	2860
07	PREP	EC 6.0	2.0	09/22	9/29	2785	3280	3540	3215
08	PREP	EC 6.0	2.0	09/22	10/03	2360	2970	2890	2710
	Whole plot mean					2573	3125	3215	2963
	LSD(0.05) =					292	283	388	NA
	STANDARD DEVIATION =					190	184	252	NA
	COEFF. OF VARIABILITY =					7	6	8	NA

PROJ. NUM.: INTERIM DATA UNITS: LBai/A
FILE NAME: PREPCOT6 PRINTED: 03/15/87

W E S T E R N T E N N E S S E E A G R I E X P S T A T I O N

EFFECT OF HARVEST AIDS ON COTTON

RESEARCH BY: HAYES&HOSKINSON COUNTY: MADISON ST: TN COUNTRY: USA
COOPERATOR : LAST UPDATE: 3/15/87 INITIATED: 09/15/86
TOTAL REPS : 4 EXPT. STATUS: 3 COMPLETED: 10/03/86
APPL: POST =09/08/86 POST =09/15/86 POST =09/22/86

TRT. NO.	PESTICIDE NAME	FORMU.	LBai/A	APPLI-CATION TYPE	LINT LB/A SUBA 1/20/86	LINT LB/A SUBB 1/20/87	LINT LB/A SUBC 1/20/87	LINT LB/A SUBD 1/20/87		% GIN TURNOUT 1/20/87
01	CONTROL				1040	1143	1215	978		36.92
02	CONTROL				829	1058	1123	1044		35.99
	Whole plot mean				935	1100	1169	889	0	36.45
03	PREP	EC 6.0	2.0	09/08	988	1143	1228	1046		37.61
04	PREP	EC 6.0	2.0	09/08	820	991	986	978		36.05
	Whole plot mean				904	1067	1107	1012	0	36.83
05	PREP	EC 6.0	2.0	09/15	1048	1167	1225	1012		36.41
06	PREP	EC 6.0	2.0	09/15	837	1062	1088	1033		35.12
	Whole plot mean				942	1115	1156	1022	0	35.76
07	PREP	EC 6.0	2.0	09/22	1080	1272	1370	1244		38.74
08	PREP	EC 6.0	2.0	09/22	841	1058	1030	964		35.67
	Whole plot mean				960	1165	1200	1104	0	37.20
				LSD(0.05) =	101	108	136	NA		2.98
				STANDARD DEVIATION =	65	70	88	NA		1.94
				COEFF. OF VARIABILITY =	7	6	8	NA		5.29

PROJ. NUM.: INTERIM DATA UNITS: LBai/A
FILE NAME: PREPCOT6 PRINTED: 03/15/87

W E S T E R N T E N N E S S E E A G R I E X P S T A T I O N

EFFECT OF HARVEST AIDS ON COTTON

RESEARCH BY: HAYES&HOSKINSON COUNTY: MADISON ST: TN COUNTRY: USA
COOPERATOR : LAST UPDATE: 3/15/87 INITIATED: 09/15/86
TOTAL REPS : 4 EXPT. STATUS: 3 COMPLETED: 10/03/86
APPL: POST =09/08/86 POST =09/15/86 POST =09/22/86

TRT. NO.	PESTICIDE NAME	FORMU.	LBai/A	APPLI-CATION TYPE	GRADE SUB A 1/20/87	GRADE SUB B 1/20/87	GRADE SUB C 1/20/87	GRADE SUB D 1/20/87	STAPLE LENGTH 1/20/87	MICRO-NAIRE 1/20/87
01	CONTROL				50	50	51	51	35	4.3
02	CONTROL				50	51	50	51	35	4.2
	Whole plot mean				50	51	51	51	35	4.3
03	PREP	EC 6.0	2.0	09/08	52	60	61	51	35	4.3
04	PREP	EC 6.0	2.0	09/08	50	51	51	51	35	4.1
	Whole plot mean				51	56	56	51	35	4.2
05	PREP	EC 6.0	2.0	09/15	51	51	60	51	35	4.3
06	PREP	EC 6.0	2.0	09/15	50	51	50	51	35	4.1
	Whole plot mean				51	51	55	51	35	4.2
07	PREP	EC 6.0	2.0	09/22	50	50	51	51	35	4.2
08	PREP	EC 6.0	2.0	09/22	50	51	51	51	34	4.2
	Whole plot mean				50	51	51	51	35	4.2
				LSD(0.05) =	NA	NA	NA	NA	1	.2
				STANDARD DEVIATION =	NA	NA	NA	NA	0	.2
				COEFF. OF VARIABILITY =	NA	NA	NA	NA	1	3.6

Project: H778-MES-8

Title: Defoliation and Harvest Aids at Milan Experiment Station

Cultivar: Stoneville 825

Experimental Design: RCB with 8* replications

Plot size: 4 rows 30' long, 2 center rows harvested for yield

Soil type: Collins silt loam (0% to 2% slopes)

Soil test: pH 6.9, P (H), K (M)

Previous crop: Soybeans

Planting date: 4/28/86

Fertilizer: 60-60-60

Spray application: Applied Sept 23 with high clearance Spirit sprayer; hollow-cone, TX-10 nozzles, 3/row; 20 gpa, 30 psi, 3 mph.

Air Temp F:

Date	9/23	9/24	9/25	9/26	9/27	9/28	9/29	9/30
Max	86	89	90	90	90	92	94	92
Min	69	70	73	72	69	69	70	72

Rainfall 9/23 - 9/30: None

Number of degree day 60's April 1 to -	Cumulative dd's from April 1	DD-60's available from	
Planting, April 28	90		
First bloom, July 3	938	April 28 - July 3	848
4 weeks following, July 31	1568	July 4 - July 31	630
Aug 1 thru Sept 23	2377	Aug 1 - Sept 23	809

Harvested: 10/7/86 and 10/17/86

*This experiment was designed as a RCB split plot with 4 replications. Main plots were (1) 60% open and (2) 4 weeks after first flower plus 750 degree days. Both situations occurred on Sept 17, so the 8 treatments were replicated 8 times.

Total lint yield and lint yield at first harvest was not different in this experiment. Maturity, as measured by percent of total yield obtained at first harvest, was almost equal for all treatments. Grade, staple lengths, and micronaire values were almost identical.

Influence of Harvest Aids on Stoneville 825 cotton grown at Milan, TN in 1986.

No.	Treatment	Rate lb ai/A	Formulation/A	Lint Yield/A Total	Lint Yield/A 1st Harvest		Gin Turnout	Lint Quality Grade	Lint Quality Staple	Lint Quality Micronaire	Sept. 17 Leaf Drop	Sept. 17 Open Bolls
				LBS	LBS	%	%		32's		%	%
1	Prep	2.0	42.7 oz (1262 ml)	1245	1147	92	33.1	50	34.5	4.30	47	61
2	Prep	1.0	21.35 oz (630 ml)	1234	1148	93	33.5	50	35.0	4.45	49	64
3	DEF 6	1.125	1.5 pts	1227	1117	91	32.7	50	35.5	4.40	46	59
4	Harvade 5F + COC	0.3	8 oz (237 ml) + 1 pt	1222	1099	90	33.3	50	35.0	4.50	41	65
5	Prep + DEF 6	1.0 + .75	21.35 oz + 1 pt	1223	1088	89	32.3	50	35.5	4.25	51	65
6	Prep + Harvade 5F + COC	1.0 + .24	21.35 oz + 192 ml + 1 pt	1299	1181	91	33.7	50	36.0	4.50	46	63
7	DEF 6 + Dropp 50W	.75 + .075	1 pt + 0.15 lb	1215	1115	92	32.5	50	35.0	4.30	38	57
8	Check	---	---	1270	1074	89	33.3	50	35.0	4.35	43	59
	Average			1234	1121	91	33.0		35.2	4.38	45.1	61.6
	LSD .05			ns	ns							
	CV %			7.4	7.3							

Project: H778-A-5

Title: Defoliation and Harvest Aids at Ames Plantation

Cultivar: Stoneville 825

Experimental Design: RCB with 6 replications

Plot size: 4 rows 30' long, 2 center rows harvested

Previous crop: Cotton

Date planted: April 18, 1986

Harvest aids applied Sept 15, 1986; CO_2 bottle, 4-row boom mounted on a John Deere high clearance sprayer; 17.2 gpa, 30 psi, 2.2 mph; hollow-cone nozzles, 3 TX-8's/row.

Weather conditions immediately after application:

Date	Temperature F		Rainfall, inches
	Max	Min	
September 15	85	56	
16	88	58	
17	90	65	
18	92	66	
19	87	67	0.01
20	90	67	Trace
21	90	67	0.38
22	90	66	1.68

Number of degree days	Cumulative from April 1	DD 60's available from:	
Date of planting, April 18	81		
Date of first bloom, Jul 1	977	April 19 - July 1	896
4 weeks blooming period	1582	July 2 - July 29	686
Cotton was 60% open on Sept 15	2316	July 30 - Sept 15	734
Chemicals applied to harvest	2514	Sept 16 - Sept 26	198

Harvest aids did not influence lint yield, maturity, or lint quality in this experiment. Micronaire values were extremely high for all treatments. Plots treated with Dropp or harvest aids tank mixed with Dropp had significantly less regrowth when rated on October 9.

Research at the Ames Plantation is made possible because the University of Tennessee is a beneficiary of a perpetual trust under the terms of the will of the late Julia C. Ames.

Defoliation and Harvest Aids, Ames Plantation. 1986.

No.	Treatment	Rate lb ai/A	Formulation/A	Lint Yield/A Total	Lint Yield/A 1st Harvest		Gin Turnout	Lint Quality Grade	Lint Quality Staple	Lint Quality Micronaire	% Open 9/04	% Open 9/15	Regrowth Rating* 10/09
				LBS	LBS	%	%		32's				
01	Prep	2.0	42.7 oz	727	668	92	38.0	50	34	5.4	46	76	6.7
02	DEF 6	1.125	1.5 pts	771	701	91	37.7	50	34	5.5	49	75	7.0
03	Dropp 50W	0.15	0.3 lbs	715	646	90	36.5	50	34	5.6	58	77	4.5
04	Harvade 5F + COC	0.3	8 oz. + 1 pt	802	729	91	39.0	50	34	5.5	51	76	7.0
05	Prep	1.0	21.3 oz	763	684	90	38.9	41	34	5.5	58	73	7.5
06	DEF 6 + Prep	.75 + 1.0	1 pt + 21.3 oz	728	651	89	37.8	41	35	5.3	42	73	7.0
07	DEF 6 + Harvade + COC	.75 + .24	1 pt + 6.4 oz + 1 pt	755	681	90	37.7	50	34	5.5	47	73	6.7
08	DEF 6 + Dropp 50W	.75 + .075	1 pt + 0.15 lb	768	693	90	39.1	41	34	5.4	50	73	5.3
09	Prep + Harvade + COC	1.0 + 0.24	21.3 oz + 6.4 oz + 1 pt	716	647	90	38.2	41	34	5.4	51	74	7.3
10	Check	---	---	743	663	89	37.3	51	35	5.5	46	73	7.7
11	Prep + Dropp 50W	1.0 + .075	21.3 oz + .15 lb	746	687	92	38.7	41	34	5.6	44	71	5.8
12	DEF 6 + Dropp 50W	.75 + .05	1 pt + .1 lb	709	635	90	38.7	42	34	5.4	40	71	6.3
	Average			745	674	90.4	38.1		34.2	5.47	48	74	6.6
	LSD .05			ns	ns								0.7
	CV %			15.1	17.7								9.2

*1-10, larger numbers denote more regrowth.

Harvested September 26 and October 29.