

Table 1. Triclopyr (Grandstand) and propanil (Stam M-4) weed control in rice, Rohwer, 1996.

TEST INFORMATION

Location . . . . .	Southeast Branch Experiment Station, Rohwer	Planting date . . . . .	May 16, 1996
Experimental Design/replications . . . . .	RCB / 4	Harvest date . . . . .	N/A
Plot size . . . . .	4.5 ft by 17 ft	Crop/Variety . . . . .	Rice/Lemont
Row width / Number of rows per plot . . . . .	6 in. / 9 rows	Date of Flood . . . . .	June 20, 1996
Soil type . . . . .	Silty clay (8% sand, 49% silt, 43% clay)		
% OM / pH . . . . .	3.5 / 6.7		

Comments: PI = panicle initiation.

Application type	2-3 lf	3-4 lf	PI
Date applied	May 30, 1996	June 10, 1996	July 10, 1996
Time	12:00-12:15 am	8:00-8:05 am	10:15-10:45 am
Incorporation equipment	N/A	N/A	N/A
Air/Soil temperature (F)	80/78	70/68	76/81
Relative humidity (%)	50	81	48
Wind (mph, direction)	4-6 NE-SW	2-4 S-N	5-10 NE-SW
Weather	sunny	sunny	cloudy
Soil/Leaf surface moisture	wet/dry	good/wet	flooded/dry
Crop stage/Height	2-3 lf/3-5"	3-4 lf/4-6"	PI/18-22"
Sprayer type/mph	BkPkCO <sub>2</sub> /3.0	BkPkCO <sub>2</sub> /3.0	BkPkCO <sub>2</sub> /3.0
Nozzle type/Size	FF/11002	FF/11002	FF/11003

Boom ht / # Noz / Spacing (in.)	18" / 4 / 17"	15" / 4 / 17"	15" / 4 / 17"
Gpa / Psi	15 / 25	15 / 28	15 / 16
<b>Weed species (population)</b>	----- (height / # leaves) -----		
ECHCG (30/m <sup>2</sup> )	0.25" / 2 lf	4-6" / 2-3 lf	16-30" / Til-head

**Conclusions:** The test area did not provide the broadleaf weed populations required for evaluation of these treatments. Panicle initiation applications were intended as salvage treatments for broadleaf weed control. As was expected the triclopyr + propanil combinations did not provide season-long control of barnyardgrass. This study was not yielded due to heavy barnyardgrass populations.

**Table 1.**

<u>Herbicide</u>	<u>Rate</u> (lb/A)	<u>Growth</u> <u>stage</u>	<u>Barnyardgrass (ECHCG) control</u>				<u>Rice injury</u>			
			<u>6/20</u>	<u>7/3</u>	<u>7/18</u>	<u>8/1</u>	<u>6/20</u>	<u>7/3</u>	<u>7/18</u>	<u>8/1</u>
..... (%) .....										
Untreated check			0	0	0	0	0	0	0	0
Triclopyr + Induce (0.25%)	0.188	2-3 lf	13	5	26	11	0	0	0	0
Triclopyr + propanil	0.188 4.0	2-3 lf	90	69	80	30	0	0	0	0
Triclopyr + propanil <u>fb</u>	0.188 4.0	2-3 lf	81	61	70	51	0	0	0	0
Triclopyr + propanil	0.25 1.0	PI								
Triclopyr + Induce (0.25%)	0.25	3-4 lf	15	26	35	11	0	0	0	0
Triclopyr + propanil	0.25 4.0	3-4 lf	81	66	74	40	5	0	0	0
Triclopyr + propanil <u>fb</u>	0.25 4.0	3-4 lf	85	70	64	45	3	0	0	0
Triclopyr + propanil	0.25 1.0	PI								
Triclopyr + Induce (0.25%)	0.25	PI			19	13			0	0
Triclopyr + Induce (0.25%)	0.375	PI			16	6			0	0
Triclopyr + propanil	0.25 1.0	PI			24	19			0	0
Triclopyr + propanil	0.375 1.0	PI			15	11			0	0

Triclopyr + (propanil + molinate)	0.25 1.0	PI			11	18			0	0
<u>LSD (0.05)</u>			<u>16</u>	<u>12</u>	<u>24</u>	<u>18</u>	<u>NS</u>	<u>NS</u>	<u>NS</u>	<u>NS</u>

Table 2. Post-flood application timing of triclopyr (Grandstand) following fenoxaprop (Whip), Rohwer, 1996.

TEST INFORMATION

Location . . . . .	Southeast Branch Experiment Station, Rohwer	Planting date . . . . .	May 16, 1996
Experimental Design/replications . . . . .	RCB / 4	Harvest date . . . . .	September 6, 1996
Plot size . . . . .	4.5 ft by 17 ft	Crop/Variety . . . . .	Rice/Lemont
Row width / Number of rows per plot . . . . .	6 in. / 9 rows	Date of Flood . . . . .	June 20, 1996
Soil type . . . . .	Silty clay (8% sand, 49% silt, 43% clay)		
% OM / pH . . . . .	3.5 / 6.7		

**Comments:** TL = tillers; DAT = days after 2-tiller treatment; IE = internode elongation. Herbicides at 0 DAT were applied in mixtures with 2-3 TL treatments.

Application type	2-3 TL	0 DAT	14 DAT	28 DAT
Date applied	June 11, 1996	June 11, 1996	June 25, 1996	July 9, 1996
Time	8:00-9:00 am	8:00-9:00 am	9:15-9:30 am	8:05-8:35 am
Incorporation equipment	N/A	N/A	N/A	N/A
Air/Soil temperature (F)	77 / 70	77 / 70	76 / 82	80 / 83
Relative humidity (%)	53	53	91	52
Wind (mph, direction)	5-7 W-E	5-7 W-E	1-3 SW-NE	0-2 NE-SW
Weather	partly cloudy	partly cloudy	cloudy	partly cloudy
Soil/Leaf surface moisture	good / dry	good / dry	flooded / dry	flooded / dry
Crop stage/Height	2-3 til / 6-8"	2-3 til / 6-8"	Mid-tiller / 8-12"	0.5-1" IE / 20-24"
Sprayer type/mph	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0

Nozzle type/Size	FF / 11003	FF / 11003	FF / 11002	FF / 11002
Boom ht / # Noz / Spacing (in.)	15" / 4 / 17"	15" / 4 / 17"	18" / 4 / 17"	15" / 4 / 17"
Gpa / Psi	15 / 16	15 / 16	15 / 24	15 / 20

**Conclusions:** There were numerical yield differences, but the treatment probability of 0.1604 indicates no significance when comparing rice yields. This research indicates no adverse affect when applying triclopyr or triclopyr + propanil following a fenoxaprop (Whip 360) application.

**Table 2.**

<u>Herbicide</u>	<u>Rate</u> (lb/A)	<u>Growth</u> <u>stage</u>	<u>Rice injury</u>			<u>Rice</u> <u>yield</u> (lb/A)
			<u>7/3</u>	<u>7/18</u> (%)	<u>8/1</u>	
Untreated check			0	0	0	6703
Triclopyr + propanil	0.25 1.0	2-3 TL	0	0	0	6401
Triclopyr + propanil	0.25 1.0	14 DAT	0	0	0	6065
Triclopyr + propanil	0.25 1.0	28 DAT	0	0	0	6127
Triclopyr + Induce (0.25%)	0.38	2-3 TL	0	0	0	6463
Triclopyr + Induce (0.25%)	0.38	14 DAT	0	0	0	5969
Triclopyr + Induce (0.25%)	0.38	28 DAT	0	0	0	5892
Fenoxaprop	0.07	2-3 TL	0	0	0	6228
Fenoxaprop + triclopyr + propanil	0.07 0.25 1.0	2-3 TL 0 DAT	0	0	0	6079
Fenoxaprop <u>fb</u> triclopyr + propanil	0.07 0.25 1.0	2-3 TL 14 DAT	0	0	0	6286
Fenoxaprop <u>fb</u> triclopyr + propanil	0.07 0.25 1.0	2-3 TL 28 DAT	0	0	0	6175
Fenoxaprop + triclopyr +	0.07 0.38	2-3 TL 0 DAT	0	0	0	6295

Induce (0.25%)						
Fenoxaprop <u>fb</u>	0.07	2-3 TL	0	0	0	5853
triclopyr +	0.38	14 DAT				
Induce (0.25%)						
Fenoxaprop <u>fb</u>	0.07	2-3 TL	0	0	0	5829
triclopyr +	0.38	28 DAT				
Induce (0.25%)						
Fenoxaprop	0.08	2-3 TL	0	0	0	5973

Continued



**Table 2. Continued.**

<u>Herbicide</u>	<u>Rate</u> (lb/A)	<u>Growth</u> <u>stage</u>	<u>Rice injury</u>			<u>Rice</u> <u>yield</u> (lb/A)
			<u>7/3</u>	<u>7/18</u> (%)	<u>8/1</u>	
Fenoxaprop + triclopyr + propanil	0.08 0.25 1.0	2-3 TL 0 DAT	0	0	0	6343
Fenoxaprop <u>fb</u> triclopyr + propanil	0.08 0.25 1.0	2-3 TL 14 DAT	0	0	0	6016
Fenoxaprop <u>fb</u> triclopyr + propanil	0.08 0.25 1.0	2-3 TL 28 DAT	0	0	0	5954
Fenoxaprop + triclopyr + Induce (0.25%)	0.08 0.38	2-3 TL 0 DAT	0	0	0	6377
Fenoxaprop <u>fb</u> triclopyr + Induce (0.25%)	0.08 0.38	2-3 TL 14 DAT	0	0	0	5825
Fenoxaprop <u>fb</u> triclopyr + Induce (0.25%)	0.08 0.38	2-3 TL 28 DAT	0	0	0	5714
Fenoxaprop <u>fb</u> triclopyr + (propanil + molinate)	0.08 0.25 1.0	2-3 TL 28 DAT	0	0	0	5906
<u>LSD (0.05)</u>			<u>NS</u>	<u>NS</u>	<u>NS</u>	<u>NS</u>



Table 3. Evaluation of lactofen (Cobra) applied delayed preemergence, Rohwer, 1996.

TEST INFORMATION

Location . . . . .	Southeast Branch Experiment Station, Rohwer	Planting date . . . . .	May 16, 1996
Experimental Design/replications . . . . .	RCB / 4	Harvest date . . . . .	N/A
Plot size . . . . .	4.5 ft by 17 ft	Crop/Variety . . . . .	Rice/Lemont
Row width / Number of rows per plot . . . . .	6 in. / 9 rows	Date of Flood . . . . .	June 20, 1996
Soil type . . . . .	Silty clay (8% sand, 49% silt, 43% clay)		
% OM / pH . . . . .	3.5 / 6.7		

**Comments:** DPRE = delayed PRE; EPOT and LPOT = early and late POST.

Application type	DPRE	EPOT	LPOT
Date applied	May 22, 1996	May 30, 1996	June 17, 1996
Time	1:00-1:30 pm	8:00-8:15 am	8:00-8:15 am
Incorporation equipment	N/A	N/A	N/A
Air/Soil temperature (F)	92 / 87	75 / 75	80 / 80
Relative humidity (%)	65	45	49
Wind (mph, direction)	5-10 E-W	2-6 SE-NW	2-4 SW-NE
Weather	cloudy	sunny	sunny
Soil/Leaf surface moisture	wet / N/A	wet / dry	good / wet
Crop stage/Height	N/A	2-3 lf / 3-5"	4-5 lf / 4-6"
Sprayer type/mph	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0

Nozzle type/Size	FF / 11002	FF / 11002	FF / 11002
Boom ht / # Noz / Spacing (in.)	18" / 4 / 17"	18" / 4 / 17"	18" / 4 / 17"
Gpa / Psi	15 / 24	15 / 25	15 / 20
<b>Weed species (population)</b>	----- (height / # leaves) -----		
ECHCG (25/m <sup>2</sup> )		0.25"-0.5" / 1-2 lf	2-6" / 2-6 lf

**Conclusions:** The test area did not provide adequate broadleaf weed populations for proper evaluation of these treatments. Lactofen is a broadleaf herbicide labeled for weed control in cotton and soybean. Tank mixtures with thiobencarb and propanil provided good early-season barnyardgrass control. No antagonism was observed in any tank mixture.

**Table 3.**

Herbicide	Rate (lb/A)	Growth stage	Barnyardgrass (ECHCG) control				Rice injury			
			6/4	6/20	7/3	7/18	6/4	6/20	7/3	7/18
..... (%) .....										
Untreated check			0	0	0	0	0	0	0	0
Thiobencarb + lactofen <u>fb</u> propanil	3.0 0.375 3.0	DPRE  EPOT	98	31	0	6	6	0	0	0
Thiobencarb + lactofen <u>fb</u> propanil	3.0 0.5 3.0	DPRE	98	30	16	0	9	0	0	0
Thiobencarb + pendimethalin <u>fb</u> lactofen + propanil	3.0 1.0 0.375 2.0	DPRE  EPOT	98	34	19	13	8	0	0	0
Thiobencarb + pendimethalin <u>fb</u> lactofen + propanil	3.0 1.0 0.5 2.0	DPRE	98	33	6	0	9	0	0	0
Thiobencarb + propanil <u>fb</u> lactofen + propanil	3.0 3.0 0.375 2.0	EPOT  LPOT	98	80	65	66	3	16	0	0
Thiobencarb + propanil <u>fb</u> lactofen + propanil	3.0 3.0 0.5 2.0	EPOT  LPOT	98	83	64	76	8	18	0	0
LSD (0.05)			1	6	21	13	NS	2	NS	NS



Table 4. Delayed preemergence and postemergence combinations for rice weed control, Rohwer, 1996.

TEST INFORMATION

Location . . . . .	Southeast Branch Experiment Station, Rohwer	Planting date . . . . .	May 16, 1996
Experimental Design/replications . . . . .	RCB / 4	Harvest date . . . . .	September 23, 1996
Plot size . . . . .	4.5 ft by 17 ft	Crop/Variety . . . . .	Rice/Lemont
Row width / Number of rows per plot . . . . .	6 in. / 9 rows	Date of Flood . . . . .	June 20, 1996
Soil type . . . . .	Silty clay (8% sand, 49% silt, 43% clay)		
% OM / pH . . . . .	3.5 / 6.7		

**Comments:** DPRE = delayed PRE; PREFLD and POSTFLD = before and after flood. Only DPRE treatments were rated on 6/4.

Application type	DPRE	2-3 lf	PREFLD	POSTFLD
Date applied	May 22, 1996	May 30, 1996	June 17, 1996	July 1, 1996
Time	1:30-2:00 pm	8:30-9:00 am	8:30-9:00 am	7:45-8:00 am
Incorporation equipment	N/A	N/A	N/A	N/A
Air/Soil temperature (F)	92 / 87	75 / 75	82 / 80	78 / 83
Relative humidity (%)	65	45	49	83
Wind (mph, direction)	5-10 W-E	2-6 SE-NW	2-3 SW-NE	0-2 S-N
Weather	cloudy	sunny	sunny	sunny
Soil/Leaf surface moisture	wet / N/A	wet / dry	good / wet	flooded / wet
Crop stage/Height	N/A	2-3 lf / 3-5"	4-5 lf / 4-6"	Mid-tiller / 8-12"
Sprayer type/mph	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0
Nozzle type/Size	FF / 11002	FF / 11002	FF / 11002	FF / 11002

Boom ht / # Noz / Spacing (in.)	18" / 4 / 17"	18" / 4 / 17"	15" / 4 / 17"	15" / 4 / 17"
Gpa / Psi	15 / 24	15 / 25	15 / 24	15 / 22
<b>Weed species (population)</b>	----- (height / # leaves)-----			
SEBEX (20-25/m <sup>2</sup> )	0.5-1" / cot.	1-2" / Cot-2 lf	2-5" / 2-6 lf	5-16" / 4-10 lf
DIGSS (30/m <sup>2</sup> )		0.25" / 2 lf	2-4" / 3-4 lf	2-6" / 2-6 lf
ECHCG (30/m <sup>2</sup> )		0.25" / 2 lf	2-6" / 2-5 lf	4-12" / 4-8 lf

**Conclusions:** This study was designed as a program approach to weed control. All treatments were tank-mix combinations or sequential applications. Many of the treatments provided good to excellent weed control and rough rice grain yield. Clomazone, sulfentrazone, and halosulfuron are potential new rice herbicides being evaluated for weed control and crop tolerance. These products were effective and could provide an added tool for rice weed control.



**Table 4.**

Herbicide	Rate (lb/A)	Growth stage	Weed control										Rice injury					Rice yield (lb/A)
			Hemp sesbania (SEBEX)		Crabgrass species (DIGSS)		Barnyardgrass (ECHCG)											
			6/4	6/20	6/4	6/20	6/4	6/20	7/3	7/18	8/1	6/4	6/20	7/3	7/18	8/1		
Untreated check			0	0	0	0	0	0	0	0	0	0	0	0	0	0	1666	
Propanil (Stam) fb	3.0	2-3 lf		96		93		83	78	80	63		14	0	0	0	5781	
propanil (Stam)	3.0	PREFLD																
(Propanil + molinate) fb	4.5	2-3 lf		96		91		84	88	95	93		16	0	0	0	5733	
fb (propanil + molinate)	4.5	PREFLD																
Propanil (Super Wham) + Agri-Dex (1 pt/A) fb	3.0	2-3 lf		95		90		83	81	84	73		13	0	0	0	5061	
propanil (Super Wham) + Agri-Dex (1 pt/A)	3.0	PREFLD																
Propanil (Stam) fb	3.0	2-3 lf		95		90		84	89	83	73		16	0	0	0	4907	
propanil (Stam) + bensulfuron	3.0 0.028	PREFLD																
(Propanil + molinate) fb	4.5	2-3 lf		96		92		88	93	92	94		15	0	0	0	5368	
(propanil + molinate) + bensulfuron	4.5 0.028	PREFLD																
Propanil (Super Wham) + Agri-Dex (1 pt/A) fb	3.0	2-3 lf		96		93		88	83	85	79		13	0	0	0	4980	
fb propanil (Super Wham) + bensulfuron + Agri-Dex (1 pt/A)	3.0 0.028	PREFLD																

(Propanil + molinate)	3.0	2-3 If	96	91	80	94	89	91	10	0	0	0	5243
+ bensulfuron <u>fb</u>	0.019												
(propanil + molinate)	3.0	PREFLD											
+ bensulfuron	0.019												
(Propanil + molinate)	3.0	2-3 If	97	96	91	93	96	95	6	0	0	0	5387
+ quinclorac <u>fb</u>	0.125												
(propanil + molinate)	3.0	PREFLD											
+ bensulfuron	0.028												

Continued

**Table 4. Continued.**

Herbicide	Rate (lb/A)	Growth stage	Weed control										Rice injury					Rice yield (lb/A)
			Hemp sesbania (SEBEX)		Crabgrass species (DIGSS)		Barnyardgrass (ECHCG)											
			6/4	6/20	6/4	6/20	6/4	6/20	7/3	7/18	8/1	6/4	6/20	7/3	7/18	8/1		
(Propanil + molinate) + bensulfuron + quinclorac fb	3.0 0.019 0.125	2-3 lf		96		95		94	94	94	97		10	0	0	0	5133	
(propanil + molinate) + bensulfuron	3.0 0.019	PREFLD																
Quinclorac + propanil (Stam) fb	0.125 2.0	2-3 lf		96		88		81	79	85	73		0	0	0	0	4956	
bensulfuron + Agri-Dex (1 pt/A)	0.047	POSTFLD																
(Propanil + molinate) + quinclorac fb	3.0 0.125	2-3 lf		93		89		86	88	81	79		0	0	0	0	5383	
bensulfuron + Agri-Dex (1 pt/A)	0.047	POSTFLD																
(Propanil + molinate) bensulfuron + quinclorac fb	3.0 0.019 0.125	2-3 lf		95		90		83	83	85	69		0	0	0	0	4706	
bensulfuron + Agri-Dex (1 pt/A)	0.019	POSTFLD																
Quinclorac + thiobencarb	0.375 2.0	DPRE		96	93	98	89	98	86	84	86	79	0	0	0	0	0	5292
Quinclorac + thiobencarb fb	0.375 2.0	DPRE		94	97	98	93	95	91	90	94	93	0	10	0	0	0	5061

(propanil + molinate)	3.0	PREFLD															
+ bensulfuron	0.028																
Clomazone (3 ME) +	0.5	DPRE	96	93	98	94	95	93	89	91	86	8	0	0	0	0	4591
sulfentrazone	0.3																
Halosulfuron fb	0.063	DPRE	90	97	98	93	93	86	85	86	83	0	0	0	0	0	5028
propanil (Super Wham)	2.0	2-3 lf															
+ quinclorac	0.125																

Continued

**Table 4. Continued.**

Herbicide	Rate (lb/A)	Growth stage	Weed control										Rice injury					Rice yield (lb/A)
			Hemp sesbania (SEBEX)		Crabgrass species (DIGSS)		Barnyardgrass (ECHCG)											
			6/4	6/20	6/4	6/20	6/4	6/20	7/3	7/18	8/1	6/4	6/20	7/3	7/18	8/1		
..... (%) .....																		
Quinclorac + halosulfuron + propanil (Stam)	0.125 0.063 2.0	2-3 lf		97		94		89	94	89	84		3	0	0	0	5681	
Quinclorac + propanil (Stam) <u>fb</u> halosulfuron + Induce (0.25%)	0.125 2.0 0.047	2-3 lf  PREFLD		91		94		88	91	90	84		0	0	0	0	5196	
Quinclorac + propanil (Stam) <u>fb</u> halosulfuron + Induce (0.25%)	0.125 2.0 0.063	2-3 lf  PREFLD		96		91		84	88	90	80		0	0	0	0	4619	
(Propanil + molinate) + quinclorac <u>fb</u> halosulfuron + Induce (0.25%)	3.0 0.125 0.063	2-3 lf  PREFLD		97		91		88	91	89	85		0	0	0	0	5272	
LSD(0.05)			8	3	1	4	7	5	10	7	8	6	5	NS	NS	NS	962	

Table 5. Potential salvage treatments for rice, Rohwer, 1996.

TEST INFORMATION

Location . . . . .	Southeast Branch Experiment Station, Rohwer	Planting date . . . . .	May 16, 1996
Experimental Design/replications . . . . .	RCB / 4	Harvest date . . . . .	September 25, 1996
Plot size . . . . .	4.5 ft by 17 ft	Crop/Variety . . . . .	Rice/Lemont
Row width / Number of rows per plot . . . . .	6 in. / 9 rows	Date of Flood . . . . .	June 20, 1996
Soil type . . . . .	Silty clay (8% sand, 49% silt, 43% clay)		
% OM / pH . . . . .	3.5 / 6.7		

Comments: PREFLD = pre flood.

Application type	PREFLD	1 WAT
Date applied	June 17, 1996	June 25, 1996
Time	11:00-11:45 am	2:15-2:30 pm
Incorporation equipment	N/A	N/A
Air/Soil temperature (F)	88 / 84	89 / 88
Relative humidity (%)	49	55
Wind (mph, direction)	2-3 SW-NE	1-3 SW-NE
Weather	sunny	sunny
Soil/Leaf surface moisture	good / dry	flooded / dry
Crop stage/Height	4-5 lf / 4-6"	6 lf-2 tillers / 6-10"
Sprayer type/mph	BkPkCO <sub>2</sub> / 3.0	Hand-applied
Nozzle type/Size	FF / 11002	Hand-applied

Boom ht / # Noz / Spacing (in.)	18" / 4 / 17"	Hand-applied
Gpa / Psi	15 / 24	Hand-applied
<b>Weed species (population)</b>	----- (height / # leaves)-----	
ECHCG (20-40/m <sup>2</sup> )	2-5" / 2-6 lf	4-10" / 6 lf - 2 tillers

**Conclusions:** Several treatments provided greater than 80% control of barnyardgrass. Fenoxaprop (Whip 360) at 0.084 lb ai/A controlled barnyardgrass 85% with rough rice grain yield of 4624 lb/A. Tank mixtures of quinclorac (0.38 lb ai/A) + fenoxaprop (0.6 and 0.67 lb ai/A) and quinclorac + Arrosolo (propanil + molinate) at 6.0 lb ai/A provided 84 to 94% barnyardgrass control. These tank mixtures produced rough rice grain yield ranging from 4859 to 5412 lb/A.

**Table 5.**

<u>Herbicide</u>	<u>Growth Rate</u> (lb/A)	<u>stage</u>	Barnyardgrass control (ECHCG)			Rice injury			Rice yield (lb/A)
			<u>7/3</u>	<u>7/18</u>	<u>8/1</u>	<u>7/3</u>	<u>7/18</u>	<u>8/1</u>	
			..... (%)			.....			
Untreated check			0	0	0	0	0	0	1911
Quinclorac + fenoxaprop	0.38 0.04	PREFLD	69	71	70	0	0	0	4677
Quinclorac + fenoxaprop	0.38 0.05	PREFLD	78	78	75	0	0	0	4667
Quinclorac + fenoxaprop	0.38 0.06	PREFLD	85	81	84	0	0	0	4859
Quinclorac + fenoxaprop	0.38 0.067	PREFLD	78	88	84	0	0	0	5340
Quinclorac + Agri-Dex (2.5%)	0.38	PREFLD	29	65	48	0	0	0	3848
Quinclorac + propanil (Stam) + Agri-Dex (2.5%)	0.38 3.0	PREFLD	58	53	41	0	0	0	3731
Quinclorac + (propanil + molinate)	0.38 4.5	PREFLD	74	89	75	0	0	0	4941
Fenoxaprop	0.084	PREFLD	79	83	85	0	0	0	4624
Propanil (Stam)	4.0	PREFLD	60	55	40	0	0	0	4240
Propanil (Stam) + quinclorac	4.0 0.38	PREFLD	60	61	46	0	0	0	3765
(Propanil + molinate)	6.0	PREFLD	75	88	89	0	0	0	4710
(Propanil + molinate) + quinclorac	6.0 0.38	PREFLD	90	90	94	0	0	0	5412
Propanil (Super Wham) + Agri-Dex (2.5%)	4.0	PREFLD	23	16	36	0	0	0	2771
Propanil (Super Wham) + quinclorac + Agri-Dex (2.5%)	4.0 0.38	PREFLD	74	68	64	0	0	0	4456



Fenoxaprop <u>fb</u>	0.067	PREFLD	80	80	81	0	0	0	4718
molinate (15G)	3.0	1 WAT							
Propanil (Stam) <u>fb</u>	3.0	PREFLD	45	41	36	0	0	0	2771
molinate (15G)	3.0	1 WAT							
Propanil (Stam) <u>fb</u>	3.0	PREFLD	49	54	45	0	0	0	3233
molinate (15G)	4.0	1 WAT							
Propanil (Stam) <u>fb</u>	3.0	PREFLD	71	56	61	0	0	0	4389
molinate (15G)	5.0	1 WAT							
<u>LSD (0.05)</u>			<u>17</u>	<u>15</u>	<u>19</u>	<u>NS</u>	<u>NS</u>	<u>NS</u>	<u>1336</u>

Table 6. Thiobencarb (Bolero) timings and combinations for broadleaf and grass control, Rohwer, 1996.

TEST INFORMATION

Location . . . . .	Southeast Branch Experiment Station, Rohwer	Planting date . . . . .	May 16, 1996
Experimental Design/replications . . . . .	RCB / 4	Harvest date . . . . .	N/A
Plot size . . . . .	4.5 ft by 17 ft	Crop/Variety . . . . .	Rice/Lemont
Row width / Number of rows per plot . . . . .	6 in. / 9 rows	Date of Flood . . . . .	June 20, 1996
Soil type . . . . .	Silty clay (8% sand, 49% silt, 43% clay)		
% OM / pH . . . . .	3.5 / 6.7		

Comments: DPRE = delayed PRE; PREFLD = pre-flood.

Application type	DPRE	2-3 lf	PREFLD
Date applied	May 22, 1996	May 30, 1996	June 17, 1996
Time	2:00-2:30 pm	9:00-9:30 am	11:00-11:45 am
Incorporation equipment	N/A	N/A	N/A
Air/Soil temperature (F)	92 / 87	75 / 75	88 / 84
Relative humidity (%)	65	45	49
Wind (mph, direction)	5-10 E-W	4-6 SE-NW	2-4 SW-NE
Weather	cloudy	sunny	sunny
Soil/Leaf surface moisture	wet / N/A	wet / dry	good / dry
Crop stage/Height	N/A	2-3 lf / 3-5"	4-5 lf / 4-6"
Sprayer type/mph	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0
Nozzle type/Size	FF / 11002	FF / 11002	FF / 11002
Boom ht / # Noz / Spacing (in.)	18" / 4 / 17"	18" / 4 / 17"	18" / 4 / 17"

Gpa / Psi	15 / 24	15 / 25	15 / 24
<b>Weed species (population)</b>	----- (height / # leaves)-----		
DIGSS (40-60/m <sup>2</sup> )		0.25" / 2 lf	0.25-4" / 2-6 lf
ECHCG (20-40/m <sup>2</sup> )		0.25" / 1-2 lf	2-5" / 2-6 lf

**Conclusions:** The full potential of these treatments could not be evaluated because of the low broadleaf weed population. Delayed preemergence applications of thiobencarb + pendimethalin did not provide the residual activity necessary for late-season control of barnyardgrass. Thiobencarb tank mixtures followed by sequential applications provided 83 to 88% late-season control of barnyardgrass.

**Table 6.**

Herbicide	Rate (lb/A)	Growth stage	Weed control										
			Crabgrass species (DIGSS)	Barnyardgrass (ECHCG)					Rice injury				
			<u>6/20</u>	<u>6/4</u>	<u>6/20</u>	<u>7/3</u>	<u>7/18</u>	<u>8/1</u>	<u>6/4</u>	<u>6/20</u>	<u>7/3</u>	<u>7/18</u>	<u>8/1</u>
..... (%) .....													
Untreated check			0	0	0	0	0	0	0	0	0	0	0
Thiobencarb + pendimethalin	3.0 1.0	DPRE	98	98	76	51	73	74	6	0	0	0	0
Thiobencarb + pendimethalin	4.0 1.0	DPRE	98	98	80	73	69	75	4	4	0	0	0
Thiobencarb + pendimethalin <u>fb</u>	2.0 1.0	DPRE	98	98	95	63	68	83	16	0	0	0	0
thiobencarb + propanil (Stam)	2.0 3.0	2-3 lf											
Thiobencarb + propanil (Stam)	3.0 3.0	2-3 lf			79	63	74	74		0	0	0	0
Thiobencarb + (propanil + molinate)	3.0 4.5	2-3 lf			82	45	73	71		0	0	0	0
Thiobencarb + propanil (Stam) <u>fb</u>	2.0 3.0	2-3 lf			84	60	75	84		14	0	0	0
thiobencarb + propanil (Stam)	2.0 3.0	PREFLD											
Thiobencarb + quinclorac <u>fb</u>	2.0 0.66	DPRE	98	98	96	59	68	88	13	0	0	0	0
thiobencarb + (propanil + molinate)	2.0 4.5	2-3 lf											
Thiobencarb +	2.0	DPRE	98	98	97	58	76	85	14	0	0	0	0

quinclorac <u>fb</u>	0.375													
thiobencarb + (propanil + molinate)	2.0 4.5	2-3 lf												
Thiobencarb + quinclorac	3.0 0.66	DPRE	98	98	90	64	81	90	5	0	0	0	0	
Thiobencarb + quinclorac	3.0 0.375	DPRE	98	98	75	50	66	79	0	0	0	0	0	

Continued

Table 6. Continued.

<u>Herbicide</u>	<u>Rate</u> (lb/A)	<u>Growth</u> <u>stage</u>	<u>Weed control</u>											
			<u>Crabgrass</u> <u>species</u> <u>(DIGSS)</u>	<u>Barnyardgrass</u> <u>(ECHCG)</u>					<u>Rice injury</u>					
				<u>6/20</u>	<u>6/4</u>	<u>6/20</u>	<u>7/3</u>	<u>7/18</u>	<u>8/1</u>	<u>6/4</u>	<u>6/20</u>	<u>7/3</u>	<u>7/18</u>	<u>8/1</u>
			..... (%) .....											
Thiobencarb + (propanil + molinate)	2.0 3.0	2-3 lf			83	70	83	88			11	0	0	0
<u>fb</u> thiobencarb + propanil (Stam)	2.0 3.0	PREFLD												
<u>LSD (0.05)</u>				<u>1</u>	<u>1</u>	<u>16</u>	<u>18</u>	<u>13</u>	<u>13</u>	<u>7</u>	<u>4</u>	<u>NS</u>	<u>NS</u>	<u>NS</u>

Table 7. Pendimethalin (Prowl) combinations for rice weed control, Rohwer, 1996.

TEST INFORMATION

Location . . . . .	Southeast Branch Experiment Station, Rohwer	Planting date . . . . .	May 16, 1996
Experimental Design/replications . . . . .	RCB / 4	Harvest date . . . . .	N/A
Plot size . . . . .	4.5 ft by 17 ft	Crop/Variety . . . . .	Rice/Lemont
Row width / Number of rows per plot . . . . .	6 in. / 9 rows	Date of Flood . . . . .	June 20, 1996
Soil type . . . . .	Silty clay (8% sand, 49% silt, 43% clay)		
% OM / pH . . . . .	3.5 / 6.7		

Comments: DPRE = delayed PRE.

Application type	DPRE		
Date applied	May 22, 1996		
Time	2:30-3:00 pm		
Incorporation equipment	N/A		
Air/Soil temperature (F)	92 / 87		
Relative humidity (%)	65		
Wind (mph, direction)	5-10 E-W		
Weather	cloudy		
Soil/Leaf surface moisture	wet / N/A		
Crop stage/Height	N/A		
Sprayer type/mph	BKPkCO <sub>2</sub> / 3.0		
Nozzle type/Size	FF / 11002		

Boom ht / # Noz / Spacing (in.)	18" / 4 / 17"		
Gpa / Psi	15 / 24		

**Conclusions:** Delayed preemergence applications of pendimethalin (1.0, 1.5, and 2.0 lb ai/A) provided excellent initial barnyardgrass control. The addition of quinclorac or thiobencarb did not improve the residual control provided by pendimethalin alone. Without sequential applications, barnyardgrass infestation re-occurred.



**Table 7.**

<u>Herbicide</u>	<u>Rate</u> (lb/A)	<u>Growth</u> <u>stage</u>	<u>Barnyardgrass (ECHCG) control</u>			<u>Rice injury</u>		
			<u>6/4</u>	<u>6/20</u>	<u>7/3</u>	<u>6/4</u>	<u>6/20</u>	<u>7/3</u>
..... (%) .....								
Untreated check			0	0	0	0	0	0
Pendimethalin	1.0	DPRE	92	38	0	0	0	0
Pendimethalin	1.5	DPRE	89	46	0	3	0	0
Pendimethalin	2.0	DPRE	89	44	0	0	0	0
Thiobencarb	4.0	DPRE	95	30	0	0	0	0
Pendimethalin + thiobencarb	1.0 2.0	DPRE	95	30	0	3	0	0
Pendimethalin + thiobencarb	1.0 3.0	DPRE	89	43	0	0	0	0
Pendimethalin + quinclorac	1.0 0.25	DPRE	98	48	0	0	0	0
Pendimethalin + quinclorac	2.0 0.25	DPRE	98	30	0	0	0	0
<u>LSD (0.05)</u>			<u>10</u>	<u>13</u>	<u>NS</u>	<u>NS</u>	<u>NS</u>	<u>NS</u>

Table 8. Quinclorac (Facet) formulations for grass control in rice, Rohwer, 1996.

TEST INFORMATION

Location . . . . . Southeast Branch Experiment Station, Rohwer  
 Experimental Design/replications . . . . . RCB / 4  
 Plot size . . . . . 4.5 ft by 17 ft  
 Row width / Number of rows per plot . . . . . 6 in. / 9 rows  
 Soil type . . . . . Silty clay (8% sand, 49% silt, 43% clay)  
 % OM / pH . . . . . 3.5 / 6.7

Planting date . . . . . May 16, 1996  
 Harvest date . . . . . September 23, 1996  
 Crop/Variety . . . . . Rice/Lemont  
 Date of Flood . . . . . June 20, 1996

**Comments:** DPRE = delayed PRE; EPOST = early POST; G = granular formulation (applied by hand).

Application type	PRE	DPRE	EPOST
Date applied	May 16, 1996	May 22, 1996	May 30, 1996
Time	6:00-6:30 pm	3:00-3:30 pm	9:30-10:00 am
Incorporation equipment	N/A	N/A	N/A
Air/Soil temperature (F)	86 / 79	92 / 87	75 / 75
Relative humidity (%)	47	65	45
Wind (mph, direction)	5-10 S-N	5-10 E-W	4-6 SE-NW
Weather	sunny	cloudy	sunny
Soil/Leaf surface moisture	good / N/A	wet / N/A	wet / dry
Crop stage/Height	N/A	N/A	2-3 lf / 3-5"
Sprayer type/mph	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0
Nozzle type/Size	FF / 11002	FF / 11002	FF / 11002
Boom ht / # Noz / Spacing (in.)	15" / 4 / 17"	18" / 4 / 17"	18" / 4 / 17"

Gpa / Psi	15 / 26	15 / 24	15 / 25
<b>Weed species (population)</b>	----- (height / # leaves)-----		
SEBEX (20-25/m <sup>2</sup> )		0.5-1" / Cot.-1 lf	1-2" / Cot.-2 lf
DIGSS (30/m <sup>2</sup> )			0.25" / 2 lf
ECHCG (30/m <sup>2</sup> )			0.25" / 2 lf

**Conclusions:** Preemergence and delayed preemergence applications of both the granular and dry flowable formulations of quinclorac at 0.375 and 0.5 lb ai/A provided good to excellent control of barnyardgrass and crabgrass species. Early postemergence applications of the dry flowable formulation of quinclorac provided better control of weed species evaluated than the granular formulation. Grain yield was similar for both formulations of quinclorac applied delayed preemergence and early postemergence at 0.375 and 0.5 lb ai/A, except for an early postemergence application of the granular formulation at 0.375 lb ai/A, which reduced yields. Tank mixtures of reduced rates of the dry flowable formulation of quinclorac + Arrosolo (propanil + molinate) provided rough rice grain yield equal or superior to full rates of both formulations of quinclorac alone.

**Table 8.**

<u>Herbicide</u>	<u>Formu- lation</u>	<u>Rate</u> (lb/A)	<u>Growth stage</u>	<u>Weed control</u>										<u>Rice injury</u> (all dates)	<u>Rice yield</u> (lb/A)
				<u>Hemp sesbania</u> (SEBEX)			<u>Crabgrass species</u> (DIGSS)		<u>Barnyardgrass</u> (ECHCG)						
				<u>6/4</u>	<u>6/20</u>	<u>7/3</u>	<u>6/4</u>	<u>6/20</u>	<u>6/4</u>	<u>6/20</u>	<u>7/3</u>	<u>7/18</u>	<u>8/1</u>		
Untreated check				0	0	0	0	0	0	0	0	0	0	0	956
Quinclorac	1.5 G	0.25	PRE	69	59	45	89	84	89	83	75	81	74	0	4893
Quinclorac	75 DF	0.25	PRE	63	53	44	92	75	94	76	61	76	56	0	4629
Quinclorac	1.5 G	0.375	PRE	84	79	78	98	90	98	84	86	85	81	0	4667
Quinclorac	75 DF	0.375	PRE	60	56	35	86	76	91	70	36	71	44	0	4288
Quinclorac	1.5 G	0.5	PRE	83	84	79	94	88	97	84	79	89	84	0	5210
Quinclorac	75 DF	0.5	PRE	80	73	68	97	86	97	83	68	81	75	0	4283
Quinclorac	1.5 G	0.25	DPRE	73	68	44	82	78	92	64	55	79	56	0	4211
Quinclorac	75 DF	0.25	DPRE	85	76	58	98	83	98	80	71	80	66	0	4533
Quinclorac	1.5 G	0.375	DPRE	76	81	60	98	88	98	85	79	85	79	0	5426
Quinclorac	75 DF	0.375	DPRE	85	81	71	97	86	97	80	80	86	79	0	5157
Quinclorac	1.5 G	0.5	DPRE	81	79	73	98	89	98	88	86	93	86	0	5296
Quinclorac	75 DF	0.5	DPRE	86	91	89	97	91	97	89	95	89	89	0	5460
Quinclorac + thiobencarb	75 DF 8 EC	0.25 2.0	DPRE	86	90	85	95	81	98	76	85	79	64	0	4696
Quinclorac	1.5 G	0.25	EPOST		68	60		85		86	70	83	78	0	4403
Quinclorac + Agri-Dex (1 pt/A)	75 DF	0.25	EPOST		90	90		91		91	85	90	88	0	5042
Quinclorac	1.5 G	0.375	EPOST		65	75		75		78	63	74	71	0	4173
Quinclorac + Agri-Dex (1 pt/A)	75 DF	0.375	EPOST		90	85		90		90	86	86	85	0	5253
Quinclorac	1.5 G	0.5	EPOST		68	68		88		88	78	89	83	0	5344

Quinclorac + Agri-Dex (1 pt/A)	75 DF	0.5	EPOST	93	93	94	94	93	86	86	0	5234
Quinclorac + (propanil + molinate) 6 EC	75 DF	0.188 2.0	EPOST	91	95	93	91	95	95	93	0	6132
<u>LSD (0.05)</u>	<u>10</u>	<u>16</u>	<u>21</u>	<u>10</u>	<u>11</u>	<u>7</u>	<u>10</u>	<u>18</u>	<u>10</u>	<u>18</u>	<u>NS</u>	<u>1054</u>

Table 9. Early-season grass control in rice, Rohwer, 1996.

TEST INFORMATION

Location . . . . . Southeast Branch Experiment Station, Rohwer  
 Experimental Design/replications . . . . . RCB / 4  
 Plot size . . . . . 4.5 ft by 17 ft  
 Row width / Number of rows per plot . . . . . 6 in. / 9 rows  
 Soil type . . . . . Silty clay (8% sand, 49% silt, 43% clay)  
 % OM / pH . . . . . 3.5 / 6.7  
 Planting date . . . . . May 16, 1996  
 Harvest date . . . . . September 25, 1996  
 Crop/Variety . . . . . Rice/Lemont  
 Date of Flood . . . . . June 20, 1996

Comments: DPRE = delayed PRE; EPOST = early POST.

Application type	2-3 lf grass		
Date applied	May 30, 1996		
Time	10:45-11:30 am		
Incorporation equipment	N/A		
Air/Soil temperature (F)	78 / 75		
Relative humidity (%)	45		
Wind (mph, direction)	4-6 SE-NW		
Weather	sunny		
Soil/Leaf surface moisture	wet / dry		
Crop stage/Height	2-3 lf / 3-5"		
Sprayer type/mph	BkPkCO <sub>2</sub> / 3.0		
Nozzle type/Size	FF / 11002		

Boom ht / # Noz / Spacing (in.)	18" / 4 / 17"		
Gpa / Psi	15 / 25		
<b>Weed species (population)</b>	----- (height / # leaves)-----		
DIGSS (30/m <sup>2</sup> )	0.25" / 1-2 lf		
ECHCG (30/m <sup>2</sup> )	0.25" / 1-2 lf		

**Conclusions:** Reduced rates of quinclorac (0.094 and 0.125 lb ai/A) in combination with propanil (Stam or Super Wham) and propanil + molinate (Arrosolo) applied to one- to two-leaf barnyardgrass and crabgrass species provided fair to excellent control (73 to 93%) at 3 WAA. These reduced rates did not provide late-season barnyardgrass control (49 to 76%) at 9 WAA. Crop injury was not a problem with any herbicide or herbicide combination. Reduced-rate combinations of quinclorac (0.094 and 0.125 lb ai/A) + propanil (Stam or Super Wham), or propanil + molinate (Arrosolo) at 2.0 lb ai/A did not produce grain yields comparable to full-rate combinations, except quinclorac at 0.125 lb ai/A + propanil (Super Wham) at 2.0 lb ai/A.

**Table 9.**

<u>Herbicide</u>	<u>Rate</u> (lb/A)	<u>Weed control</u>					<u>Rice injury</u> (all dates)	<u>Rice yield</u> (lb/A)
		<u>Crabgrass species</u> (DIGSS)		<u>Barnyardgrass (ECHCG)</u>				
		<u>6/20</u>	<u>6/20</u>	<u>7/3</u>	<u>7/18</u>	<u>8/1</u>		
Untreated check		0	0	0	0	0	2238	
<u>All treatments applied at 2- to 3-leaf grass and rice:</u>								
Propanil (Stam) + quinclorac	3.0 0.375	95	92	86	94	94	0	4874
Propanil (Stam) + quinclorac	3.0 0.25	96	92	83	89	91	0	5306
Propanil (Stam) + quinclorac	2.0 0.25	97	93	85	91	86	0	5815
Propanil (Stam) + quinclorac	3.0 0.188	96	86	84	91	86	0	5124
Propanil (Stam) + quinclorac	2.0 0.188	93	86	81	86	83	0	4802
Propanil (Stam) + quinclorac	3.0 0.125	89	80	69	79	68	0	5123
Propanil (Stam) + quinclorac	2.0 0.125	86	79	73	71	75	0	4691
Propanil (Stam) + quinclorac	3.0 0.094	90	79	64	73	55	0	4442
Propanil (Stam) + quinclorac	2.0 0.094	90	75	43	68	54	0	4206
Propanil (Super Wham)	3.0	96	91	83	88	90	0	5440



quinclorac + Agri-Dex (1 pt/A)	0.25								
Propanil (Super Wham)	2.0	97	89	81	89	84	0	5340	
quinclorac + Agri-Dex (1 pt/A)	0.25								
Propanil (Super Wham)	3.0	97	91	79	86	83	0	4687	
quinclorac + Agri-Dex (1 pt/A)	0.188								
Propanil (Super Wham)	2.0	95	89	83	88	89	0	5695	
quinclorac + Agri-Dex (1 pt/A)	0.188								
Propanil (Super Wham)	3.0	92	80	74	79	76	0	4749	
quinclorac + Agri-Dex (1 pt/A)	0.125								

Continued

**Table 9. Continued.**

<u>Herbicide</u>	<u>Rate</u> (lb/A)	<u>Weed control</u>					<u>Rice injury</u> (all dates)	<u>Rice yield</u> (lb/A)
		<u>Crabgrass species</u> (DIGSS)		<u>Barnyardgrass (ECHCG)</u>				
		<u>6/20</u>	<u>6/20</u>	<u>7/3</u>	<u>7/18</u>	<u>8/1</u>		
Propanil (Super Wham)	2.0	93	85	74	78	65	0	5003
quinclorac + Agri-Dex (1 pt/A)	0.125							
Propanil (Super Wham)	3.0	90	75	61	64	49	0	3400
quinclorac + Agri-Dex (1 pt/A)	0.094							
Propanil (Super Wham)	2.0	90	74	66	70	55	0	4341
quinclorac + Agri-Dex (1 pt/A)	0.094							
(Propanil + molinate) + quinclorac	3.0 0.25	97	95	89	90	79	0	5066
(Propanil + molinate) + quinclorac	2.0 0.25	96	93	83	91	89	0	5364
(Propanil + molinate) + quinclorac	3.0 0.188	96	89	83	90	86	0	5234
(Propanil + molinate) + quinclorac	2.0 0.188	96	91	76	80	81	0	5268
(Propanil + molinate) + quinclorac	3.0 0.125	90	79	69	75	70	0	4893
(Propanil + molinate) + quinclorac	2.0 0.125	91	86	71	79	69	0	4581
(Propanil + molinate) + quinclorac	3.0 0.094	92	73	56	66	60	0	4528
(Propanil + molinate) + quinclorac	2.0 0.094	90	86	70	74	69	0	4413
Propanil (Stam)	3.0	91	77	34	41	30	0	3462

Propanil (Super Wham) + Agri-Dex (1 pt/A)	3.0	90	65	5	34	43	0	3112
(Propanil + molinate)	3.0	94	66	31	50	33	0	3683
Quinclorac + Agri-Dex (1 pt/A)	0.375	97	95	84	88	93	0	5743
<u>LSD (0.05)</u>		<u>6</u>	<u>12</u>	<u>15</u>	<u>13</u>	<u>20</u>	<u>NS</u>	<u>965</u>

Table 10. Postemergence grass control in rice, Rohwer, 1996.

TEST INFORMATION

Location . . . . .	Southeast Branch Experiment Station, Rohwer	Planting date . . . . .	May 16, 1996
Experimental Design/replications . . . . .	RCB / 4	Harvest date . . . . .	N/A
Plot size . . . . .	4.5 ft by 17 ft	Crop/Variety . . . . .	Rice/Lemont
Row width / Number of rows per plot . . . . .	6 in. / 9 rows	Date of Flood . . . . .	June 20, 1996
Soil type . . . . .	Silty clay (8% sand, 49% silt, 43% clay)		
% OM / pH . . . . .	3.5 / 6.7		

Comments:

Application type	4-5 lf		
Date applied	June 17, 1996		
Time	9:00-9:20 am		
Incorporation equipment	N/A		
Air/Soil temperature (F)	82 / 80		
Relative humidity (%)	49		
Wind (mph, direction)	2-3 SW-NE		
Weather	sunny		
Soil/Leaf surface moisture	good / yes		
Crop stage/Height	4-5 lf / 4-6"		
Sprayer type/mph	BKPkCO <sub>2</sub> / 3.0		
Nozzle type/Size	FF / 11002		

Boom ht / # Noz / Spacing (in.)	18" / 4 / 17"		
Gpa / Psi	15 / 24		
<b>Weed species (population)</b>	----- (height/# leaves -----		
ECHCG (40-60/m <sup>2</sup> )	1-5" / 2-6 lf		

**Conclusions:** Propanil (Stam or Super Wham) was applied alone and in combination with reduced rates of quinclorac for barnyardgrass control. All treatments were applied at a single application timing to a heavy population of two- to six-leaf barnyardgrass. Control with all treatments was less than 50% at all rating dates. Plots were not harvested because of heavy barnyardgrass pressure.

**Table 10.**

<u>Herbicide</u>	<u>Rate</u> (lb/A)	<u>Barnyardgrass (ECHCG) control</u>		<u>Rice injury</u>	
		<u>6/20</u>	<u>7/3</u>	<u>6/20</u>	<u>7/3</u>
		..... (%) .....			
Untreated check		0	0	0	0
<u>All treatments applied at 4- to 5-lf grass and rice:</u>					
Propanil (Stam)	4.0	43	30	13	0
Propanil (Super Wham) + Agri-Dex (1 pt/A)	4.0	35	33	11	0
Propanil (Stam) + quinclorac	4.0 0.25	44	45	14	0
Propanil (Stam) + quinclorac	4.0 0.188	44	38	11	0
Propanil (Stam) + quinclorac	4.0 0.125	40	36	11	0
Propanil (Stam) + quinclorac	3.0 0.188	44	34	13	0
Propanil (Stam) + quinclorac	3.0 0.125	44	40	13	0
Propanil (Super Wham) + quinclorac + Agri-Dex (1 pt/A)	3.0 0.125	35	33	11	0
<u>LSD (0.05)</u>		<u>7</u>	<u>10</u>	<u>3</u>	<u>NS</u>

Table 11. V10029 for weed control in rice, Rohwer, 1996.

TEST INFORMATION

Location . . . . . Southeast Branch Experiment Station, Rohwer  
 Experimental Design/replications . . . . . RCB / 4  
 Plot size . . . . . 4.5 ft by 17 ft  
 Row width / Number of rows per plot . . . . . 6 in. / 9 rows  
 Soil type . . . . . Silty clay (8% sand, 49% silt, 43% clay)  
 % OM / pH . . . . . 3.5 / 6.7  
 Planting date . . . . . May 16, 1996  
 Harvest date . . . . . September 25, 1996  
 Crop/Variety . . . . . Rice/Lemont  
 Date of Flood . . . . . June 20, 1996

**Comments:** DPRE = delayed PRE; 2LF = 2-leaf grasses; 4LF = 4-leaf grasses; 3DPF = 3 days prior to flooding.

Application type	DPRE	2LF	4LF	3DPF
Date applied	May 22, 1996	May 30, 1996	June 10, 1996	June 17, 1996
Time	3:30-4:00 pm	11:30-11:40 am	8:10-8:15 am	10:00-11:00 am
Incorporation equipment	N/A	N/A	N/A	N/A
Air/Soil temperature (F)	92 / 87	78 / 78	70 / 68	88 / 84
Relative humidity (%)	65	50	81	49
Wind (mph, direction)	10 E-W	4-6 SE-NW	2-4 S-N	2-3 SW-NE
Weather	cloudy	sunny	sunny	sunny
Soil/Leaf surface moisture	wet / N/A	wet / dry	good / wet	good / dry
Crop stage/Height	N/A	2-3 lf / 2-4"	3-4 lf / 3-5"	4-5 lf / 4-6"
Sprayer type/mph	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0
Nozzle type/Size	FF / 11002	FF / 11002	FF / 11002	FF / 11002
Boom ht / # Noz / Spacing (in.)	18" / 4 / 17"	18" / 4 / 17"	15" / 4 / 17"	15" / 4 / 17"

Gpa / Psi	15 / 24	15 / 25	15 / 28	15 / 24
	----- (height / # leaves) -----			
SEBEX (20-25/m <sup>2</sup> )	0.5-1" / Cot.	1-2" / Cot-2 lf	2-4" / 2-6 lf	2-6" / 2-6 lf
DIGSS (30/m <sup>2</sup> )		1-2" / 2-4 lf	2-4" / 2-6 lf	2-6" / 2-6 lf
ECHCG (30/m <sup>2</sup> )		1-2" / 2-4 lf	2-4" / 2-6 lf	2-6" / 2-6 lf

**Conclusions:** V10029 is not a stand-alone herbicide. The low use rates dictate either tank mixtures or sequential applications with other herbicides that have grass activity. At the rates evaluated, crop injury was not a problem. No differences were noted in weed control or rice injury from use of Kinetic or a crop oil concentrate with V10029. Treatments of V10029 with propanil (Stam), propanil + molinate (Arrosolo) or bensulfuron provided 84 to 97% control of hemp sesbania and crabgrass species at 4 weeks after application and 89 to 98% control of barnyardgrass at 10 weeks after application. These treatments produced rough rice grain yield ranging from 5800 to 6353 lb/A.



**Table 11.**

Herbicide	Rate (lb/A)	Growth stage	Weed control										Rice injury			Rice yield (lb/A)
			Hemp sesbania (SEBEX)		Crabgrass (DIGSS)		Barnyardgrass (ECHCG)					6/4	6/20	others		
			6/4	6/20	6/4	6/20	6/4	6/20	7/3	7/18	8/1				(%)	
Untreated check			0	0	0	0	0	0	0	0	0	0	0	0	0	884
Pendimethalin fb	1.0	DPRE	69	97	94	97	89	97	90	91	92	3	3	0	6084	
V10029 + (propanil + molinate)	0.02 4.5	4LF														
Pendimethalin fb	1.0	DPRE	75	97	97	97	87	97	88	90	96	8	3	0	6021	
(propanil + molinate)	4.5	4LF														
Pendimethalin + thiobencarb fb	1.0 3.0	DPRE	80	86	97	91	97	85	89	94	98	3	11	0	6353	
V10029 + (propanil + molinate)	0.013 4.5	3DPF														
Pendimethalin + thiobencarb fb	1.0 3.0	DPRE	83	91	97	93	94	81	94	91	96	0	13	0	6204	
V10029 + (propanil + molinate)	0.02 4.5	3DPF														
Thiobencarb + propanil (Stam)	3.0 3.0	2LF		94		86		75	90	93	98		1	0	5964	
fb V10029 + Kinetic (0.25%)	0.02	3DPF														
Thiobencarb +	3.0	2LF		94		89		84	90	95	98		0	0	5897	

propanil (Stam)	3.0												
<u>fb</u> V10029 + Agri-Dex (1%)	0.02	3DPF											
Thiobencarb + propanil (Stam)	3.0	2LF	96	96	91	86	90	94		15	0	6084	
<u>fb</u> (propanil + molinate)	6.0	3DPF											

Continued

**Table 11 Continued.**

Herbicide	Rate (lb/A)	Growth stage	Weed control										Rice injury			Rice yield (lb/A)
			Hemp sesbania (SEBEX)		Crabgrass (DIGSS)		Barnyardgrass (ECHCG)					6/4	6/20	others		
			6/4	6/20	6/4	6/20	6/4	6/20	7/3	7/18	8/1				..... (%) .....	
Thiobencarb + propanil (Stam) fb V10029 + triclopyr	3.0 3.0 0.02 0.28	2LF 3DPF		94		89		59	71	76	71		3	0	5623	
Thiobencarb + propanil (Stam) fb V10029 + bensulfuron	3.0 3.0 0.02 0.038	2LF 3DPF		96		84		74	86	86	92		4	0	5800	
(Propanil + molinate) fb V10029 + triclopyr	6.0 0.013 0.28	2LF 3DPF		94		91		46	53	64	46		0	0	4393	
(Propanil + molinate) + propanil (Stam) fb triclopyr	4.5 3.0 0.28	2LF 3DPF		90		85		43	48	63	58		10	0	3928	
Pendimethalin fb V10029 + triclopyr	1.0 0.02 0.28	DPRE 3DPF		74	77	94	75	90	63	66	69	65	0	3	0	4874
Pendimethalin fb V10029 + Kinetic (0.25%) fb V10029 +	1.0 0.013 0.013	DPRE 2LF 3DPF		78	93	96	93	96	86	85	91	95	3	11	0	5968

propanil (Stam)	3.0																
Pendimethalin <u>fb</u>	1.0	DPRE	78	91	96	85	96	63	78	71	68	3	0	0	5047		
V10029 +	0.013	2LF															
Kinetic (0.25%) <u>fb</u>																	
V10029 +	0.013	3DPF															
triclopyr	0.28																

Continued

**Table 11 Continued.**

Herbicide	Rate (lb/A)	Growth stage	Weed control										Rice injury			Rice yield (lb/A)
			Hemp sesbania (SEBEX)		Crabgrass (DIGSS)		Barnyardgrass (ECHCG)					6/4	6/20	others		
			6/4	6/20	6/4	6/20	6/4	6/20	7/3	7/18	8/1				(%)	
Pendimethalin fb V10029 + Kinetic (0.25%) fb V10029 + (propanil + molinate)	1.0 0.013 0.013 4.5	DPRE 2LF 3DPF	79	97	97	93	97	91	90	95	89	3	14	0	6045	
Pendimethalin fb propanil (Stam) fb propanil (Stam) + triclopyr	1.0 4.0 3.0 0.28	DPRE 2LF 3DPF	60	68	94	79	89	73	68	74	80	0	14	0	5186	
Clomazone fb V10029 + triclopyr	0.5 0.02 0.28	DPRE 3DPF	38	45	96	34	96	38	76	86	69	0	0	0	5344	
<u>LSD (0.05)</u>			<u>14</u>	<u>12</u>	<u>5</u>	<u>9</u>	<u>8</u>	<u>13</u>	<u>15</u>	<u>10</u>	<u>15</u>	<u>NS</u>	<u>5</u>	<u>NS</u>	<u>875</u>	

Table 12. Preemergence weed control in rice, Rohwer, 1996.

TEST INFORMATION

Location . . . . .	Southeast Branch Experiment Station, Rohwer	Planting date . . . . .	May 16, 1996
Experimental Design/replications . . . . .	RCB / 4	Harvest date . . . . .	September 23, 1996
Plot size . . . . .	4.5 ft by 17 ft	Crop/Variety . . . . .	Rice/Lemont
Row width / Number of rows per plot . . . . .	6 in. / 9 rows	Date of Flood . . . . .	June 20, 1996
Soil type . . . . .	Silty clay (8% sand, 49% silt, 43% clay)		
% OM / pH . . . . .	3.5 / 6.7		

Comments: DPRE = delayed PRE; EPOST = early POST.

Application type	PPI	PRE	DPRE	EPOST
Date applied	May 16, 1996	May 16, 1996	May 22, 1996	May 30, 1996
Time	4:00-4:30 pm	4:45-5:00 pm	4:00-4:30 pm	11:45-11:55 am
Incorporation equipment	PTO-tiller	N/A	N/A	N/A
Air/Soil temperature (F)	86 / 79	86 / 79	92 / 87	80 / 78
Relative humidity (%)	47	47	65	50
Wind (mph, direction)	10-20 S-N	10-20 S-N	5-10 E-W	4-6 NE-SW
Weather	sunny	sunny	cloudy	sunny
Soil/Leaf surface moisture	good / N/A	good / N/A	wet / N/A	wet / dry
Crop stage/Height	N/A	N/A	N/A	2-3 lf / 3-5"
Sprayer type/mph	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0
Nozzle type/Size	FF / 11002	FF / 11002	FF / 11002	FF / 11002
Boom ht / # Noz / Spacing (in.)	15" / 4 / 17"	15" / 4 / 17"	18" / 4 / 17"	18" / 4 / 17"

Gpa / Psi	15 / 26	15 / 26	15 / 24	15 / 25
<b>Weed species (population)</b>	----- (height / # leaves) -----			
SEBEX (20-25/m <sup>2</sup> )			0.5-1" / Cot.-1 lf	1-2" / Cot.-2 lf
DIGSS (30/m <sup>2</sup> )				0.25" / 1-2 lf
ECHCG (30/m <sup>2</sup> )				0.25" / 1-2 lf

**Conclusions:** In this study, weed control did not differ between the 3 ME and the 4 EC formulations of clomazone. Both formulations provided good to excellent barnyardgrass control and produced grain yield comparable to quinclorac. Clomazone produced excellent results in tank mixture with quinclorac. Delayed preemergence applications of clomazone 4 EC at 0.5 lb ai/A + pendimethalin at 1.0 lb ai/A or thiobencarb at 2.0 lb ai/A produced grain yield of 6454 and 5690 lb/A, respectively. Rice recovered quickly from initial clomazone injury. The only injury symptom was bleaching of rice foliage.

**Table 12.**

Herbicide	Rate (lb/A)	Growth stage	Weed control												Rice injury <sup>z</sup>	Rice yield (lb/A)
			Hemp sesbania (SEBEX)			Crabgrass (DIGSS)			Barnyardgrass (ECHCG)							
			5/30	6/4	6/20	5/30	6/4	6/20	5/30	6/4	6/20	7/3	7/18	8/1		
Untreated check			0	0	0	0	0	0	0	0	0	0	0	0	0	3213
Clomazone (4 EC)	0.4	PPI	40	50	23	95	94	76	95	90	84	85	88	84	18	6218
Clomazone (4 EC)	0.5	PPI	41	45	6	95	94	90	95	90	93	91	88	88	19	5974
Clomazone (4 EC)	0.6	PPI	38	36	0	93	98	93	88	98	91	85	88	91	15	5911
Quinclorac	0.375	PPI	66	80	83	93	97	84	88	97	89	86	83	81	9	5513
Quinclorac	0.5	PPI	58	81	94	95	97	88	95	97	83	79	86	85	14	5796
Clomazone (4 EC) + quinclorac	0.5 0.375	PPI	64	69	82	95	97	88	95	97	91	85	90	86	20	5537
Clomazone (3 ME)	0.4	PRE	31	15	18	95	94	85	89	86	83	84	84	83	10	5892
Clomazone (3 ME)	0.5	PRE	31	5	38	95	92	87	93	92	79	84	86	85	13	5796
Clomazone (3 ME)	0.6	PRE	34	11	25	95	98	92	95	98	88	90	89	88	9	6093
Quinclorac	0.5	PRE	64	78	71	95	98	81	91	98	83	69	81	80	11	5671
Clomazone (3 ME) + quinclorac	0.5 0.375	PRE	45	60	71	95	98	90	93	98	90	80	86	88	18	5690
Clomazone (3 ME)	0.4	DPRE	30	6	6	90	97	74	85	97	80	81	84	84	13	6055
Clomazone (3 ME)	0.5	DPRE	43	24	34	95	95	83	95	97	79	84	79	81	19	5945
Clomazone (3 ME)	0.6	DPRE	39	51	44	95	97	88	95	97	90	90	83	84	15	6050
Quinclorac	0.5	DPRE	44	68	80	95	97	85	93	97	80	88	88	88	11	5853
Quinclorac	0.375	DPRE	69	73	87	95	98	76	95	98	83	89	86	78	8	5440
Clomazone (3 ME) + quinclorac	0.5 0.375	DPRE	33	71	76	95	98	89	95	97	89	85	91	92	9	6276
Thiobencarb	4.0	DPRE	31	64	75	95	97	70	95	97	71	69	82	75	9	6036
Clomazone (3 ME) +	0.4	DPRE	34	63	83	95	97	87	95	97	79	86	88	88	10	6074



quinclorac	0.25															
Pendimethalin	1.0	DPRE	6	33	60	93	83	75	90	97	71	66	79	69	9	5301
Clomazone (4 EC) + thiobencarb	0.5 2.0	DPRE	31	35	35	95	97	78	95	97	71	75	81	76	10	5642
Clomazone (4 EC) + pendimethalin	0.5 1.0	DPRE	6	44	41	95	97	78	95	97	81	78	88	84	13	6454
Quinclorac + thiobencarb	0.375 2.0	DPRE	64	81	93	95	97	79	95	97	76	79	81	79	11	5690

Continued

**Table 12 Continued.**

Herbicide	Rate (lb/A)	Growth stage	Weed control												Rice injury <sup>z</sup>	Rice yield (lb/A)
			Hemp sesbania (SEBEX)			Crabgrass (DIGSS)			Barnyardgrass (ECHCG)							
			5/30	6/4	6/20	5/30	6/4	6/20	5/30	6/4	6/20	7/3	7/18	8/1		
Quinclorac + pendimethalin	0.375 1.0	DPRE	45	85	93	95	96	88	95	97	92	90	89	90	13	6324
Quinclorac + thiobencarb	0.25 2.0	DPRE	69	80	92	95	97	78	95	97	80	86	80	83	13	5445
Quinclorac + pendimethalin	0.25 1.0	DPRE	66	78	83	95	97	81	95	97	85	86	91	88	11	6165
Clomazone (3 ME)	0.4	EPOST		33	45		54	88		54	93	81	85	84		5882
Clomazone (3 ME)	0.5	EPOST		31	54		62	84		49	89	88	89	79		6041
Clomazone (3 ME)	0.6	EPOST		35	34		49	87		49	91	90	91	93		5829
<u>LSD (0.05)</u>			<u>13</u>	<u>13</u>	<u>14</u>	<u>3</u>	<u>10</u>	<u>12</u>	<u>7</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>9</u>	<u>11</u>	<u>7</u>	<u>992</u>

<sup>z</sup>Rice injury ranged from 0-5% with no significant differences among treatments on 6/4 and 6/20 and was 0% after 6/20.

Table 13. Propanil formulations with reduced rates of quinclorac (Facet), Stuttgart, 1996.

TEST INFORMATION

Location . . . . .	Rice Research and Extension Center, Stuttgart	Planting date . . . . .	May 3, 1996
Experimental Design/replications . . . . .	RCB / 4	Harvest date . . . . .	August 29, 1996
Plot size . . . . .	6 ft by 16 ft	Crop/Variety . . . . .	Rice/Kaybonnet
Row width / Number of rows per plot . . . . .	7 in. / 9 rows	Dates of Flushing . . . . .	May 18, 22, 25, 1996
Soil type . . . . .	Crowley silt loam (8% sand, 75% silt, 16% clay)	Date of Flood . . . . .	May 30, 1996
% OM / pH . . . . .	1.3 / 5.5		

**Comments:** Plots were tilled with Triple-K before planting. Barnyardgrass was planted in rows across the plots. Yields were adjusted to 12% moisture (based on moisture per plot). EPOST = early POST.

Application type	EPOST		
Date applied	May 20, 1996		
Time	5:00 pm		
Incorporation equipment	N/A		
Air/Soil temperature (F)	77 / 72		
Relative humidity (%)	65		
Wind (mph, direction)	3		
Weather	25% clouds		
Soil moisture	medium		
Crop stage/Height	2-If / 3"		
Sprayer type/mph	BKPkCO <sub>2</sub> / 3.0		

Nozzle type/Size	FF / 8002LP		
Boom ht / # Noz / Spacing (in.)	18" / 3 / 20"		
Gpa / Psi	20 / 25		
<b>Weed species (population)</b>	<b>(height / # leaves)</b>		
ECHCG	4" / 2-3 lf		

**Conclusions:** Barnyardgrass control increased when 0.062 to 0.25 lb/A quinclorac was tank mixed with 2 or 3 lb/A propanil (Stam M-4) compared to 3 to 4 lb/A propanil (Stam M-4) alone. Three lb/A propanil (Stam M-4) plus 0.125 to 0.25 lb/A quinclorac provided 100% control of barnyardgrass. Control of barnyardgrass was poor with 2 to 3 lb/A propanil (Super Wham) alone but was excellent with a tank mix of propanil (Super Wham) plus 0.094 to 0.25 lb/A quinclorac. Propanil plus molinate (Arrosolo) at 3 or 4.5 lb/A controlled barnyardgrass and was not benefited by the addition of quinclorac. Slight rice injury occurred from 4.5 lb/A propanil plus molinate (Arrosolo) but this treatment produced the highest yields in the experiment.

**Table 13.**

<u>Treatment</u>	<u>Rate</u> (lb/A)	<u>Barnyardgrass</u> <u>(ECHCG) control</u>		<u>Rice injury</u>		<u>Rice yield</u> (lb/A)
		<u>6/3</u>	<u>6/17</u>	<u>6/3</u>	<u>6/17</u>	
		..... (%) .....		.....		
Untreated check		0	0	0	0	4112
<u>All treatments applied early postemergence (EPOST):</u>						
Quinclorac	0.062	76	81	0	0	4842
Quinclorac	0.094	85	83	1	0	4786
Quinclorac	0.125	78	78	0	0	4905
Quinclorac	0.188	86	86	0	0	4755
Quinclorac	0.25	94	96	0	0	5017
Propanil (Stam)	2.0	69	73	0	0	4627
Propanil (Stam) + quinclorac	2.0 0.062	84	88	0	0	4966
Propanil (Stam) + quinclorac	2.0 0.094	80	81	0	0	4988
Propanil (Stam) + quinclorac	2.0 0.125	75	85	0	0	5230
Propanil (Stam) + quinclorac	2.0 0.188	80	85	0	0	4911
Propanil (Stam) + quinclorac	2.0 0.25	84	91	1	0	4664
Propanil (Stam)	3.0	73	85	0	0	4126
Propanil (Stam) + quinclorac	3.0 0.062	71	80	0	0	4763
Propanil (Stam) + quinclorac	3.0 0.094	85	93	0	0	5021

Propanil (Stam) + quinclorac	3.0 0.125	98	100	1	0	5385
Propanil (Stam) + quinclorac	3.0 0.188	89	100	0	0	4528
Propanil (Stam) + quinclorac	3.0 0.25	96	100	1	0	4857
Propanil (Super Wham) + Agri-Dex (1%)	2.0	64	68	0	0	4614

Continued

**Table 13. Continued.**

<u>Treatment</u>	<u>Rate</u> (lb/A)	<u>Barnyardgrass</u> <u>(ECHCG) control</u>		<u>Rice injury</u>		<u>Rice yield</u> (lb/A)
		<u>6/3</u>	<u>6/17</u>	<u>6/3</u>	<u>6/17</u>	
		..... (%) .....		.....		
Propanil (Super Wham) + Agri-Dex (1%) + quinclorac	2.0 0.062	84	90	0	0	4826
Propanil (Super Wham) + Agri-Dex (1%) + quinclorac	2.0 0.094	96	100	1	0	5009
Propanil (Super Wham) + Agri-Dex (1%) + quinclorac	2.0 0.125	97	100	0	0	4827
Propanil (Super Wham) + Agri-Dex (1%) + quinclorac	2.0 0.188	97	100	1	0	4937
Propanil (Super Wham) + Agri-Dex (1%) + quinclorac	2.0 0.25	96	100	0	0	4752
Propanil (Super Wham) + Agri-Dex (1%)	3.0	39	38	0	0	4503
Propanil (Super Wham) + Agri-Dex (1%) + quinclorac	3.0 0.062	79	78	0	0	4657
Propanil (Super Wham) + Agri-Dex (1%) + quinclorac	3.0 0.094	93	94	0	0	4874
Propanil (Super Wham) +	3.0	100	100	0	0	5031

Agri-Dex (1%) + quinclorac	0.125					
Propanil (Super Wham) + Agri-Dex (1%) + quinclorac	3.0	97	100	1	0	5042
Propanil (Super Wham) + Agri-Dex (1%) + quinclorac	0.188					
Propanil (Super Wham) + Agri-Dex (1%) + quinclorac	3.0	98	100	1	0	5924
(Propanil + molinate)	0.25					
	3.0	95	100	3	0	5315

Continued



**Table 13. Continued.**

<u>Treatment</u>	<u>Rate</u> (lb/A)	<u>Barnyardgrass</u> <u>(ECHCG) control</u>		<u>Rice injury</u>		<u>Rice yield</u> (lb/A)
		<u>6/3</u>	<u>6/17</u>	<u>6/3</u>	<u>6/17</u>	
		..... (%) .....		.....		
(Propanil + molinate) + quinclorac	3.0 0.062	96	100	1	0	5080
(Propanil + molinate) + quinclorac	3.0 0.094	90	100	1	0	4971
(Propanil + molinate) + quinclorac	3.0 0.125	89	99	4	0	4092
(Propanil + molinate) + quinclorac	3.0 0.188	97	98	1	0	5413
(Propanil + molinate) + quinclorac	3.0 0.25	97	99	5	1	5261
(Propanil + molinate)	4.5	99	100	11	6	4976
(Propanil + molinate) + quinclorac	4.5 0.062	99	100	13	4	4815
(Propanil + molinate) + quinclorac	4.5 0.094	99	100	10	5	5110
(Propanil + molinate) + quinclorac	4.5 0.125	100	100	9	3	5362
(Propanil + molinate) + quinclorac	4.5 0.188	99	100	10	1	5974
(Propanil + molinate) + quinclorac	4.5 0.25	100	100	9	4	5285
<u>LSD (0.05)</u>		<u>8</u>	<u>5</u>	<u>3</u>	<u>2</u>	<u>909</u>



Table 14. Delayed-preemergence mixtures for resistant barnyardgrass, Stuttgart, 1996.

TEST INFORMATION

Location . . . . .	Rice Research and Extension Center, Stuttgart	Planting date . . . . .	May 15, 1996
Experimental Design/replications . . . . .	RCB / 4	Harvest date . . . . .	September 5, 1996
Plot size . . . . .	6 ft by 16 ft	Crop/Variety . . . . .	Rice/Kaybonnet
Row width / Number of rows per plot . . . . .	7 in. / 9 rows	Dates of Flushing . . . . .	May 11, 21, 31, 1996
Soil type . . . . .	Crowley silt loam (8% sand, 75% silt, 16% clay)	Date of Flood . . . . .	June 13, 1996
% OM / pH . . . . .	1.3 / 5.5		

**Comments:** Plots were tilled with Triple-K before planting. Barnyardgrass was planted in rows across the plots. Yields were adjusted to 12% moisture (based on moisture per plot). DPRE = delayed PRE; EPOST = early POST; and PRE = preemergence.

Application type	PPI	PRE	DPRE	EPOST
Date applied	May 15, 1996	May 15, 1996	May 20, 1996	June 4, 1996
Time	3:00 pm	6:00 pm	3:00 pm	8:00 am
Incorporation equipment / depth	Triple-K / 2"	N/A	N/A	N/A
Air/Soil temperature (F)	80 / 68	78 / 65	73 / 72	67 / 76
Relative humidity (%)	75	73	78	75
Wind (mph, direction)	3	3	2	2
Weather	clear	clear	50% clouds	40% clouds
Soil moisture	medium	medium	medium	medium
Crop stage/Height	N/A	N/A	N/A	2-3 lf / 4"
Sprayer type/mph	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0

Nozzle type/Size	FF / 8002LP	FF / 8002LP	FF / 8002LP	FF / 8002LP
Boom ht / # Noz / Spacing (in.)	18" / 3 / 20"	18" / 3 / 20"	18" / 3 / 20"	18" / 3 / 20"
Gpa / Psi	20 / 25	20 / 25	20 / 25	20 / 25
<b>Weed species (population)</b>	----- (height / # leaves) -----			
ECHCG	N/A	N/A	N/A	3" /2-3 lf

**Conclusions:** Clomazone at 0.5 lb/A applied PPI, PRE, DPRE or EPOST alone or in combination with 0.25 lb/A quinclorac gave excellent season-long control of resistant and susceptible barnyardgrass. Bleaching of rice was excessive when clomazone (4 EC) was applied PPI, but was tolerated by rice when clomazone was applied PRE, DPRE, or EPOST. Rough rice yields were not reduced after the injury sustained by the rice from the PPI application.

**Table 14.**

<u>Treatment</u>	<u>Rate</u> (lb/A)	<u>Growth</u> <u>stage</u>	<u>Barnyardgrass (ECHCG) control</u>				<u>Rice</u> <u>injury</u>		<u>Rice</u> <u>yield</u> (lb/A)
			<u>Resistant</u>		<u>Not resistant</u>		<u>6/5</u>	<u>6/19</u>	
			<u>6/5</u>	<u>6/19</u>	<u>6/5</u>	<u>6/19</u>	<u>6/5</u>	<u>6/19</u>	
			..... (%) .....						
Untreated check			0	0	0	0	0	0	4434
Clomazone (4 EC)	0.5	PPI	100	100	99	100	68	34	5499
Clomazone (3 ME)	0.5	PRE	100	100	100	100	30	14	5853
Clomazone (3 ME)	0.5	DPRE	99	100	100	100	15	11	5666
Clomazone (3 ME)	0.5	EPOST	72	100	92	100	14	12	5812
Clomazone (4 EC) + quinclorac	0.5 + 0.25	PPI	99	100	100	100	61	38	5409
Clomazone (3 ME) + quinclorac	0.5 + 0.25	PRE	99	100	100	100	1	0	5561
Clomazone (3 ME) + quinclorac	0.5 + 0.25	DPRE	98	100	99	100	2	0	5924
Clomazone (3 ME) + quinclorac	0.5 + 0.25	EPOST	72	100	88	100	4	1	5829
Thiobencarb + quinclorac	2.0 + 0.375	DPRE	98	100	98	100	2	1	5417
Thiobencarb + quinclorac	2.0 + 0.188	DPRE	68	79	70	80	0	0	4854
Thiobencarb + quinclorac	2.0 + 0.094	DPRE	24	0	50	0	2	1	5000
Pendimethalin + quinclorac	1.0 + 0.375	DPRE	100	100	100	100	1	0	5681
Pendimethalin + quinclorac	1.0 + 0.188	DPRE	100	100	100	100	0	0	5618
Pendimethalin + quinclorac	1.0 + 0.094	DPRE	99	100	98	100	0	0	5786
Pendimethalin + thiobencarb	1.0 + 3.0	DPRE	94	96	95	99	0	0	5843
Thiobencarb	4.0	DPRE	59	46	59	45	1	1	5464
Pendimethalin	1.0	DPRE	94	98	95	99	0	0	5652
Quinclorac	0.375	DPRE	96	99	97	100	0	0	5392
Quinclorac	0.25	DPRE	91	100	92	100	1	0	5664
Quinclorac	0.188	DPRE	88	98	90	100	0	0	5331
Quinclorac	0.094	DPRE	71	81	79	90	0	0	5345
<u>LSD (0.05)</u>			<u>6</u>	<u>5</u>	<u>6</u>	<u>2</u>	<u>5</u>	<u>4</u>	<u>788</u>



Table 15. Quinclorac (Facet) formulations for grass control in rice, Stuttgart, 1996.

TEST INFORMATION

Location . . . . .	Rice Research and Extension Center, Stuttgart	Planting date . . . . .	May 15, 1996
Experimental Design/replications . . . . .	RCB / 4	Harvest date . . . . .	September 6, 1996
Plot size . . . . .	6 ft by 16 ft	Crop/Variety . . . . .	Rice/Kaybonnet
Row width / Number of rows per plot . . . . .	7 in. / 9 rows	Dates of Flushing . . . . .	May 17, 20, 31, 1996
Soil type . . . . .	Crowley silt loam (8% sand, 75% silt, 16% clay)	Date of Flood . . . . .	June 13, 1996
% OM / pH . . . . .	1.3 / 5.5		

**Comments:** Plots were tilled with Triple-K before planting. Barnyardgrass was planted in rows across the plots. Yields are adjusted to 12% moisture (based on moisture per plot). DPRE = delayed PRE; EPOST = early POST; G = granular formulation (applied with shaker jar).

Application type	PRE	DPRE	EPOST
Date applied	May 15, 1996	May 20, 1996	June 4, 1996
Time	3:00 pm	6:00 pm	8:00 am
Incorporation equipment / depth	N/A	N/A	N/A
Air/Soil temperature (F)	80 / 68	70 / 72	67 / 76
Relative humidity (%)	75	78	75
Wind (mph, direction)	3	3	2
Weather	clear	25% clouds	40% clouds
Soil moisture	medium	medium	medium
Crop stage/Height	N/A	N/A	2-3 lf / 4"
Sprayer type/mph	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0

Nozzle type/Size	FF / 8002LP	FF / 8002LP	FF / 8002LP
Boom ht / # Noz / Spacing (in.)	18" / 3 / 20"	18" / 3 / 20"	18" / 3 / 20"
Gpa / Psi	20 / 25	20 / 25	20 / 25
<b>Weed species (population)</b>	----- (height / # leaves) -----		
ECHCG	N/A	N/A	3" /2-4 lf

**Conclusions:** In comparing the DF and granular formulations of quinclorac, no differences in weed control were observed except for the EPOST applications of the granular formulation at 0.28 lb/A. Slight injury occurred from both formulations at 0.375 lb/A PRE. Rice treated with quinclorac yielded significantly greater than the untreated check.



**Table 15.**

<u>Treatment</u>	<u>Formulation</u>	<u>Rate</u> (lb/A)	<u>Growth</u> <u>stage</u>	<u>Barnyardgrass</u> <u>(ECHCG) control</u>		<u>Rice</u> <u>injury</u>		<u>Rice</u> <u>yield</u>
				<u>6/28</u>	<u>7/12</u>	<u>6/28</u>	<u>7/12</u>	<u>9/6</u>
				..... (%) .....				..... (lb/A)
Untreated check				0	0	0	0	2191
Quinclorac	1.5 G	0.18	PRE	83	89	0	0	5632
Quinclorac	75 DF	0.18	PRE	97	86	0	0	5697
Quinclorac	1.5 G	0.375	PRE	96	95	9	4	5289
Quinclorac	75 DF	0.375	PRE	95	95	10	5	5044
Quinclorac	1.5 G	0.18	DPRE	93	93	0	0	5641
Quinclorac	75 DF	0.18	DPRE	93	93	0	0	5403
Quinclorac	1.5 G	0.375	DPRE	95	88	1	0	5137
Quinclorac	75 DF	0.375	DPRE	95	93	0	0	5224
Quinclorac	1.5 G	0.18	EPOST	84	83	0	0	5902
Quinclorac + Agri-Dex (1 pt/A)	75 DF	0.18	EPOST	95	91	0	0	5427
Quinclorac	1.5 G	0.375	EPOST	96	90	0	0	5636
Quinclorac + Agri-Dex (1 pt/A)	75 DF	0.375	EPOST	94	90	0	0	5062
<u>LSD (0.05)</u>				<u>5</u>	<u>7</u>	<u>2</u>	<u>2</u>	<u>810</u>

Table 16. F-8426 (carfentrazone) postemergence in rice, Stuttgart, 1996.

TEST INFORMATION

Location . . . . .	Rice Research and Extension Center, Stuttgart	Planting date . . . . .	May 6, 1996
Experimental Design/replications . . . . .	RCB / 4	Harvest date . . . . .	September 9, 1996
Plot size . . . . .	6 ft by 16 ft	Crop/Variety . . . . .	Rice/Kaybonnet
Row width / Number of rows per plot . . . . .	7 in. / 9 rows	Dates of Flushing . . . . .	May 18, 22, 25, 1996
Soil type . . . . .	Crowley silt loam (8% sand, 75% silt, 16% clay)	Date of Flood . . . . .	May 30, 1996
% OM / pH . . . . .	1.3 / 5.5		

**Comments:** Plots were tilled with Triple-K before planting. Barnyardgrass was planted in rows across the plots. Yields were adjusted to 12% moisture (based on moisture per plot). EPOST = early POST.

Application type	EPOST		
Date applied	May 16, 1996		
Time	3:00 pm		
Incorporation equipment	N/A		
Air/Soil temperature (F)	78 / 72		
Relative humidity (%)	75		
Wind (mph, direction)	3		
Weather	25% clouds		
Soil moisture	medium		
Crop stage/Height	2-lf / 3"		
Sprayer type/mph	BkPkCO <sub>2</sub> / 3.0		
Nozzle type/Size	FF / 8002LP		

Boom ht / # Noz / Spacing (in.)	18" / 3 / 20"		
Gpa / Psi	20 / 25		
<b>Weed species (population)</b>	<b>(height / # leaves)</b>		
ECHCG	3" /2-4 lf		
POROL (purslane)	0.5"		

**Conclusions:** F-8426, a broadleaf herbicide, had to be mixed with propanil plus molinate, propanil, or thiobencarb to control barnyardgrass. Control of common purslane with F-8426 was excellent at 0.03 to 0.04 lb/A and very good at 0.01 to 0.02 lb/A. Tankmixing F-8426 with propanil increased control of common purslane compared to propanil applied alone. All yields were significantly greater than the untreated check except for F-8426 applied alone, in which barnyardgrass interference reduced yield.

**Table 16.**

Treatment	Rate (lb/A)	Growth stage	Weed control									Rice yield (lb/A)
			Barnyardgrass (ECHCG)			Common purslane (POROL)		Rice injury				
			6/23	5/30	6/13	5/30	6/13	5/23	5/30	6/13		
Untreated check			0	0	0	0	0	0	0	0	0	4499
F-8426 (WES)+ AG-98 (0.25%)	0.01	EPOST	19	0	0	86	89	5	0	0	0	4923
F-8426 (WES) + AG-98 (0.25%)	0.02	EPOST	14	0	0	76	84	5	0	0	0	5344
F-8426 (WES) + AG-98 (0.25%)	0.03	EPOST	19	0	0	96	100	5	0	0	0	5029
F-8426 (WES) + AG-98 (0.25%)	0.04	EPOST	53	0	0	100	100	6	1	0	0	5011
F-8426 (WES) + (propanil + molinate)6.0 + AG-98 (0.25%)	0.03	EPOST	99	98	100	100	100	13	8	3	0	6125
F-8426 (WES) + propanil (Stam) + AG-98 (0.25%)	0.03 4.0	EPOST	90	93	96	100	100	11	6	1	0	5898
F-8426 (WES) + fenoxaprop + AG-98 (0.25%)	0.03 0.067	EPOST	66	35	40	96	98	5	0	0	0	5422
F-8426 (WES) + thiobencarb + AG-98 (0.25%)	0.03 4.0	EPOST	85	96	100	100	100	5	1	0	0	5974
(Propanil + molinate)	6.0	EPOST	97	97	100	99	99	9	4	0	0	5731
Propanil (Stam)	4.0	EPOST	94	89	85	75	83	8	4	0	0	5824

Quinclorac + Agri-Dex (1 qt/A)	0.38	EPOST	80	96	100	0	34	5	0	0	5964
Propanil (Stam) + quinclorac	4.0 0.38	EPOST	99	98	100	95	100	13	8	3	5330
<u>LSD (0.05)</u>			<u>8</u>	<u>8</u>	<u>5</u>	<u>6</u>	<u>5</u>	<u>3</u>	<u>3</u>	<u>2</u>	<u>829</u>

Table 17. Clomazone (Command) for resistant barnyardgrass control in rice, Stuttgart, 1996.

TEST INFORMATION

Location . . . . .	Rice Research and Extension Center, Stuttgart	Planting date . . . . .	May 15, 1996
Experimental Design/replications . . . . .	RCB / 4	Harvest date . . . . .	September 5, 1996
Plot size . . . . .	6 ft by 16 ft	Crop/Variety . . . . .	Rice/Kaybonnet
Row width / Number of rows per plot . . . . .	7 in. / 9 rows	Dates of Flushing . . . . .	May 17, 21, 1996
Soil type . . . . .	Crowley silt loam (8% sand, 75% silt, 16% clay)	Date of Flood . . . . .	June 13, 1996
% OM / pH . . . . .	1.3 / 5.5		

**Comments:** Plots were tilled with Triple-K before planting. Barnyardgrass was planted in rows across the plots. Yields are adjusted to 12% moisture (based on moisture per plot). DPRE = delayed PRE; EPOST = early POST.

Application type	PPI	PRE	DPRE	EPOST
Date applied	May 15, 1996	May 15, 1996	May 20, 1996	May 28, 1996
Time	6:00 pm	7:00 pm	5:00 pm	8:00 am
Incorporation equipment / depth	Triple-K (2")	N/A	N/A	N/A
Air/Soil temperature (F)	82 / 65	80 / 67	85 / 76	76 / 74
Relative humidity (%)	75	75	78	68
Wind (mph, direction)	3	3	2	1
Weather	clear	clear	30% clouds	10% clouds
Soil moisture	medium	medium	medium	medium
Crop stage/Height	N/A	N/A	N/A	2-3 lf / 2-3"
Sprayer type/mph	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0

Nozzle type/Size	FF / 8002LP	FF / 8002LP	FF / 8002LP	FF / 8002LP
Boom ht / # Noz / Spacing (in.)	18" / 3 / 20"	18" / 3 / 20"	18" / 3 / 20"	18" / 3 / 20"
Gpa / Psi	20 / 25	20 / 25	20 / 25	20 / 25
<b>Weed species (population)</b>	----- (height / # leaves) -----			
ECHCG	N/A	N/A	N/A	2-3" /2-3 lf

**Conclusions:** Clomazone at all rates and application timings was effective in controlling both susceptible and resistant barnyardgrass. When applied PPI, clomazone initially caused moderate to severe injury to rice, but no significant yield reduction occurred. Clomazone applied PRE or DPRE significantly reduced the chlorosis in rice and caused little if any stunting or stand reduction. EPOST application of clomazone at the two- to three-leaf stage of barnyardgrass resulted in moderate chlorosis to rice but, as with other treatments, did not reduce yield.

**Table 17.**

<u>Treatment</u>	<u>Rate</u>	Growth <u>stage</u> (lb/A)	<u>Barnyardgrass (ECHCG) control</u>							
			<u>Resistant</u>				<u>Not Resistant</u>			
			<u>5/30</u>	<u>6/5</u>	<u>6/14</u>	<u>6/29</u>	<u>5/30</u>	<u>6/5</u>	<u>6/14</u>	<u>6/29</u>
..... (%) .....										
Untreated check			0	0	0	0	0	0	0	0
Clomazone (4 EC)	0.4	PPI	100	100	100	100	100	100	100	100
Clomazone (4 EC)	0.5	PPI	99	99	100	100	100	99	100	100
Clomazone (4 EC)	0.6	PPI	99	100	100	100	99	100	100	100
Clomazone (3 ME)	0.4	PRE	99	100	100	100	99	100	100	100
Clomazone (3 ME)	0.5	PRE	99	100	100	100	99	100	100	100
Clomazone (3 ME)	0.6	PRE	100	100	100	100	100	100	100	100
Clomazone (3 ME)	0.4	DPRE	99	99	100	100	100	99	100	100
Clomazone (3 ME)	0.5	DPRE	100	100	100	100	100	99	100	100
Clomazone (3 ME)	0.6	DPRE	100	100	100	100	100	100	100	100
Clomazone (3 ME)	0.4	EPOST		100	100	100		100	100	100
Clomazone (3 ME)	0.5	EPOST		100	100	100		99	100	100
Clomazone (3 ME)	0.6	EPOST		100	100	100		99	100	100
Quinclorac	0.38	PRE	87	95	96	100	88	95	96	100
Thiobencarb	4.0	DPRE	38	48	51	55	46	55	54	68
<u>LSD (0.05)</u>			<u>13</u>	<u>11</u>	<u>12</u>	<u>14</u>	<u>5</u>	<u>5</u>	<u>2</u>	<u>9</u>



**Table 17. Continued.**

Treatment	Rate (lb/A)	Growth stage	Rice injury												Rice yield (lb/A)
			Chlorosis				Stand reduction (%)				Stunting				
			5/29	6/6	6/12	6/21	5/29	6/6	6/12	6/21	5/29	6/6	6/12	6/21	
Untreated check			0	0	0	0	0	0	0	0	0	0	0	0	4811
Clomazone (4 EC)	0.4	PPI	59	40	43	18	14	13	20	6	0	5	11	10	5828
Clomazone (4 EC)	0.5	PPI	75	73	79	43	48	49	55	38	5	30	44	33	5150
Clomazone (4 EC)	0.6	PPI	80	75	74	39	50	48	54	35	5	30	45	35	4911
Clomazone (3 ME)	0.4	PRE	30	11	3	0	5	0	0	0	0	0	0	0	5056
Clomazone (3 ME)	0.5	PRE	49	19	10	4	14	0	0	0	0	0	0	0	5769
Clomazone (3 ME)	0.6	PRE	46	23	11	5	19	0	0	0	4	0	0	0	5120
Clomazone (3 ME)	0.4	DPRE	19	5	0	0	3	0	0	0	0	0	0	0	5524
Clomazone (3 ME)	0.5	DPRE	56	19	3	0	23	0	0	0	4	3	0	0	5041
Clomazone (3 ME)	0.6	DPRE	50	14	3	1	14	0	0	0	0	0	0	0	5957
Clomazone (3 ME)	0.4	EPOST		15	9	6		0	0	0		0	0	0	5376
Clomazone (3 ME)	0.5	EPOST		21	29	18		0	0	0		8	0	0	5437
Clomazone (3 ME)	0.6	EPOST		29	35	38		0	0	0		0	0	4	5583
Quinclorac	0.38	PRE	0	0	0	0	0	0	0	0	0	0	0	0	5926
Thiobencarb	4.0	DPRE	0	0	0	0	0	0	0	0	0	0	0	0	5317
<u>LSD (0.05)</u>			<u>13</u>	<u>11</u>	<u>13</u>	<u>7</u>	<u>12</u>	<u>6</u>	<u>5</u>	<u>7</u>	<u>NS</u>	<u>7</u>	<u>6</u>	<u>6</u>	<u>NS</u>

Table 18. Molinate (Ordram) and propanil (Stam) mixtures for barnyardgrass control, Stuttgart, 1996.

TEST INFORMATION

Location . . . . .	Rice Research and Extension Center, Stuttgart	Planting date . . . . .	May 3, 1996
Experimental Design/replications . . . . .	RCB / 4	Harvest date . . . . .	September 5, 1996
Plot size . . . . .	6 ft by 16 ft	Crop/Variety . . . . .	Rice/Kaybonnet
Row width / Number of rows per plot . . . . .	7 in. / 9 rows	Dates of Flushing . . . . .	May 18, 22, 25, 1996
Soil type . . . . .	Crowley silt loam (8% sand, 75% silt, 16% clay)	Date of Flood . . . . .	May 30, 1996
% OM / pH . . . . .	1.3 / 5.5		

**Comments:** Plots were tilled with Triple-K before planting. Barnyardgrass was planted in rows across the plots. Yields were adjusted to 12% moisture (based on moisture per plot). PREFLD = pre-flood; WAF = weeks after flood.

Application type	2-LF	PREFLD	1 WAF	2 WAF	3 WAF
Date applied	May 16, 1996	May 29, 1996	June 5, 1996	June 12, 1996	June 19, 1996
Time	3:00 pm	10:00 am	9:00 am	8:00 am	3:00 pm
Incorporation equipment	N/A	N/A	N/A	N/A	N/A
Air/Soil temperature (F)	83 / 72	78 / 75	72 / 76	74 / 78	92 / 86
Relative humidity (%)	78	76	75	75	85
Wind (mph, direction)	2	3	2	3	1
Weather	clear	50% clouds	40% clouds	15% clouds	40% clouds
Soil moisture	medium	medium	medium	medium	medium
Crop stage/Height	2-lf / 2"	3-4 lf / 4"	2-3 tiller / 7"	3-4 tiller / 9"	4 tiller / 11"
Sprayer type/mph	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0	Shaker jar	Shaker jar	Shaker jar

Nozzle type/Size	FF / 8002LP	FF / 8002LP	N/A	N/A	N/A
Boom ht/# Noz/spacing	18" / 3 / 20"	18" / 3 / 20"	N/A	N/A	N/A
Gpa / Psi	20 / 25	20 / 25	N/A	N/A	N/A
<b>Weed species (population)</b>	----- (height / # leaves)-----				
ECHCG	2" / 2-lf	4" / 3-4 lf	5" / 2 tiller	9" / 3-4 tiller	10" / 3 tiller

**Conclusions:** Arrosolo (propanil + molinate) at 6 lb/A or Stam M4 (propanil) at 4 lb/A applied to two-leaf barnyardgrass and again at pre-flood provided excellent control of barnyardgrass. Molinate at 3 to 4 lb/A applied at 1, 2, or 3 weeks after the flood controlled barnyardgrass escaping the initial application of 3 lb/A propanil at the two-leaf stage. Rice yields did not differ among treatments.

**Table 18.**

<u>Treatment</u>	<u>Rate</u> (lb/A)	<u>Growth</u> <u>stage</u>	<u>Barnyardgrass</u> <u>(ECHCG) control</u>		<u>Rice</u> <u>injury</u>		<u>Rice</u> <u>yield</u> (lb/A)
			<u>5/28</u>	<u>7/12</u>	<u>5/28</u>	<u>7/12</u>	
			..... (%) .....				
Untreated check			0	0	0	0	5281
[Propanil + molinate (Arrosolo)] <u>fb</u>	6.0	2 LF	90	100	0	0	5708
[propanil + molinate (Arrosolo)]	6.0	PREFLD					
Propanil (Stam) <u>fb</u>	3.0	2 LF	81	99	0	0	6469
molinate	3.0	1 WAF					
Propanil (Stam) <u>fb</u>	3.0	2 LF	79	100	0	1	6170
molinate	4.0	1 WAF					
Propanil (Stam) <u>fb</u>	3.0	2 LF	74	99	0	1	5644
molinate	3.0	2 WAF					
Propanil (Stam) <u>fb</u>	3.0	2 LF	78	98	0	3	5810
molinate	4.0	2 WAF					
Propanil (Stam) <u>fb</u>	3.0	2 LF	78	100	0	8	6158
molinate	3.0	3 WAF					
Propanil (Stam) <u>fb</u>	3.0	2 LF	74	100	0	16	6154
molinate	4.0	3 WAF					
Propanil (Stam) <u>fb</u>	4.0	2 LF	84	100	0	1	5681
propanil (Stam)	4.0	PREFLD					
<u>LSD (0.05)</u>			<u>7</u>	<u>3</u>	<u>NS</u>	<u>5</u>	<u>NS</u>

Table 19. Halosulfuron (Permit), bensulfuron (Londax), and triclopyr (Grandstand) for nutsedge and aquatics in rice, Stuttgart, 1996.

TEST INFORMATION

Location . . . . .	Rice Research and Extension Center, Stuttgart	Planting date . . . . .	May 16, 1996
Experimental Design/replications . . . . .	RCB / 4	Harvest date . . . . .	September 6, 1996
Plot size . . . . .	6 ft by 16 ft	Crop/Variety . . . . .	Rice/Kaybonnet
Row width / Number of rows per plot . . . . .	7 in. / 9 rows	Dates of Flushing . . . . .	May 17, 21, 31, 1996
Soil type . . . . .	Crowley silt loam (8% sand, 75% silt, 16% clay)	Date of Flood . . . . .	June 13, 1996
% OM / pH . . . . .	1.3 / 5.5		

**Comments:** Plots were tilled with Triple-K before planting. Weed species were planted in rows across the plots. Yields were adjusted to 12% moisture (based on moisture per plot). DPRE = delayed PRE; EPOST, MPOST, and LPOST = early, mid-, and late POST; PI = panicle initiation.

Application type	PRE	DPRE	EPOST	MPOST	LPOST	PI
Date applied	May 15, 1996	May 20, 1996	June 4, 1996	June 11, 1996	June 17, 1996	July 11, 1996
Time	3:00 pm	6:00 pm	7:00 am	7:00 am	3:00 pm	7:00 am
Incorporation equip.	N/A	N/A	N/A	N/A	N/A	N/A
Air/Soil temperature (F)	80 / 65	70 / 72	67 / 76	74 / 78	92 / 86	75 / 79
Relative humidity (%)	75	78	75	75	85	76
Wind (mph, direction)	6	3	2	3	1	1
Weather	clear	25% clouds	40% clouds	15% clouds	40% clouds	95% clouds
Soil moisture	medium	medium	medium	medium	flooded	flooded

Crop stage/Height	N/A	N/A	2-4 lf / 3"	2 tiller / 9"	3 tiller / 14"	PI / 29"
Sprayer type/mph	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0
Nozzle type/Size	FF / 8002LP	FF / 8002LP	FF / 8002LP	FF / 8002LP	FF / 8002LP	FF / 8003XR
Boom ht/# Noz/spacing	18" / 3 / 20"	18" / 3 / 20"	18" / 3 / 20"	18" / 3 / 20"	18" / 3 / 20"	18" / 3 / 20"
Gpa / Psi	20 / 25	20 / 25	20 / 25	20 / 25	20 / 25	20 / 22
<b>Weed species (population)</b>	----- (height) -----					
SEBEX (hemp sesbania)	N/A	N/A	3"	7"	15"	19"
CYPES (nutsedge)	N/A	N/A	3"	4"	0	0
COMDI (dayflower)	N/A	N/A	2"	3"	0	0

**Conclusions:** All treatments except bensulfuron applied LPOST and halosulfuron applied PRE gave excellent control of hemp sesbania. Halosulfuron applied PRE, EPOST or LPOST was very effective in controlling yellow nutsedge and provided good to excellent control of spreading dayflower. Rice was not injured and rough rice yields did not differ among treatments.

**Table 19.**

Treatment	Rate (lb/A)	Growth stage	Hemp sesbania (SEBEX)			Yellow nutsedge (CYPES)		Spreading dayflower (COMDI)	Rice injury		Rice yield
			6/18	7/2	8/13	6/18	7/2	6/18	6/18	7/2	(lb/A)
..... (%) .....											
Untreated check			0	0	0	0	0	0	0	0	4359
Halosulfuron	0.062	PRE	16	20	13	89	91	91	0	0	4890
Halosulfuron + Induce (0.25%)	0.047	EPOST	96	100	100	93	95	90	0	0	4582
Halosulfuron + Induce (0.25%)	0.062	EPOST	98	99	96	90	95	89	0	0	4587
Bensulfuron + Induce (0.25%)	0.038	EPOST	90	88	98	88	84	90	0	0	4848
Halosulfuron + Induce (0.25%)	0.047	MPOST	83	100	100	54	56	78	0	0	4271
Halosulfuron + Induce (0.25%)	0.062	MPOST	84	100	100	59	60	83	0	0	4955
Bensulfuron + Induce (0.25%)	0.038	MPOST	63	96	96	56	64	74	1	0	4609
Halosulfuron + Induce (0.25%)	0.047	LPOST		94	100		90		0	0	4611
Halosulfuron + Induce (0.25%)	0.062	LPOST		94	100		93		0	0	4679
Bensulfuron + Induce (0.25%)	0.038	LPOST		79	59		58		0	0	4904
Halosulfuron + Induce (0.25%) <u>fb</u>	0.047	EPOST	98	100	100	90	96	89	0	0	5205
halosulfuron +	0.047	LPOST									

Induce (0.25%)											
Triclopyr +	0.19	EPOST	98	98	100	46	54	53	0	0	5112
propanil (Stam) <u>fb</u>	4.0										
triclopyr +	0.25	PI									
propanil (Stam)	4.0										
Pendimethalin <u>fb</u>	1.0	DPRE	100	100	100	63	68	25	0	0	5143
triclopyr +	0.25	EPOST									
propanil (Stam)	4.0										

Continued



**Table 19.**

<u>Treatment</u>	<u>Rate</u> (lb/A)	<u>Growth</u> <u>stage</u>	<u>Hemp sesbania</u> <u>(SEBEX)</u>			<u>Yellow</u> <u>nutsedge</u> <u>(CYPES)</u>		<u>Spreading</u> <u>dayflower</u> <u>(COMDI)</u>	<u>Rice</u> <u>injury</u>		<u>Rice</u> <u>yield</u>
			<u>6/18</u>	<u>7/2</u>	<u>8/13</u>	<u>6/18</u>	<u>7/2</u>	<u>6/18</u>	<u>6/18</u>	<u>7/2</u>	(lb/A)
			..... (%) .....								
Pendimethalin fb triclopyr + propanil (Stam)	1.0 0.25 1.0	DPRE PI	14	20	100	13	26	8	0	0	5329
<u>LSD (0.05)</u>			<u>6</u>	<u>7</u>	<u>6</u>	<u>12</u>	<u>11</u>	<u>7</u>	<u>NS</u>	<u>NS</u>	<u>NS</u>

Table 20. Control of weeds with triclopyr (Grandstand) -- Test 1, Stuttgart, 1996.

TEST INFORMATION

Location . . . . .	Rice Research and Extension Center, Stuttgart	Planting date . . . . .	May 15, 1996
Experimental Design/replications . . . . .	RCB / 4	Harvest date . . . . .	N/A
Plot size . . . . .	6 ft by 16 ft	Crop/Variety . . . . .	No crop
Row width / Number of rows per plot . . . . .	7 in. / 9 rows	Dates of Flushing . . . . .	N/A
Soil type . . . . .	Crowley silt loam (8% sand, 75% silt, 16% clay)	Date of Flood . . . . .	June 29 and July 12 (drained July 9), 1996
% OM / pH . . . . .	1.3 / 5.5		

**Comments:** Plots were tilled with a Triple-K before planting. Weed species were seeded in rows 1.6 ft apart across all plots.

Application type	POST-1	POST-2
Date applied	June 27, 1996	July 10, 1996
Time	9:00 am	6:00 pm
Incorporation equipment	N/A	N/A
Air/Soil temperature (F)	82 / 81	74 / 79
Relative humidity (%)	85	67
Wind (mph, direction)	4	4
Weather	95% clouds	100% clouds
Soil moisture	medium	wet
Crop stage/Height	N/A	N/A
Sprayer type/mph	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0
Nozzle type/Size	FF / 8003XR	FF / 8003XR

Boom ht / # Noz / Spacing (in.)	18" / 3 / 20"	18" / 3 / 20"
Gpa / Psi	20 / 22	20 / 22
<b>Weed species</b>	----- (height) -----	
AESVI (northern jointvetch)	7"	18"
SENOB (sicklepod)	8"	11"
ECHCG (barnyardgrass)	14"	29"
ECLAL (eclipta)	5"	12"
HETLI (ducksalad)	--	0.5"
SEBEX (hemp sesbania)	19"	43"
XANST (common cocklebur)	11"	15"

**Conclusions:** Barnyardgrass was not controlled by any treatment at either timing because of its large size at application. Triclopyr, triclopyr plus propanil, and both 2,4-D formulations (Savage 95 DF and Weedar 64) provided excellent overall broadleaf control with the exception of ducksalad at the early timing. Ducksalad control was better at the second application timing.

**Table 20.**

Treatment	Rate (lb/A)	Weed control													
		Northern <u>jointvetch</u>		Sicklepod		Barnyard- <u>grass</u>		<u>Eclipta</u>		<u>Ducksalad</u>		Hemp <u>sesbania</u>		Common <u>cocklebur</u>	
		<u>14z</u>	<u>28</u>	<u>14</u>	<u>28</u>	<u>14</u>	<u>28</u>	<u>14</u>	<u>28</u>	<u>14</u>	<u>28</u>	<u>14</u>	<u>28</u>	<u>14</u>	<u>28</u>
..... (%) .....															
Untreated check		0	0	0	0	0	0	0	0	0	0	0	0	0	0
<u>Applied 6/27 (POST-1); rated 7/11 (14 DAT) and 7/25 (28 DAT):</u>															
Triclopyr + X-77 (0.25%)	0.125	80	96	93	95	33	13	66	89	15	88	88	96	93	
Triclopyr + X-77 (0.25%)	0.25	92	95	96	95	36	21	94	95	5	95	94	98	94	
Triclopyr + X-77 (0.25%)	0.38	96	95	96	95	44	29	97	95	11	99	98	97	94	
Triclopyr + propanil (Stam)	0.25 1.0	98	94	96	95	31	21	96	94	18	98	95	97	95	
Triclopyr + propanil (Stam)	0.25 3.0	99	96	99	95	24	23	96	93	3	99	96	96	95	
Propanil (Stam)	1.0	71	89	78	71	14	20	38	43	26	75	55	56	56	
Propanil (Stam)	3.0	93	95	92	94	19	28	49	74	31	95	94	59	73	
2,4-D (Savage 95DF)	1.0	81	93	94	95	21	18	95	95	18	96	96	96	95	
2,4-D (Weedar 64)	1.0	93	94	95	96	19	18	98	95	19	96	96	97	96	
<u>Applied 7/10 (POST-2); rated 7/24 (14 DAT) and 8/7 (28 DAT):</u>															
Triclopyr + X-77 (0.25%)	0.125	95	100	63	90	19	4	44	54	84	75	88	96	93	100
Triclopyr + X-77 (0.25%)	0.25	95	98	90	99	25	6	84	91	90	90	93	100	95	100
Triclopyr + X-77 (0.25%)	0.38	95	100	91	100	21	8	89	94	88	91	95	100	95	100
Triclopyr + propanil (Stam)	0.25 1.0	95	100	93	100	25	1	80	90	86	81	95	99	90	99
Triclopyr + propanil (Stam)	0.25 3.0	93	98	95	99	33	6	83	93	88	90	94	100	91	100

Propanil (Stam)	1.0	90	100	64	83	18	11	34	38	88	39	74	74	40	49
Propanil (Stam)	3.0	94	100	58	85	23	13	36	44	90	54	78	69	43	50
2,4-D (Savage 95DF)	1.0	95	100	85	99	10	5	94	98	90	93	90	100	95	100
2,4-D (Weedar 64)	1.0	91	100	85	95	10	1	93	100	89	95	94	100	95	100
<u>LSD (0.05)</u>		<u>5</u>	<u>3</u>	<u>10</u>	<u>6</u>	<u>9</u>	<u>9</u>	<u>12</u>	<u>8</u>	<u>6</u>	<u>13</u>	<u>6</u>	<u>7</u>	<u>9</u>	<u>10</u>

<sup>z</sup> Days after treatment.

Table 21. Control of weeds with triclopyr (Grandstand) -- Test 2, Stuttgart, 1996.

TEST INFORMATION

Location . . . . .	Rice Research and Extension Center, Stuttgart	Planting date . . . . .	June 11, 1996
Experimental Design/replications . . . . .	RCB / 4	Harvest date . . . . .	N/A
Plot size . . . . .	6 ft by 16 ft	Crop/Variety . . . . .	No crop
Row width / Number of rows per plot . . . . .	7 in. / 9 rows	Dates of Flushing . . . . .	N/A
Soil type . . . . .	Crowley silt loam (8% sand, 75% silt, 16% clay)	Date of Flood . . . . .	July 12 and July 25 (drained July 22), 1996
% OM / pH . . . . .	1.3 / 5.5		

**Comments:** Plots were tilled with a Triple-K before planting. Weed species were seeded in rows 1.6 ft apart across all plots.

Application type	POST-1	POST-2
Date applied	July 11, 1996	July 25, 1996
Time	8:00 pm	10:00 pm
Incorporation equipment	N/A	N/A
Air/Soil temperature (F)	74 / 82	84 / 84
Relative humidity (%)	67	82
Wind (mph, direction)	2	3
Weather	95% clouds	80% clouds
Soil moisture	medium	wet
Crop stage/Height	N/A	N/A
Sprayer type/mph	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0
Nozzle type/Size	FF / 8003XR	FF / 8003XR

Boom ht / # Noz / Spacing (in.)	18" / 3 / 20"	18" / 3 / 20"
Gpa / Psi	20 / 22	20 / 22
<b>Weed species</b>	----- (Height)-----	
SENOB (sicklepod)	8"	24"
ECHCG (barnyardgrass)	12"	40"
ECLAL (eclipta)	5"	12"
COMDI (dayflower)	4"	14"
SEBEX (hemp sesbania)	19"	42"
XANST (common cocklebur)	11"	24"

**Conclusions:** Triclopyr plus propanil or 2,4-D (Savage or Weedar) provided excellent control of the broadleaf weed spectrum at either timing. Triclopyr alone showed better activity on eclipta, hemp sesbania and spreading dayflower if applied at the later timing. Barnyardgrass was too big to be controlled by treatment with propanil.

**Table 21.**

Treatment	Rate (lb/A)	Weed control											
		Sicklepod		Barnyard- grass		Eclipta		Hemp sesbania		Dayflower		Common cocklebur	
		14z	28	14	28	14	28	14	28	14	28	14	28
..... (%) .....													
Untreated check		0	0	0	0	0	0	0	0	0	0	0	0
<u>Applied 7/11 (POST-1); rated 7/25 (14 DAT) and 8/7 (28 DAT):</u>													
Triclopyr + X-77 (0.25%)	0.125	71	94	56	63	64	90	84	78	93	93	95	99
Triclopyr + X-77 (0.25%)	0.25	59	93	58	14	79	86	84	83	90	88	95	98
Triclopyr + X-77 (0.25%)	0.38	58	96	63	26	90	99	93	81	93	94	95	100
Triclopyr + propanil (Stam)	0.25 1.0	93	100	81	35	94	100	97	100	93	100	95	100
Triclopyr + propanil (Stam)	0.25 3.0	95	100	58	36	91	98	97	100	82	100	95	100
Propanil (Stam)	1.0	19	53	35	29	39	35	80	59	55	90	49	53
Propanil (Stam)	3.0	71	75	74	38	48	44	94	96	85	90	51	54
2,4-D (Savage 95DF)	1.0	83	100	43	29	95	99	95	100	93	100	96	100
2,4-D (Weedar 64)	1.0	88	98	60	36	95	99	95	100	95	100	95	100
<u>Applied 7/25 (POST-2); rated 8/7 (14 DAT) and 8/21 (28 DAT):</u>													
Triclopyr + X-77 (0.25%)	0.125	70	65	20	26	90	98	99	100	96	100	98	100
Triclopyr + X-77 (0.25%)	0.25	80	88	26	34	85	91	100	100	96	100	99	100
Triclopyr + X-77 (0.25%)	0.38	90	93	31	26	95	100	100	100	100	100	100	100
Triclopyr + propanil (Stam)	0.25	91	95	33	30	89	100	100	100	100	100	100	100
Triclopyr + propanil (Stam)	0.25 3.0	98	100	19	28	94	100	100	100	100	100	100	100



Propanil (Stam)	1.0	31	33	19	26	58	66	88	86	100	100	48	54
Propanil (Stam)	3.0	44	51	28	29	53	66	100	100	100	100	39	50
2,4-D (Savage 95DF)	1.0	78	80	19	19	96	100	100	100	100	100	100	100
2,4-D (Weedar 64)	1.0	86	88	10	26	98	100	100	100	100	100	100	100
<u>LSD (0.05)</u>		<u>12</u>	<u>8</u>	<u>14</u>	<u>12</u>	<u>9</u>	<u>8</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>4</u>	<u>9</u>	<u>9</u>

<sup>z</sup> Days after treatment.

Table 22. Herbicide antagonism with fipronil, Stuttgart, 1996.

TEST INFORMATION

Location . . . . . Rice Research and Extension Center, Stuttgart  
 Experimental Design/replications . . . . . RCB / 4  
 Plot size . . . . . 6 ft by 16 ft  
 Row width / Number of rows per plot . . . . . 9 in. / 9 rows  
 Soil type . . . . . Crowley silt loam (8% sand, 75% silt, 16% clay)  
 % OM / pH . . . . . 1.3 / 5.5  
 Planting date . . . . . May 15, 1996  
 Harvest date . . . . . September 9, 1996  
 Crop/Variety . . . . . Rice/Kaybonnet  
 Dates of Flushing . . . . . May 17, 21, 31, 1996  
 Date of Flood . . . . . June 13, 1996

**Comments:** Plots were tilled with Triple-K before planting. Barnyardgrass was planted in rows across the plots. Yields are adjusted to 12% moisture (based on moisture per plot). EPOST = early POST; SEEDTR = seed treatment.

Application type	PPI	PRE	EPOST
Date applied	May 15, 1996	May 15, 1996	June 4, 1996
Time	3:00 pm	5:00 pm	8:00 am
Incorporation equipment / depth	Triple K / 2 in.	N/A	N/A
Air/Soil temperature (F)	80 / 67	78 / 67	67 / 76
Relative humidity (%)	75	74	75
Wind (mph, direction)	3	3	2
Weather	clear	clear	40% clouds
Soil moisture	medium	medium	medium
Crop stage/Height	N/A	N/A	2-3 lf / 4"
Sprayer type/mph	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0
Nozzle type/Size	FF / 8002LP	FF / 8002LP	FF / 8002LP

Boom ht / # Noz / Spacing (in.)	18" / 3 / 20"	18" / 3 / 20"	18" / 3 / 20"
Gpa / Psi	20 / 25	20 / 25	20 / 25
<b>Weed species (population)</b>	----- (height / # leaves) -----		
ECHCG	N/A	N/A	4" /2-4 lf

**Conclusions:** Preplant incorporated treatments of fipronil (EXP 80698A) followed by 4.0 lb/A propanil applied EPOST resulted in less control of barnyardgrass than if propanil was applied alone. Fipronil at 0.05 lb/A PPI followed by 0.38 lb/A quinclorac applied PRE controlled barnyardgrass but resulted in slight rice injury. Fipronil-treated seed followed by quinclorac at 0.38 lb/A PRE also controlled barnyardgrass and resulted in significantly less injury than the fipronil PPI followed by quinclorac PRE. Rice yield did not differ among treatments and was greater than that in the untreated check.

**Table 22.**

<u>Treatment</u>	<u>Rate</u> (lb/A)	<u>Growth</u> <u>stage</u>	<u>Barnyardgrass</u> <u>(ECHCG) control</u>		<u>Rice</u> <u>injury</u>		<u>Rice</u> <u>yield</u> (lb/A)
			<u>5/29</u>	<u>6/12</u>	<u>5/29</u>	<u>6/12</u>	
			..... (%) .....				
Untreated check			0	0	0	0	3613
Fipronil (EXP80698A) <u>fb</u> propanil (Stam)	0.05 4.0	PPI EPOST	79	83	0	0	7654
Fipronil (EXP80698A) <u>fb</u> quinclorac	0.05 0.38	PPI PRE	99	95	21	13	7393
Fipronil (EXP80698A) <u>fb</u> quinclorac	0.38	SEEDTR PRE	99	93	14	8	7441
Propanil (Stam)	4.0	EPOST	95	95	0	0	8395
Quinclorac	0.38	PRE	100	95	8	4	7880
<u>LSD (0.05%)</u>			<u>3</u>	<u>3</u>	<u>7</u>	<u>4</u>	<u>1466</u>

Table 23. Control of propanil-resistant and susceptible barnyardgrass, Stuttgart, 1996.

TEST INFORMATION

Location . . . . .	Rice Research and Extension Center, Stuttgart	Planting date (weeds) . . . . .	May 3, 1996
Experimental Design/replications . . . . .	RCB / 4	Harvest date . . . . .	September 5, 1996
Plot size . . . . .	6 ft by 16 ft	Crop/Variety . . . . .	Rice/Kaybonnet
Row width / Number of rows per plot . . . . .	6 ft / 2 rows	Dates of Flushing . . . . .	May 18, 22, 25, 1996
Soil type . . . . .	Crowley silt loam (8% sand, 75% silt, 16% clay)	Date of Flood . . . . .	May 30, 1996
% OM / pH . . . . .	1.1 / 5.5		

**Comments:** Plots were tilled with a Triple-K before planting. Weed species were seeded in rows across all plots. Yields are adjusted to 12% moisture (based on moisture per plot). Resist. = resistant barnyardgrass; Susc. = susceptible barnyardgrass.

Application type	POST
Date applied	May 21, 1996
Time	3:00 pm
Incorporation equipment	N/A
Air/Soil temperature (F)	90 / 68
Relative humidity (%)	82
Wind (mph, direction)	3
Weather	50% clouds
Soil moisture	dry
Crop stage/Height	2-lf / 4"
Sprayer type/mph	BkPkCO <sub>2</sub> / 3.0

Nozzle type/Size	FF / 8002LP
Boom ht / # Noz / Spacing (in.)	18" / 3 / 20"
Gpa / Psi	20 / 25
<b>Weed species</b>	<b>( # leaves)</b>
ECHCG	3-5 lf

**Conclusions:** Control of the resistant biotype at 14 DAT was greatest with 3.0 lb/A propanil plus 0.3 lb/A anilophos. The propanil / carbaryl combination was injurious to rice at 14 DAT. Rice yields were highest when treated with 1.5 lb/A propanil plus 0.074 lb/A quinclorac (5706 lb/A), 1.5 lb/A propanil plus 0.3 lb/A piperophos (5706 lb/A), and 3.0 lb/A propanil plus 0.3 lb/A anilophos (5947 lb/A).

**Table 23.**

<u>Treatment</u>	<u>Rate</u> (lb/A)	<u>Barnyardgrass (ECHCG) control</u>								<u>Rice injury</u>				<u>Rice yield</u> (lb/A)
		<u>5/28</u>		<u>6/4</u>		<u>6/18</u>		<u>6/25</u>		<u>5/28</u>	<u>6/4</u>	<u>6/18</u>	<u>6/25</u>	
		<u>Resist.</u>	<u>Susc.</u>	<u>Resist.</u>	<u>Susc.</u>	<u>Resist.</u>	<u>Susc.</u>	<u>Resist.</u>	<u>Susc.</u>					
		..... (%) .....												
Untreated check		0	0	0	0	0	0	0	0	0	0	0	0	2795
<u>All treatments were applied at the 2-leaf rice stage:</u>														
Quinclorac	0.074	51	62	32	56	35	40	39	44	0	0	0	0	4599
Quinclorac	0.22	69	76	69	84	72	76	80	88	0	0	0	0	4974
Carbaryl	0.27	0	0	0	0	0	0	0	0	2	0	0	0	3116
Carbaryl	0.9	0	0	0	5	0	0	0	0	6	8	0	0	3608
Piperophos	0.1	4	4	0	0	0	0	8	8	0	0	0	0	4108
Piperophos	0.3	0	0	0	16	0	0	2	5	0	0	0	0	3670
Anilophos	0.1	14	32	4	42	4	12	16	19	0	0	0	0	4260
Anilophos	0.3	52	70	65	88	62	82	61	81	0	0	0	0	5224
Propanil	1.5	18	49	0	38	2	24	11	38	0	0	0	0	4751
Propanil + quinclorac	1.5 0.074	79	85	69	84	72	75	78	85	0	0	0	0	5706
Propanil + quinclorac	1.5 0.22	80	86	74	86	74	85	84	91	0	0	0	0	5358
Propanil + carbaryl	1.5 0.27	49	64	25	54	32	36	34	45	28	26	2	1	4528
Propanil + carbaryl	1.5 0.9	62	79	42	64	42	51	51	60	40	34	1	8	4144
Propanil + piperophos	1.5 0.1	48	76	32	65	26	54	41	58	0	0	0	0	5269
Propanil + piperophos	1.5 0.3	69	76	48	69	51	61	56	65	0	0	0	0	5706

Propanil + anilophos	1.5 0.1	44	71	14	59	14	34	24	55	1	0	0	0	4528
Propanil + anilophos	1.5 0.3	81	78	79	84	81	79	80	76	2	0	0	0	5304
Propanil	3.0	31	66	10	59	12	38	20	46	0	0	0	0	4394
Propanil + quinclorac	3.0 0.074	74	80	69	81	55	75	59	81	2	0	0	0	5402

Continued



**Table 23. Continued**

Treatment	Rate (lb/A)	Barnyardgrass (ECHCG) control								Rice injury				Rice yield (lb/A)
		5/28		6/4		6/18		6/25		5/28	6/4	6/18	6/25	
		Resist.	Susc.	Resist.	Susc.	Resist.	Susc.	Resist.	Susc.					
		..... (%) .....												
Propanil + quinclorac	3.0 0.22	86	91	76	91	74	84	84	91	2	0	0	15	5644
Propanil + carbaryl	3.0 0.27	79	86	55	78	55	62	65	69	42	35	12	16	3938
Propanil + carbaryl	3.0 0.9	84	88	62	85	65	68	70	76	49	42	9	0	4402
Propanil + piperophos	3.0 0.1	75	75	40	64	44	60	50	68	6	2	0	0	4635
Propanil + piperophos	3.0 0.3	72	82	60	80	52	68	61	76	9	0	4	0	5242
Propanil + anilophos	3.0 0.1	60	75	25	68	16	46	37	70	0	0	0	0	4286
Propanil + anilophos	3.0 0.3	88	85	86	87	93	81	92	86	4	0	0	0	5947
<u>LSD (0.05)</u>		<u>11</u>	<u>14</u>	<u>16</u>	<u>15</u>	<u>19</u>	<u>17</u>	<u>18</u>	<u>14</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>3</u>	<u>1348</u>

Table 24. Control of propanil-resistant and -susceptible barnyardgrass, Lonoke, 1996.

TEST INFORMATION

Location .....	Lonoke	Planting date (weeds) .....	April 27, 1996
Experimental Design/replications .....	RCB / 4	Harvest date .....	September 6, 1996
Plot size .....	7.6 ft by 16 ft	Crop/Variety .....	Rice/Kaybonnet
Row width / Number of rows per plot .....	6 ft / 2 rows	Date of Flood .....	June 6, 1996
Soil type .....	Calloway silt loam		
% OM / pH .....	1.0 / 4.9		

**Comments:** Plots were tilled with a Triple-K before planting. Weed species were seeded in rows across all plots. Yields are adjusted to 12% moisture (based on moisture per plot). Resist. = resistant barnyardgrass; Susc. = susceptible barnyardgrass.

Application type	POST, 3-5 lf.
Date applied	May 21, 1996
Time	7:30 pm
Incorporation equipment	N/A
Air/Soil temperature (F)	80 / 73
Relative humidity (%)	81
Wind (mph, direction)	10
Weather	0% clouds
Soil moisture	dry
Crop stage/Height	3-lf / 4"
Sprayer type/mph	BkPkCO <sub>2</sub> / 3.0

Nozzle type/Size	FF / 8002LP
Boom ht / # Noz / Spacing (in.)	18" / 3 / 20"
Gpa / Psi	20 / 25
<b>Weed species</b>	<b>(# leaves)</b>
ECHCG (barnyardgrass)	3-5 lf

**Conclusions:** Carbaryl was injurious to rice when used in conjunction with propanil. Highest yielding treatments were 1.5 lb/A propanil plus 0.22 lb/A quinclorac (3842 lb/A), 3 lb/A propanil plus 0.22 lb/A quinclorac (4114 lb/A), and 3 lb/A propanil plus 0.1 lb/A piperophos (4164 lb/A). All additives in combination with 3.0 lb/A propanil provided 78 to 95% control of the resistant biotype at 14 DAT (6/3), with no statistical differences among treatments.

**Table 24.**

<u>Treatment</u>	<u>Rate</u> (lb/A)	<u>Barnyardgrass (ECHCG) control</u>								<u>Rice injury</u>			<u>Rice yield</u> (lb/A)
		<u>5/28</u>		<u>6/3</u>		<u>6/10</u>		<u>6/24</u>		<u>5/28</u>	<u>6/10</u>	<u>6/24</u>	
		<u>Resist.</u>	<u>Susc.</u>	<u>Resist.</u>	<u>Susc.</u>	<u>Resist.</u>	<u>Susc.</u>	<u>Resist.</u>	<u>Susc.</u>				
		..... (%) .....											
Untreated check		0	0	0	0	0	0	0	0	0	0	0	596
<u>All treatments were applied at the 2-leaf growth stage:</u>													
Quinclorac	0.074	20	50	60	74	15	30	40	40	0	0	0	1130
Quinclorac	0.22	78	86	82	90	71	78	92	95	0	0	0	2657
Carbaryl	0.27	0	0	0	0	0	0	0	0	6	0	0	1038
Carbaryl	0.9	0	0	0	0	0	0	0	0	5	0	0	754
Piperophos	0.1	0	0	59	59	0	0	0	0	0	0	0	462
Piperophos	0.3	0	0	46	55	0	0	0	0	0	0	0	451
Anilophos	0.1	2	30	49	65	12	20	5	2	0	0	0	464
Anilophos	0.3	13	45	75	78	50	49	14	10	0	0	0	440
Propanil	1.5	11	32	34	61	25	48	25	31	0	6	0	3244
Propanil + quinclorac	1.5 0.074	72	89	88	92	71	82	68	72	6	2	0	3215
Propanil + quinclorac	1.5 0.22	79	91	96	100	86	92	92	96	6	6	0	3842
Propanil + carbaryl	1.5 0.27	42	84	71	88	75	82	46	60	24	9	0	2706
Propanil + carbaryl	1.5 0.9	72	88	90	94	84	91	68	65	36	16	4	2130
Propanil + piperophos	1.5 0.1	55	76	65	82	54	70	34	58	0	0	0	2491
Propanil + piperophos	1.5 0.3	71	90	76	95	64	82	29	71	1	0	0	2934

Propanil + anilophos	1.5 0.1	56	88	65	82	61	79	34	58	1	0	0	1904
Propanil + anilophos	1.5 0.3	66	79	79	88	72	81	56	75	0	0	0	1279
Propanil	3.0	41	75	41	82	31	71	34	65	4	2	0	2679
Propanil + quinclorac	3.0 0.074	71	98	78	97	76	92	74	95	9	2	0	3788

Continued

**Table 24. Continued.**

<u>Treatment</u>	<u>Rate</u> (lb/A)	<u>Barnyardgrass (ECHCG) control</u>								<u>Rice injury</u>			<u>Rice yield</u> (lb/A)
		<u>5/28</u>		<u>6/3</u>		<u>6/10</u>		<u>6/24</u>		<u>5/28</u>	<u>6/10</u>	<u>6/24</u>	
		<u>Resist.</u>	<u>Susc.</u>	<u>Resist.</u>	<u>Susc.</u>	<u>Resist.</u>	<u>Susc.</u>	<u>Resist.</u>	<u>Susc.</u>				
		..... (%) .....											
Propanil + quinclorac	3.0 0.22	81	99	95	100	94	97	100	100	18	1	0	4114
Propanil + carbaryl	3.0 0.27	84	90	94	98	96	98	84	90	42	16	0	2599
Propanil + carbaryl	3.0 0.9	88	95	94	99	99	99	85	91	38	29	4	2992
Propanil + piperophos	3.0 0.1	79	86	85	91	72	85	70	75	2	2	0	1822
Propanil + piperophos	3.0 0.3	78	87	92	96	83	91	76	86	5	2	0	4164
Propanil + anilophos	3.0 0.1	76	86	82	94	78	88	35	69	9	1	0	1618
Propanil + anilophos	3.0 0.3	85	92	86	90	91	100	62	82	4	1	0	2898
<u>LSD (0.05)</u>		<u>20</u>	<u>18</u>	<u>21</u>	<u>12</u>	<u>18</u>	<u>13</u>	<u>26</u>	<u>20</u>	<u>9</u>	<u>8</u>	<u>NS</u>	<u>2023</u>

Table 25. Potential synergistic effects of herbicides and insecticides with propanil (7 experiments), Fayetteville, 1996.

TEST INFORMATION

Location . . . . .	Main Experiment Station, Fayetteville	Planting date . . . . .	May 25, 1996
Experimental Design/replications . . . . .	Factorial on a RCB / 4	Harvest date . . . . .	N/A
Plot size . . . . .	3.3 ft by 5 ft	Crop/Variety . . . . .	Rice/Kaybonnet
Row width / Number of rows per plot . . . . .	3.3ft / 1 row	Dates of Flushing . . . . .	N/A
Soil type . . . . .	Taloka silt loam 21% sand, 68% silt, 11% clay)	Date of Flood . . . . .	N/A
% OM / pH . . . . .	1.1 / 6.3		

**Comments:** Weed species were planted in rows across the plots. The seven experiments were adjacent in the field. All herbicides were applied at the 2- to 3-leaf grass stage.

Application type	anilophos / carbaryl	piperophos / thiobencarb / pendimethalin	quinclorac	molinate
Date applied	June 7, 1996	June 7, 1996	June 8, 1996	June 10, 1996
Time	12:30 pm	4:00 pm	10:30 am	11:30 am
Incorporation equip.	N/A	N/A	N/A	N/A
Air/Soil temperature (F)	70 / 78	80 / 78	69 / 68	72 / 70
Relative humidity (%)	75	76	67	75
Wind (mph, direction)	0	4	5	0
Weather	85% clouds	80% clouds	95% clouds	40% clouds
Soil moisture	wet	wet	wet	moist
Crop stage/Height	2-lf/ 2"	2-lf/ 2"	2-3 lf / 2"	2-3 lf / 2"
Sprayer type/mph	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0
Nozzle type/Size	FF / 11003 XR	FF / 11003 XR	FF / 11003 XR	FF / 11003 XR

Boom ht/# Noz/spacing	12" / 2 / 18"	12" / 2 / 18"	12" / 2 / 18"	12" / 2 / 18"
Gpa / Psi	20 / 27	20 / 27	20 / 27	20 / 27
<b>Weed species (population)</b>	----- (height/no. leaves) -----			
ECHCG	2" / 2-3 lf	2" / 2-3 lf	2" / 2-3 lf	2" / 2-3 lf

**Conclusions:**

- Test 1.** Rice injury from all combinations of propanil plus molinate was <30% at 7 DAT, with no injury at 49 DAT. Propanil-resistant barnyardgrass was controlled >90% when treated with 5.9 lb/A propanil and any rate of molinate. As molinate rate increased, for a given rate of propanil, control of propanil-resistant barnyardgrass increased.
- Test 2.** Control of propanil-resistant barnyardgrass (>90%) was achieved with several rates of a propanil/thiobencarb combination with marginal rice injury (<30%).
- Test 3.** Pendimethalin alone did not control the resistant barnyardgrass. Propanil at 5.9 lb/A plus 0.9 or 2.7 lb/A pendimethalin controlled propanil-resistant barnyardgrass >90% with <15% rice injury.
- Test 4.** Quinclorac alone and in combination with propanil was not injurious to rice. Several rates of the propanil/quinclorac combination provided >90% control of the resistant barnyardgrass.
- Test 5.** Carbaryl applied with propanil was injurious to rice. As propanil and carbaryl rates increased, injury to rice increased. Rates providing >90% control of the resistant barnyardgrass also caused severe rice injury.
- Test 6.** Injury from 2.7 lb/A anilophos plus 3.0 or 5.9 lb/A propanil was 35% at 7 DAT. Several rate combinations provided >90% control of the resistant barnyardgrass with minimal rice injury.
- Test 7.** Piperophos plus propanil at all rates was not injurious to rice. Control of the resistant barnyardgrass was obtained with several rates of the combination.



**Table 25. Test 1.**

Treatment (lb/A)	Rate	Barnyardgrass (ECHCG) control						Rice injury		
		Resistant			Susceptible			6/15	6/28	7/26
		6/15 (%)	6/28	7/26	6/15	6/28	7/26	6/15	6/28	7/26

All treatments applied at 2- to 3-leaf grass stage:

**TEST 1:**

Untreated check		0	0	0	0	0	0	0	0	0	0
Molinate	0.3	0	0	0	0	0	6	0	0	0	0
Molinate	1.0	0	0	0	8	0	0	0	0	0	0
Molinate	3.0	9	10	25	5	8	25	0	0	0	0
Molinate	8.8	36	38	32	45	47	44	6	0	0	0
Propanil	0.74	20	30	2	56	60	2	0	0	0	0
Propanil + molinate	0.74 0.3	30	29	0	50	31	0	0	0	0	0
Propanil + molinate	0.74 1.0	26	31	6	40	32	18	4	0	0	0
Propanil + molinate	0.74 3.0	48	19	15	75	58	44	4	0	0	0
Propanil + molinate	0.74 8.8	74	70	53	85	76	72	4	1	0	0
Propanil	1.5	39	18	6	75	79	43	2	0	0	0
Propanil + molinate	1.5 0.3	50	38	29	88	90	73	2	1	0	0
Propanil + molinate	1.5 1.0	60	62	47	95	96	88	7	0	0	0
Propanil + molinate	1.5 3.0	64	62	60	89	90	78	5	0	0	0

Propanil + molinate	1.5 8.8	75	83	71	97	96	87	5	5	0
Propanil	3.0	65	67	41	99	100	96	4	1	0
Propanil + molinate	3.0 0.3	88	90	66	100	100	92	2	0	0
Propanil + molinate	3.0 1.0	72	75	50	99	100	92	5	0	0
Propanil + molinate	3.0 3.0	86	88	76	100	100	95	14	2	0

Continued

**Table 25. Test 1. Continued.**

<u>Treatment</u> (lb/A)	<u>Rate</u>	<u>Barnyardgrass (ECHCG) control</u>						<u>Rice injury</u>		
		<u>Resistant</u>			<u>Susceptible</u>			<u>6/15</u>	<u>6/28</u>	<u>7/26</u>
		<u>6/15</u>	<u>6/28</u>	<u>7/26</u>	<u>6/15</u>	<u>6/28</u>	<u>7/26</u>	<u>6/15</u>	<u>6/28</u>	<u>7/26</u>
Propanil + molinate	3.0 8.8	91	93	84	100	100	97	21	5	0
Propanil	6.0	92	93	84	100	100	95	8	0	0
Propanil + molinate	6.0 0.3	92	95	81	100	100	95	7	1	0
Propanil + molinate	6.0 1.0	91	90	86	100	100	97	11	2	0
Propanil + molinate	6.0 3.0	96	98	84	100	100	96	11	4	0
Propanil + molinate	6.0 8.8	100	99	92	100	100	95	28	12	0
<u>LSD (0.05)</u>		<u>21</u>	<u>24</u>	<u>21</u>	<u>16</u>	<u>21</u>	<u>21</u>	<u>8</u>	<u>4</u>	<u>NS</u>

**TEST 2:**

Untreated check		0	0	0	1	0	0	0	0	0
Thiobencarb	0.3	25	2	0	18	0	0	0	0	0
Thiobencarb	1.0	72	79	42	78	84	45	0	0	0
Thiobencarb	3.0	74	95	55	40	82	50	0	0	0
Thiobencarb	8.8	89	100	100	68	99	97	13	9	2
Propanil	0.74	25	10	2	51	42	6	0	0	0
Propanil +	0.74	30	45	34	49	36	16	0	0	0

thiobencarb	0.3									
Propanil +	0.74	48	52	50	69	80	56	0	0	0
thiobencarb	1.0									
Propanil +	0.74	70	79	67	63	62	51	0	0	0
thiobencarb	3.0									
Propanil +	0.74	99	100	100	98	100	100	15	6	1
thiobencarb	8.8									
Propanil	1.5	55	33	36	60	28	34	5	0	0

Continued

**Table 25. Test 2. Continued.**

<u>Treatment</u> (lb/A)	<u>Rate</u>	<u>Barnyardgrass (ECHCG) control</u>						<u>Rice injury</u>		
		<u>Resistant</u>			<u>Susceptible</u>			<u>6/15</u>	<u>6/28</u>	<u>7/26</u>
		<u>6/15</u>	<u>6/28</u>	<u>7/26</u>	<u>6/15</u>	<u>6/28</u>	<u>7/26</u>			
Propanil + thiobencarb	1.5 0.3	52	46	52	84	97	85	0	0	0
Propanil + thiobencarb	1.5 1.0	67	70	64	85	95	85	0	0	0
Propanil + thiobencarb	1.5 3.0	96	99	98	96	99	94	2	0	0
Propanil + thiobencarb	1.5 8.8	96	100	99	100	100	98	10	0	0
Propanil	3.0	50	15	20	99	100	94	4	0	0
Propanil + thiobencarb	3.0 0.3	49	92	57	56	100	68	6	0	0
Propanil + thiobencarb	3.0 1.0	88	93	80	99	100	98	4	0	0
Propanil + thiobencarb	3.0 3.0	96	98	94	100	100	99	2	0	0
Propanil + thiobencarb	3.0 8.8	100	100	100	100	100	98	20	1	0
Propanil	6.0	64	61	48	100	100	94	2	0	0
Propanil + thiobencarb	6.0 0.3	74	71	50	100	100	98	1	0	0
Propanil + thiobencarb	6.0 1.0	91	96	85	100	100	98	5	0	0
Propanil + thiobencarb	6.0 3.0	100	100	97	100	100	98	11	0	0

Propanil + thiobencarb	6.0 8.8	100	100	99	100	100	98	19	2	0
<u>LSD (0.05)</u>		<u>29</u>	<u>30</u>	<u>33</u>	<u>21</u>	<u>19</u>	<u>26</u>	<u>7</u>	<u>4</u>	<u>1</u>

Continued

**Table 25. Test 3.**

<u>Treatment</u> (lb/A)	<u>Rate</u>	<u>Barnyardgrass (ECHCG) control</u>						<u>Rice injury</u>		
		<u>Resistant</u>			<u>Susceptible</u>			<u>6/15</u>	<u>6/28</u>	<u>7/26</u>
		<u>6/15</u>	<u>6/28</u>	<u>7/26</u>	<u>6/15</u>	<u>6/28</u>	<u>7/26</u>			
		.....								
<b>TEST 3:</b>										
Untreated check		0	0	0	0	0	0	0	0	0
Pendimethalin	0.1	0	0	0	0	0	0	0	0	0
Pendimethalin	0.3	0	0	12	2	0	12	0	0	0
Pendimethalin	0.9	10	34	45	14	41	48	0	0	0
Pendimethalin	2.7	6	29	46	8	34	26	0	0	0
Propanil	0.74	41	21	4	58	41	9	1	0	0
Propanil + pendimethalin	0.74 0.1	43	8	20	70	70	75	0	0	0
Propanil + pendimethalin	0.74 0.3	28	37	23	42	50	40	0	0	0
Propanil + pendimethalin	0.74 0.9	44	34	28	52	39	25	0	0	0
Propanil + pendimethalin	0.74 2.7	70	81	80	70	75	72	1	0	0
Propanil	1.5	52	27	3	74	61	59	0	0	0
Propanil + pendimethalin	1.5 0.1	54	28	11	70	69	56	2	0	0
Propanil + pendimethalin	1.5 0.3	60	69	40	73	78	66	1	0	0
Propanil + pendimethalin	1.5 0.9	63	72	70	62	80	70	1	0	0
Propanil + pendimethalin	1.5 2.7	81	92	92	80	96	95	4	0	0

Propanil	3.0	67	57	22	83	99	93	5	0	0
Propanil + pendimethalin	3.0 0.1	64	80	61	82	96	89	4	0	0
Propanil + pendimethalin	3.0 0.3	74	66	50	88	96	92	4	0	0
Propanil + pendimethalin	3.0 0.9	75	93	90	92	98	98	2	0	0
Propanil + pendimethalin	3.0 2.7	86	99	99	90	99	98	6	1	0

Continued



**Table 25. Test 3. Continued.**

<u>Treatment</u> (lb/A)	<u>Rate</u>	<u>Barnyardgrass (ECHCG) control</u>						<u>Rice injury</u>		
		<u>Resistant</u>			<u>Susceptible</u>			<u>6/15</u>	<u>6/28</u>	<u>7/26</u>
		<u>6/15</u>	<u>6/28</u>	<u>7/26</u>	<u>6/15</u>	<u>6/28</u>	<u>7/26</u>			
Propanil	6.0	79	84	70	98	100	97	6	0	0
Propanil + pendimethalin	6.0 0.1	87	90	84	98	100	98	10	0	0
Propanil + pendimethalin	6.0 0.3	84	96	91	96	100	98	11	0	0
Propanil + pendimethalin	6.0 0.9	92	99	97	100	100	100	9	5	0
Propanil + pendimethalin	6.0 2.7	99	100	100	100	100	100	12	6	5
<u>LSD (0.05)</u>		<u>16</u>	<u>22</u>	<u>26</u>	<u>17</u>	<u>27</u>	<u>27</u>	<u>3</u>	<u>2</u>	<u>1</u>

**TEST 4:**

Untreated check		0	0	0	2	0	4	0	0	0
Quinclorac	0.025	25	15	0	22	25	0	0	0	0
Quinclorac	0.074	41	77	59	34	63	54	0	0	0
Quinclorac	0.22	90	99	100	82	94	94	0	0	0
Quinclorac	0.67	92	100	100	91	100	100	0	0	0
Propanil	0.74	14	2	0	31	9	0	0	0	0
Propanil + quinclorac	0.74 0.025	48	34	31	54	54	35	0	0	0
Propanil + quinclorac	0.74 0.074	58	48	10	59	78	34	0	0	0

Propanil + quinclorac	0.74 0.22	66	80	75	70	89	78	0	0	0
Propanil + quinclorac	0.74 0.67	100	100	100	100	100	100	0	0	0
Propanil	1.5	35	0	8	72	71	49	0	0	0
Propanil + quinclorac	1.5 0.025	40	30	18	69	73	55	0	0	0

Continued

**Table 25. Test 4. Continued.**

<u>Treatment</u> (lb/A)	<u>Rate</u>	<u>Barnyardgrass (ECHCG) control</u>						<u>Rice injury</u>		
		<u>Resistant</u>			<u>Susceptible</u>			<u>6/15</u>	<u>6/28</u>	<u>7/26</u>
		<u>6/15</u>	<u>6/28</u>	<u>7/26</u>	<u>6/15</u>	<u>6/28</u>	<u>7/26</u>			
Propanil + quinclorac	1.5 0.074	69	70	43	78	88	78	0	0	0
Propanil + quinclorac	1.5 0.22	100	100	100	99	100	100	1	0	0
Propanil + quinclorac	1.5 0.67	100	100	100	100	100	100	0	0	0
Propanil	3.0	61	22	24	98	99	88	0	0	0
Propanil + quinclorac	3.0 0.025	71	64	48	88	92	80	0	0	0
Propanil + quinclorac	3.0 0.074	61	82	66	98	100	94	0	0	0
Propanil + quinclorac	3.0 0.22	100	100	100	96	99	95	0	0	0
Propanil + quinclorac	3.0 0.67	100	100	100	100	100	100	0	0	0
Propanil	6.0	70	61	41	91	98	89	0	0	0
Propanil + quinclorac	6.0 0.025	60	50	29	99	100	94	0	0	0
Propanil + quinclorac	6.0 0.074	88	92	76	100	100	94	0	0	0
Propanil + quinclorac	6.0 0.22	100	100	100	100	100	100	0	0	0
Propanil + quinclorac	6.0 0.67	100	100	100	100	100	100	0	0	2

<u>LSD (0.05)</u>		<u>24</u>	<u>24</u>	<u>24</u>	<u>18</u>	<u>15</u>	<u>21</u>	<u>NS</u>	<u>NS</u>	<u>NS</u>
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**TEST 5:**

Untreated check		0	0	0	0	0	12	0	0	0
Carbaryl	0.009	0	0	0	0	0	0	0	0	0
Carbaryl	0.027	0	0	0	0	0	0	1	0	0

Continued

**Table 25. Test 5. Continued.**

<u>Treatment</u> (lb/A)	<u>Rate</u>	<u>Barnyardgrass (ECHCG) control</u>						<u>Rice injury</u>		
		<u>Resistant</u>			<u>Susceptible</u>			<u>6/15</u>	<u>6/28</u>	<u>7/26</u>
		<u>6/15</u> (%)	<u>6/28</u>	<u>7/26</u>	<u>6/15</u>	<u>6/28</u>	<u>7/26</u>			
Carbaryl	0.09	0	0	0	0	0	0	1	0	0
Carbaryl	0.27	0	0	0	0	0	0	2	0	0
Propanil	0.74	24	22	0	55	62	0	8	0	0
Propanil + carbaryl	0.74	58	61	8	69	62	0	22	9	0
Propanil + carbaryl	0.74	48	40	25	76	47	15	18	2	0
Propanil + carbaryl	0.74	52	65	20	54	79	43	26	18	0
Propanil + carbaryl	0.74	52	70	29	68	73	28	32	31	0
Propanil	1.5	49	56	21	80	90	60	20	5	0
Propanil + carbaryl	1.5	70	82	37	80	86	69	20	2	0
Propanil + carbaryl	1.5	84	90	68	83	91	79	28	2	0
Propanil + carbaryl	1.5	84	97	70	83	94	66	48	35	0
Propanil + carbaryl	1.5	82	99	79	86	98	82	44	50	35
Propanil	3.0	81	96	68	98	100	94	35	6	0
Propanil + carbaryl	3.0	84	93	73	94	100	88	42	17	10
Propanil +	3.0	96	100	85	98	100	90	42	22	8

carbaryl											0.027
Propanil + carbaryl	3.0	87	99	90	99	100	98	62	55		49
carbaryl											0.09
Propanil + carbaryl	3.0	89	98	82	99	100	95	61	65		51
carbaryl											0.27
Propanil	6.0	97	98	84	100	100	95	58	12		0
Propanil + carbaryl	6.0	100	100	87	100	100	94	60	15		2
carbaryl											0.009

Continued

**Table 25. Test 5. Continued.**

<u>Treatment</u> (lb/A)	<u>Rate</u>	<u>Barnyardgrass (ECHCG) control</u>						<u>Rice injury</u>		
		<u>Resistant</u>			<u>Susceptible</u>			<u>6/15</u>	<u>6/28</u>	<u>7/26</u>
		<u>6/15</u>	<u>6/28</u>	<u>7/26</u>	<u>6/15</u>	<u>6/28</u>	<u>7/26</u>			
Propanil + carbaryl	6.0 0.027	100	100	90	100	100	96	74	69	52
Propanil + carbaryl	6.0 0.09	99	100	84	100	100	91	82	80	74
Propanil + carbaryl	6.0 0.27	100	100	97	100	100	98	92	99	100
<u>LSD (0.05)</u>		<u>17</u>	<u>18</u>	<u>22</u>	<u>17</u>	<u>18</u>	<u>21</u>	<u>18</u>	<u>17</u>	<u>23</u>

**TEST 6:**

Untreated check		0	0	0	0	0	0	0	0	0
Anilophos	0.1	2	0	0	11	0	0	0	0	0
Anilophos	0.3	15	0	0	49	6	4	0	0	0
Anilophos	0.9	19	9	15	50	59	20	0	0	0
Anilophos	2.7	25	56	44	65	84	68	1	0	0
Propanil	0.74	39	10	2	75	66	16	0	0	0
Propanil + anilophos	0.74 0.1	74	68	21	84	78	56	1	0	0
Propanil + anilophos	0.74 0.3	83	82	53	86	87	50	1	0	0
Propanil + anilophos	0.74 0.9	82	89	57	93	96	71	11	0	0
Propanil +	0.74	81	96	85	80	91	81	11	4	0

anilophos	2.7										
Propanil	1.5	55	61	29	88	90	61	0	0	0	
Propanil +	1.5	66	71	33	85	84	46	2	0	0	
anilophos	0.1										
Propanil +	1.5	81	93	70	94	99	88	8	0	0	
anilophos	0.3										
Propanil +	1.5	97	100	99	99	100	99	29	22	11	
anilophos	0.9										

Continued



**Table 25. Test 6. Continued.**

Treatment (lb/A)	Rate	Barnyardgrass (ECHCG) control						Rice injury		
		Resistant			Susceptible			6/15	6/28	7/26
		6/15 (%)	6/28	7/26	6/15	6/28	7/26	6/15	6/28	7/26
Propanil + anilophos	1.5 2.7	97	100	100	98	100	100	21	10	2
Propanil	3.0	63	79	58	94	98	89	0	0	0
Propanil + anilophos	3.0 0.1	92	99	89	94	99	93	5	0	0
Propanil + anilophos	3.0 0.3	97	100	90	99	100	98	11	1	0
Propanil + anilophos	3.0 0.9	94	100	95	100	100	100	11	0	0
Propanil + anilophos	3.0 2.7	100	100	100	100	100	100	35	41	15
Propanil	6.0	86	97	76	98	100	97	2	0	0
Propanil + anilophos	6.0 0.1	94	100	91	98	100	98	6	0	0
Propanil + anilophos	6.0 0.3	98	100	96	100	100	99	15	3	0
Propanil + anilophos	6.0 0.9	99	100	94	100	100	98	18	6	2
Propanil + anilophos	6.0 2.7	100	100	100	100	100	100	35	38	10
<u>LSD (0.05)</u>		<u>14</u>	<u>18</u>	<u>25</u>	<u>15</u>	<u>14</u>	<u>21</u>	<u>6</u>	<u>7</u>	<u>7</u>

**TEST 7:**

Untreated check		0	0	0	4	0	0	0	0	0
Piperophos	0.1	0	0	0	0	0	0	0	0	0
Piperophos	0.3	0	0	0	2	0	0	0	0	0
Piperophos	0.9	6	2	4	4	2	0	0	0	0
Piperophos	2.7	21	26	38	41	42	38	0	0	0
Propanil	0.74	16	8	0	31	9	0	0	0	0

Continued

**Table 25. Test 7. Continued.**

<u>Treatment</u> (lb/A)	<u>Rate</u>	<u>Barnyardgrass (ECHCG) control</u>						<u>Rice injury</u>		
		<u>Resistant</u>			<u>Susceptible</u>			<u>6/15</u>	<u>6/28</u>	<u>7/26</u>
		<u>6/15</u>	<u>6/28</u>	<u>7/26</u>	<u>6/15</u>	<u>6/28</u>	<u>7/26</u>	<u>6/15</u>	<u>6/28</u>	<u>7/26</u>
Propanil + piperophos	0.74 0.1	36	9	0	54	44	0	0	0	0
Propanil + piperophos	0.74 0.3	30	15	4	70	70	66	0	0	0
Propanil + piperophos	0.74 0.9	41	4	0	60	38	10	0	0	0
Propanil + piperophos	0.74 2.7	56	53	36	61	72	52	1	0	0
Propanil	1.5	71	42	18	71	72	17	0	0	0
Propanil + piperophos	1.5 0.1	55	57	15	64	78	34	0	0	0
Propanil + piperophos	1.5 0.3	40	20	12	68	81	58	0	0	0
Propanil + piperophos	1.5 0.9	87	85	81	95	98	92	6	0	0
Propanil + piperophos	1.5 2.7	81	86	78	82	79	68	1	0	0
Propanil	3.0	92	82	51	92	95	85	4	0	0
Propanil + piperophos	3.0 0.1	71	71	46	88	97	84	0	0	0
Propanil + piperophos	3.0 0.3	78	72	56	91	96	88	1	0	0
Propanil + piperophos	3.0 0.9	97	98	92	100	100	99	2	1	0

Propanil + piperophos	3.0 2.7	92	95	90	92	99	97	3	0	0
Propanil	6.0	85	86	68	100	96	92	2	0	0
Propanil + piperophos	6.0 0.1	92	89	85	100	100	98	0	0	0
Propanil + piperophos	6.0 0.3	92	100	100	95	100	99	5	0	0

Continued

Table 25. Test 7. Continued.

<u>Treatment</u> (lb/A)	<u>Rate</u>	<u>Barnyardgrass (ECHCG) control</u>						<u>Rice injury</u>		
		<u>Resistant</u>			<u>Susceptible</u>			<u>6/15</u>	<u>6/28</u>	<u>7/26</u>
		<u>6/15</u>	<u>6/28</u>	<u>7/26</u>	<u>6/15</u>	<u>6/28</u>	<u>7/26</u>	<u>6/15</u>	<u>6/28</u>	<u>7/26</u>
Propanil + piperophos	6.0 0.9	100	100	100	100	100	99	11	1	0
Propanil + piperophos	6.0 2.7	98	99	98	100	100	100	9	0	0
<u>LSD (0.05)</u>		<u>20</u>	<u>23</u>	<u>23</u>	<u>25</u>	<u>27</u>	<u>26</u>	<u>3</u>	<u>NS</u>	<u>NS</u>

Table 26. Glufosinate (Liberty)-tolerant rice, Lonoke, 1996.

TEST INFORMATION

Location	UAPB at Lonoke	Planting date	May 23, 1996
Experimental Design/replications	RCB / 3	Harvest date	September 1, 1996
Plot size	6 ft by 20 ft	Crop/Variety	Rice/Liberty Link
Row width / Number of rows per plot	7 in. / 9 rows	Dates of Flushing	N/A
Soil type	Calloway silt loam	Date of Flood	June 4, 1996
% OM / pH / CEC	1.0 / 4.9 / 8		

**Comments:** DPRE = delayed PRE; EPOST = early POST; PREFLD = pre-flood.

Application type	DPRE	EPOST	PREFLD
Date applied	May 31, 1996	June 12, 1996	June 20, 1996
Time	5:00 pm	10:00 am	5:30 pm
Incorporation equipment	N/A	N/A	N/A
Air/Soil temperature (F)	85 / 70	84 / 94	94 / 86
Relative humidity (%)	74	90	78
Wind (mph, direction)	3	4	2
Weather	99% clouds	70% clouds	10% clouds
Soil moisture	wet	medium	wet
Crop stage/Height	N/A	5"	12"
Sprayer type/mph	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0
Nozzle type/Size	driftguard / 11002	driftguard / 11002	driftguard / 11002

Boom ht / # Noz / Spacing (in.)	18" / 4 / 20"	20" / 4 / 20"	22" / 4 / 20"
Gpa / Psi	15 / 28	15 / 28	15 / 29
<b>Weed species</b>	<b>(height / # leaves)</b>	<b>(height / #/sqft)</b>	<b>(# leaves / #/sqft)</b>
BRAPP (broadleaf signalgrass)	(PRE)	1" / 20	4 / 5
IPOSS (morningglory species)	(PRE)	2" / 4	4 / 5
SENOB (sicklepod)	(PRE)	1" / 2	3 / 2
SEBEX (hemp sesbania)	(PRE)	2" / 3	2 / 3

**Conclusions:** This study was conducted to evaluate weed control programs in the genetically transformed rice being developed at LSU. The variety was transformed Gulfmont. The study had a dense infestation of broadleaf signalgrass, morningglory, hemp sesbania and sicklepod. Excellent weed control was achieved in all of the programs. Liberty is an excellent broadleaf herbicide, and also has good grass activity at higher rates when applied early and repeated. In other research in Arkansas and Louisiana it has also shown outstanding activity on red rice. This system has excellent potential for future rice weed control programs in Arkansas.

**Table 26.**

Broadleaf signalgrass		Weed control															Rice yield	
Growth	Rate	stage	Morningglory (BRAPP)			Hemp sesbania (IPOSS)		Sicklepod (SEBEX)			Eclipta (SENOB)		Rice (ECLAL)		injury			
Treatment (lb/A)			6/20 (%)	6/24	8/12	6/20	6/24	6/20	6/24	8/12	6/20	8/12	6/20	6/24	8/12	(lb/A)		
Untreated check			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1620
Glufosinate fb	0.375	EPOST	87	100	100	83	100	87	100	100	90	100	0	0	0	0	0	3780
glufosinate	0.375	PREFLD																
Glufosinate fb	0.5	EPOST	87	97	100	88	98	87	100	100	90	100	0	0	0	0	0	3690
glufosinate	0.5	PREFLD																
Glufosinate fb	0.75	EPOST	85	97	100	90	98	92	100	100	92	100	0	0	0	0	0	3735
glufosinate	0.75	PREFLD																
Propanil (Stam)	2.0	EPOST	88	100	100	92	100	92	100	100	92	100	0	0	0	0	0	4365
+ glufosinate	0.25																	
fb propanil (Stam) +	2.0	PREFLD																
glufosinate	0.25																	
Propanil (Stam)	2.0	EPOST	88	100	100	88	98	92	100	100	92	100	0	7	0	0	0	4005
+ glufosinate	0.375																	
fb propanil (Stam) +	2.0	PREFLD																
glufosinate	0.375																	
Propanil (Stam)	3.0	EPOST	90	95	100	37	100	90	100	97	90	100	0	25	0	0	0	3645
fb glufosinate	0.375	PREFLD																
Propanil (Stam)	3.0	EPOST	90	100	100	53	100	92	100	100	92	100	0	28	0	0	0	3600
fb glufosinate	0.5	PREFLD																
Propanil (Stam)	3.0	EPOST	90	100	100	50	100	90	100	100	90	100	0	33	0	0	0	3375
fb glufosinate	0.75	PREFLD																



Quinclorac <u>fb</u>	0.375	DPRE	90	100	100	80	100	67	100	100	0	100	0	30	0	3330
glufosinate	0.5	PREFLD														
Quinclorac +	0.188	DPRE	90	100	100	72	100	88	100	100	92	100	0	27	0	4095
pendimethalin	1.0															
<u>fb</u> glufosinate	0.5	PREFLD														
Glufosinate +	0.375	EPOST	95	100	100	95	100	95	100	100	0	100	0	0	0	3915
quinclorac	0.25															

Continued

**Table 26.**

Broadleaf signalgrass Growth Treatment (lb/A)	Rate	stage	Weed control												Rice yield	
			Morningglory (BRAPP)			Hemp sesbania (IPOSS)		Sicklepod (SEBEX)			Eclipta (SENOB)	Rice (ECLAL)	injury			
			<u>6/20</u>	<u>6/24</u>	<u>8/12</u>	<u>6/20</u>	<u>6/24</u>	<u>6/20</u>	<u>6/24</u>	<u>8/12</u>	<u>6/20</u>	<u>8/12</u>	<u>6/20</u>	<u>6/24</u>		<u>8/12</u>
Glufosinate + quinclorac	0.5 0.25	EPOST	93	100	100	95	100	95	100	100	95	100	0	0	0	4095
Glufosinate + quinclorac	0.75 0.25	EPOST	95	100	100	95	100	95	97	100	93	100	0	0	0	3240
<u>LSD (0.05)</u>			<u>5</u>	<u>5</u>	<u>NS</u>	<u>10</u>	<u>2</u>	<u>11</u>	<u>2</u>	<u>2</u>	<u>3</u>	<u>NS</u>	<u>NS</u>	<u>7</u>	<u>NS</u>	<u>900</u>

Table 27. Clomazone (Command) and quinclorac (Facet) combinations in rice, Lonoke, 1996.

TEST INFORMATION

Location UAPB at Lonoke ..... Planting date April 27, 1996  
 Experimental Design/replications ..... RCB / 4 Harvest date ..... September 11, 1996  
 Plot size ..... 6 ft by 20 ft Crop/Variety ..... Rice/Kaybonnet  
 Row width / Number of rows per plot ..... 7 in. / 9 rows Dates of Flushing ..... May 3, 1996  
 Soil type Calloway silt loam ..... Date of Flood June 4, 1996  
 % OM / pH / CEC ..... 1.0 / 4.9 / 8

Comments: DPRE = delayed PRE; EPOST = early POST; PREFLD = preflight.

Application type	PRE	DPRE	EPOST	PREFLD
Date applied	April 29, 1996	May 1, 1996	May 20, 1996	June 3, 1996
Time	11:00 am	8:00 am	4:00 pm	10:30 am
Incorporation equipment	N/A	N/A	N/A	N/A
Air/Soil temperature (F)	75 / 65	57 / 52	94 / 87	80 / 75
Relative humidity (%)	58	93	52	83
Wind (mph, direction)	3	3	9	5
Weather	0% clouds	10% clouds	60% clouds	10% clouds
Soil moisture	medium	medium	medium	medium
Crop stage/# leaves	N/A	N/A	4 leaves	12"
Sprayer type/mph	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0
Nozzle type/Size	driftguard / 11002	driftguard / 11002	driftguard / 11002	driftguard / 11002

Boom ht / # Noz / Spacing (in.)	18" / 4 / 20"	18" / 4 / 20"	20" / 4 / 20"	24" / 4 / 20"
Gpa / Psi	15 / 28	15 / 28	15 / 32	15 / 32
<b>Weed species</b>	----- (height / # leaves) -----		----- (# leaves / #/sqft) -----	
BRAPP (broadleaf signalgrass)	(PRE)	(PRE)	4-5 / 60	4-5 / 60

**Conclusions:** F-8426 is an experimental broadleaf herbicide from FMC. Early-season broadleaf signalgrass pressure was severe but very few broadleaf weeds were present. All of the herbicide treatments except thiobencarb (Bolero) alone or followed by F-8426 provided excellent broadleaf signalgrass control. The preemergence applications of clomazone (Command) continued to provide excellent broadleaf signalgrass control. It should also be noted that the F-8426 formulation did not disperse well in the spray mixture.

**Table 27.**

Growth Treatment (lb/A)	Rate	stage	Broadleaf signalgrass (BRAPP) control					Rice injury					Rice yield
			5/17 (%)	5/23	6/3	6/24	8/21	5/17	5/23	6/3	6/24	8/21 (lb/A)	
Untreated check			0	0	0	0	0	0	0	0	0	0	1980
Clomazone (3ME)	0.5	PRE	95	86	94	95	95	33	21	14	0	0	6975
Quinclorac	0.375	PRE	100	86	100	93	100	9	8	8	0	100	7470
Thiobencarb	4.0	DPRE	60	0	0	0	0	5	0	0	0	0	3870
Clomazone (3ME) fb	0.5	PRE	90	96	100	95	100	24	20	15	0	0	7065
F-8426 (WES) + AG-98 (0.25%)	0.031	EPOST											
Quinclorac fb	0.375	PRE	100	98	100	99	96	18	18	21	0	0	6750
F-8426 (WES) + AG-98 (0.25%)	0.031	EPOST											
Thiobencarb fb	4.0	DPRE	58	40	17	73	60	0	12	0	0	0	3825
F-8426 (WES) + AG-98 (0.25%)	0.031	EPOST											
Clomazone (3ME) fb	0.5	DPRE	94	94	100	100	100	23	16	14	0	0	8010
F-8426 (WES) + AG-98 (0.25%)	0.031	EPOST											
Quinclorac fb	0.375	DPRE	100	100	100	94	95	3	15	23	0	0	7425
F-8426 (WES) + AG-98 (0.25%)	0.031	EPOST											
Clomazone (3ME) + quinclorac fb	0.5 0.25	DPRE	100	90	100	100	100	20	15	13	0	0	7470
F-8426 (WES) + AG-98 (0.25%)	0.031	EPOST											
Quinclorac +	0.188	DPRE	98	95	100	98	95	14	18	13	0	0	7920

thiobencarb <u>fb</u>	2.0													
F-8426 (WES) + AG-98 (0.25%)	0.031	EPOST												
Clomazone (3ME) <u>fb</u>	0.5	PRE	98	93	100	100	100	29	30	36	0	0	8235	
propanil (Stam)	4.0	EPOST												
Quinclorac <u>fb</u>	0.375	PRE	99	90	100	94	100	10	23	28	0	0	7380	
propanil (Stam)	4.0	EPOST												
Thiobencarb <u>fb</u>	4.0	DPRE	65	69	100	100	100	3	16	24	0	0	7335	
propanil (Stam)	4.0	EPOST												

Continued

**Table 27.**

Growth Treatment (lb/A)	Rate	stage	Broadleaf signalgrass (BRAPP) control					Rice injury					Rice yield
			5/17 (%)	5/23	6/3	6/24	8/21	5/17	5/23	6/3	6/24	8/21 (lb/A)	
Clomazone (3ME) <u>fb</u> [propanil + molinate]	0.5 6.0	PRE EPOST	94	88	100	100	100	29	35	36	0	0	7335
Quinclorac <u>fb</u> [propanil + molinate]	0.375 6.0	PRE EPOST	100	99	100	93	100	9	10	18	0	0	7020
Thiobencarb <u>fb</u> [propanil + molinate]	4.0 6.0	DPRE EPOST	79	88	100	100	100	5	20	26	0	0	7110
Quinclorac + thiobencarb <u>fb</u> [propanil + molinate]	0.25 4.0 6.0	DPRE EPOST	100	99	100	100	100	13	24	19	0	0	7785
Quinclorac + clomazone (3ME) <u>fb</u> [propanil + molinate]	0.25 0.5 6.0	DPRE EPOST	100	90	100	100	100	24	20	19	0	0	7425
[Propanil + molinate] + clomazone (3ME)	6.0 0.5	EPOST	0	49	100	100	100	0	8	31	0	0	7560
Propanil (Stam) + clomazone (3ME)	4.0 0.5	EPOST	0	34	100	99	100	0	5	19	0	0	7515
Quinclorac + propanil (Stam) + bentazon +	0.375 2.0 0.5	EPOST	0	23	100	98	100	0	4	28	0	0	7650

Agri-Dex (2.5%) Quinclorac + propanil (Stam) + bentazon + Agri-Dex (2.5%)	0.375 2.0 0.5	PREFLD	0	0	0	100	100	0	0	0	0	0	7695
<u>LSD (0.05)</u>			<u>12</u>	<u>16</u>	<u>5</u>	<u>7</u>	<u>5</u>	<u>11</u>	<u>10</u>	<u>16</u>	<u>NS</u>	<u>NS</u>	<u>774</u>



Table 28. Lactofen (Cobra) for weed control in rice, Lonoke, 1996.

TEST INFORMATION

Location UAPB at Lonoke ..... Planting date April 27, 1996  
 Experimental Design/replications ..... RCB / 4 Harvest date ..... September 6, 1996  
 Plot size ..... 6 ft by 20 ft Crop/Variety ..... Rice/Kaybonnet  
 Row width / Number of rows per plot ..... 7 in. / 9 rows Dates of Flushing ..... May 3, 1996  
 Soil type Calloway silt loam ..... Date of Flood June 4, 1996  
 % OM / pH / CEC ..... 1.0 / 4.9 / 8

**Comments:** DPRE = delayed PRE; EPOST = early POST; PREFLD = pre-flood.

Application type	DPRE	EPOST	PREFLD
Date applied	May 1, 1996	May 17, 1996	June 3, 1996
Time	8:00 am	9:00 am	11:00 am
Incorporation equipment	N/A	N/A	N/A
Air/Soil temperature (F)	57 / 52	70 / 71	81 / 78
Relative humidity (%)	93	88	80
Wind (mph, direction)	3	6	5
Weather	10% clouds	90% clouds	10% clouds
Soil moisture	medium	medium	medium
Crop stage	N/A	2-3 leaves	12"
Sprayer type/mph	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0
Nozzle type/Size	driftguard / 11002	driftguard / 11002	driftguard / 11002

Boom ht / # Noz / Spacing (in.)	18" / 4 / 18"	20" / 4 / 20"	24" / 4 / 20"
Gpa / Psi	15 / 28	15 / 26	15 / 32
<b>Weed species</b>	<b>(height / # leaves)</b>	<b>----- (# leaves / #/sqft)-----</b>	
BRAPP (broadleaf signalgrass)	(PRE)	2-3 / 80	none present

**Conclusions:** This study was conducted to evaluate lactofen (Cobra) in various rice weed control programs. All treatments provided excellent broadleaf signalgrass control. The broadleaf weed infestation did not develop. However, we know from other research that lactofen alone and in combination with propanil has excellent broadleaf weed activity. In two years of study, rice injury from the lactofen treatments was not significant.

**Table 28.**

Broadleaf signalgrass			<u>(BRAPP) control</u>		<u>Rice injury</u>					<u>Rice</u>
<u>Treatment</u>	<u>Rate</u>	<u>stage</u>	<u>5/17</u>	<u>5/23-8/20</u>	<u>5/17</u>	<u>5/23</u>	<u>6/3</u>	<u>6/24</u>	<u>8/20</u>	<u>yield</u>
(lb/A)			(%)						(lb/A)	
Untreated check			0	0	0	0	0	0	0	3060
Thiobencarb + lactofen <u>fb</u>	3.0 0.375	DPRE	80	100	15	25	10	0	0	7605
propanil (Stam)	3.0	EPOST								
Thiobencarb + lactofen <u>fb</u>	3.0 0.5	DPRE	83	100	25	23	14	0	0	7380
propanil (Stam)	3.0	EPOST								
Thiobencarb + pendimethalin <u>fb</u>	3.0 1.0	DPRE	96	100	28	35	15	0	0	7020
lactofen + propanil (Stam)	0.375 2.0	EPOST								
Thiobencarb + pendimethalin <u>fb</u>	3.0 1.0	DPRE	98	100	20	38	26	0	0	6975
lactofen + propanil (Stam)	0.5 2.0	EPOST								
Thiobencarb + propanil (Stam) <u>fb</u>	3.0 3.0	EPOST	40	100	0	35	15	0	0	7335
lactofen+ propanil (Stam)	0.375 2.0	PREFLD								
Thiobencarb + propanil (Stam) <u>fb</u>	3.0 3.0	EPOST	28	100	0	33	15	0	0	7470
lactofen + propanil (Stam)	0.5 2.0	PREFLD								

LSD (0.05)

12

NS

10

7

NS

NS

NS

414

Table 29. Propanil (Stam) combinations for grass control in rice, Lonoke, 1996.

TEST INFORMATION

Location UAPB at Lonoke ..... Planting date April 27, 1996  
 Experimental Design/replications ..... RCB / 4 Harvest date ..... September 12, 1996  
 Plot size ..... 6 ft by 20 ft Crop/Variety ..... Rice/Kaybonnet  
 Row width / Number of rows per plot ..... 7 in. / 9 rows Dates of Flushing ..... May 3, 1996  
 Soil type Calloway silt loam ..... Date of Flood June 4, 1996  
 % OM / pH / CEC ..... 1.0 / 4.9 / 8

Comments: EPOST = early POST; PREFLD = pre flood.

Application type	EPOST	PREFLD
Date applied	May 17, 1996	June 3, 1996
Time	11:30 am	2:30 pm
Incorporation equipment	N/A	N/A
Air/Soil temperature (F)	78 / 78	80 / 75
Relative humidity (%)	86	83
Wind (mph, direction)	6	4
Weather	50% clouds	10% clouds
Soil moisture	medium	medium
Crop stage	2-3 leaves / 4"	8"
Sprayer type/mph	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0
Nozzle type/Size	driftguard / 11002	driftguard / 11002

Boom ht / # Noz / Spacing (in.)	18" / 4 / 20"	24" / 4 / 20"
Gpa / Psi	15 / 28	15 / 26
<b>Weed species</b>	----- (# leaves / #/sqft) -----	
BRAPP (broadleaf signalgrass)	2-3 / 60	3-4" / 60

**Conclusions:** This study was conducted to compare various labeled and reduced-rate weed control programs. Also included were all of the common propanil formulations. All treatments, except the lower rates of quinclorac (Facet) alone, provided excellent control. The broadleaf signalgrass infestation was extremely dense and a lot of four-leaf grass was present at treatment application. However, all herbicides were very active.

**Table 29.**

Treatment (lb/A)	Rate	stage	Weed control				Smartweed			Rice injury			Rice yield
			Broadleaf signalgrass Growth				Fall panicum (BRAPP)			Smartweed (PANICUM) (POLSS)			
			5/23	6/3	6/24	8/21	5/23	6/3	6/24	8/21	5/23	6/3	
Untreated check			0	0	0	0	0	45	1	0	0	69	1350
Propanil (Stam M-4)	4.0	EPOST	100	100	100	100	99	100	38	13	0	0	7560
[Propanil + molinate]	6.0	EPOST	100	75	100	99	99	100	26	10	0	0	7425
Propanil (Stam M-4) + propanil (Stam M-4)	3.0 3.0	EPOST PREFLD	93	100	100	100	99	100	35	19	3	0	6795
Propanil (Stam 80 DF) + AG-98 (0.25%) fb propanil (Stam 80 DF) + AG-98 (0.25%)	3.0 3.0	EPOST PREFLD	89	100	100	100	99	100	33	14	5	0	7650
Propanil (Super Wham) + Penetrator Plus (1 pt/A) fb propanil (Super Wham) + Penetrator Plus (1 pt/A)	3.0 3.0	EPOST PREFLD	98	100	100	100	99	100	16	18	8	0	6885
[Propanil + molinate] fb [propanil + molinate]	4.5 4.5	EPOST PREFLD	95	100	100	100	99	100	21	9	3	0	7020
Propanil (Terra 60 DF) + Penetrator Plus (1 pt/A) fb propanil (Terra 60 DF) + Penetrator Plus (1 pt/A)	3.0 3.0	EPOST PREFLD	100	100	100	100	100	100	10	23	3	0	7605
Propanil (Stam M-4) + thiobencarb	3.0 3.0	EPOST	100	100	100	100	99	100	48	25	0	0	7650
Propanil (Stam 80 DF) + thiobencarb +	3.0 3.0	EPOST	100	100	100	100	100	100	29	13	0	0	7245

AG-98 (0.25%) [Propanil + molinate] + thiobencarb	4.5 3.0	EPOST	78	100	100	100	99	100	39	16	3	0	7290
Propanil (Stam M-4) + pendimethalin + AG-98 (0.25%)	3.0 1.0	EPOST	99	100	100	100	100	100	44	14	5	0	7875
Propanil (Stam 80 DF) + pendimethalin + AG-98 (0.25%)	3.0 1.0	EPOST	96	100	100	94	98	100	21	13	0	0	7470

Continued



**Table 29. Continued.**

Treatment (lb/A)	Rate	stage	Weed control							Rice injury			Rice yield	
			Fall panicum (BRAPP)				Smartweed (PANICUM POLSS)			5/23	6/3	6/24		8/21
			5/23 (%)	6/3	6/24	8/21	8/21	8/21	(lb/A)					
[Propanil +molinate) + pendimethalin	4.5 1.0	EPOST	78	100	100	100	100	100	26	14	8	0	8190	
Propanil (Stam 80 DF) + quinclorac + AG-98 (0.25%)	3.0 0.125	EPOST	99	100	100	99	99	100	30	11	8	0	8010	
Propanil (Stam M-4) + quinclorac	3.0 0.125	EPOST	99	100	100	100	100	100	29	16	0	0	8460	
Propanil (Stam M-4) + quinclorac	3.0 0.25	EPOST	100	100	100	100	100	100	30	15	3	0	8010	
Propanil (Stam M-4) + quinclorac	3.0 0.375	EPOST	100	100	100	98	100	100	16	14	0	0	7290	
Quinclorac + Penetrator Plus (1 pt/A)	0.125	EPOST	20	40	75	45	21	45	5	8	3	19	4725	
Quinclorac + Penetrator Plus (1 pt/A)	0.25	EPOST	45	49	100	96	95	91	8	18	3	0	6570	
Quinclorac + Penetrator Plus (1 pt/A)	0.375	EPOST	29	65	100	90	93	47	9	16	5	0	6480	
<u>LSD (0.05)</u>			<u>24</u>	<u>26</u>	<u>15</u>	<u>17</u>	<u>14</u>	<u>26</u>	<u>27</u>	<u>NS</u>	<u>NS</u>	<u>13</u>	<u>1075</u>	

Table 30. Postemergence grass control in rice, Lonoke, 1996.

TEST INFORMATION

Location	UAPB at Lonoke	Planting date	April 27, 1996
Experimental Design/replications	RCB / 4	Harvest date	September 12, 1996
Plot size	6 ft by 20 ft	Crop/Variety	Rice/Kaybonnet
Row width / Number of rows per plot	7 in. / 9 rows	Dates of Flushing	May 3, 1996
Soil type	Calloway silt loam	Date of Flood	June 4, 1996
% OM / pH / CEC	1.0 / 4.9 / 8		

Comments:

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Application type	POST
Date applied	May 20, 1996
Time	4:30 pm
Incorporation equipment	N/A
Air/Soil temperature (F)	94 / 87
Relative humidity (%)	52
Wind (mph, direction)	5
Weather	10% clouds
Soil moisture	medium
Crop stage	4-5 leaves / 4"
Sprayer type/mph	BkPkCO <sub>2</sub> / 3.0
Nozzle type/Size	driftguard / 11002
Boom ht / # Noz / Spacing (in.)	20" / 4 / 20"

Gpa / Psi

15 / 32

**Weed species**

**(# leaves / #/sqft)**

BRAPP (broadleaf signalgrass)

4-5 / 60

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**Conclusions:** This study was conducted to compare various propanil combinations on 4- to 5-leaf broadleaf signalgrass. Due to excellent environmental conditions, all treatments provided 100 percent control of broadleaf signalgrass.

**Table 30.**

<u>Treatment</u> (lb/A)	<u>Rate</u>	Broadleaf signalgrass (BRAPP)	<u>Weed control</u>			Rice		<u>yield</u>
			Smartweed (POLSS) <u>6/24</u> (%)	Fall panicum (PANDI) <u>6/24</u>	<u>8/20</u>	<u>injury</u> <u>6/24</u>	Rice <u>8/20</u> (lb/A)	
Untreated check			0	0	0	0	0	1980
<u>Treatments applied at 4- to 5-leaf grass:</u>								
Propanil (Stam)	4.0		100	83	70	0	0	6345
Propanil (Super Wham) + Penetrator Plus (1 pt/A)	4.0		100	88	74	8	0	6345
Propanil (Stam) + quinclorac	4.0 0.25		100	94	100	10	0	7470
Propanil (Stam) + quinclorac	4.0 0.188		100	93	100	5	0	7290
Propanil (Stam) + quinclorac	4.0 0.125		100	94	100	6	0	7695
Propanil (Stam) + quinclorac	3.0 0.188		100	96	98	5	0	8190
Propanil (Stam) + quinclorac	3.0 0.125		100	89	100	11	0	7065
Propanil (Super Wham) + quinclorac + Penetrator Plus (1 pt/A)	3.0 0.125		100	100	100	0	0	7515
<u>LSD (0.05)</u>			<u>1</u>	<u>15</u>	<u>12</u>	<u>NS</u>	<u>NS</u>	<u>1440</u>



Table 31. Herbicide combinations with V10029 in rice, Lonoke, 1996.

TEST INFORMATION

Location	UAPB at Lonoke	Planting date	April 27, 1996
Experimental Design/replications	RCB / 4	Harvest date	September 12, 1996
Plot size	6 ft by 20 ft	Crop/Variety	Rice/Kaybonnet
Row width / Number of rows per plot	7 in. / 9 rows	Dates of Flushing	May 3, 1996
Soil type	Calloway silt loam	Date of Flood	June 4, 1996
% OM / pH / CEC	1.0 / 4.9 / 8		

Comments: DPRE = delayed PRE; PREFLD = preflood.

Application type	DPRE	POST-1	POST-2	PREFLD
Date applied	May 1, 1996	May 17, 1996	May 22, 1996	June 3, 1996
Time	9:00 am	10:30 am	11:50 am	10:15 am
Incorporation equipment	N/A	N/A	N/A	N/A
Air/Soil temperature (F)	57 / 52	77 / 76	80 / 76	80 / 75
Relative humidity (%)	93	86	68	83
Wind (mph, direction)	3	6	3	5
Weather	10% clouds	50% clouds	80% clouds	10% clouds
Soil moisture	medium	medium	medium	medium
Crop stage	N/A	2-3 leaves / 4"	3-4 leaves / 6"	12"
Sprayer type/mph	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0
Nozzle type/Size	driftguard / 11002	driftguard / 11002	driftguard / 11002	driftguard / 11002
Boom ht / # Noz / Spacing (in.)	18" / 4 / 20"	18" / 4 / 20"	20" / 4 / 20"	24" / 4 / 20"

Gpa / Psi	15 / 28	15 / 26	15 / 30	15 / 28
<b>Weed species</b>	<b>(height / # leaves)</b>	<b>----- (# leaves / #/sqft) -----</b>		
BRAPP (broadleaf signalgrass)	(PRE)	2-3 / 60	4-5 / 60	5-6" / 60

**Conclusions:** This study was conducted to evaluate V-10029 in various broadleaf signalgrass control programs. V-10029 used in a program with most other herbicides provided excellent control of a severe broadleaf signalgrass infestation. Some crop injury in the form of slight stunting and tiller malformation was observed.

**Table 31.**

Growth Rice Treatment (lb/A)	Rate	stage	<u>Broadleaf signalgrass (BRAPP) control</u>					<u>Rice injury</u>					
			<u>5/17</u> (%)	<u>5/23</u>	<u>6/3</u>	<u>6/24</u>	<u>8/21</u>	<u>5/17</u>	<u>5/23</u>	<u>6/3</u>	<u>6/24</u>	<u>8/21</u> (lb/A)	<u>yield</u>
Untreated check			0	0	0	0	0	0	0	0	0	0	1845
Pendimethalin <u>fb</u> V10029 + (propanil + molinate)	1.0 0.02 4.5	DPRE POST-2	69	89	100	100	99	0	8	18	5	0	7605
Pendimethalin <u>fb</u> (propanil + molinate)	1.0 4.5	DPRE POST-2	63	87	100	100	93	0	27	20	7	0	7155
Pendimethalin + thiobencarb <u>fb</u> V10029 + (propanil + molinate)	1.0 3.0 0.013 4.5	DPRE PREFLD	63	68	64	100	76	0	0	0	5	0	6660
Pendimethalin + thiobencarb <u>fb</u> V10029 + (propanil + molinate)	1.0 3.0 0.02 4.5	DPRE PREFLD	65	71	63	95	80	0	0	3	0	0	7065
Thiobencarb + propanil (Stam) <u>fb</u> V10029 + Kinetic (0.25%)	3.0 3.0 0.02	POST-1 PREFLD	0	100	100	100	100	0	34	20	5	0	7785
Thiobencarb +	3.0	POST-1	0	100	100	100	100	0	38	23	8	0	7605



propanil (Stam)	3.0													
<u>fb</u> V10029 + Agri-Dex (1%)	0.03	PREFLD												
Thiobencarb + propanil (Stam)	3.0	POST-1	0	100	100	100	98	0	31	23	8	0	7695	
<u>fb</u> (propanil + molinate)	6.0	PREFLD												
Thiobencarb + propanil (Stam)	3.0	POST-1	0	100	100	100	100	0	33	25	10	0	7785	
<u>fb</u> V10029 + triclopyr	0.02 0.28	PREFLD												

Continued

**Table 31. Continued.**

Growth		<u>Broadleaf signalgrass (BRAPP) control</u>							<u>Rice injury</u>				
<u>Treatment</u> (lb/A)	<u>Rate</u>	<u>stage</u>	<u>5/17</u> (%)	<u>5/23</u>	<u>6/3</u>	<u>6/24</u>	<u>8/21</u>	<u>5/17</u>	<u>5/23</u>	<u>6/3</u>	<u>6/24</u>	<u>8/21</u>	<u>Rice yield</u> (lb/A)
Thiobencarb + propanil (Stam) fb V10029 + bensulfuron	3.0 0.02	POST-1	0	100	100	100	100	0	33	28	10	0	8010 3.0 PREFLD 0.038
(Propanil + molinate) fb V10029 + triclopyr	6.0 0.02	POST-1	0	100	100	100	98	0	18	10	0	0	6525 PREFLD 0.28
molinate) fb propanil (Stam) + triclopyr	6.0 3.0	POST-1	0	100	100	100	100	0	30	28	8	0	(Propanil + 7425 PREFLD 0.28
Pendimethalin fb V10029 + triclopyr	1.0 0.02 0.28	DPRE	65	78	70	100	61	5	6	5	5	0	5940 PREFLD
Pendimethalin fb V10029 + Kinetic (0.25%) fb V10029 + propanil (Stam)	1.0 0.013 0.013 3.0	DPRE	65	90	100	100	100	0	13	20	8	0	7830 POST-1 PREFLD
Pendimethalin fb V10029 +	1.0 0.013	DPRE	68	95	100	100	100	0	20	31	13	0	7830 POST-1 Kinetic (1%)

<u>fb</u> V10029 + triclopyr	0.013													PREFLD 0.28
Pendimethalin <u>fb</u> V10029 + Kinetic (0.25%)	1.0	DPRE	68	91	99	100	100	0	15	20	3	0		7785 POST-1
<u>fb</u> V10029 + (propanil + molinate)	0.013													PREFLD 4.5

Continued

**Table 31. Continued.**

Growth		<u>Broadleaf signalgrass (BRAPP) control</u>					<u>Rice injury</u>						
<u>Treatment</u> (lb/A)	<u>Rate</u>	<u>stage</u>	<u>5/17</u> (%)	<u>5/23</u>	<u>6/3</u>	<u>6/24</u>	<u>8/21</u>	<u>5/17</u>	<u>5/23</u>	<u>6/3</u>	<u>6/24</u>	<u>8/21</u>	<u>Rice yield</u> (lb/A)
Pendimethalin fb	1.0	DPRE	70	100	100	100	100	5	20	21	10	0	8055
propanil (Stam)	4.0												POST-1
fb propanil (Stam)	3.0												PREFLD
triclopyr													0.28
Clomazone (4EC) fb	0.5	DPRE	89	100	83	100	100	13	15	3	3	0	8235
V10029 +	0.02												PREFLD
triclopyr													0.28
<u>LSD (0.05)</u>			<u>7</u>	<u>9</u>	<u>9</u>	<u>3</u>	<u>7</u>	<u>7</u>	<u>18</u>	<u>15</u>	<u>13</u>	<u>NS</u>	<u>990</u>

Table 32. Broadleaf and grass control in rice, Lonoke, 1996.

TEST INFORMATION

Location	UAPB at Lonoke	Planting date	April 27, 1996
Experimental Design/replications	RCB / 4	Harvest date	N/A
Plot size	6 ft by 20 ft	Crop/Variety	Rice/Kaybonnet
Row width / Number of rows per plot	7 in. / 9 rows	Dates of Flushing	May 3, 1996
Soil type	Calloway silt loam	Date of Flood	June 4, 1996
% OM / pH / CEC	1.0 / 4.9 / 8		

**Comments:** Proposed common name of F6284 is carfentrazone.

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Application type	POST
Date applied	May 20, 1996
Time	5:30 pm
Incorporation equipment	N/A
Air/Soil temperature (F)	94 / 87
Relative humidity (%)	52
Wind (mph, direction)	5
Weather	10% clouds
Soil moisture	medium
Crop stage	3-4 leaves / 4"
Sprayer type/mph	BkPkCO <sub>2</sub> / 3.0
Nozzle type/Size	driftguard / 11002

Boom ht / # Noz / Spacing (in.)	18" / 4 / 20"
Gpa / Psi	15 / 32
<b>Weed species</b>	<b>(growth / #/sqft)</b>
BRAPP (broadleaf signalgrass)	4-5 leaves / 60
IPOSS (morningglory species)	1" (coty) -2" / 4
SENOB (sicklepod)	3/4" (coty) -2" / 1

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**Conclusions:** This study was conducted to evaluate F-8426 alone and in combination for broadleaf weed control in rice. All of the combination treatments provided excellent control in rice. In treatments where F-8426 was applied alone, the grass pressure eliminated most of the broadleaf weeds. Therefore, some of the high ratings in these treatments may be misleading. Because all treatments were applied early and no follow-up treatments were used, all plots were overgrown with grass at harvest, and no yield data were taken. It should be noted that the F-8426 formulation did not mix well even after an hour in the spray solution and repeated shaking.

**Table 32.**

Treatment (lb/A)	Rate	Weed control												
		Morningglory Broadleaf signalgrass species (BRAPP)			Fall Sicklepod (IPOSS)		Smartweed (SEBOB)		panicum (POLSS)	(PANDI)	Rice injury			
		5/23	6/4	6/24	5/23	6/24	5/23	6/4	6/24	8/20	5/23	6/4	6/24	8/20
		(%)												
<u>All treatments applied POST at 3- to 4-leaf rice stage:</u>														
Untreated check		0	0	0	0	100	0	0	0	0	0	0	0	0
F-8426 (WES) + AG-98 (0.25%)	0.1	0	0	0	0	100	0	0	100	0	0	0	0	0
F-8426 (WES) + AG-98 (0.25%)	0.2	0	0	0	25	100	25	93	100	0	0	0	0	0
F-8426 (WES) + AG-98 (0.25%)	0.3	0	0	0	0	100	0	85	100	0	0	0	0	0
F-8426 (WES) + AG-98 (0.25%)	0.4	20	0	0	73	100	70	93	100	0	0	0	0	0
F-8426 (WES) + (propanil + molinate) + AG-98 (0.25%)	0.3 6.0	70	91	88	100	100	98	100	100	88	3	19	8	0
F-8426 (WES) + propanil (Stam) +	0.3 4.0	78	89	100	100	100	100	100	99	94	10	20	15	0

AG-98 (0.25%)														
F-8426 (WES) + fenoxaprop + AG-98 (0.25%)	0.3 0.067	33	80	100	88	100	88	100	93	93	0	13	10	0

Continued



**Table 32. Continued.**

Treatment (lb/A)	Rate	Weed control												
		Morningglory Broadleaf signalgrass species (BRAPP)			Fall Sicklepod (IPOSS)		Smartweed (SENOB)		panicum (POLSS)	(PANDI)	Rice injury			
		<u>5/23</u>	<u>6/4</u>	<u>6/24</u>	<u>5/23</u>	<u>6/24</u>	<u>5/23</u>	<u>6/4</u>	<u>6/24</u>	<u>8/20</u>	<u>5/23</u>	<u>6/4</u>	<u>6/24</u>	<u>8/20</u>
		(%)												
F-8426 (WES) + thiobencarb + AG-98 (0.25%)	0.3 4.0	35	55	81	100	100	90	95	99	0	0	6	0	0
(Propanil + molinate) + AG-98 (0.25%)	6.0	73	83	100	90	100	93	100	79	86	10	9	8	0
Propanil (Stam) + AG-98 (0.25%)	4.0	78	84	100	95	100	93	100	81	94	10	18	5	0
Quinclorac + Agri-Dex (1 qt/A)	0.38	0	75	85	0	100	0	100	0	98	0	10	0	0
<u>LSD (0.05)</u>	<u>14</u>	<u>7</u>	<u>12</u>	<u>13</u>	<u>NS</u>	<u>12</u>	<u>11</u>	<u>9</u>	<u>6</u>	<u>8</u>	<u>9</u>	<u>9</u>	<u>NS</u>	

Table 33. Herbicide programs for rice, Lonoke, 1996.

TEST INFORMATION

Location	UAPB at Lonoke	Planting date	April 27, 1996
Experimental Design/replications	RCB / 4	Harvest date	September 11, 1996
Plot size	6 ft by 20 ft	Crop/Variety	Rice/Kaybonnet
Row width / Number of rows per plot	7 in. / 9 rows	Dates of Flushing	May 3, 1996
Soil type	Calloway silt loam	Date of Flood	June 4, 1996
% OM / pH / CEC	1.0 / 4.9 / 8		

**Comments:** PREFLD = preflood; PI = panicle initiation.

Application type	2-3 LF	4-LF	4-LF+1DAY	PREFLD	PI
Date applied	May 17, 1996	May 20, 1996	May 22, 1996	June 3, 1996	June 26, 1996
Time	8:00 am	4:00 pm	12:00 noon	10:30 am	3:00 pm
Incorporation equipment	N/A	N/A	N/A	N/A	N/A
Air/Soil temperature (F)	72 / 70	94 / 87	80 / 76	80 / 75	90 / 88
Relative humidity (%)	86	52	68	83	88
Wind (mph, direction)	6	9	3	4	4
Weather	10% clouds	60% clouds	80% clouds	10% clouds	50% clouds
Soil moisture	wet	medium	medium	medium	medium
Crop stage (# leaves/ height)	2-3 leaf / 4"	4-leaf / 4"	6- leaf / 7"	8"	10"
Sprayer type/mph	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0
Nozzle type/Size	driftguard / 11002	driftguard / 11002	driftguard / 11002	driftguard / 11002	driftguard / 11002

Boom ht / # Noz / Spacing (in.)	18" / 4 / 20"	20" / 4 / 20"	22" / 4 / 20"	24" / 4 / 20"	29" / 4 / 20"
Gpa / Psi	15 / 27	15 / 32	15 / 30	15 / 32	15 / 35
<b>Weed species</b>	----- (# leaves / #/sqft) -----				
BRAPP (broadleaf signalgrass)	2-3 / 60	4-5 / 60	4-5 / 60	none	none
SENOB (sicklepod)	1 true / 1	2 / 1	2 / 1	none	none
IPOSS (morningglory species)	1 true / 1	2 / 1	2 / 1	none	none
SEBEX (hemp sesbania)	none	none	none	none	12"
POLSS (smartweed species)	none	none	none	none	12"

**Conclusions:** This study was conducted to evaluate various broadleaf herbicide treatments for weed control in rice. Fenoxaprop (Whip) was used for grass control in treatments which did not include a grass herbicide. The fenoxaprop resulted in some early injury. Excellent weed control and crop yields resulted in most plots.

**Table 33.**

Treatment (lb/A)	Rate	Broadleaf signalgrass Growth stage	Weed control				Morningglory species		Hemp sesbania		Smartweed		(POLSS)		Rice injury				Rice yield
			Sicklepod (BRAPP)		(SENOB)		(IPOSS)		(SEBEX)		(POLSS)		5/23	6/3	6/24	8/21			
			5/23 (%)	6/3	6/24	8/21	6/3	6/3	6/24	8/21	6/24	8/21	6/24	8/21	5/23	6/3	6/24	8/21	
Fenoxaprop	0.1	4LF	0	96	91	95	70	76	0	0	0	90	0	29	0	15	4185		
Fenoxaprop fb triclopyr + AG-98 (0.25%)	0.1 0.19	4LF 4LF+1DA	8	96	99	99	98	93	100	99	83	73	4	35	0	0	7110		
Propanil (Stam) + triclopyr	4.0 0.19	2-3LF	100	100	100	100	100	96	100	94	100	100	25	0	0	0	7470		
Propanil (Stam) + triclopyr	4.0 0.125	2-3LF	96	100	100	99	100	96	98	95	100	100	18	4	0	0	7965		
Propanil (Stam) fb propanil (Stam) + triclopyr	3.0 3.0 0.125	2-3LF PREFLD	91	100	100	100	100	93	100	100	100	100	29	4	0	0	7110		
Propanil (Stam) + triclopyr	4.0 0.25	PREFLD	0	0	100	0	68	65	100	100	100	78	0	8	3	0	3645		
Propanil (Stam) + triclopyr fb	4.0 0.19	2-3LF	95	100	99	100	100	99	100	100	100	100	23	5	0	0	7470		

propanil (Stam) + triclopyr	1.0 0.25	PI																
Propanil (Stam) + triclopyr <u>fb</u>	4.0 0.25	PREFLD	0	0	93	99	73	76	100	100	93	98	0	13	5	0	7245	
propanil (Stam) + triclopyr	1.0 0.25	PI																

Continued

**Table 33. Continued.**

			<u>Weed control</u>															
<u>Broadleaf signalgrass</u>			<u>Sicklepod</u>				<u>Morningglory species</u>		<u>Hemp sesbania</u>		<u>Smartweed</u>		<u>Rice injury</u>				<u>Rice yield</u>	
<u>Treatment</u>	<u>Rate</u>	<u>stage</u>	<u>(BRAPP)</u>				<u>(SENOB)</u>	<u>(IPOSS)</u>	<u>(SEBEX)</u>		<u>(POLSS)</u>		<u>5/23</u>	<u>6/3</u>	<u>6/24</u>	<u>8/21</u>	<u>(lb/A)</u>	
(lb/A)			<u>5/23</u>	<u>6/3</u>	<u>6/24</u>	<u>8/21</u>	<u>6/3</u>	<u>6/3</u>	<u>6/24</u>	<u>8/21</u>	<u>6/24</u>	<u>8/21</u>	<u>5/23</u>	<u>6/3</u>	<u>6/24</u>	<u>8/21</u>		
			..... (%) .....															
Fenoxaprop <u>fb</u> triclopyr + AG-98 (0.25%)	0.1 0.25	4LF PI	3	100	100	100	68	70	0	99	0	88	4	33	0	0	7695	
Fenoxaprop <u>fb</u> triclopyr + AG-98 (0.25%)	0.1 0.375	4LF PI	10	99	95	100	75	80	0	100	0	93	10	39	0	0	7380	
Triclopyr <u>fb</u> fenoxaprop <u>fb</u> propanil (Stam)	0.25 0.1 1.0	2-3LF 4LF PI	10	99	100	100	96	95	100	100	95	83	10	34	0	0	7560	
Triclopyr <u>fb</u> fenoxaprop <u>fb</u> propanil (Stam)	0.375 0.1 1.0	2-3LF 4LF PI	5	100	98	99	100	95	100	100	89	91	8	28	0	0	7560	
Triclopyr <u>fb</u> fenoxaprop <u>fb</u> (propanil + molinate)	0.25 0.1 1.0	2-3LF 4LF PI	9	100	100	100	99	94	100	100	100	98	8	34	0	0	8010	
Propanil (Super Wham) +	2.0	2-3LF	91	100	100	100	100	96	100	100	100	100	19	3	0	0	7650	

quinclorac	0.125																	
<u>fb</u> propanil (Super Wham) +	2.0	PREFLD																
bensulfuron	0.03																	
Fenoxaprop <u>fb</u> 2,4-D (Hi-Dep)	0.1 0.83	4LF PI	0	98	100	100	86	78	0	100	0	98	6	34	0	0	7785	

Continued

**Table 33. Continued.**

Treatment (lb/A)	Broadleaf signalgrass Growth Rate	stage	Weed control														Rice yield		
			Sicklepod (BRAPP)				Morningglory species (SENOB)		Hemp sesbania (IPOSS)		Smartweed (SEBEX)		(POLSS)		Rice injury				
			5/23 (%)	6/3	6/24	8/21	6/3	6/3	6/24	8/21	6/24	8/21	5/23	6/3	6/24	8/21			
Fenoxaprop fb 2,4-D (Weedar)	0.1 0.83	4LF PI	0	96	99	100	78	78	0	100	0	99	4	43	3	0	7875		
<u>LSD (0.05)</u>			<u>9</u>	<u>4</u>	<u>NS</u>	<u>3</u>	<u>12</u>	<u>12</u>	<u>2</u>	<u>3</u>	<u>10</u>	<u>10</u>	<u>10</u>	<u>9</u>	<u>NS</u>	<u>5</u>	<u>765</u>		



Table 34. Preemergence weed control in rice, Lonoke, 1996.

TEST INFORMATION

Location UAPB at Lonoke ..... Planting date April 27, 1996  
 Experimental Design/replications ..... RCB / 4 Harvest date ..... September 4, 1996  
 Plot size ..... 6 ft by 20 ft Crop/Variety ..... Rice/Kaybonnet  
 Row width / Number of rows per plot ..... 7 in. / 9 rows Dates of Flushing ..... May 3, 1996  
 Soil type Calloway silt loam ..... Date of Flood June 4, 1996  
 % OM / pH / CEC ..... 1.0 / 4.9 / 8

Comments: DPRE = delayed PRE; EPOST = early POST.

Application type	PPI	PRE	DPRE	EPOST
Date applied	April 29, 1996	April 29, 1996	April 30, 1996	May 17, 1996
Time	7:00 am	11:00 am	5:00 pm	9:30 am
Incorporation equipment (depth)	Triple-K (2")	N/A	N/A	N/A
Air/Soil temperature (F)	47 / 54	75 / 65	67 / 68	70 / 71
Relative humidity (%)	96	58	56	86
Wind (mph, direction)	0	3	5	6
Weather	0% clouds	0% clouds	0% clouds	80% clouds
Soil moisture	medium	medium	medium	medium
Crop stage (# leaves / height)	N/A	N/A	N/A	2-3 lvs / 3"
Sprayer type/mph	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0
Nozzle type/Size	driftguard / 11002	driftguard / 11002	driftguard / 11002	driftguard / 11002

Boom ht / # Noz / Spacing (in.)	18" / 4 / 20"	18" / 4 / 20"	18" / 4 / 20"	20" / 4 / 20"
Gpa / Psi	15 / 28	15 / 28	15 / 30	15 / 26
<b>Weed species</b>	----- (height / # leaves) -----			(# leaves / #/sqft)
BRAPP (broadleaf signalgrass)	none	none	none	2-3 / 60

**Conclusions:** The primary objective of this study was to evaluate various rates and application methods for clomazone (Command) applied alone and in combination with other herbicides. Standard herbicides were included for comparison. Clomazone provided outstanding control of broadleaf signalgrass at all rates and application methods as did most of the standards. The preplant incorporated applications of clomazone, quinclorac (Facet), and clomazone + quinclorac (Trt. 2-7) are of particular interest because they could be applied with ground equipment prior to pulling the levees. Rice injury, in the form of bleaching, was very apparent at emergence but was outgrown early in the season. One-half the labeled rates of quinclorac and pendimethalin (Prowl) or thiobencarb (Bolero) (Trt. 26 & 27) performed as well as the current Arkansas MP-44 reduced-rate recommendations (Trt. 24 & 25). Thiobencarb alone and pendimethalin alone, applied preemergence, failed to provide acceptable early-season control of broadleaf signalgrass.

**Table 34.**

Smartweed Growth Treatment (lb/A)	Rate	stage	Weed control											Rice yield	
			Broadleaf signalgrass (BRAPP)					POLSS	Rice injury						
			5/17	5/23	6/3	6/24	8/22	8/22	5/17	5/23	6/3	6/24	8/21		
Untreated check			0	0	0	0	0	0	0	0	0	0	0	0	1845
Clomazone (4EC)	0.4	PPI	80	100	96	94	98	98	11	38	6	0	0	6795	
Clomazone (4EC)	0.5	PPI	78	100	98	100	98	100	11	31	11	3	0	6570	
Clomazone (4EC)	0.6	PPI	65	95	96	95	94	100	14	38	6	0	0	6615	
Quinclorac	0.25	PPI	88	96	96	94	95	84	10	5	4	4	0	6930	
Quinclorac	0.375	PPI	90	100	95	91	98	86	10	8	5	3	0	6570	
Clomazone (4EC) + quinclorac	0.5 0.25	PPI	89	100	98	96	100	98	10	25	9	0	0	7110	
Clomazone (3ME)	0.4	PRE	71	96	91	96	96	95	10	8	6	0	0	6390	
Clomazone (3ME)	0.5	PRE	70	98	91	95	100	100	13	31	13	3	0	7155	
Clomazone (3ME)	0.6	PRE	80	100	91	93	98	100	14	18	6	3	0	6975	
Quinclorac	0.375	PRE	91	100	98	94	100	78	13	15	10	0	0	7290	
Clomazone (3ME) + quinclorac	0.5 0.25	PRE	91	100	100	93	100	100	10	21	10	0	0	6885	
Clomazone (3ME)	0.4	DPRE	76	100	94	95	100	98	10	10	10	0	0	7020	
Clomazone (3ME)	0.5	DPRE	78	100	90	94	100	99	10	10	8	3	0	7560	
Clomazone (3ME)	0.6	DPRE	83	100	94	100	100	98	10	5	6	0	0	7065	
Quinclorac	0.375	DPRE	91	100	99	98	100	81	13	10	3	0	0	6795	
Quinclorac	0.25	DPRE	94	90	91	94	95	68	10	3	8	0	0	6795	
Clomazone (3ME) + quinclorac	0.4 0.25	DPRE	95	100	98	99	100	98	5	0	5	0	0	7245	
Clomazone (3ME) + quinclorac	0.4 0.188	DPRE	95	99	96	98	100	100	10	13	8	0	0	7515	

Thiobencarb	4.0	DPRE	20	48	69	78	0	70	0	0	6	4	0	4950
Pendimethalin	1.0	DPRE	60	60	79	81	0	100	5	0	3	0	0	4095
Clomazone (4EC) + thiobencarb	0.5 2.0	DPRE	83	98	95	98	98	100	10	8	4	0	0	6435
Clomazone (4EC) + pendimethalin	0.5 1.0	DPRE	86	100	96	94	98	98	10	3	4	0	0	5895
Quinclorac + thiobencarb	0.5 2.0	DPRE	95	94	99	95	91	84	10	9	5	0	0	6300

Continued

**Table 34. Continued.**

Smartweed Growth Treatment (lb/A)	Rate	stage	Weed control											Rice yield
			Broadleaf signalgrass (BRAPP)					POLSS	Rice injury					
			5/17 (%)	5/23	6/3	6/24	8/22	8/22	5/17	5/23	6/3	6/24	8/21 (lb/A)	
Quinclorac + pendimethalin	0.25 2.0	DPRE	95	100	98	95	100	100	8	0	3	0	0	6345
Quinclorac + thiobencarb	0.188 2.0	DPRE	89	85	98	100	88	76	10	3	4	0	0	6030
Quinclorac + pendimethalin	0.188 1.0	DPRE	95	98	100	100	91	98	10	3	3	0	0	6795
Clomazone (3ME)	0.4	EPOST	0	60	79	88	66	86	0	0	4	0	3	4140
Clomazone (3ME)	0.5	EPOST	0	58	83	84	89	60	0	0	4	0	3	6165
Clomazone (3ME)	0.6	EPOST	0	66	89	91	91	90	0	5	5	4	0	5625
<u>LSD (0.05)</u>			<u>9</u>	<u>8</u>	<u>8</u>	<u>10</u>	<u>10</u>	<u>10</u>	<u>3</u>	<u>12</u>	<u>NS</u>	<u>NS</u>	<u>NS</u>	<u>855</u>

Table 35. Early-season grass control in rice, Lonoke, 1996.

TEST INFORMATION

Location	UAPB at Lonoke	Planting date	April 27, 1996
Experimental Design/replications	RCB / 4	Harvest date	September 13, 1996
Plot size	6 ft by 20 ft	Crop/Variety	Rice/Kaybonnet
Row width / Number of rows per plot	7 in. / 9 rows	Dates of Flushing	May 3, 1996
Soil type	Calloway silt loam	Date of Flood	June 4, 1996
% OM / pH / CEC	1.0 / 4.9 / 8		

Comments:

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Application type	POST
Date applied	May 17, 1996
Time	2:30 pm
Incorporation equipment	N/A
Air/Soil temperature (F)	87 / 88
Relative humidity (%)	72
Wind (mph, direction)	6
Weather	0% clouds
Soil moisture	medium
Crop stage	2-3 leaves / 4"
Sprayer type/mph	BkPkCO <sub>2</sub> / 3.0
Nozzle type/Size	driftguard / 11002
Boom ht / # Noz / Spacing (in.)	18" / 4 / 20"
Gpa / Psi	15 / 24

**Weed species**

**(growth / #/sqft)**

BRAPP (broadleaf signalgrass)

2-3 leaves / 60

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**Conclusions:** This study was conducted to compare different propanil formulations with various rates of quinclorac (Facet). There was 100% ground cover of broadleaf signalgrass with a heavy infestation of four-leaf grass at the time of treatment. The data collected are intended to support a further rate reduction of the propanil and quinclorac recommendations in the Arkansas MP-44. All treatments, including the propanil formulations alone, provided nearly 100% control.

**Table 35.**

Broadleaf Treatment (lb/A)	Rate	<u>Weed control</u> Fall panicum signalgrass (BRAPP)				Smartweed species (PANDI)		Rice injury				Rice yield
		<u>5/23</u> (%)	<u>6/3</u>	<u>6/24</u>	<u>8/21</u>	<u>8/21</u>	<u>(POLSS)</u> <u>8/21</u>	<u>5/23</u>	<u>6/3</u>	<u>6/24</u>	<u>8/21</u> (lb/A)	
Untreated check		0	0	0	0	0	0	0	0	0	0	1080
<u>Treatments applied at 2- to 3-leaf grass stage:</u>												
Propanil (Stam) + quinclorac	3.0 0.375	100	100	100	99	100	100	31	9	5	0	7920
Propanil (Stam) + quinclorac	3.0 0.25	96	100	100	100	96	100	33	15	13	0	7470
Propanil (Stam) + quinclorac	2.0 0.25	99	98	100	96	100	100	51	13	8	0	7695
Propanil (Stam) + quinclorac	3.0 0.188	99	99	100	100	100	100	38	13	10	0	8100
Propanil (Stam) + quinclorac	2.0 0.188	96	100	100	100	100	100	29	8	3	0	7785
Propanil (Stam) + quinclorac	3.0 0.125	96	96	100	100	96	100	23	9	5	0	7740
Propanil (Stam) + quinclorac	2.0 0.125	96	98	100	100	100	100	38	10	3	0	8460
Propanil (Stam) + quinclorac	3.0 0.094	93	98	100	100	100	100	33	11	15	0	7650
Propanil (Stam) + quinclorac	2.0 0.094	98	98	100	98	100	100	43	10	3	0	7695
Propanil (Super Wham) +	3.0	100	100	100	100	98	100	51	24	10	0	7200



quinclorac + Penetrator Plus (1 pt/A)	0.25												
Propanil (Super Wham) + quinclorac + Penetrator Plus (1 pt/A)	2.0 0.25	100	91	100	100	100	100	51	21	10	0	7560	
Propanil (Super Wham) + quinclorac + Penetrator Plus (1 pt/A)	3.0 0.188	99	99	100	100	100	100	35	15	5	0	7515	
Continued													

**Table 35. Continued.**

Treatment (lb/A)	Rate	<u>Weed control</u>				<u>Smartweed</u>		<u>Rice injury</u>				Rice yield
		Fall				species						
		panicum signalgrass (BRAPP)				(PANDI)	(POLSS)					
		<u>5/23</u>	<u>6/3</u>	<u>6/24</u>	<u>8/21</u>	<u>8/21</u>	<u>8/21</u>	<u>5/23</u>	<u>6/3</u>	<u>6/24</u>	<u>8/21</u>	
		(%)									(lb/A)	
Propanil (Super Wham) + quinclorac + Penetrator Plus (1 pt/A)	2.0 0.188	99	99	100	100	99	100	25	8	8	0	7785
Propanil (Super Wham) + quinclorac + Penetrator Plus (1 pt/A)	3.0 0.125	99	98	100	100	98	100	34	14	5	0	7425
Propanil (Super Wham) + quinclorac + Penetrator Plus (1 pt/A)	2.0 0.125	90	96	100	100	100	100	30	11	10	0	7470
Propanil (Super Wham) + quinclorac + Penetrator Plus (1 pt/A)	3.0 0.094	99	99	100	100	100	100	56	26	5	0	8235
Propanil (Super Wham) + quinclorac + Penetrator Plus (1 pt/A)	2.0 0.094	95	96	100	100	95	100	38	13	10	0	7290
(Propanil + molinate) + quinclorac	4.5 0.25	100	98	100	100	100	100	40	16	3	0	8235
(Propanil + molinate) + quinclorac	3.0 0.25	100	100	100	100	99	100	58	21	10	0	8055
(Propanil + molinate) + quinclorac	4.5 0.188	100	100	100	100	100	100	45	16	0	0	7380
(Propanil + molinate) +	3.0	94	98	100	99	100	100	38	19	10	0	8595

quinclorac	0.188												
(Propanil + molinate) + quinclorac	4.5 0.125	94	100	100	100	99	100	50	19	8	0	7560	
(Propanil + molinate) + quinclorac	3.0 0.125	93	100	100	100	100	100	33	14	3	0	7695	
(Propanil + molinate) + quinclorac	4.5 0.094	96	100	100	100	99	100	26	14	5	0	7200	

Continued

**Table 35. Continued.**

Broadleaf Treatment (lb/A)	Rate	<u>Weed control</u> Fall panicum signalgrass (BRAPP)				Smartweed species (PANDI)		(POLSS)		Rice injury				Rice yield
		<u>5/23</u>	<u>6/3</u>	<u>6/24</u>	<u>8/21</u>	<u>8/21</u>	<u>8/21</u>	<u>5/23</u>	<u>6/3</u>	<u>6/24</u>	<u>8/21</u>			
		(%)									(lb/A)			
(Propanil + molinate) + quinclorac	3.0 0.094	91	96	100	100	100	100	30	10	8	0	7605		
Propanil (Stam)	3.0	95	100	100	100	99	100	34	16	8	0	6930		
Propanil (Super Wham) + Penetrator Plus (1 pt/A)	3.0	90	85	100	100	58	100	38	10	5	0	6750		
(Propanil + molinate)	4.5	98	98	100	98	93	100	46	10	13	0	7965		
Quinclorac + Penetrator Plus (1 pt/A)	0.375	15	71	100	99	91	78	23	11	13	0	6795		
<u>LSD (0.05)</u>		<u>9</u>	<u>7</u>	<u>NS</u>	<u>2</u>	<u>12</u>	<u>4</u>	<u>21</u>	<u>10</u>	<u>NS</u>	<u>NS</u>	<u>855</u>		

Table 36. Quinclorac (Facet) formulations for grass control in rice, Lonoke, 1996.

TEST INFORMATION

Location	UAPB at Lonoke	Planting date	April 27, 1996
Experimental Design/replications	RCB / 4	Harvest date	September 6, 1996
Plot size	6 ft by 20 ft	Crop/Variety	Rice/Kaybonnet
Row width / Number of rows per plot	7 in. / 9 rows	Dates of Flushing	May 3, 1996
Soil type	Calloway silt loam	Date of Flood	June 4, 1996
% OM / pH / CEC	1.0 / 4.9 / 8		

Comments: DPRE = delayed PRE; G = granular formulation.

Application type	PRE	DPRE	POST
Date applied	April 29, 1996	May 1, 1996	May 17, 1996
Time	11:00 am	9:30 am	9:30 am
Incorporation equipment	N/A	N/A	N/A
Air/Soil temperature (F)	75 / 65	57 / 52	78 / 78
Relative humidity (%)	58	93	85
Wind (mph, direction)	3	3	5
Weather	0% clouds	10% clouds	50% clouds
Soil moisture	medium	medium	dry
Crop stage	N/A	N/A	2-3 leaves / 4"
Sprayer type/mph	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0	BkPkCO <sub>2</sub> / 3.0
Nozzle type/Size	driftguard / 11002	driftguard / 11002	driftguard / 11002

Boom ht / # Noz / Spacing (in.)	18" / 4 / 20"	18" / 4 / 20"	20" / 4 / 20"
Gpa / Psi	15 / 28	15 / 28	15 / 26
<b>Weed species</b>	----- (growth / #/sqft) -----		
BRAPP (broadleaf signalgrass)	none	none	2-3 leaves / 60

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**Conclusions:** This was the second year to compare a quinclorac (Facet) granular formulation with the standard dry flowable formulation. Weed control and crop yields were similar with the two formulations when applied PRE or delayed PRE. There was a trend toward higher control and yield with the DF formulation. However, this could be due to the difficulty in spreading the granule uniformly in the small plots. The granule was mixed with sand in an effort to achieve uniform application. The performance of the granular formulation was considerably less than that of the dry flowable when applied early postemergence.

**Table 36.**

Formu- Treatment	Growth lation (lb/A)	Rate	stage	Broadleaf signalgrass (BRAPP) control					Rice injury				Rice yield	
				5/17 (%)	5/23	6/3	6/24	8/22	5/17	5/23	6/3	6/24		8/22 (lb/A)
Untreated check				0	0	0	0	0	0	0	0	0	0	3285
Quinclorac	1.5 G	0.25	PRE	75	93	93	96	80	3	10	3	0	0	7110
Quinclorac	75 DF	0.25	PRE	90	100	99	100	100	11	11	9	0	0	7785
Quinclorac	1.5 G	0.375	PRE	75	94	89	98	100	3	14	8	0	0	7020
Quinclorac	75 DF	0.375	PRE	90	99	96	100	100	11	6	3	0	0	7605
Quinclorac	1.5 G	0.5	PRE	83	90	91	100	83	3	11	5	0	0	6840
Quinclorac	75 DF	0.5	PRE	90	100	99	100	98	11	10	14	0	0	7515
Quinclorac	1.5 G	0.25	DPRE	60	78	86	96	88	0	8	11	0	0	7290
Quinclorac	75 DF	0.25	DPRE	90	95	95	99	100	3	9	5	0	0	7560
Quinclorac	1.5 G	0.375	DPRE	70	89	84	99	88	0	6	6	0	0	7470
Quinclorac	75 DF	0.375	DPRE	90	100	96	100	98	3	15	8	0	0	7470
Quinclorac	1.5 G	0.5	DPRE	78	93	88	99	95	3	13	9	0	0	7200
Quinclorac	75 DF	0.5	DPRE	90	99	98	99	99	10	5	6	0	0	6840
Quinclorac + thiobencarb	75 DF	0.25 2.0	DPRE	90	95	96	100	100	10	15	3	0	0	7470
Quinclorac	1.5 G	0.25	EPOST	0	64	59	88	64	0	11	1	0	0	5265
Quinclorac + Agri-Dex (1 pt/A)	75 DF	0.25	EPOST	0	68	89	95	96	0	14	9	0	0	6930
Quinclorac	1.5 G	0.375	EPOST	0	49	65	89	60	0	10	8	0	0	4905
Quinclorac + Agri-Dex (1 pt/A)	75 DF	0.375	EPOST	0	69	90	100	98	0	6	5	0	0	7110
Quinclorac	1.5 G	0.5	EPOST	0	20	56	90	55	0	14	0	0	0	4320
Quinclorac + Agri-Dex (1 pt/A)	75 DF	0.5	EPOST	0	75	95	99	98	0	6	5	0	0	7335



Quinclorac + (propanil + molinate)3.0	75 DF	0.188	EPOST	0	100	98	100	98	0	14	10	0	0	7650
<u>LSD(0.05)</u>				<u>7</u>	<u>9</u>	<u>10</u>	<u>6</u>	<u>12</u>	<u>4</u>	<u>NS</u>	<u>NS</u>	<u>NS</u>	<u>NS</u>	<u>720</u>

Table 37. Pendimethalin (Prowl) combinations for weed control in rice, Lonoke, 1996.

TEST INFORMATION

Location	UAPB at Lonoke	Planting date	April 27, 1996
Experimental Design/replications	RCB / 4	Harvest date	September 6, 1996
Plot size	6 ft by 20 ft	Crop/Variety	Rice/Kaybonnet
Row width / Number of rows per plot	7 in. / 9 rows	Dates of Flushing	May 3, 1996
Soil type	Calloway silt loam	Date of Flood	June 4, 1996
% OM / pH / CEC	1.0 / 4.9 / 8		

Comments: DPRE = delayed PRE.

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Application type	DPRE
Date applied	May 1, 1996
Time	7:30 am
Incorporation equipment	N/A
Air/Soil temperature (F)	58 / 52
Relative humidity (%)	92
Wind (mph, direction)	3
Weather	20% clouds
Soil moisture	medium
Crop stage	N/A
Sprayer type/mph	BkPkCO <sub>2</sub> / 3.0
Nozzle type/Size	driftguard / 11002
Boom ht / # Noz / Spacing (in.)	18" / 4 / 20"

Gpa / Psi

15 / 28

**Weed species**

**(growth / #/sqft)**

BRAPP (broadleaf signalgrass)

none

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**Conclusions:** This study was conducted to evaluate the various rates of pendimethalin (Prowl) for rice injury and broadleaf signalgrass control. While broadleaf signalgrass control increased slightly with increased rates, early-season control was unacceptable with all rates. There was no significant crop injury at any herbicide rate. Thiobencarb (Bolero) alone and pendimethalin + thiobencarb also failed to adequately control broadleaf signalgrass. The proposed Arkansas MP-44 recommended rates of pendimethalin + quinclorac and thiobencarb + quinclorac provided excellent control.

**Table 37.**

Growth Treatment (lb/A)	Rate	stage	Broadleaf signalgrass (BRAPP) control					Rice injury				Rice	yield
			5/17 (%)	5/23	6/3	6/24	8/20	5/17	5/23	6/3	6/24	8/20 (lb/A)	
Untreated check			0	0	0	0	0	0	0	0	0	0	2430
Pendimethalin	1.0	DPRE	60	83	63	84	50	0	0	3	0	4	4455
Pendimethalin	1.5	DPRE	69	84	71	80	15	5	0	5	0	5	4770
Pendimethalin	2.0	DPRE	79	79	76	99	70	10	0	5	0	3	5085
Thiobencarb	4.0	DPRE	48	55	58	71	65	0	0	8	0	8	4455
Pendimethalin + thiobencarb	1.0 2.0	DPRE	66	58	70	53	13	0	5	3	0	4	4320
Pendimethalin + thiobencarb	1.0 3.0	DPRE	73	70	73	95	45	5	5	6	0	1	4545
Pendimethalin + quinclorac	1.0 0.188	DPRE	95	85	99	99	96	3	0	0	0	0	6795
Thiobencarb + quinclorac	2.0 0.188	DPRE	90	85	98	100	100	3	0	5	0	0	6525
<u>LSD (0.05)</u>			<u>6</u>	<u>16</u>	<u>7</u>	<u>17</u>	<u>14</u>	<u>NS</u>	<u>NS</u>	<u>NS</u>	<u>NS</u>	<u>NS</u>	<u>800</u>

Table 38. Strawhull red rice control in glufosinate (Liberty)-tolerant rice, Stuttgart, 1996.

TEST INFORMATION

Location	Rice Research and Extension Center, Stuttgart	Planting date	June 13, 1996
Experimental Design/replications	RCB / 4	Harvest date	August 15 - 19, 1996
Plot size	6 ft by 16 ft	Crop/Variety	Rice/Gulfmont 517-2-R1 (resist.); Gulfmont (susc.)
Row width / Number of rows per plot	7 in. / 9 rows	Dates of Flushing	June 14, July 4, 1996
Soil type	Crowley silt loam (8% sand, 75% silt, 16% clay)	Date of Flood	July 16, 1996
% OM / pH	1.3 / 5.5		

**Comments:** Stuttgart strawhull red rice was broadcast June 13 during tillage. 3LF = 3-leaf rice stage; PREFLD = pre-flood.

Application type	3LF	PREFLD
Date applied	July 1, 1996	July 15, 1996
Incorporation equipment	N/A	N/A
Air temperature (F)	80	75
Wind (mph, direction)	5 / W	calm
Weather	0% clouds	partly cloudy
Soil moisture	medium	medium
Crop stage/Height	3-5 lf / 6-8"	tillering / 8-12"
Sprayer type/mph	BkPkCO <sub>2</sub> / 2.0	BkPkCO <sub>2</sub> / 2.0
Nozzle type/Size	FF / 8001	FF / 8001
Boom ht / # Noz / Spacing (in.)	20" / 3 / 20"	20" / 3 / 20"

Gpa / Psi	10 / 23	10 / 23
<b>Weed species</b>	<b>(height / # leaves)</b>	<b>(height / # leaves)</b>
red rice	5-10" / 3-7	8-16" / tillering

**Conclusions:** Use of glufosinate to control red rice in BAR-transformed glufosinate-resistant Gulfmont looks promising, especially when applied at >0.5 lb/A at the 3-leaf stage or when applied at  $\geq$  0.37 lb/A at the 3-leaf stage followed by the pre flood stage. Glufosinate up to 1 lb/A applied at the pre flood stage or 0.75 lb/A applied at 3-leaf did not cause visible injury to transformed rice.

**Table 38.**

Treatment (lb/A)	Growth Rate	stage	Red rice			Dry weight	Rice		Dry weight (Resist.)
			Control 7/15 (%)	7/26 (% of UTCz)	8/13		Injury (8/13) Resist. (%)	Susc. (% of UTCz)	
Untreated check			0	0	0	100	0	0	100
Glufosinate	0.25	3LF	95	80	69	6	0	64	181
Glufosinate	0.25	PREFLD	--	76	76	3	0	49	162
Glufosinate	0.375	3LF	100	84	90	6	0	85	172
Glufosinate	0.375	PREFLD	--	71	63	5	0	60	137
Glufosinate <u>fb</u>	0.375	3LF	99	100	98	0	0	100	214
glufosinate	0.376	PREFLD							
Glufosinate	0.5	3LF	100	91	93	3	0	96	182
Glufosinate	0.5	PREFLD	--	90	78	3	0	76	145
Glufosinate <u>fb</u>	0.5	3LF	99	100	100	0	0	100	197
glufosinate	0.5								
Glufosinate	0.75	3LF	100	98	96	1	0	99	199
Glufosinate	0.75	PREFLD	--	96	97	0	0	95	165
Glufosinate <u>fb</u>	0.75	3LF	99	100	100	0	0	100	215
glufosinate	0.75								
Glufosinate	1.0	PREFLD	--	95	97	0	0	95	180

Quizalofop	0.063	3LF	75	85	89	0	90	91	0
<u>LSD (0.05)</u>			<u>9</u>	<u>10</u>	<u>15</u>	<u>5</u>	<u>1</u>	<u>17</u>	<u>49</u>

<sup>z</sup> UTC = untreated check; dry weight of UTC red rice = 294 g/m<sup>2</sup>; dry weight of UTC rice = 250 g/m<sup>2</sup>.

<sup>y</sup> Treatments not applied.



Table 39. Response of blackhull and strawhull red rice to soybean herbicide treatments, Stuttgart, 1996.

TEST INFORMATION

Location	Rice Research and Extension Center, Stuttgart	Planting date	May 24, 1996
Experimental Design / replications	..... split plot / 4	Harvest date	..... N/A
Row width	7 in. .... Crop/Variety	N/A	
Number of rows per plot	..... 3 strawhull and 2 blackhull	Dates of Flushing	..... N/A
Soil type	Crowley silt loam (8% sand, 75% silt, 16% clay)	Date of Flood	N/A
% OM / pH	..... 1.3 / 5.5		

**Comments:** Data are averaged over hull type. DAE = days after emergence.

Application type	PPI	1-4 LF	28 DAE
Date applied	May 24, 1996	June 11, 1996	June 27, 1996
Time	1 pm	9 am	3 pm
Incorporation equipment	rototiller / 2"	N/A	N/A
Air temperature (F)	88	76	90
Wind (mph, direction)	15 / SSW	15 / WSW	10 / NE
Weather	0% clouds	0% clouds	0% clouds
Soil moisture	dry	moist	moist
Crop stage/Height	N/A	N/A	N/A
Sprayer type/mph	BkPkCO <sub>2</sub> / 2.0	BkPkCO <sub>2</sub> / 2.0	BkPkCO <sub>2</sub> / 2.0
Nozzle type/Size	FF / 8001	FF / 8001	FF / 8001
Boom ht / # Noz / Spacing (in.)	20" / 4 / 20"	20" / 3 / 20"	20" / 3 / 20"

Gpa / Psi	15 / 25	10 / 22	10 / 24
<b>Weed species (population)</b>	<b>(height / # leaves)</b>	<b>(height / # leaves)</b>	<b>(height / # leaves)</b>
strawhull red rice	N/A	4" / 3	6-13" / tillering
blackhull red rice	N/A	5" / 3	6-13" / tillering

**Conclusions:** Standard use rates of preplant incorporated herbicides such as alachlor:trifluralin (Freedom), metolachlor (Dual) and dimethenamid (Frontier) provided nearly 100% control of red rice. Postemergence graminicides such as quizalofop (Assure II) and sethoxydim (Poast Plus) were less effective than the PPI herbicides. The higher rates of postemergence graminicides were moderately effective against red rice when applied at the 1- to 4-leaf stage and were completely ineffective when applied 28 DAE. Assure II tended to provide slightly better red rice control than the other graminicides.

**Table 39.**

Growth Treatment (lb/A)	Rate	stage	Red rice control				Tillersz		Dry weighty	
			6/28		7/31		Blackhull	Strawhull	Blackhull	Strawhull
			Blackhull (%)	Strawhull	Blackhull	Strawhull	(% of untreated)		Blackhull	Strawhull
Untreated check			0	0	0	0	100	100	100	100
Metolachlor	1.5	PPI	100	100	100	100	0	0	0	0
Metolachlor	2.0	PPI	100	100	100	100	0	3	0	3
Dimethenamid	1.16	PPI	98	100	97	98	0	25	0	26
Dimethenamid	0.87	PPI	100	100	100	100	0	0	0	0
(Alachlor + trifluralin)	3.38	PPI	100	100	100	98	27	0	25	0
Metolachlor fb	1.5	PPI	97	100	100	100	0	0	0	0
clethodim	0.063	28DAE								
Dimethenamid fb	0.87	PPI	100	98	100	10	0	0	0	0
clethodim	0.063	28DAE								
Quizalofop	0.031	1-4LF	77	75	85	82	3	10	5	13
Quizalofop	0.056	1-4LF	75	75	90	90	29	16	28	15
Clethodim	0.063	1-4LF	30	48	48	43	118	84	117	104
Clethodim	0.125	1-4LF	67	82	83	87	9	12	9	14
Sethoxydim	0.3	1-4LF	72	78	88	77	4	28	3	35
(Fluazifop-P + fenoxaprop)	0.188	1-4LF	55	70	73	83	43	12	58	12
Quizalofop	0.056	28DAE	--x	--	53	65	80	44	95	38
Clethodim	0.125	28DAE	--	--	45	45	152	105	127	116
Sethoxydim	0.3	28DAE	--	--	47	38	125	118	147	143
(Fluazifop-P + fenoxaprop)	0.188	28DAE	--	--	48	40	134	194	138	260
Glyphosate	0.5	28DAE	--	--	55	68	232	159	140	184
Glufosinate	0.5	28DAE	--	--	37	42	201	176	250	200

LSD (0.05)<sup>w</sup>

----- 7.5 -----

----- NS -----

----- 33 -----

----- 40 -----

<sup>z</sup> Tillers in untreated check = 17/ft<sup>2</sup> blackhull; 12/ft<sup>2</sup> strawhull.

<sup>y</sup> Dry weight in untreated check = 15 g/ft<sup>2</sup> blackhull; 14/ft<sup>2</sup> strawhull.

<sup>x</sup> Treatments not applied.

<sup>w</sup> LSD's are for the interaction of strawhull and blackhull. The LSD on 7/31, averaged across hull types = 12.

Table 40. Control of propanil-resistant barnyardgrass (Year 1), Stuttgart, 1995.

TEST INFORMATION

Location Rice Research and Extension Center, Stuttgart, MS  
 Planting date May 10, 1995  
 Experimental Design/replications RCB/ 4 Harvest date November 6, 1995  
 Plot size 6 ft by 16 ft Crop/Variety Rice/Lemont  
 Row width / Number of rows per plot 7 in. / 9 rows Dates of Flushing May 23, June 8 and June 16, 1995  
 Soil type Crowley silt loam (8% sand, 75% silt, 16% clay) Date of Flood June 22, 1995  
 % OM / pH 1.3 / 5.5

**Comments:** Plots were tilled with Triple-K before planting. Barnyardgrass was planted in rows across the plots. Yields were adjusted to 12% moisture (based on moisture per plot).

Application type	2-leaf	4-leaf	
Date applied	May 31, 1995	June 12, 1995	
Time	1:30 pm	4:00 pm	
Incorporation equipment / depth	Triple-K / 2"	Triple-K / 2"	
Air temperature (F)	73 / 79	83 / 80	
Relative humidity (%)	68	45	
Wind (mph, direction)	8 / north	10 / north	
Weather	cloudy	sunny	
Soil moisture	moist to wet	wet	
Crop stage/Height (in.)	2 lf / 4	4 lf / 7.5	
Sprayer type/mph	Backpack CO <sub>2</sub> / 3.0	Backpack CO <sub>2</sub> / 3.0	

Nozzle type/Size	FF / 8002LP	FF / 8002LP	
Boom ht / # Noz / Spacing (in.)	18" / 3 / 20"	18" / 3 / 20"	
Gpa / Psi	20 / 25	20 / 25	
<b>Weed species (population)</b>			
ECHCG	2 lf	4 lf	

**Conclusions:** Propanil at 3 lb ai/A with carbaryl at 0.089 lb ai/A to 0.27 lb ai/A controlled resistant barnyardgrass at the 2-leaf stage with 11 to 18% rice injury. Propanil + quinclorac (Facet), propanil + pendimethalin (Prowl), and Arrosolo (propanil + molinate) + pendimethalin (Prowl) controlled resistant barnyardgrass with one application at the 2-leaf stage.

**Table 40.**

Growth Treatment (lb/A)	Rate	stage	Barnyardgrass control								Rice injury			Rice	yield
			6/12		6/21		7/27		8/9		6/12	6/21	7/27	8/9	
			Res.	Susc.	Res.	Susc.	Res.	Susc.	Res.	Susc.				(lb/A)	
Untreated check			0	0	0	0	0	0	0	0	2	1	0	0	826
Propanil (Stam)	3.0	2lf	25	39	28	44	16	58	34	62	10	6	2	0	3438
Propanil (Stam) + carbaryl	3.0 0.0009	2lf	60	56	35	42	48	64	46	79	19	6	2	0	3882
Propanil (Stam) + carbaryl	3.0 0.0027	2lf	52	75	39	55	36	69	45	81	25	6	0	0	3681
Propanil (Stam) + carbaryl	3.0 0.0089	2lf	80	74	71	71	78	90	79	91	24	9	2	0	4670
Propanil (Stam) + carbaryl	3.0 0.027	2lf	78	88	79	81	88	91	92	98	34	10	9	0	4475
Propanil (Stam) + carbaryl	3.0 0.089	2 lf	94	94	92	90	96	96	95	99	41	11	6	0	4100
Propanil (Stam) + carbaryl	3.0 0.27	2 lf	94	92	92	89	92	98	95	100	56	19	14	2	5081
Propanil 3.0 (Super Wham)	2 lf	50	46	32	35	4	12	8	22	14	8	2	0	1986	
(Propanil + molinate)	4.5	2 lf	74	75	51	70	94	95	85	94	14	9	5	0	4601
(Propanil + molinate) + pendimethalin	4.5 1.0	2 lf	95	95	98	98	98	99	96	100	16	6	1	0	4147
Propanil (Stam) + quinclorac	3.0 0.27	2 lf	91	88	95	94	95	88	98	98	14	5	5	0	3713
Propanil (Stam) +	3.0	2 lf	78	76	84	89	91	94	86	95	14	9	8	2	4604

pendimethalin	1.0															
Propanil (Stam) <u>fb</u>	3.0	2 lf	34	49	39	51	36	79	55	84	12	12	6	0	3979	
propanil (Stam)	3.0	4 lf														
Propanil (Stam) +	3.0	2 lf	25	44	30	54	12	66	38	88	16	10	6	0	3374	
carbaryl <u>fb</u>	0.0009															
propanil (Stam) +	3.0	4 lf														
carbaryl	0.0009															

Continued



**Table 40. Continued.**

Growth Treatment (lb/A)	Rate	stage	Barnyardgrass control								Rice injury				Rice yield (lb/A)
			6/12		6/21		7/27		8/9		6/12	6/21	7/27	8/9	
			Res. (%)	Susc.	Res.	Susc.	Res.	Susc.	Res.	Susc.					
Propanil (Stam) + carbaryl fb	3.0	2 lf	58	76	52	76	72	92	75	94	24	14	4	0	4834
propanil (Stam) + carbaryl	3.0														0.0027
															4 lf
Propanil (Stam) + carbaryl fb	3.0	2 lf	72	70	76	84	96	96	99	100	30	16	11	0	4786
propanil (Stam) + carbaryl	3.0														0.0089
															4 lf
Propanil (Stam) + carbaryl fb	3.0	2 lf	81	68	90	89	99	99	95	98	31	18	12	2	5110
propanil (Stam) + carbaryl	3.0														0.027
															4 lf
Propanil (Stam) + carbaryl fb	3.0	2 lf	81	91	95	98	94	90	96	100	32	38	11	2	3933
propanil (Stam) + carbaryl	3.0														0.089
															4 lf
Propanil (Stam) + carbaryl fb	3.0	2 lf	94	94	100	99	99	99	99	99	56	52	14	0	3997
propanil (Stam) + carbaryl	3.0														0.27
															4 lf
Propanil (Super propanil	3.0	2 lf	80	80	84	88	91	96	90	99	12	21	9	2	3914
															Wham) fb
															4 lf
															(Super Wham)

(Propanil + molinate) <u>fb</u>	4.5	2 lf	.79	82	93	94	95	94	96	96	15	15	12	0	5097
molinate)	4.5														(propanil + 4 lf
<u>LSD (0.05)</u>			<u>20</u>	<u>22</u>	<u>24</u>	<u>22</u>	<u>24</u>	<u>22</u>	<u>30</u>	<u>21</u>	<u>6</u>	<u>6</u>	<u>7</u>	<u>NS</u>	<u>1393</u>

Table 41. Control of propanil-resistant barnyardgrass (Year 2), Stuttgart, 1996.

TEST INFORMATION

Location	Rice Research and Extension Center, Stuttgart, MS	Planting date	May 2, 1996
Experimental Design/replications	RCB / 4	Harvest date	August 29, 1996
Plot size	6 ft by 16 ft	Crop/Variety	Rice / Kaybonnet
Row width / Number of rows per plot	7 in. / 9 rows	Dates of Flushing	May 18, 22 and 25, 1996
Soil type	Crowley silt loam (8% sand, 75% silt, 16% clay)	Date of Flood	May 30, 1996
% OM / pH	1.3 / 5.5		

**Comments:** Plots were tilled with Triple-K before planting. Barnyardgrass was planted in rows across the plots. Yields were adjusted to 12% moisture (based on moisture per plot).

Application type	2-leaf	4-leaf	
Date applied	May 16, 1996	May 23, 1996	
Time	10:00 am	2:00 pm	
Incorporation equipment / depth	Triple-K / 2"	Triple-K / 2"	
Air temperature (F)	80 / 65	92 / NA	
Relative humidity (%)	NA	46	
Wind (mph, direction)	9	12 / southwest	
Weather	clear	clear	
Soil moisture	medium	medium	
Crop stage/Height (in.)	2 lf / NA	4 lf / 5	
Sprayer type/mph	Backpack CO <sub>2</sub> / 3.0	Backpack CO <sub>2</sub> / 3.0	

Nozzle type/Size	FF / 8002LP	FF / 8002LP	
Boom ht / # Noz / Spacing (in.)	18" / 3 / 20"	18" / 3 / 20"	
Gpa / Psi	20 / 25	20 / 25	
<b>Weed species (population)</b>			
barnyardgrass	2 lf	4 lf	

**Conclusions:** As found in 1995 (Table 40), propanil at 3 lb ai/A with carbaryl at 0.089 lb ai/A to 0.27 lb ai/A controlled resistant barnyardgrass at the 2-leaf stage with 15 to 33% rice injury. Propanil + quinclorac (Facet), propanil + pendimethalin (Prowl), and Arrosolo (propanil + molinate) + pendimethalin (Prowl) controlled resistant barnyardgrass with one application at the 2-leaf stage.

**Table 41.**

Growth Treatment (lb/A)	Rate	stage	Barnyardgrass control						Rice injury			Rice yield
			5/23		5/30		6/6		5/23	5/30	6/6	
			Res. (%)	Susc.	Res.	Susc.	Res.	Susc.	(lb/A)			
Untreated check			0	0	0	0	0	0	0	0	0	2627
Propanil (Stam)	3.0	2lf	20	95	15	91	0	89	6	0	0	3677
Propanil (Stam) + carbaryl	3.0 0.0009	2lf	31	93	30	94	18	98	11	5	0	3115
Propanil (Stam) + carbaryl	3.0 0.0027	2lf	43	90	55	89	34	93	16	5	0	3559
Propanil (Stam) + carbaryl	3.0 0.0089	2lf	57	83	50	78	40	83	18	13	9	3357
Propanil (Stam) + carbaryl	3.0 0.027	2lf	76	95	81	98	80	99	19	5	0	3740
Propanil (Stam) + carbaryl	3.0 0.089	2 lf	84	96	89	100	99	100	21	25	15	3657
Propanil (Stam) + carbaryl	3.0 0.27	2 lf	78	96	89	99	99	99	30	38	33	3908
Propanil 3.0 (Super Wham)	2 lf	46	94	53	94	34	96	8	0	0	3665	
(Propanil + molinate)	4.5	2 lf	36	96	53	100	66	100	6	0	0	3733
(Propanil + molinate) + pendimethalin	4.5 1.0	2 lf	60	97	91	100	98	100	10	0	0	3761
Propanil (Stam) + quinclorac	3.0 0.27	2 lf	48	89	80	99	99	100	6	0	0	3871
Propanil (Stam) +	3.0	2 lf	40	93	79	100	98	100	9	0	0	3878

pendimethalin	1.0											
Propanil (Stam) <u>fb</u>	3.0	2 lf	15	90	40	100	25	99	6	0	0	3518
propanil (Stam)	3.0	4 lf										
Propanil (Stam) +	3.0	2 lf	33	86	59	99	60	98	9	23	8	3680
carbaryl <u>fb</u>	0.0009											
propanil (Stam) +	3.0	4 lf										
carbaryl	0.0009											

Continued

**Table 41.**

Growth Treatment (lb/A)	Rate	stage	Barnyardgrass control									Rice yield
			5/23		5/30		6/6		Rice injury			
			Res. (%)	Susc.	Res.	Susc.	Res.	Susc.	5/23	5/30	6/6	
Propanil (Stam) + carbaryl fb	3.0 0.0027	2 lf	48	90	75	97	81	99	14	28	13	3721
propanil (Stam) + carbaryl	3.0 0.0027	4 lf										
Propanil (Stam) + carbaryl fb	3.0 0.0089	2 lf	35	90	75	100	79	98	9	40	13	3671
propanil (Stam) + carbaryl	3.0 0.0089	4 lf										
Propanil (Stam) + carbaryl fb	3.0 0.027	2 lf	68	94	93	98	99	100	15	48	45	4165
propanil (Stam) + carbaryl	3.0 0.027	4 lf										
Propanil (Stam) + carbaryl fb	3.0 0.089	2 lf	85	96	91	100	100	100	20	56	43	3904
propanil (Stam) + carbaryl	3.0 0.089	4 lf										
Propanil (Stam) + carbaryl fb	3.0 0.27	2 lf	90	95	100	100	100	100	39	76	66	2290
propanil (Stam) + carbaryl	3.0 0.27	4 lf										
Propanil (Super Wham) fb	3.0	2 lf	55	92	74	100	89	98	10	20	5	3898
propanil (Super Wham)	3.0	4 lf										

(Propanil + molinate) fb	4.5	2 lf	31	93	84	100	98	100	20	25	8	3612
(propanil + molinate)	4.5	4 lf										
<u>LSD (0.05)</u>			<u>20</u>	<u>10</u>	<u>22</u>	<u>9</u>	<u>28</u>	<u>3</u>	<u>8</u>	<u>13</u>	<u>15</u>	<u>627</u>



APPENDICES

**Appendix Table 1. Common and trade names, formulation (pounds of active ingredient or acid equivalent per gallon), sponsoring companies, and chemical names of herbicides<sup>z</sup>.**

Common name	Trade name (formulation <sup>y</sup> )	Company	Chemical name
triclopyr	Grandstand (3 SL)	DowElanco	[(3,5,6-trichloro-2-pyridinyl)oxy]acetic acid
Induce (surfactant)	Induce	Helena	--
propanil	Stam 4M (4 EC); Stam 80DF; Super Wham (4 EC); Terra 60DF	Rohm & Haas; Cedar; Terra	<i>N</i> -(3,4-dichlorophenyl)propanamide
(propanil + molinate)	Arrosolo (3 + 3 EC)	Zeneca	(see individual components)
fenoxaprop	Whip 1EC; Whip 360 (0.57 EC)	AgrEvo	(±)-2-[4-[(6-chloro-2-benzoxazolyl)oxy]phenoxy]propanoic acid
thiobencarb	Bolero (8 EC; 10 G)	Valent	<i>S</i> -[(4-chlorophenyl)methyl]diethylcarbamoithioate
lactofen	Cobra (2 EC)	Valent	(±)-2-ethoxy-1-methyl-2-oxoethyl 5-[2-chloro-4-(trifluoromethyl)phenoxy]-2-nitrobenzoate
pendimethalin	Prowl (3.3 EC)	Cyanamid	<i>N</i> -(1-ethylpropyl)-3,4-dimethyl-2,6-dinitrobenzenamine
Agri-Dex (crop oil)	Agri-Dex	Helena	--
bensulfuron	Londax (60 DF)	Du Pont	2-[[[[[(4,6-dimethoxy-2-pyrimidinyl)amino]carbonyl]amino]sulfonyl]methyl]benzoic acid
quinclorac	Facet (75 DF; 1.5 G)	BASF	3,7-dichloro-8-quinolinecarboxylic acid
clomazone	Command (4 EC; 3 ME)	FMC	2-[(2-chlorophenyl)methyl]-4,4-dimethyl-3-isoxazolidinone
halosulfuron	Permit (75 DF)	Monsanto	3-chloro-5-[[[[[(4,6-dimethoxy-2-pyrimidinyl) amino]carbonyl] amino]-sulfonyl]-1-methyl-1 <i>H</i> -pyrazole-4-carboxylic acid

molinate	Ordram (15 G)	Zeneca	S-ethyl hexahydro-1 <i>H</i> -azepine-1-carbothioate
V10029	-- (80 WP)	Valent	--
Kinetic (surfactant)	Kinetic	Helena	--
F-8426 (carfentrazone)	-- (50 DF) [WES formulation]	FMC	<i>N</i> -[2,4-dichloro-5-(4-(difluoromethyl)-4,5-dihydro-3-methyl-5-oxo-1 <i>H</i> -1,2,4-triazol)-1-ylphenyl]-methanesulfonamide
X-77 (surfactant)	X-77	Valent	--
2,4-D	Weedar 64 (3.8 SL); Savage (95 DF); Hi-Dep (3.8 SL)	Rhone-Poulenc; UAP	(2,4-dichlorophenoxy)acetic acid
fipronil (insecticide)	[EXP 80698A]	Rhone-Poulenc	(±)-5-amino-1-[2,6-dichloro-4-(trifluoromethyl)phenyl]-4-[(trifluoromethyl)sulfinyl]-1 <i>H</i> -pyrazole-3-carbonitrile

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carbaryl (insecticide)	Sevin (4 F)	Rhone-Poulenc	1-naphthalenyl methylcarbamate
piperophos	-- (4.17 EC)	Ciba	<i>S</i> -[2-(2-methyl-1-piperidiny)-2-oxoethyl] <i>O,O</i> -dipropyl phosphorodithioate
anilophos or anilofos	-- (2.5 EC)	AgrEvo	<i>S</i> -[2-[(4-chlorophenyl)(1-methylethyl)amino]-2-oxoethyl] <i>O,O</i> -dimethyl phosphorodithioate
glufosinate	Liberty (1.67 EC)	AgrEvo	2-amino-4-(hydroxymethylphosphinyl)butanoic acid
bentazon	Basagran (4 SL)	BASF	3-(1-methylethyl)-(1 <i>H</i> )-2,1,3-benzothiadiazin-4(3 <i>H</i> )-one 2,2-dioxide
Penetrator Plus (crop oil surfactant)	Penetrator Plus	Helena	--

sulfentrazone

Authority (75 DF)

FMC

*N*-[2,4-dichloro-5-[4-(difluoromethyl)-4,5-dihydro-3-methyl-5-oxo-1*H*-1,2,4-triazol-1-yl]phenyl]methanesulfonamide

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z' -- ' indicates information is not available or not applicable.

y Formulations are followed by amount of active ingredient per gallon for liquids and % active ingredient for solid formulations. Abbreviations for formulations: EC, emulsifiable concentrate; DF, dry flowable; G, granule; ME, micro-encapsulated; WP, wettable powder; SL, soluble liquid; F, flowable.

**Appendix Table 2. Common, coded, and scientific names of plant species.**

<u>Common name</u>	<u>Bayer code<sup>z</sup></u>	<u>Scientific name</u>
Barnyardgrass	ECHCG	<i>Echinochloa crus-galli</i> (L.) Beauv.
Broadleaf signalgrass	BRAPP	<i>Brachiaria platyphylla</i> (Griseb.) Nash.
Common cocklebur	XANST	<i>Xanthium strumarium</i> L.
Common purslane	POROL	<i>Portulaca oleracea</i> L.
Crabgrass species	DIGSS	<i>Digitaria</i> spp.
Ducksalad	HETLI	<i>Heteranthera limosa</i> (Sw.)Willd.
Eclipta	ECLAL	<i>Eclipta prostrata</i> L.
Fall panicum	PANDI	<i>Panicum dicotomiflorum</i> Michx.
Hemp sesbania	SEBEX	<i>Sesbania exaltata</i> (Raf.) Rydb.
Morningglory species	IPOSS	<i>Ipomoea</i> spp.
Northern jointvetch	AESVI	<i>Aeschynomene virginica</i> (L.)B.S.P.
Red rice	ORYSA	<i>Oryza sativa</i> L.
Sicklepod	SENOB	<i>Senna obtusifolia</i> L.
Smartweed species	POLSS	<i>Polygonum</i> spp.
Spreading dayflower	COMDI	<i>Commelina diffusa</i> Burm. f.
Yellow nutsedge	CYPES	<i>Cyperus esculentus</i> L.

<sup>z</sup> WSSA-approved computer code from Composite List of Weeds, Revised 1989. WSSA, 1508 W. University Ave., Champaign, IL 61821.

**Appendix Table 3. Climatological data, 1996.**

Day	April				May				June				July	
	Max (%F)	Temp. Min (%F)	Rain- fall (in.)	Max (%F)	Temp. Min (%F)	Rain- fall (in.)	Max (%F)	Temp. Min (%F)	Rain- fall (in.)	Max (%F)	Temp. Min (%F)	Rain- fall (in.)		
<u>Fayetteville</u>														
150	31			68	43			69	60	1.15		91	69	
264	32			74	48			78	54	0.16		93	70	
371	52			78	56			81	61			95	68	
474	40		0.48	78	50			78	57			92	67	
547	33			77	57			79	63			73	64	
648	25			78	58	0.81		83	67	0.50		84	71	
749	30			76	63			84	62	0.18		92	77	
866	49			80	68			74	63			93	70	
960	39			80	67			73	53			86	67	
103	38			80	67			70	57			74	59	
171	41			77	48	2.17		79	57	0.25		77	64	
129	61			74	45			83	62			71	62	
166	60		0.64	70	50			86	65			73	62	
177	58			59	54	0.09		87	67	0.25		83	64	
152	36			73	55	0.03		88	66			78	59	
168	37			81	68			87	68			86	63	
173	48			83	69			89	71			89	69	
185	58			80	74			90	62			88	74	
192	53			85	77			93	65	1.34		89	75	
205	48			85	71			83	64			92	76	
269	43			83	65			92	68			84	78	
226	54		2.89	79	64			89	69			94	75	
261	40		0.96	80	64	0.02		90	70			97	67	

<del>246</del>	43		88	69	0.60	90	70	0.50	89	68	
<del>257</del>	56		79	64		87	67		85	63	0.03
<del>267</del>	51		86	67		90	71		85	58	
274	56		80	57	0.75	84	71	0.08	86	63	
<del>287</del>	58		84	56		87	70		84	68	0.06
<del>297</del>	40	0.38	77	53		89	66	0.50	89	76	
<del>301</del>	38		74	53	0.20	88	70		89	63	0.37
31			79	58	0.19				89	65	

Lonoke (Little Rock Airport)

167	39		78	47		75	64	1.61	97	73	
271	36		82	56		86	62		97	75	0.01
376	46		79	63		89	62	T	95	73	
465	41	0.03	85	66		84	61	0.02	89	67	T
545	39		87	66		89	66		87	70	0.27
657	37		84	65	10.4	88	70	0.22	93	74	0.17
766	35		86	65		85	67	0.16	94	77	T
862	45		85	67		79	63	0.35	98	76	
959	41		86	67		78	60		90	69	
100	37		83	65	0.65	83	59	T	81	67	0.02
178	48		73	59	0.45	88	64		83	67	
129	58	2.65	72	54		92	69	0.04	84	70	T
134	56	0.30	65	58	0.21	87	72	T	95	71	
174	53	0.26	80	58	T	90	69		85	72	0.52
159	45		84	68	T	93	70		92	71	
167	41		86	66		95	70		95	71	T
176	45		87	69		94	72	T	94	71	
181	60	T	88	67		97	73		94	74	
197	64	0.01	88	68		92	71		96	74	
280	60	0.31	89	68		95	71		99	77	T
282	57	0.06	92	73	0.02	97	72		100	80	
223	57	0.38	92	66	0.28	98	75		103	73	0.84
232	51		93	67		95	73		89	73	T
279	46		91	68		90	73		92	72	0.07
280	61		93	70		90	74	0.10	94	71	
280	53		90	71		90	76	0.32	91	70	0.08
279	48		86	67	1.30	90	71		85	69	0.9
281	69	0.03	92	69	0.03	95	69		90	71	
290	44	0.21	86	64		95	72		94	72	0.06

301	40	79	59	97	73	77	72	0.36
31		78	61			89	72	0.26



Rohwer

156	41		70	40		84	67		95	75	
262	35		77	53		86	62	0.97	95	73	
368	46		80	59		85	63		96	72	
471	50	0.02	85	64		89	63	0.07			
573	40		89	66		85	67		99	70	
653	35	0.27	89	69		92	70		86	72	
751	33		87	65	0.22	81	67		95	73	0.05
864	48		87	66		91	68		93	76	
964	44		88	67		77	59	0.30	95	75	
108	36		86	69	0.11	77	59		91	69	
170	39		88	64	1.02	86	63		81	69	
129	53		73	54		89	69	0.17	89	70	
134	53	0.52	73	60		80	70		91	73	0.18
173	57		74	59		84	68		89	78	
134	45	0.36	84	60		84	71		88	71	
160	40		87	68		97	70		90	73	
175	40		88	68		94	74		93	72	
184	50		96	68		93	74		94	14	
190	60		93	70		92	66		96	72	
286	69		92	70		92	69	0.16	92	74	
282	62	1.94	92	71		92	72		91	74	1.10
282	62	0.09	92	72		97	74		97	75	
280	54	1.16	83	72		95	73		100	71	0.31
248	48		97	70		95	74		91	72	
235	51		95	70		95	72		92	70	0.94
279	56		96	69		93	72	0.75	89	68	
280	49		95	78		92	71	0.19	89	70	
282	50		93	72		88	69		82	68	0.02
296	59	0.36	95	700	0.72	92	72		87	71	

361	42	0.39	85	61	95	77	94	71	
31			80	62			85	72	0.06

Stuttgart

165	41		68	42		81	64		86	75	
262	37		75	50		81	64	0.36	95	74	
368	47		78	62		84	64		96	73	
470	53	0.03	83	64		88	63	0.07	91	67	
567	39		85	67		85	67		89	66	
645	33		87	70		89	69		90	70	0.55
755	36		85	65	1.91	89	66	0.70	95	73	0.07
864	45		84	65		78	61	0.45	93	73	
959	43		85	68		69	60	0.03	92	72	
<del>109</del>	35		86	69		76	60		88	70	
168	37		85	63	0.95	82	63	0.03	84	70	
127	65		70	56	0.06	87	70	0.03	85	70	
<del>138</del>	55	0.79	72	59		88	73		88	71	
172	56		68	58		87	70	0.09	90	70	
<del>152</del>	45	0.05	81	59		88	71		90	69	0.84
167	38		84	68		93	74		88	70	
172	46		87	68		94	75		93	73	0.46
<del>183</del>	47		87	68		94	76		92	74	
<del>198</del>	59		70	70		91	71	0.02	92	74	
<del>207</del>	67	0.01	89	70		92	72	0.25	93	76	
283	62	0.02	70	73		92	75		96	76	
<del>220</del>	61		70	69		96	76		96	76	
233	51	0.47	82	67		96	75		98	72	0.18
<del>248</del>	48		94	69		96	75		87	73	
<del>255</del>	47		92	72		90	75		90	70	
<del>261</del>	52		93	74		90	76		89	70	
280	59		93	78		88	71	0.11	87	72	0.95
<del>289</del>	61		87	68	1.60	89	71		87	72	2.24
294	57	0.49	91	69		95	73		91	67	

361	41	0.88	83	61	95	74	91	71	0.03
31			79	62			77	71	4.03

**ENGLISH/METRIC CONVERSION TABLE**

English to Metric

<u>to convert</u> <u>from:to:</u>	<u>U.S. unit by:</u>
<b>length</b>	
miles kilometers	1.61
yards meters	0.91
feet meters	0.31
inches centimeters	2.54

<b>area volume</b>	
sq yards	sq meters
sq feet sq meters	0.09
sq inches	sq centimeters
cu inches	cu centimeters
acres hectares	0.41

<b>liquid measure</b>	
cu inches	liters
cu feet liters	28.34

<u>Multiply the</u> <u>from:</u>
<b>length</b>
kilometers
meters
meters
centimeters

0.84
sq meters
6.45
16.39
hectares

0.02
liters

Metric to English

<u>to convert</u> <u>to:</u>	<u>metric unit by</u>	<u>Multiply the</u>
<b>length</b>		
miles	0.62	
yards	1.09	
feet	3.28	
inches	0.39	

<b>area and volume</b>		
sq meters	sq yards	1.20
sq feet	10.76	
sq centimeters	sq inches	0.16
cu centimeters	cu inches	0.06
acres	2.47	

<b>liquid measure</b>		
liters	cu inches	61.02
cu feet	0.04	

gallons liters 3.79  
quarts liters 0.95  
fluid ounces milliliters

liters  
liters  
29.57

gallons 0.26  
quarts 1.06  
milliliters fluid ounces 0.03

**weight and mass**

pounds kilograms 0.45  
ounces grams 28.35

kilograms  
grams

**weight and mass**

pounds 2.21  
ounces 0.04

**temperature**

F C  $5/9(F-32)$

**temperature**

C F  $(9/5)C+32$