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Palmer amaranth response to tillage and herbicide programs.

Trial ID: C27-07 Study Dir.: Culpepper
Location: Attapulgus Investigator: Stanley Culpepper

Reps: 4 Plots: 18 by 30 feet
Spray vol: 14.8 gal/ac Mix size: 1 liters (min 2.778)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Rate Unit	Grow Stg	Appl Code	Amt Product to Measure	Plot No. By Rep 1	2	3	4
1	Wheat cover No PRE									101	207	303	408
2	Wheat cover Prowl H20	3.8		L	1	QT/A	PRE	A	16.89 ml/mx	102	205	301	407
3	Wheat cover Prowl H20 Reflex	3.8 2		L L	1 1	QT/A PT/A	PRE PRE	A A	16.89 ml/mx 8.445 ml/mx	103	206	302	406
4	Wheat cover Reflex Direx	2 4		L L	1 1.5	PT/A PT/A	PRE PRE	A A	8.445 ml/mx 12.67 ml/mx	104	208	304	405
5	Conventional-Deep Turn No PRE									105	202	307	401
6	Conventional-Deep Turn Prowl H20	3.8		L	1	QT/A	PRE	A	16.89 ml/mx	106	204	308	403
7	Conventional-Deep Turn Prowl H20 Reflex	3.8 2		L L	1 1	QT/A PT/A	PRE PRE	A A	16.89 ml/mx 8.445 ml/mx	107	201	305	404
8	Conventional-Deep Turn Reflex Direx	2 4		L L	1 1.5	PT/A PT/A	PRE PRE	A A	8.445 ml/mx 12.67 ml/mx	108	203	306	402
9	Conventional-Disk No PRE									109	211	311	410
10	Conventional-Disk Prowl H20	3.8		L	1	QT/A	PRE	A	16.89 ml/mx	110	209	312	411
11	Conventional-Disk Prowl H20 Reflex	3.8 2		L L	1 1	QT/A PT/A	PRE PRE	A A	16.89 ml/mx 8.445 ml/mx	111	212	310	409
12	Conventional-Disk Reflex Direx	2 4		L L	1 1.5	PT/A PT/A	PRE PRE	A A	8.445 ml/mx 12.67 ml/mx	112	210	309	412

Sort Order: Treatment

Product quantities required for listed treatments and applications in one trial:

Amount*	Unit	Treatment Name	Form Conc	Form Type	Lot Code
126.676	ml	Prowl H20	3.8	L	
63.338	ml	Reflex	2	L	
47.503	ml	Direx	4	L	

* 'Per area' calculations based on spray volume= 14.8 gal/ac, mix size= 1 liters (mix size basis).
* Product amount calculations increased 25 % for overage adjustment.

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Trial Comments

OBJECTIVE: Determine the impact of tillage and cover crop on Palmer amaranth emergence and herbicide activity.

Cotton Response:
1. No herbicide application injured cotton throughout the season.

Palmer amaranth response:
1. Wheat reduced the number of emerged pigweed by 90% at 22 DAP.
2. Deep turning the land reduced the number of emerged pigweed 10% at 22 DAP.
3. Prowl provided less control than Prowl + Reflex or Direx plus Reflex.
4. After glyphosate was applied POST, little differences in control were noted throughout the rest of the season.

Large crabgrass response:
1. Control in the wheat system was 77% greater than that noted in either conventional system at 22 DAT. After applying glyphosate topically, no differences in control were noted for the rest of the season.

Seed Yield:
1. No statistical differences were noted likely in response to the excellent weed control observed after the topical glyphosate application was initiated. However, a clear trend for less yield was noted with the NO PRE or Prowl PRE systems suggesting early season competition did occur.

GENERAL COMMENTS:
June 8: WeatherMax 22 oz/A applied over trial area.
July 2: Layby of WeatherMax 22 oz/A plus Valor 1 oz/A applied over trial area.

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Trt No.	Treatment Name	Rate	Rate Unit	1	2	3	4	5	6	7	8
	Weed Code			INURY	AMAPA	AMAPA	AMAPA	AMAPA	AMAPA	AMAPA	DIGSA
	Crop Code										
	Rating Data Type			%	%	%	%	%	%	#	%
	Rating Unit			control	control	control	control	control	control	135 sqft	control
	Rating Date			Jun-02-07	Jun-02-07	Jun-16-07	Jul-02-07	Jul-25-07	Oct-09-07	Jun-01-07	Jul-02-07
	Trt-Eval Interval			22 DA-A	22 DA-A	36 DA-A	52 DA-A	75 DA-A	151 DA-A	21 DA-A	52 DA-A
	ARM Action Codes										
	# Subsamples, Dec.										
1	Wheat cover No PRE			0 a	61 d	100 a	68 c	85 bc	89 ab	360 c	78 b
2	Wheat cover Prowl H20		 1 QT/A	0 a	87 b	100 a	85 b	89 ab	87 abc	23 d	95 a
3	Wheat cover Prowl H20 Reflex		 1 QT/A 1 PT/A	0 a	98 a	100 a	97 a	99 a	97 a	0 d	96 a
4	Wheat cover Reflex Direx		 1 PT/A 1.5 PT/A	0 a	99 a	100 a	99 a	99 a	92 ab	0 d	95 a
5	Conventional-Deep Turn No PRE			0 a	8 e	100 a	0 d	70 d	71 c	3300 b	0 c
6	Conventional-Deep Turn Prowl H20		 1 QT/A	0 a	75 c	100 a	85 b	96 a	99 a	125 d	97 a
7	Conventional-Deep Turn Prowl H20 Reflex		 1 QT/A 1 PT/A	0 a	99 a	100 a	97 a	99 a	99 a	0 d	99 a
8	Conventional-Deep Turn Reflex Direx		 1 PT/A 1.5 PT/A	0 a	99 a	100 a	99 a	99 a	99 a	1 d	94 a
9	Conventional-Disk No PRE			0 a	0 f	100 a	0 d	78 cd	77 bc	3650 a	0 c
10	Conventional-Disk Prowl H20		 1 QT/A	0 a	61 d	100 a	76 bc	91 ab	91 ab	200 cd	98 a
11	Conventional-Disk Prowl H20 Reflex		 1 QT/A 1 PT/A	0 a	99 a	100 a	95 a	99 a	99 a	0 d	99 a
12	Conventional-Disk Reflex Direx		 1 PT/A 1.5 PT/A	0 a	99 a	100 a	99 a	99 a	99 a	0 d	92 a
	LSD (P=.05)			0.0	5.8	0.0	9.0	10.0	14.6	197.0	6.8
	Standard Deviation			0.0	4.0	0.0	6.2	6.9	10.1	136.5	4.7
	CV			0.0	5.44	0.0	8.31	7.54	11.04	21.38	6.02
	Bartlett's X2			0.0	10.385	0.0	33.258	4.412	6.596	58.615	52.201
	P(Bartlett's X2)			.	0.065	.	0.001*	0.492	0.36	0.001*	0.001*

Means followed by same letter do not significantly differ (P=.05, Duncan's New MRT)

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Trt No.	Treatment Name	Rate	Rate Unit	DIGSA 9	SEED cotton 10	SEED cotton 11
	Weed Code			DIGSA	SEED	SEED
	Crop Code				cotton	cotton
	Rating Data Type			%	lb	YIELD
	Rating Unit			control	plot	LB
	Rating Date			Jul-25-07	Oct-09-07	Oct-09-07
	Trt-Eval Interval			75 DA-A	151 DA-A	151 DA-A
	ARM Action Codes					TY1
	# Subsamples, Dec.					1
1	Wheat cover No PRE			97 a	12 bc	3468.1 bc
2	Wheat cover Prowl H20	1	QT/A	98 a	13 abc	3858.0 abc
3	Wheat cover Prowl H20 Reflex	1 1	QT/A PT/A	99 a	15 a	4341.5 a
4	Wheat cover Reflex Direx	1 1.5	PT/A PT/A	98 a	15 ab	4218.1 ab
5	Conventional-Deep Turn No PRE			93 a	11 c	3330.9 c
6	Conventional-Deep Turn Prowl H20	1	QT/A	99 a	14 abc	3950.2 abc
7	Conventional-Deep Turn Prowl H20 Reflex	1 1	QT/A PT/A	99 a	15 ab	4235.5 ab
8	Conventional-Deep Turn Reflex Direx	1 1.5	PT/A PT/A	96 a	15 a	4383.6 a
9	Conventional-Disk No PRE			96 a	12 abc	3627.1 abc
10	Conventional-Disk Prowl H20	1	QT/A	97 a	13 abc	3746.2 abc
11	Conventional-Disk Prowl H20 Reflex	1 1	QT/A PT/A	99 a	14 abc	4051.1 abc
12	Conventional-Disk Reflex Direx	1 1.5	PT/A PT/A	99 a	14 abc	3965.4 abc
	LSD (P=.05)			6.1	2.4	702.25
	Standard Deviation			4.2	1.7	486.35
	CV			4.32	12.37	12.37
	Bartlett's X2			9.86	19.414	19.414
	P(Bartlett's X2)			0.131	0.054	0.054

Means followed by same letter do not significantly differ (P=.05, Duncan's New MRT)

Column 11: TY1 = 290.4*[C10]

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Location: Attapulgus Investigator: Stanley Culpepper

GENERAL TRIAL INFORMATION

Study Director: Stanley Culpepper **Title:** Ext. Weed Science
Affiliation: Univ. of Georgia
Postal Code: 31794

Investigator: Stanley Culpepper **Title:** Ext. Weed Science
Affiliation: Univ. of Georgia
Postal Code: _____

TRIAL LOCATION

City: Attapulgus **Trial Status:** completed
State/Prov.: GA **Trial Reliability:** good
Postal Code: 31794 **Initiation Date:** May-11-07
Country: USA **Planned Completion Date:** _____
E-Longitude of LL Corner °: _____ **N-Latitude of LL Corner °:** _____
Altitude of LL Corner: _____ **Unit:** _____ **Angle y-axis to North °:** _____
Directions:

COOPERATOR/LANDOWNER

Cooperator: _____ **Country:** _____
Org: _____ **Phone No:** _____
Address 1: _____ **Fax No:** _____
Address 2: _____
City: _____
State/Prov: _____
Postal Code: _____

Conducted Under GLP (Y/N): N **Conducted Under GEP (Y/N):** N
Guidelines: _____ **Guideline Description:** _____

Objective:

Conclusions:

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	AMAPA	Palmer amaranth	
2.	DIGSA	large crabgrass	

Crop 1: GOSHI cotton **Variety:** DP 555 BRR
Planting Date: May-11-07 **Planting Method:** seeded
Rate: 3 ft **Depth:** 0.5 in **Perennial Age:** ____ _____
Row Spacing: 36 inch **Spacing Within Row:** 4 inch **Seed Bed:** flat
Soil Temperature: 78 F **Soil Moisture:** moist **Emergence Date:** May-15-07

SITE AND DESIGN

Plot Width, Unit: 18 FT **Plot Length, Unit:** 30 FT **Reps:** 4
Site Type: Attapulgus research farm
Tillage Type: conventional **Study Design:** SPLIT-PLOT

Trial Initiation Comments:

	Previous Crops	Previous Pesticides	Year
1.			

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MAINTENANCE

Field Prep./Maintenance:

No.	Date	Maintenance Treatment Name	Form Conc	Form Unit	Form Type	Rate	Rate Unit
1.							

SOIL DESCRIPTION

% Sand: 84 **% OM:** 1.3 **Texture:** loamy sand
% Silt: 8 **pH:** 6.0 **Soil Name:** _____
% Clay: 8 **CEC:** _____ **Fert. Level:** _____

ADDITIONAL MEASURED ELEMENTS

Element	Quantity	Unit

MOISTURE CONDITIONS

	Date	Time	Amount	Unit	Type	Interval	Unit
1.							

Overall Moisture Conditions: irrigated
Closest Weather Station: _____ **Distance:** _____ **Unit:** __

APPLICATION DESCRIPTION

	A
Application Date:	May-11-07
Time of Day:	8 am
Application Method:	broadcast
Application Timing:	PRE
Applic. Placement:	overtop
Air Temp., Unit:	79 F
% Relative Humidity:	38
Wind Velocity, Unit:	3 mph
Dew Presence (Y/N):	n
Water Hardness:	
Soil Temp., Unit:	78 F
Soil Moisture:	moist
% Cloud Cover:	0

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	GOSHI PRE
Stage Scale:	not up
Height, Unit:	0 inch

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code, Stage:	AMAPA PRE
Stage Scale:	not up
Density, Unit:	0 ydsq
Weed 2 Code, Stage:	DIGSA PRE
Stage Scale:	not up
Density, Unit:	0 ydsq

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APPLICATION EQUIPMENT

	A
Appl. Equipment:	backpack
Operating Pressure:	24
Nozzle Type:	flat fan
Nozzle Size:	11002
Nozzle Spacing, Unit:	18 inch
Nozzles/Row:	2
Band Width, Unit:	
Boom Length, Unit:	4.5 feet
Boom Height, Unit:	15 inch
Ground Speed, Unit:	3 mph
Incorporation Equip.:	
Hours to Incorp.:	
Incorp. Depth, Unit:	
Carrier:	water
Spray Volume, Unit:	14.8 GPA
Spray pH:	
Propellant:	CO2
Tank Mix (Y/N):	Y

Trt No	Treatment Application Comment