

University of Georgia

Seeded onion and weed control by metam/herbicide systems.

Trial ID: Onion1-05

Study Dir.: Stanley Culpepper

Location: VORF

Investigator: Stanley Culpepper

Trial Comments

OBJECTIVE: Evaluate seeded onion and weed response to Vapam/Herbicide programs.

Onion Response:

1. Onions were seeded 10 days after injecting Vapam with our new Vapam rig without injury.
2. Herbicides caused little to no injury throughout the season.
3. Stand counts were not impacted by herbicide or fumigant treatment.
4. Main effects for onion yield were noted. A) Herbicide programs increased yields at least 25% compared to the no herbicide program when pulled over Vapam rates. B) Including Vapam in the program increased yields at approximately 50% when pooled over herbicide options. There were no differences among rates of Vapam or within herbicide programs.

Weed Response:

Primrose:

1. During early and mid-season, Vapam and the herbicide program alone provided fair control.
2. Late-season control noted main effects. When pooled over the Vapam option, the herbicide program improved control by 14 to 18% compared to no herbicide program. When pooled over the herbicide program, Vapam (25 G) improved control 29% when compared to no Vapam while Vapam at 50 or 75G improved control 55 to 58% compared to no Vapam.

Pink Purslane:

1. Vapam alone provided only fair control.
2. The herbicide program provided excellent control.
3. Combinations of herbicides and Vapam provided excellent control.
4. Purslane eventually went out when a heavy frost occurred.

Large Crabgrass

1. Vapam alone provided only fair control at 75 G with poor control noted with other rates.
2. The herbicide program provided excellent control.
3. Combinations of herbicides and Vapam provided excellent control.
4. Crabgrass died at time of the first light frost.

GENERAL COMMENTS:

- 1) Additional applications of Goal at 6 to 8 oz/A were applied overtop of plots receiving a herbicide program on Nov. 22 and on Dec. 7.

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Weed Code		onion	onion	PORPI	PORPI	OEOLA	OEOLA	OEOLA		
Crop Code		injury	injury	control	control	control	control	control		
Rating Data Type		percent	percent	percent	percent	percent	percent	percent		
Rating Unit										
Rating Date		Nov-22-04	Jan-07-05	Nov-22-04	Dec-07-04	Nov-22-04	Dec-07-04	Jan-07-05		
Trt-Eval Interval		59 DA-A		59 DA-A		59 DA-A	74 DA-A	88 DA-A		
Trt No.	Treatment Name	Rate	Unit	1	2	3	4	5	6	7
1	No herbicide No Vapam			0	0	0	0	0	0	0
2	No herbicide Vapam	25	gal/a	0	0	69	63	59	70	68
3	No herbicide Vapam	50	gal/a	0	0	80	85	75	88	79
4	No herbicide Vapam	75	gal/a	0	0	78	85	71	71	72
5	Dacthal Goal As needed after 2 lf No Vapam	6 0.0625	lb ai/a lb ai/a	5	0	98	99	66	66	75
6	Dacthal Goal As needed after 2 lf Vapam	6 0.0625	lb ai/a lb ai/a	4	0	99	99	85	79	90
7	Dacthal Goal As needed after 2 lf Vapam	6 0.0625	lb ai/a lb ai/a	4	0	99	99	93	96	95
8	Dacthal Goal As needed after 2 lf Vapam	6 0.0625	lb ai/a lb ai/a	6	0	99	99	89	92	91
9	Dacthal Dacthal Goal As needed after 2 lf No Vapam	3 3 0.0625	lb ai/a lb ai/a lb ai/a	3	0	99	99	69	57	68
10	Dacthal Dacthal Goal As needed after 2 lf Vapam	3 3 0.0625	lb ai/a lb ai/a lb ai/a	0	0	99	99	87	82	90
11	Dacthal Dacthal Goal As needed after 2 lf Vapam	3 3 0.0625	lb ai/a lb ai/a lb ai/a	1	0	99	99	93	94	94
12	Dacthal Dacthal Goal As needed after 2 lf Vapam	3 3 0.0625	lb ai/a lb ai/a lb ai/a	2	0	99	99	95	93	95
LSD (P=.05)				5.1	0.0	4.7	8.1	12.6	15.2	12.5
Standard Deviation				3.5	0.0	3.2	5.6	8.8	10.5	8.7
CV				184.54	0.0	3.82	6.61	11.91	14.28	11.39

Means followed by same letter do not significantly differ (P=.05, LSD)

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Weed Code			OEOLA	DIGSA	onion	harvest
Crop Code					onion	onion
Rating Data Type			control	control	stand cts	wt
Rating Unit			percent	percent	#/10'	lb/3.3'
Rating Date			Mar-30-05	Dec-07-04	Mar-31-05	May-18-05
Trt-Eval Interval						
Trt No.	Treatment Name	Rate Unit	8	9	10	11
1	No herbicide No Vapam		0	0	29	2
2	No herbicide Vapam	25 gal/a	38	33	33	3
3	No herbicide Vapam	50 gal/a	64	18	29	4
4	No herbicide Vapam	75 gal/a	59	70	31	3
5	Dacthal Goal As needed after 2 lf No Vapam	6 lb ai/a 0.0625 lb ai/a	20	99	26	2
6	Dacthal Goal As needed after 2 lf Vapam	6 lb ai/a 0.0625 lb ai/a 25 gal/a	45	99	29	4
7	Dacthal Goal As needed after 2 lf Vapam	6 lb ai/a 0.0625 lb ai/a 50 gal/a	79	99	36	5
8	Dacthal Goal As needed after 2 lf Vapam	6 lb ai/a 0.0625 lb ai/a 75 gal/a	73	99	30	4
9	Dacthal Dacthal Goal As needed after 2 lf No Vapam	3 lb ai/a 3 lb ai/a 0.0625 lb ai/a	25	97	28	3
10	Dacthal Dacthal Goal As needed after 2 lf Vapam	3 lb ai/a 3 lb ai/a 0.0625 lb ai/a 25 gal/a	49	99	30	4
11	Dacthal Dacthal Goal As needed after 2 lf Vapam	3 lb ai/a 3 lb ai/a 0.0625 lb ai/a 50 gal/a	78	99	31	5
12	Dacthal Dacthal Goal As needed after 2 lf Vapam	3 lb ai/a 3 lb ai/a 0.0625 lb ai/a 75 gal/a	79	99	30	4
LSD (P=.05)			11.1	20.7	7.4	1.1
Standard Deviation			7.7	14.4	5.2	0.6
CV			15.17	18.93	17.15	18.64

Means followed by same letter do not significantly differ (P=.05, LSD)

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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: 86	% OM: 0.47	Texture: sand	
% Silt: 10	pH: 5.8	Soil Name: Tifton sandy loam	
% Clay: 4	CEC: _____	Fert. Level: _____	

ADDITIONAL MEASURED ELEMENTS

Element	Quantity	Unit

MOISTURE CONDITIONS

	Date	Time	Amount	Unit	Type	Interval	Unit
1.							

Overall Moisture Conditions: .

Closest Weather Station: _____ Distance: _____ Unit: ____

APPLICATION DESCRIPTION

	A	B	C	D
Application Date:	Sep-24-04	Oct-05-04	Oct-14-04	Oct-29-04
Time of Day:	11:00am	10:00am	9:30am	8:30am
Application Method:	Broadcast	Broadcast	Broadcast	Broadcast
Application Timing:	preplant	PRE	spike trt	2lf onion
Applic. Placement:	inject4"	on soil	overtop	overtop
Air Temp., Unit:	81 F	83 F	66 F	71 F
% Relative Humidity:	68	49	44	67
Wind Velocity, Unit:	1.4 mph	2 mph	3 mph	0 mph
Dew Presence (Y/N):	n	n		
Water Hardness:				
Soil Temp., Unit:	73 F	75 F	68 F	69 F
Soil Moisture:	moist	moist	moist	fair
% Cloud Cover:	23	15	0	100

CROP STAGE AT EACH APPLICATION

	A	B	C	D
Crop 1 Code, Stage:	onion preplant	onion PRE	onion spike	onion 2lf
Stage Scale:	not up	plant day	1 lf	1-2 leaf
Height, Unit:	0 inch	0 inch	0.75 inch	2.5 inch

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WEED STAGE AT EACH APPLICATION

	A	B	C	D
Weed 1 Code, Stage:	OEOLA preplant	OEOLA PRE	OEOLA spike	OEOLA 2-leaf
Stage Scale:	not up	not up	0.15 inch	upto 1.5"
Density, Unit:	. .	. .	12 ydsq	12 ydsq
Weed 2 Code, Stage:	PORPI preplant	PORPI PRE	PORPI spike	PORPI 2-leaf
Stage Scale:	not up	not up	0.15 inch	1 inch
Density, Unit:	. .	. .	3 ydsq	3 ydsq
Weed 3 Code, Stage:	DIGSA preplant	DIGSA PRE	DIGSA spike	DIGSA 2-leaf
Stage Scale:	not up	not up	0.15 inch	1 inch
Density, Unit:	. .	. .	3 ydsq	3 ydsq

APPLICATION EQUIPMENT

	A	B	C	D
Appl. Equipment:	Vapam rig	backpack	backpack	backpack
Operating Pressure:	40	23	23	23
Nozzle Type:		flat fan	flat fan	flat fan
Nozzle Size:		11002	11002	11002
Nozzle Spacing, Unit:		18 inch	18 inch	18 inch
Nozzles/Row:				
Band Width, Unit:				
Boom Length, Unit:		4.5 feet	4.5 feet	4.5 feet
Boom Height, Unit:		15 inch	15 inch	15 inch
Ground Speed, Unit:		3 mph	3 mph	3 mph
Incorporation Equip.:	injected			
Hours to Incorp.:	0			
Incorp. Depth, Unit:	4 inch			
Carrier:	none	water	water	water
Spray Volume, Unit:		14.8 GPA	14.8 GPA	14.8 GPA
Spray pH:				
Propellant:	PTO	CO2	CO2	CO2
Tank Mix (Y/N):	N	Y	Y	Y

Trt No	Treatment Application Comment