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Seeded onion and weed response to metam/herbicide systems.

Trial ID: Onion3-06
 Location: VORF

Study Dir.: Stanley Culpepper
 Investigator: Stanley Culpepper

Reps: 4 Plots: 6 by 30 feet
 Spray vol: 14.8 gal/ac Mix size: 1.5 liters (min .92602)

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Grow Stg	Appl Code	Amt Product to Measure	Plot No. By Rep			
									1	2	3	4
1	Vapam No herbicide	L		0	GAL/A	Preplant	A		101	203	301	403
2	Vapam Dacthal Prowl H20 Goal	L 6 L 3.8 L 4 F		0 6 2 2	GAL/A LB A/A PT/A OZ/A	Preplant PRE 1-lf >2 lf	A B C D	 101.3 ml/mx 25.34 ml/mx 1.584 ml/mx	105	207	305	407
3	Vapam No herbicide	L		25	GAL/A	Preplant	A	*2533.5 ml/mx	102	208	306	404
4	Vapam Dacthal Prowl H20 Goal	L 6 L 3.8 L 4 F		25 6 2 2	GAL/A LB A/A PT/A OZ/A	Preplant PRE 1-lf >2 lf	A B C D	 *2533.5 ml/mx 101.3 ml/mx 25.34 ml/mx 1.584 ml/mx	106	204	302	408
5	Vapam No herbicide	L		50	GAL/A	Preplant	A	*5067.0 ml/mx	103	205	303	405
6	Vapam Dacthal Prowl H20 Goal	L 6 L 3.8 L 4 F		50 6 2 2	GAL/A LB A/A PT/A OZ/A	Preplant PRE 1-lf >2 lf	A B C D	 *5067.0 ml/mx 101.3 ml/mx 25.34 ml/mx 1.584 ml/mx	107	201	307	401
7	Vapam No herbicide	L		75	GAL/A	Preplant	A	*7600.5 ml/mx	104	206	304	402
8	Vapam Dacthal Prowl H20 Goal	L 6 L 3.8 L 4 F		75 6 2 2	GAL/A LB A/A PT/A OZ/A	Preplant PRE 1-lf >2 lf	A B C D	 *7600.5 ml/mx 101.3 ml/mx 25.34 ml/mx 1.584 ml/mx	108	202	308	406

* Amount of product to use exceeds the mix size.

Sort Order: Treatment

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

Amount*	Unit	Treatment Name	Form Conc	Form Type	Lot Code
38,002.742	ml	Vapam		L	
506.703	ml	Dacthal	6	L	
126.676	ml	Prowl H20	3.8	L	
7.918	ml	Goal	4	F	

* 'Per area' calculations based on spray volume= 14.8 gal/ac, mix size= 1.5 liters (mix size basis).

* Product amount calculations increased 25 % for overage adjustment.

Trial Comments

OBJECTIVE: Determine the most effective fumigant/herbicide system for controlling weeds in seeded onions.

Onion Injury:

1. Fumigants applied alone caused no visual stunting or stand loss.
2. The herbicide system did cause 10 to 23% stunting with greater stunting noted when herbicides were applied behind higher Vapam rates. This further supports that split applications of Dacthal should be recommended instead of a single applied at planting.
3. Prowl H20 applied at 1 leaf caused no visual onion injury.
4. Goal applications caused typical leaf burn.

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Primrose and Henbit Control:

1. Vapam provided only suppression of primrose or henbit, regardless of rate.
2. The herbicide system provided excellent early season control. By late-season the herbicide system provided greater than 85% control of primrose and 100% control of henbit. The addition of Outlook, once labeled, should help extend control through the season.

Onion Yield:

1. The number of onions was only reduced when no fumigant or herbicide was applied.
2. The weight of onions produced followed closely with weed control.
3. Onion weights were similar when herbicide systems were applied and greater than treatments not using the herbicide system. When no herbicide system was applied, increasing rates of Vapam generally produced larger onions.

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Weed Code		onion	onion	OEOLA	OEOLA	LAMAM	LAMAM	Yield	Yield	
Crop Code		injury	injury	control	control	control	control	onion	onion	
Rating Data Type		percent	percent	percent	percent	percent	percent	.	.	
Rating Unit								#	wt/lb	
Rating Date		Jan-08-06	Apr-06-06	Jan-08-06	Apr-06-06	Jan-08-06	Apr-06-06	May-10-06	May-10-06	
Trt No.	Treatment Name	Rate								
		Unit	1	2	3	4	5	6	7	8
1	Vapam No herbicide	0 GAL/A	0 d	0 c	0 e	0 d	0 d	0 d	11 c	2 d
2	Vapam Dacthal Prowl H20 Goal	0 GAL/A 6 LB A/A 2 PT/A 2 OZ/A	10 c	0 c	99 a	88 a	99 a	100 a	28 ab	19 a
3	Vapam No herbicide	25 GAL/A	0 d	0 c	66 c	35 c	84 b	79 b	27 ab	7 c
4	Vapam Dacthal Prowl H20 Goal	25 GAL/A 6 LB A/A 2 PT/A 2 OZ/A	15 bc	4 c	99 a	88 a	98 a	100 a	23 ab	19 a
5	Vapam No herbicide	50 GAL/A	0 d	0 c	63 d	53 b	73 c	57 c	22 ab	6 c
6	Vapam Dacthal Prowl H20 Goal	50 GAL/A 6 LB A/A 2 PT/A 2 OZ/A	20 ab	10 b	99 a	86 a	99 a	100 a	28 ab	21 a
7	Vapam No herbicide	75 GAL/A	0 d	0 c	74 b	35 c	96 a	73 b	33 a	13 b
8	Vapam Dacthal Prowl H20 Goal	75 GAL/A 6 LB A/A 2 PT/A 2 OZ/A	23 a	20 a	99 a	89 a	99 a	100 a	20 bc	20 a
LSD (P=.05)			6.3	5.1	3.7	7.1	4.2	7.5	10.0	3.5
Standard Deviation			4.3	3.4	2.5	4.8	2.8	5.1	6.8	2.4
CV			50.71	81.4	3.38	8.13	3.5	6.67	28.47	17.85
Bartlett's X2			0.692	3.963	1.438	5.753	4.031	4.508	22.438	13.951
P(Bartlett's X2)			0.708	0.047*	0.487	0.451	0.258	0.105	0.002*	0.052

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

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 Location: VORF 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: 31794

TRIAL LOCATION

City: Vidalia **Trial Status:** completed
State/Prov.: GA **Trial Reliability:** good
Postal Code: _____ **Initiation Date:** Sep-20-05
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.	OEOLA	cutleaf eveningprimrose	
2.	LAMAM	henbit	

Crop 1: ALLCE ONION **Variety:** Century
Planting Date: Oct-17-05 **Planting Method:** seeded
Rate: 1 3 in **Depth:** 0.25 in **Perennial Age:** ____
Row Spacing: 15 inch **Spacing Within Row:** 4 inch **Seed Bed:** flat
Soil Temperature: 69 F **Soil Moisture:** fair/irrigat **Emergence Date:** _____

SITE AND DESIGN

Plot Width, Unit: 6 FT **Plot Length, Unit:** 30 FT **Reps:** 4
Site Type: Vidalia Onion Research Farm
Tillage Type: conventional **Study Design:** FACTORIAL

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: 86	% OM: 0.47	Texture: loamy sand
% Silt: 10	pH: 6.1	Soil Name: _____
% Clay: 4	CEC: _____	Fert. Level: _____

ADDITIONAL MEASURED ELEMENTS

Element	Quantity	Unit

MOISTURE CONDITIONS

No.	Date	Time	Amount	Unit	Type	Interval	Unit
1.							

Overall Moisture Conditions: irrigated often

Closest Weather Station: _____ Distance: _____ Unit: ____

APPLICATION DESCRIPTION

	A	B	C	D
Application Date:	Sep-20-05	Oct-17-05	Nov-04-05	Nov-20-05
Time of Day:	10 am	9 am	9 am	10 am
Application Method:	injected	broadcast	broadcast	broadcast
Application Timing:	preplant	PRE	1-1f	3-1f
Applic. Placement:	4"down	overtop	overtop	overtop
Air Temp., Unit:	85 F	69 F	65 F	42 F
% Relative Humidity:	69	44	56	38
Wind Velocity, Unit:	2 mph	3 mph	0 mph	2 mph
Dew Presence (Y/N):	n	n	y	n
Water Hardness:				
Soil Temp., Unit:	86 F	69 F	61 F	39 F
Soil Moisture:	irrigated	fair/irri	moist	moist
% Cloud Cover:	0	0	0	0

CROP STAGE AT EACH APPLICATION

	A	B	C	D
Crop 1 Code, Stage:	ALLCE .	ALLCE .	ALLCE .	ALLCE .
Stage Scale:	preplant	PRE	1-leaf	3-leaf
Height, Unit:	0 in	0 in	1 in	3 in

WEED STAGE AT EACH APPLICATION

	A	B	C	D
Weed 1 Code, Stage:	OEOLA .	OEOLA .	OEOLA .	OEOLA .
Stage Scale:	preplant	preplant	0.25 in	2.5 in
Density, Unit:	0 ydsq	0 ydsq	15 ydsq	20 ydsq
Weed 2 Code, Stage:	LAMAM .	LAMAM .	LAMAM .	LAMAM .
Stage Scale:	preplant	preplant	0.25 in	1 in
Density, Unit:	0 ydsq	0 ydsq	5 ydsq	5 ydsq

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APPLICATION EQUIPMENT

	A	B	C	D
Appl. Equipment:	backpack	backpack	backpack	backpack
Operating Pressure:	24	24	24	24
Nozzle Type:	flat fan	flat fan	flat fan	flat fan
Nozzle Size:	11002	11002	11002	11002
Nozzle Spacing, Unit:	18 in	18 in	18 in	18 in
Nozzles/Row:	1	1	1	1
Band Width, Unit:				
Boom Length, Unit:	4.5 feet	4.5 feet	4.5 feet	4.5 feet
Boom Height, Unit:	15 inch	15 inch	15 inch	15 inch
Ground Speed, Unit:	3 mph	3 mph	3 mph	3 mph
Incorporation Equip.:				
Hours to Incorp.:				
Incorp. Depth, Unit:				
Carrier:	water	water	water	water
Spray Volume, Unit:	14.8 GPA	14.8 GPA	14.8 GPA	14.8 GPA
Spray pH:				
Propellant:	CO2	CO2	CO2	CO2
Tank Mix (Y/N):	N	N	N	N

Trt No	Treatment Application Comment