

University of Georgia

Transplant onion tolerance to Valor and linuron.

Trial ID: onion7-03
Location: VORF

Study Dir.:
Investigator: Stanley Culpepper

GENERAL TRIAL INFORMATION

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

TRIAL LOCATION

City: Vidalia **Trial Status:** completed
State/Prov.: GA **Trial Reliability:** excellent
Country: USA **Initiation Date:** Dec-20-02

Conducted Under GLP (Y/N): N **Conducted Under GEP (Y/N):** N

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	OEOLA	cutleaf eveningprimrose	
2.	LAMAM	henbit	
3.	DIGSA	large crabgrass	

Crop 1: ALLCE ONION **Variety:** Grannex 33 PRR
Planting Date: Dec-20-02 **Planting Method:** transplants
Rate: 1 3 inch
Row Spacing: 12 inch **Seed Bed:** bedded
Soil Temperature: 59 F **Soil Moisture:** moist

SITE AND DESIGN

Plot Width, Unit: 6 FT **Plot Length, Unit:** 20 FT **Reps:** 4
Site Type: research station
Tillage Type: conventional **Study Design:** RANDOMIZED COMPLETE BLOCK

SOIL DESCRIPTION

% Sand: 86 **% OM:** 0.4 **Texture:** loamy sand
% Silt: 10 **pH:** 5.8
% Clay: 4

APPLICATION DESCRIPTION

	A
Application Date:	Dec-20-02
Time of Day:	11 am
Application Method:	broadcast
Application Timing:	POST TRAN
Applic. Placement:	overtop
Air Temp., Unit:	64 F
% Relative Humidity:	44
Wind Velocity, Unit:	3 mph
Dew Presence (Y/N):	n
Soil Temp., Unit:	59 F
Soil Moisture:	wet
% Cloud Cover:	25

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	ALLCE transplat
Stage Scale:	POST TRAN
Height, Unit:	4 inch

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WEED STAGE AT EACH APPLICATION

A	
Weed 1 Code, Stage:	OEOLA POST
Stage Scale:	PRE weed
Density, Unit:	. .
Weed 2 Code, Stage:	LAMAM POST
Stage Scale:	PRE weed
Density, Unit:	. .
Weed 3 Code, Stage:	DIGSA POST
Stage Scale:	PRE weed
Density, Unit:	. .

APPLICATION EQUIPMENT

A	
Appl. Equipment:	backpack
Operating Pressure:	23
Nozzle Type:	flat fan
Nozzle Size:	11002
Nozzle Spacing, Unit:	18 inch
Boom Length, Unit:	4.5 feet
Boom Height, Unit:	15 inch
Ground Speed, Unit:	3 mph
Carrier:	water
Spray Volume, Unit:	14.8 GPA
Propellant:	CO2
Tank Mix (Y/N):	Y

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Investigator: Stanley Culpepper

Weed Code		onion	onion	onion	onion	OEOLA	OEOLA	OEOLA	OEOLA		
Crop Code		injury	injury	control	control	control	control	control	control		
Rating Data Type		percent	percent	percent	percent	percent	percent	percent	percent		
Rating Unit											
Rating Date		Jan-14-03	Feb-15-03	Mar-27-03	Apr-29-03	Jan-14-03	Feb-15-03	Mar-27-03	Apr-29-03		
Trt-Eval Interval		25 DA-A	57 DA-A	97 DA-A	97 DA-A	97 DA-A	97 DA-A	97 DA-A	97 DA-A		
ARM Action Codes											
Trt No.	Treatment Name	Rate	Unit	1	2	3	4	5	6	7	8
1	Goal Prowl	1	qt/a	0.0	0.0	0.0	0.0	99.0	99.0	99.0	98.3
2	Valor	0.5	oz/a	0.0	1.7	0.0	0.0	99.0	99.0	99.0	87.7
3	Valor	0.75	oz/a	0.0	0.0	1.7	0.0	99.0	99.0	96.7	86.3
4	Valor	1.0	oz/a	0.0	11.7	0.0	1.7	99.0	99.0	99.0	96.0
5	Valor	1.5	oz/a	0.0	16.7	10.0	2.3	99.0	99.0	99.0	96.0
6	Valor Prowl	0.5	oz/a	0.0	0.0	0.0	0.0	99.0	97.7	94.3	87.7
7	Valor Prowl	0.75	oz/a	0.0	5.3	4.7	2.3	99.0	99.0	96.7	92.7
8	Valor Prowl	1	oz/a	0.0	6.3	3.3	0.0	99.0	99.0	99.0	95.7
9	Linuron	0.5	lb ai/a	0.0	0.0	0.0	0.0	99.0	92.3	82.3	80.7
10	Linuron	1	lb ai/a	0.0	6.7	3.3	3.3	99.0	93.0	87.3	86.3
11	Linuron	2	lb ai/a	0.0	15.3	12.7	10.0	99.0	94.3	92.3	85.7
12	non-treated			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LSD (P=.05)				0.00	5.56	5.72	4.67	0.00	4.53	10.16	11.08
Standard Deviation				0.00	3.28	3.38	2.76	0.00	2.68	6.00	6.54
CV				0.0	61.86	113.56	168.42	0.0	3.0	6.89	7.91
Bartlett's X2				0.0	4.076	1.354	0.962	0.0	1.58	4.793	13.558
P(Bartlett's X2)				.	0.666	0.852	0.915	.	0.664	0.442	0.194

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

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Weed Code	LAMAM	LAMAM	LAMAM	DIGSA	ALLC	ALLC	ALLC	ALLC			
Crop Code											
Rating Data Type	control	control	control	control	ALLC	ALLC	ALLC	ALLC			
Rating Unit	percent	percent	percent	percent	yield	yield	yield	yield			
Rating Date	Feb-15-03	Mar-27-03	Apr-29-03	Apr-29-03	#/12'row	lb/12'ro	#/acre	lb/acre			
Trt-Eval Interval	57 DA-A	97 DA-A	130 DA-A	130 DA-A	130 DA-A	130 DA-A	130 DA-A	130 DA-A			
ARM Action Codes							T1	T2			
Trt No.	Treatment Name	Rate	Unit	9	10	11	12	13	14	15	16
1	Goal Prowl	1	qt/a	99.7	99.0	98.7	99.0	25.3	7.2	61306.7	17375.6
2	Valor	0.5	oz/a	99.7	99.0	97.7	88.0	22.7	6.1	54853.3	14810.4
3	Valor	0.75	oz/a	99.7	99.0	96.3	90.0	25.0	6.9	60500.0	16810.9
4	Valor	1.0	oz/a	99.7	99.0	97.7	89.3	25.0	7.2	60500.0	17504.7
5	Valor	1.5	oz/a	99.3	99.0	98.3	89.3	24.3	5.7	58886.7	13826.3
6	Valor Prowl	0.5	oz/a	99.7	97.7	97.7	97.0	25.0	6.5	60500.0	15697.7
7	Valor Prowl	0.75	oz/a	99.7	99.0	99.0	99.0	22.0	6.7	53240.0	16246.3
8	Valor Prowl	1	oz/a	99.7	99.0	98.3	97.3	23.3	5.6	56466.7	13632.7
9	Linuron	0.5	lb ai/a	99.7	73.0	73.3	85.3	24.0	5.7	58080.0	13890.8
10	Linuron	1	lb ai/a	99.3	80.0	73.3	82.3	23.7	6.2	57273.3	14971.7
11	Linuron	2	lb ai/a	99.7	74.0	81.3	90.0	19.7	4.2	47593.3	10164.0
12	non-treated			0.0	0.0	0.0	0.0	22.7	6.1	54853.3	14858.8
LSD (P=.05)				0.46	5.23	3.28	9.34	4.47	1.83	10828.75	4422.74
Standard Deviation				0.27	3.09	1.94	5.51	2.64	1.08	6394.63	2611.73
CV				0.3	3.64	2.3	6.57	11.22	17.43	11.22	17.43
Bartlett's X2				0.0	3.353	6.345	14.865	20.294	10.924	20.294	10.924
P(Bartlett's X2)				0.001*	0.34	0.705	0.038*	0.041*	0.45	0.041*	0.45

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

Column 15: T1 = [13]*2420

Column 16: T2 = [14]*2420

Trial Comments

OBJECTIVE: Evaluate Valor and Linuron in transplant onions.

Onion response:

- 1) Injury from high rates of Valor were not detectable for at least 6 weeks after application.
- 2) Valor at 0.75 oz/A and below did not visually impact transplant onions. Rates above 0.75 oz/A caused 12 to 17% at 57 DAT.
- 3) Valor rate probably needs to be between 0.75 and 1 oz of product per acre.
- 4) Mixing Prowl with Valor had no negative impacts.
- 5) Onion injury from linuron at 1 lb ai/A and below was not significant. Minor visual injury was noted at twice this rate.
- 6) The standard of Goal and Prowl caused no injury.

Primrose response:

- 1) Intense emergence was noted until mid march.
- 2) In mid-march, all treatments containing Valor provided at least 94% control. By April, the lower rates of Valor appeared to begin breaking.
- 3) Linuron provided good control of primrose but rates of 1 lb ai/A were less effective than the standard of Goal plus Prowl.
- 4) Control by Goal plus Prowl was excellent.

Henbit:

- 1) Valor systems provided excellent control as did the standard.
- 2) Linuron provided fair control but was less effective than the Standard or Valor system late in the season.

Crabgrass:

- 1) Late-season crabgrass emergence was noted in most plots. Control was similar with Prowl treatments having a tendency to be more effective.

Onion Yield:

- 1) Number of onions produced were similar among all treatments.
- 2) Yields were similar among all treatments. There was a tendency for lower yields with 2 lb ai/A of linuron.

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3) Yields from the non-treated control were high because weed infestation really did not begin until mid-march.