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Onion Cultivar Response to Various Valor Herbicide Systems

Trial ID: Onion2-05 Study Dir.: Culpepper
Location: VORF Investigator: Stanley Culpepper

Reps: 3 Plots: 6 by 15 feet
Spray vol: 14.8 gal/ac Mix size: 1 liters (min .34726)

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code	Amt Product to Measure	Plot No. By Rep 1	2	3
1	Cultivar A								101	220	307
	Goal	2	L	1	qt/a	at trans	A	16.89 ml/mx			
	Prowl H20	3.8	EC	1	qt/a	at trans	A	16.89 ml/mx			
2	Cultivar A								102	217	308
	Valor	51	WDG	1.5	oz/a	at trans	A	0.759 g/mx			
3	Cultivar A								103	218	309
	Valor	51	WDG	1.5	oz/a	at trans	A	0.759 g/mx			
	Prowl H20	3.8	EC	1	qt/a	at trans	A	16.89 ml/mx			
4	Cultivar A								104	216	310
	Valor	51	WDG	3	oz/a	at trans	A	1.518 g/mx			
5	Cultivar A								105	219	306
	No herbicide										
6	Cultivar B								106	221	302
	Goal	2	L	1	qt/a	at trans	A	16.89 ml/mx			
	Prowl H20	3.8	EC	1	qt/a	at trans	A	16.89 ml/mx			
7	Cultivar B								107	224	303
	Valor	51	WDG	1.5	oz/a	at trans	A	0.759 g/mx			
8	Cultivar B								108	223	304
	Valor	51	WDG	1.5	oz/a	at trans	A	0.759 g/mx			
	Prowl H20	3.8	EC	1	qt/a	at trans	A	16.89 ml/mx			
9	Cultivar B								109	222	305
	Valor	51	WDG	3	oz/a	at trans	A	1.518 g/mx			
10	Cultivar B								110	225	301
	No herbicide										
11	Cultivar C								111	203	319
	Goal	2	L	1	qt/a	at trans	A	16.89 ml/mx			
	Prowl H20	3.8	EC	1	qt/a	at trans	A	16.89 ml/mx			
12	Cultivar C								112	204	317
	Valor	51	WDG	1.5	oz/a	at trans	A	0.759 g/mx			
13	Cultivar C								113	202	316
	Valor	51	WDG	1.5	oz/a	at trans	A	0.759 g/mx			
	Prowl H20	3.8	EC	1	qt/a	at trans	A	16.89 ml/mx			
14	Cultivar C								114	205	320
	Valor	51	WDG	3	oz/a	at trans	A	1.518 g/mx			
15	Cultivar C								115	201	318
	No herbicide										
16	Cultivar D								116	210	315
	Goal	2	L	1	qt/a	at trans	A	16.89 ml/mx			
	Prowl H20	3.8	EC	1	qt/a	at trans	A	16.89 ml/mx			
17	Cultivar D								117	208	314
	Valor	51	WDG	1.5	oz/a	at trans	A	0.759 g/mx			
18	Cultivar D								118	206	311
	Valor	51	WDG	1.5	oz/a	at trans	A	0.759 g/mx			
	Prowl H20	3.8	EC	1	qt/a	at trans	A	16.89 ml/mx			
19	Cultivar D								119	209	313
	Valor	51	WDG	3	oz/a	at trans	A	1.518 g/mx			
20	Cultivar D								120	207	312
	No herbicide										

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Reps: 3 Plots: 6 by 15 feet
Spray vol: 14.8 gal/ac Mix size: 1 liters (min .34726)

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code	Amt Product to Measure	Plot No. By Rep 1	2	3
21	Cultivar E								121	213	325
	Goal	2	L	1	qt/a	at trans	A	16.89 ml/mx			
	Prowl H20	3.8	EC	1	qt/a	at trans	A	16.89 ml/mx			
22	Cultivar E								122	215	322
	Valor	51	WDG	1.5	oz/a	at trans	A	0.759 g/mx			
23	Cultivar E								123	211	324
	Valor	51	WDG	1.5	oz/a	at trans	A	0.759 g/mx			
	Prowl H20	3.8	EC	1	qt/a	at trans	A	16.89 ml/mx			
24	Cultivar E								124	214	323
	Valor	51	WDG	3	oz/a	at trans	A	1.518 g/mx			
25	Cultivar E								125	212	321
	No herbicide										

Sort Order: Treatment

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

Amount*	Unit	Treatment Name	Lot Code
105.563	ml	Goal 2 L	
211.126	ml	Prowl H20 3.8 EC	
18.976	g	Valor 51 WDG	

* '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.

Trial Comments

OBJECTIVE: Compare onion cultivar response to Valor systems.

Onion Response (main effects were predominately significant throughout each evaluation and thus will be discussed):

1. When pooled over cultivars, onion injury from Goal + Prowl was similar to that noted with 1.5 oz of Valor. Additionally, adding Prowl with Valor did not increase injury from Valor alone and in fact reduced late-season injury of three cultivars. Valor at 3 oz/A was more injurious than other mixtures.
2. When pooled over herbicide programs, cultivar 15085 was the most sensitive cultivar to herbicide programs followed by cultivar 101801.
3. Differences among onion stands were not evident when comparing the non-treated control and Valor treated plots when pooled over cultivars.
4. Yields from plots treated with 1.5 oz of Valor alone or mixed with Prowl were equal to and numerically greater than the control. Yields from onion treated with 3 oz/A of Valor were numerically less than other systems when pooled over cultivars. Additionally, looking within onion cultivar the high rate of Valor strongly tended to reduce yield of two cultivars.

CONCLUSIONS:
1. Mixing Prowl with Valor on transplant onions is no more injurious than Valor alone and in fact looking at cultivars C, D, and E it appears that the visual late-season injury from Prowl + Valor is less than that noted with Valor alone (could just be an anomaly???, but at least interesting)
2. Valor at 3 oz/A was too injurious.
3. Although there were differences in cultivar response, the same trends were noted with the Goal program. Thus, the slow growing tender cultivars were more sensitive to all herbicide programs, not just Valor.
4. The injury noted with Valor at 1.5 oz/A was marginal for onions. We need to continue to focus with the 1 oz/A rate but more importantly work with 0.5 oz/A to 0.75 oz/A followed by a sequential application of 0.5 to 0.75 oz/A two to three weeks later.

GENERAL COMMENTS:
1. Cultivar A = SSC 1636
2. Cultivar B = XON 204Y
3. Cultivar C = 15085
4. Cultivar D = W1-129
5. Cultivar E = 101801

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6. Onion yield was determined by harvest 15 row feet of onion.

Plots
103, 108, 113, 118, 123 did not get sprayed

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Trial ID: Onion2-05 Study Dir.: Culpepper
Location: VORF Investigator: Stanley Culpepper

Trt No.	Treatment Name	Rate	Rate Unit	1	2	3	4	5	6	7
Crop Code				onion	onion	onion	onion	onion	onion	onion
Rating Data Type				injury	injury	injury	injury	injury	stand cts	wt
Rating Unit				percent	percent	percent	percent	percent	#/10ft	lb/15ft
Rating Date				Dec-21-04	Dec-27-04	Jan-23-05	Feb-25-05	Mar-31-05	Mar-31-05	May-17-05
Trt-Eval Interval				14 DA-A	20 DA-A	47 DA-A	80 DA-A	114 DA-A	114 DA-A	161 DA-A
1	Cultivar A			9	10	7	6	7	34	20
	Goal	1	qt/a							
	Prowl H20	1	qt/a							
2	Cultivar A			6	11	2	6	8	33	18
	Valor	1.5	oz/a							
3	Cultivar A			7	11	5	13	8	33	16
	Valor	1.5	oz/a							
	Prowl H20	1	qt/a							
4	Cultivar A			6	7	8	20	22	36	16
	Valor	3	oz/a							
5	Cultivar A			0	0	0	0	0	35	18
	No herbicide									
6	Cultivar B			7	13	7	7	9	33	23
	Goal	1	qt/a							
	Prowl H20	1	qt/a							
7	Cultivar B			5	5	5	7	13	36	22
	Valor	1.5	oz/a							
8	Cultivar B			4	8	2	8	10	35	24
	Valor	1.5	oz/a							
	Prowl H20	1	qt/a							
9	Cultivar B			7	6	11	29	23	34	14
	Valor	3	oz/a							
10	Cultivar B			0	0	0	0	0	40	20
	No herbicide									
11	Cultivar C			16	24	15	34	33	18	11
	Goal	1	qt/a							
	Prowl H20	1	qt/a							
12	Cultivar C			12	19	16	32	33	23	12
	Valor	1.5	oz/a							
13	Cultivar C			6	11	5	4	6	31	13
	Valor	1.5	oz/a							
	Prowl H20	1	qt/a							
14	Cultivar C			13	12	14	29	38	27	7
	Valor	3	oz/a							
15	Cultivar C			2	0	0	0	2	34	12
	No herbicide									
16	Cultivar D			8	8	0	0	7	40	30
	Goal	1	qt/a							
	Prowl H20	1	qt/a							
17	Cultivar D			8	7	3	13	11	38	26
	Valor	1.5	oz/a							
18	Cultivar D			5	5	2	8	3	39	26
	Valor	1.5	oz/a							
	Prowl H20	1	qt/a							
19	Cultivar D			9	9	9	16	25	39	23
	Valor	3	oz/a							

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Crop Code				onion	onion	onion	onion	onion	onion	onion
Rating Data Type				injury	injury	injury	injury	injury	stand cts	wt
Rating Unit				percent	percent	percent	percent	percent	#/10ft	lb/15ft
Rating Date				Dec-21-04	Dec-27-04	Jan-23-05	Feb-25-05	Mar-31-05	Mar-31-05	May-17-05
Trt-Eval Interval				14 DA-A	20 DA-A	47 DA-A	80 DA-A	114 DA-A	114 DA-A	161 DA-A
Trt No.	Treatment Name	Rate	Rate Unit	1	2	3	4	5	6	7
20	Cultivar D			0	0	0	0	0	39	24
	No herbicide									
21	Cultivar E			15	16	17	39	26	22	12
	Goal	1	qt/a							
	Prowl H20	1	qt/a							
22	Cultivar E			8	12	9	15	13	27	14
	Valor	1.5	oz/a							
23	Cultivar E			0	5	4	4	6	31	18
	Valor	1.5	oz/a							
	Prowl H20	1	qt/a							
24	Cultivar E			3	9	6	24	22	29	16
	Valor	3	oz/a							
25	Cultivar E			0	0	0	0	0	25	13
	No herbicide									
LSD (P=.05)				9.0	6.8	7.5	15.1	10.0	7.4	8.2
Standard Deviation				5.4	4.1	4.6	9.1	6.0	4.5	4.9
CV				86.32	49.1	77.79	72.55	46.16	13.7	27.82

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

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Trial ID: Onion2-05 Study Dir.: Culpepper
Location: VORF Investigator: Stanley Culpepper

GENERAL TRIAL INFORMATION

Study Director: Stanley Culpepper **Title:** Ex. weed science
Affiliation: University of Georgia
Postal Code: 31793

Investigator: Stanley Culpepper **Title:** Ex. weed science
Affiliation: University of Georgia
Postal Code: 31793

TRIAL LOCATION

City: Vidalia **Trial Status:** completed
State/Prov.: GA **Trial Reliability:** good
Postal Code: 31794 **Initiation Date:** Dec-07-04
Country: U.S.A. **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.	.		

Crop 1: ALLCE ONION **Variety:** see comments
Planting Date: Dec-07-04 **Planting Method:** transplant
Rate: 3 per ft **Depth:** 1 in **Perennial Age:** ____ _____
Row Spacing: 15 inch **Spacing Within Row:** 4 inch **Seed Bed:** flat
Soil Temperature: 66 F **Soil Moisture:** irrigated **Emergence Date:** _____

SITE AND DESIGN

Plot Width, Unit: 6 FT **Plot Length, Unit:** 15 FT **Reps:** 3
Site Type: research station
Tillage Type: coventional **Study Design:** SPLIT-PLOT

Trial Initiation Comments:

	Previous Crops	Previous Pesticides	Year
1.			

MAINTENANCE

Field Prep./Maintenance:

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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:** 5.8 **Soil Name:** _____
% 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
Application Date:	Dec-07-04
Time of Day:	10 am
Application Method:	Broadcast
Application Timing:	PRE
Applic. Placement:	overonion
Air Temp., Unit:	72 F
% Relative Humidity:	64
Wind Velocity, Unit:	6 mph
Dew Presence (Y/N):	n
Water Hardness:	
Soil Temp., Unit:	66 F
Soil Moisture:	moist
% Cloud Cover:	0

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	ALLCE at trans
Stage Scale:	transplan
Height, Unit:	4 inch

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code, Stage:	.
Stage Scale:	.
Density, Unit:	. .

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APPLICATION EQUIPMENT

	A
Appl. Equipment:	backpack
Operating Pressure:	23
Nozzle Type:	flat fan
Nozzle Size:	11002
Nozzle Spacing, Unit:	18 inch
Nozzles/Row:	
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