

University of Georgia

Tomato and pepper response to Eptam at various water regimes

Trial ID: Veg13-08
Location: Ponder Farm

Study Dir.: Edwards, Culpepper
Investigator: Stanley Culpepper

Reps: 3 Plots: 3 by 60 feet
Spray vol: 24 gal/ac Mix size: 1 liters (min 1.1262)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Grow Unit	Appl Stg	Code	Amt to Measure	Plot No. By Rep		
										1	2	3
1	PicChlor 60 21 G Blockade Mulch Ideal Watering No herbicide									101	203	301
2	PicChlor 60 21 G Blockade Mulch Ideal Watering Eptam	7	L		4	PT/A	PRE	A	20.83 ml/mx	102	204	302
3	PicChlor 60 21 G Blockade Mulch Heavy Watering No herbicide									103	202	303
4	PicChlor 60 21 G Blockade Mulch Heavy Watering Eptam	7	L		4	PT/A	PRE	A	20.83 ml/mx	104	201	304

Sort Order: Treatment

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

Amount*	Unit	Treatment Name	Form Conc	Form Type	Lot Code
52.078	ml	Eptam	7	L	

* 'Per area' calculations based on spray volume= 24 gal/ac, mix size= 1 liters (mix size basis).

* Product amount calculations increased 25 % for overage adjustment.

Trial Comments

OBJECTIVE: Determine the impact of heavy watering on pepper and tomato injury from Eptam.

Visual Injury:

1. Severe tomato and pepper injury from Eptam was noted throughout the trial.
2. In tomato, there was less injury with heavier watering late in the season.
3. In pepper, watering regime had no impact.

Tomato Heights (10 plants per plot measured in mid-April and early May):

1. Eptam reduced tomato heights at least 25% and there was a trend for larger plants with Eptam when applying heavy watering.

Pepper Heights (20 plants per plot measured in mid-April and early May)

1. Watering regime had little impact with pepper height reduction being at least 18% in mid April and 100% by early May.

GENERAL COMMENTS:

1. Heavy watering (beds sagged) included twice the amount of watering during the first 7 days after planting as compared to the normal watering.
2. Blockade is a high barrier mulch often used in Georgia.

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Trial ID: Veg13-08

Study Dir.: Edwards, Culpepper

Location: Ponder Farm

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Weed Code	INJURY CPSAN	INJURY CPSAN	INJURY CPSAN	INJURY LYPES	INJURY LYPES	INJURY LYPES	LYPES 1 height	LYPES 1 height	
Crop Code	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	cm	cm	
Rating Data Type	%	%	%	%	%	%			
Rating Unit	Apr-16-08	Apr-16-08	Apr-30-08	Apr-16-08	Apr-16-08	Apr-30-08	Apr-16-08	May-07-08	
Rating Date	20 DA-A	20 DA-A	34 DA-A	20 DA-A	20 DA-A	34 DA-A	20 DA-A	41 DA-A	
Trt-Eval Interval	ARM Action Codes								
Trt No.	Treatment Name	Rate	Rate	Rate	Rate	Rate	Rate	Rate	
		Unit	Unit	Unit	Unit	Unit	Unit	Unit	
1	PicChlor 60 21 G Blockade Mulch Ideal Watering No herbicide	0 b	0 b	0 b	0 b	0 b	0 c	22 a	55 a
2	PicChlor 60 21 G Blockade Mulch Ideal Watering Eptam	50 a	38 a	99 a	50 a	52 a	80 a	14 b	22 b
		4 PT/A							
3	PicChlor 60 21 G Blockade Mulch Heavy Watering No herbicide	0 b	0 b	0 b	0 b	0 b	0 c	20 a	52 a
4	PicChlor 60 21 G Blockade Mulch Heavy Watering Eptam	50 a	38 a	99 a	50 a	42 a	60 b	15 b	24 b
		4 PT/A							
LSD (P=.05)	0.0	10.1	0.0	0.0	10.1	9.6	2.9	15.5	
Standard Deviation	0.0	5.1	0.0	0.0	5.1	4.8	1.5	7.8	
CV	0.0	26.45	0.0	0.0	21.72	13.68	8.24	20.29	
Bartlett's X2	0.0	2.498	0.0	0.0	0.619	0.84	0.603	4.208	
P(Bartlett's X2)	.	0.114	.	.	0.431	0.359	0.896	0.24	

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

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Weed Code	LYPES 2	LYPES 2	LYPES 3	LYPES 3	LYPES 4	LYPES 4	LYPES 5	LYPES 5	
Crop Code	height	height	height	height	height	height	height	height	
Rating Data Type	cm	cm	cm	cm	cm	cm	cm	cm	
Rating Unit	cm	cm	cm	cm	cm	cm	cm	cm	
Rating Date	Apr-16-08	May-07-08	Apr-16-08	May-07-08	Apr-16-08	May-07-08	Apr-16-08	May-07-08	
Trt-Eval Interval	20 DA-A	41 DA-A	20 DA-A	41 DA-A	20 DA-A	41 DA-A	20 DA-A	41 DA-A	
ARM Action Codes									
Trt No.	Treatment Name	Rate	Rate	Rate	Rate	Rate	Rate	Rate	
		Unit	Unit	Unit	Unit	Unit	Unit	Unit	
		10	11	12	13	14	15	16	
		17							
1	PicChlor 60 21 G Blockade Mulch Ideal Watering No herbicide	21 a	60 a	20 a	56 a	19 a	58 a	21 a	58 a
2	PicChlor 60 21 G Blockade Mulch Ideal Watering Eptam	13 b	15 c	13 b	21 b	13 b	19 b	13 b	22 b
		4 PT/A							
3	PicChlor 60 21 G Blockade Mulch Heavy Watering No herbicide	21 a	58 a	19 a	59 a	21 a	57 a	19 ab	56 a
4	PicChlor 60 21 G Blockade Mulch Heavy Watering Eptam	16 b	34 b	15 b	41 a	17 a	32 b	17 ab	32 ab
		4 PT/A							
LSD (P=.05)		3.6	17.0	3.3	17.7	3.9	20.5	6.1	27.2
Standard Deviation		1.8	8.5	1.7	8.9	2.0	10.3	3.1	13.6
CV		10.24	20.28	9.85	19.97	11.23	24.68	17.5	32.47
Bartlett's X2		0.884	9.977	2.374	4.294	4.276	4.328	2.815	6.872
P(Bartlett's X2)		0.829	0.019*	0.498	0.231	0.233	0.228	0.421	0.076

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

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Weed Code	LYPES 6	LYPES 6	LYPES 7	LYPES 7	LYPES 8	LYPES 8	LYPES 9	LYPES 9	
Crop Code	height	height	height	height	height	height	height	height	
Rating Data Type	cm	cm	cm	cm	cm	cm	cm	cm	
Rating Unit	cm	cm	cm	cm	cm	cm	cm	cm	
Rating Date	Apr-16-08	May-07-08	Apr-16-08	May-07-08	Apr-16-08	May-07-08	Apr-16-08	May-07-08	
Trt-Eval Interval	20 DA-A	41 DA-A	20 DA-A	41 DA-A	20 DA-A	41 DA-A	20 DA-A	41 DA-A	
ARM Action Codes									
Trt No.	Treatment Name	Rate	Rate	Rate	Rate	Rate	Rate	Rate	
18	19	20	21	22	23	24	25		
1	PicChlor 60 21 G Blockade Mulch Ideal Watering No herbicide	22 a	58 a	19 ab	58 a	21 a	61 a	21 a	58 a
2	PicChlor 60 21 G Blockade Mulch Ideal Watering Eptam	14 b	22 b	12 c	22 c	12 b	16 b	12 b	21 b
									4 PT/A
3	PicChlor 60 21 G Blockade Mulch Heavy Watering No herbicide	20 a	61 a	22 a	58 a	20 a	55 a	23 a	58 a
4	PicChlor 60 21 G Blockade Mulch Heavy Watering Eptam	15 b	25 b	16 bc	40 b	17 ab	27 b	16 b	30 ab
									4 PT/A
LSD (P=.05)	3.5	15.1	4.6	16.4	5.7	13.5	4.5	27.1	
Standard Deviation	1.7	7.5	2.3	8.2	2.9	6.8	2.3	13.6	
CV	9.71	18.15	13.09	18.51	16.51	16.96	12.59	32.53	
Bartlett's X2	4.532	1.921	1.89	5.287	1.025	3.022	3.048	8.376	
P(Bartlett's X2)	0.209	0.589	0.596	0.152	0.795	0.388	0.384	0.039*	

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

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Weed Code	LYPES 10	LYPES 10	AVG10PLA	AVG10PLA	CPSAN 1L	CPSAN 2L	CPSAN 3L	CPSAN 4L			
Crop Code	height	height	LYPES	LYPES	height	height	height	height			
Rating Data Type	cm	cm	height	height	cm	cm	cm	cm			
Rating Unit	cm	cm	cm	cm	cm	cm	cm	cm			
Rating Date	Apr-16-08	May-07-08	Apr-16-08	May-07-08	Apr-16-08	Apr-16-08	Apr-16-08	Apr-16-08			
Trt-Eval Interval	20 DA-A	41 DA-A	20 DA-A	41 DA-A	20 DA-A	20 DA-A	20 DA-A	20 DA-A			
ARM Action Codes			T2	T1							
Trt No.	Treatment Name	Rate	Unit	26	27	28	29	31	32	33	34
1	PicChlor 60 21 G Blockade Mulch Ideal Watering No herbicide			20 a	58 a	21 a	52 a	19 a	19 a	19 a	12 a
2	PicChlor 60 21 G Blockade Mulch Ideal Watering Eptam	4	PT/A	12 b	12 c	13 c	18 c	15 b	13 b	13 b	14 a
3	PicChlor 60 21 G Blockade Mulch Heavy Watering No herbicide			20 a	56 a	21 a	51 a	20 a	19 a	19 a	19 a
4	PicChlor 60 21 G Blockade Mulch Heavy Watering Eptam	4	PT/A	14 b	30 b	16 b	29 b	15 b	16 ab	14 b	15 a
LSD (P=.05)				4.0	15.6	2.0	9.8	3.5	3.7	3.6	10.7
Standard Deviation				2.0	7.8	1.0	4.9	1.7	1.9	1.8	5.4
CV				12.02	19.98	5.8	13.03	9.99	11.07	10.93	35.82
Bartlett's X2				1.557	4.788	3.542	5.802	3.682	1.063	3.167	13.396
P(Bartlett's X2)				0.669	0.188	0.315	0.122	0.298	0.786	0.367	0.004*

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

Column 27: T2 = $([C8]+[C10]+[C12]+[C14]+[C16]+[C18]+[C20]+[C22]+[C24]+[C26])/10$
 Column 28: T1 = $([C9]+[C11]+[C13]+[C15]+[C17]+[C19]+[C21]+[C23]+[C25])/10$

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Weed Code	CPSAN 5L	CPSAN 6R	CPSAN 7R	CPSAN 8R	CPSAN 9R	CPSAN10R	AVG10PLA	CPSAN 1L	
Crop Code	height	height	height	height	height	height	CPSAN	height	
Rating Data Type	cm	cm	cm	cm	cm	cm	height	cm	
Rating Unit	cm	cm	cm	cm	cm	cm	cm	cm	
Rating Date	Apr-16-08	Apr-16-08	Apr-16-08	Apr-16-08	Apr-16-08	Apr-16-08	Apr-16-08	Apr-16-08	
Trt-Eval Interval	20 DA-A	20 DA-A	20 DA-A	20 DA-A	20 DA-A	20 DA-A	20 DA-A	41 DA-A	
ARM Action Codes							T3		
Trt No.	Treatment Name	Rate	Rate	Rate	Rate	Rate	Rate	Rate	
Rate Unit	Rate Unit	35	36	37	38	39	40	41	
Rate Unit	Rate Unit	35	36	37	38	39	40	41	
1	PicChlor 60 21 G Blockade Mulch Ideal Watering No herbicide	20 a	18 a	17 ab	10 a	17 a	16 ab	17 a	36 a
2	PicChlor 60 21 G Blockade Mulch Ideal Watering Eptam	14 b	15 ab	13 bc	13 a	13 a	13 b	14 b	0 b
3	PicChlor 60 21 G Blockade Mulch Heavy Watering No herbicide	20 a	17 a	18 a	18 a	18 a	19 a	19 a	34 a
4	PicChlor 60 21 G Blockade Mulch Heavy Watering Eptam	13 b	12 b	12 c	13 a	14 a	13 b	14 b	0 b
	LSD (P=.05)	5.0	3.8	3.8	9.0	5.1	5.4	2.4	3.4
	Standard Deviation	2.5	1.9	1.9	4.5	2.5	2.7	1.2	1.7
	CV	15.06	12.28	12.64	33.52	16.2	17.4	7.51	9.76
	Bartlett's X2	4.875	1.492	1.465	9.71	0.501	5.192	2.191	4.288
	P(Bartlett's X2)	0.181	0.474	0.69	0.021*	0.919	0.075	0.534	0.038*

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

Column 39: T3 = @AVG([31],[40])

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Weed Code	CPSAN 2L	CPSAN 3L	CPSAN 4L	CPSAN 5L	CPSAN 6L	CPSAN7L	CPSAN 8L	CPSAN9L
Crop Code	height	height	height	height	height	height	height	height
Rating Data Type	cm	cm	cm	cm	cm	cm	cm	cm
Rating Unit	cm	cm	cm	cm	cm	cm	cm	cm
Rating Date	May-07-08	May-07-08	May-07-08	May-07-08	May-07-08	May-07-08	May-07-08	May-07-08
Trt-Eval Interval	41 DA-A	41 DA-A	41 DA-A	41 DA-A	41 DA-A	41 DA-A	41 DA-A	41 DA-A
ARM Action Codes								
Trt No.	44	45	46	47	48	49	50	51
Treatment Name								
Rate								
Unit								
1 PicChlor 60 21 G Blockade Mulch Ideal Watering No herbicide	36 a	35 a	35 a	37 a	36 a	27 a	36 a	33 a
2 PicChlor 60 21 G Blockade Mulch Ideal Watering Eptam 4 PT/A	0 b	0 b	0 b	0 b	0 c	0 b	0 b	0 b
3 PicChlor 60 21 G Blockade Mulch Heavy Watering No herbicide	35 a	33 a	32 a	36 a	31 b	34 a	35 a	37 a
4 PicChlor 60 21 G Blockade Mulch Heavy Watering Eptam 4 PT/A	0 b	0 b	0 b	0 b	0 c	7 b	0 b	0 b
LSD (P=.05)	7.1	5.1	4.6	4.5	3.2	12.5	6.2	7.4
Standard Deviation	3.5	2.6	2.3	2.2	1.6	6.3	3.1	3.7
CV	19.96	15.17	13.61	12.22	9.7	37.02	17.71	20.95
Bartlett's X2	0.156	0.092	0.015	1.375	0.451	8.298	2.838	1.066
P(Bartlett's X2)	0.693	0.761	0.903	0.241	0.502	0.016*	0.092	0.302

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

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Weed Code	CPSAN10L	CPSAN 1R	CPSAN 2R	CPSAN 3R	CPSAN 4R	CPSAN 5R	CPSAN 6R
Crop Code	height	height	height	height	height	height	height
Rating Data Type	cm	cm	cm	cm	cm	cm	cm
Rating Unit	cm	cm	cm	cm	cm	cm	cm
Rating Date	May-07-08	May-07-08	May-07-08	May-07-08	May-07-08	May-07-08	May-07-08
Trt-Eval Interval	41 DA-A	41 DA-A	41 DA-A	41 DA-A	41 DA-A	41 DA-A	41 DA-A
ARM Action Codes							
Trt No.	Treatment Name	Rate	Rate	Rate	Rate	Rate	Rate
52	53	54	55	56	57	58	58
1	PicChlor 60 21 G Blockade Mulch Ideal Watering No herbicide	35 a	35 a	36 a	36 a	36 a	37 a
2	PicChlor 60 21 G Blockade Mulch Ideal Watering Eptam 4 PT/A	0 b	0 b	0 b	0 b	0 b	0 b
3	PicChlor 60 21 G Blockade Mulch Heavy Watering No herbicide	33 a	34 a	37 a	34 a	32 a	36 a
4	PicChlor 60 21 G Blockade Mulch Heavy Watering Eptam 4 PT/A	0 b	0 b	0 b	0 b	0 b	7 b
LSD (P=.05)	9.7	6.0	1.5	3.5	5.2	2.2	12.6
Standard Deviation	4.9	3.0	0.8	1.8	2.6	1.1	6.3
CV	28.26	17.59	4.2	10.18	15.36	6.1	31.88
Bartlett's X2	0.0	0.054	0.039	1.556	5.775	0.063	9.472
P(Bartlett's X2)	1.00	0.816	0.844	0.212	0.016*	0.801	0.009*

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

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Weed Code	CPSAN 7R	CPSAN 8R	CPSAN 9R	CPSAN10R	AVG20PLA
Crop Code	height	height	height	height	CPSAN
Rating Data Type	cm	cm	cm	cm	height
Rating Unit	cm	cm	cm	cm	cm
Rating Date	May-07-08	May-07-08	May-07-08	May-07-08	May-07-08
Trt-Eval Interval	41 DA-A	41 DA-A	41 DA-A	41 DA-A	41 DA-A
ARM Action Codes					T4
Trt No.	Treatment Name	Rate	Rate	Rate	Rate
		Unit	Unit	Unit	Unit
		59	60	61	62
		63			
1	PicChlor 60 21 G Blockade Mulch Ideal Watering No herbicide	33 a	35 a	31 a	34 a
2	PicChlor 60 21 G Blockade Mulch Ideal Watering Eptam	0 b	0 b	0 b	0 b
					4 PT/A
3	PicChlor 60 21 G Blockade Mulch Heavy Watering No herbicide	34 a	36 a	34 a	37 a
4	PicChlor 60 21 G Blockade Mulch Heavy Watering Eptam	0 b	0 b	0 b	0 b
					4 PT/A
LSD (P=.05)		4.9	4.1	7.1	10.1
Standard Deviation		2.4	2.1	3.5	5.1
CV		14.59	11.56	21.72	28.36
Bartlett's X2		0.637	0.238	0.052	1.143
P(Bartlett's X2)		0.425	0.625	0.819	0.285

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

Column 60: T4 = @AVG([43],[62])

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Tomato and pepper response to Eptam at various water regimes

Trial ID: Veg13-08 Study Dir.: Edwards, Culpepper
Location: Ponder Farm 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: Ponder Farm **Trial Status:** completed
State/Prov.: GA **Trial Reliability:** good
Postal Code: 31795 **Initiation Date:** Feb-21-08
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.			

Crop 1: CPSAN PEPPER **Variety:** HERITAGE
Planting Date: Mar-27-08 **Planting Method:** TRANSPLANT
Rate: 1 12 inch **Depth:** 2 in **Perennial Age:** _____
Row Spacing: 15 IN **Spacing Within Row:** 12 IN **Seed Bed:** raised
Soil Temperature: 75 F **Soil Moisture:** DRIP **Emergence Date:** _____

Crop 2: LYPES TOMATO **Variety:** BELLA ROSA
Planting Date: Mar-27-08 **Planting Method:** TRANSPLANT
Rate: 1 18 in **Depth:** 2 in **Perennial Age:** _____
Row Spacing: 6 ft **Spacing Within Row:** 18 in **Seed Bed:** raised
Soil Temperature: 75 f **Soil Moisture:** drip **Emergence Date:** _____

SITE AND DESIGN

Plot Width, Unit: 3 FT **Plot Length, Unit:** 60 FT **Reps:** 3
Site Type: Ponder Research Farm
Tillage Type: Conventional **Study Design:** FACTORIAL

Trial Initiation Comments:

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	Previous Crops	Previous Pesticides	Year
1.			

MAINTENANCE

Field Prep./Maintenance:

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

SOIL DESCRIPTION

% Sand: 90	% OM: 1.0	Texture: sandy loam
% Silt: 6	pH: 6.4	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: Ponder Farm Distance: 1000 Unit: ft

APPLICATION DESCRIPTION

	A
Application Date:	Feb-21-08
Time of Day:	9 am
Application Method:	broadcast
Application Timing:	preplant
Applic. Placement:	un mulch
Air Temp., Unit:	65 F
% Relative Humidity:	74
Wind Velocity, Unit:	2 mph
Dew Presence (Y/N):	
Water Hardness:	
Soil Temp., Unit:	58 F
Soil Moisture:	moist
% Cloud Cover:	20

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	CPSAN preplant
Stage Scale:	not trans
Height, Unit:	0 inch
Crop 2 Code, Stage:	LYPES preplant
Stage Scale:	not trans
Height, Unit:	0 inch

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WEED STAGE AT EACH APPLICATION

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

APPLICATION EQUIPMENT

	A
Appl. Equipment:	superbedd
Operating Pressure:	24
Nozzle Type:	flat fan
Nozzle Size:	11015
Nozzle Spacing, Unit:	8 inch
Nozzles/Row:	6
Band Width, Unit:	
Boom Length, Unit:	5 ft
Boom Height, Unit:	
Ground Speed, Unit:	3 mph
Incorporation Equip.:	
Hours to Incorp.:	
Incorp. Depth, Unit:	
Carrier:	water
Spray Volume, Unit:	24 GPA
Spray pH:	
Propellant:	CO2
Tank Mix (Y/N):	N

Trt No	Treatment Application Comment