

Virginia Tech

Hemp tolerance to PRE and POST herbicides			
Trial ID: VTHemp18-1	Location: Kentland	Trial Year: 2017	
Protocol ID: VTHemp18-1	Investigator: Michael L Flessner		
Project ID:	Study Director:		
	Sponsor Contact:		

Reps: 4 Plots: 8 by 16 feet
 Appl. Amount: 15 GAL/AC Mix Size: 1 L (total for 4 plots; minimum=0.6674 L)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Other Rate	Other Rate Unit	Amt Product to Measure	Rep 1	Rep 2	Rep 3	Rep 4
1	Untreated Check								101	202	301	407
2	Prowl H2O			SL	3 pt/a			50.0 mL/mx	102	208	307	406
3	Dual II Magnum			SL	1.5 pt/a			25.0 mL/mx	103	205	304	403
4	Classic			WG	2 oz/a			1.997 g/mx	104	207	302	405
5	Reflex			SL	1.5 pt/a			25.0 mL/mx	105	206	308	404
6	Linex	4 LBA/GAL	L		2.5 pt/a	1.25 lbai/a		41.67 mL/mx	106	203	305	402
7	Valor SX	51 %		WG	2.5 oz/a			2.496 g/mx	107	204	303	408
8	metribuzin	75 %		WG	5.3 oz/a			5.292 g/mx	108	201	306	401

PER ROGER BATTS,
 TITLE OF REPORT
 INCLUDES "POST", BUT
 ALL TREATMENTS ARE
 "PRE". YEAR IS ALSO
 INCORRECTLY LISTED
 AS 2017. 09/09/19

Sort Order: Replicate 1

Product quantities required for listed treatments and applications of trials included in this table:

Amount*	Unit	Treatment Name	Form Conc	Form Unit	Form Type	Lot Code
62.500	mL	Prowl H2O			SL	
31.250	mL	Dual II Magnum			SL	
2.496	g	Classic			WG	
31.250	mL	Reflex			SL	
52.083	mL	Linex	4	LBA/GAL	L	
3.120	g	Valor SX	51	%	WG	
6.615	g	metribuzin	75	%	WG	

* 'Per area' calculations based on application amount= 15 GAL/AC, mix size= 2 L (mix size basis).

* Product amount calculations increased 25 % for overage adjustment.

General Trial Information	
Study Director: Kevin Bamber	Title: Research Specialist
Investigator: Michael L Flessner	Title: Assistant Professor
Discipline: H herbicide	
Trial Status: R reviewed and reported	Trial Reliability: HIGH
Initiation Date: Jun-8-2018	
Completion Date: Sep-7-2018	
Trial Location	
City: Blacksburg	Country: USA United States
State/Prov.: Virginia	
Climate Zone: USCOOL US Cool Continental	
Directions: Kentland Farm	
Conducted Under GLP: No	
Conducted Under GEP: No	

Contacts	
Study Director: Kevin Bamber	Title: Research Specialist
Organization: Virginia Tech	
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City+State/Prov: Blacksburg, VA	Mobile No.: 540-355-9552
Postal Code: 24061	E-mail: bamber86@vt.edu
Country: USA United States	
Investigator: Michael L Flessner	
Title: Assistant Professor	
Organization: Virginia Tech	
Address: 675 Old Glade Rd	
City+State/Prov: Blacksburg, VA	Phone No.: 540-231-2910
Postal Code: 24061	Mobile No.: 540-315-2954
E-mail: flessner@vt.edu	
Country: USA United States	

Crop Description
Crop 1: C CNISA Cannabis sativa Marijuana BBCH Scale: BDIC

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Site and Design	Site Type: FIELD field
Treated Plot Width: 8 FT	Experimental Unit: 1 PLOT plot
Treated Plot Length: 16 FT	Tillage Type: CONTIL conventional-till
Treated Plot Area: 128 FT ²	Study Design: RACOB� Randomized Complete Block (RCB)
Treatments: 8	
Replications: 4	

Application Description

	A
Application Date	Jun-8-2018
Appl. Start Time	3:45 PM
Appl. Stop Time	4:15 PM
Application Method	SPRAY
Application Timing	PREPRE
Application Placement	PLOT
Applied By	Bamber
Air Temperature Start, Stop	87.8 F
% Relative Humidity Start, Stop	51.4
Wind Velocity+Dir. Start	0.5 MPH S
Wet Leaves (Y/N)	N no
Soil Temperature	85 F
Soil Moisture	Dry
% Cloud Cover	30

Crop Stage At Each Application

	A
Crop 1 Code, BBCH Scale	CNISA BDIC
Stage Scale Used	BBCH
Stage Majority, Percent	seed 100

Application Equipment

	A
Equipment Type	BACSPR
Operation Pressure	28 PSI
Nozzle Type	FLAFXR
Nozzle Size	11002
Nozzle Spacing	18 IN
Nozzles/Row	4
Band Width	18 IN
% Coverage	100
Boom Length	54 IN
Boom Height	20 IN
Ground Speed	3.1 MPH
Carrier	WATER
Application Amount	15 GAL/AC
Mix Size	2 L
Propellant	COMCO2

Date	By	Notes
Jul-6-2018	Flessner, M	Injury characterized by stunting and in more severe cases, stand reduction.
Aug-7-2018	Bamber, K	All injury took the form of stand thinning.

SE Definitions

	1.
Crop Type, Code	C

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Crop Type, Code	C CNISA	C CNISA	C CNISA	C CNISA	C CNISA	C CNISA
Crop Name	Marijuana	Marijuana	Marijuana	Marijuana	Marijuana	Marijuana
Rating Date	Jul-6-2018	Aug-7-2018	Aug-15-2018	Sep-7-2018	Sep-7-2018	Sep-7-2018
Part Rated	PLOT C	PLOT C	PLOT C	PLOT C	PLOT C	PLOT C
Rating Type	PHYGEN	PHYGEN	STAOBJ	PHYGEN	PHYGEN	YIELD
Rating Unit	%	%	plnt/row	%	%	kg/ha
Number of Subsamples	1	1	1	1	1	1
Assessed By	Flessner, M	Bamber, K	Bamber, K.	Bamber, K.	Bamber, K.	Bamber, K.
Days After First/Last Applic.	28 28	60 60	68 68	91 91	91 91	91 91
Trt-Eval Interval	28 DA-A	60 DA-A	68 DA-A	91 DA-A	91 DA-A	91 DA-A
Trt Treatment	Rate Appl					
No. Name	Rate Unit Code	1*	2*	3*	4*	5*
1 Untreated Check		0.0 b	0.0 -	20.8 ab	0.0 -	671.99315217 -
2 Prowl H2O	3 pt/a A	50.0 a	20.0 -	9.8 b	17.5 -	748.08328588 -
3 Dual II Magnum	1.5 pt/a A	15.0 ab	7.5 -	20.8 ab	15.0 -	615.53918203 -
4 Classic	2 oz/a A	27.5 ab	5.0 -	20.0 ab	5.0 -	739.90155099 -
5 Reflex	1.5 pt/a A	10.0 ab	7.5 -	22.3 ab	0.0 -	663.81141736 -
6 Linex	2.5 pt/a A	15.0 ab	10.0 -	24.8 a	7.5 -	761.99223505 -
7 Valor SX	2.5 oz/a A	25.0 ab	7.5 -	17.0 ab	10.0 -	779.17387807 -
8 metribuzin	5.3 oz/a A	31.3 ab	15.0 -	13.5 ab	22.5 -	582.81224276 -
LSD P=.05	26.32	28.41	8.28	26.88	243.576930143	
Standard Deviation	17.90	19.32	5.63	18.28	165.641231406	
CV	82.42	213.21	30.28	188.67	23.82	
Levene's F	2.791	0.55	0.732	1.678	0.936	
Levene's Prob(F)	0.028*	0.788	0.647	0.162	0.498	
Skewness	0.347	1.722*	0.4299	2.0387*	0.4079	
Kurtosis	-1.3627	1.8991*	-0.5885	4.152*	0.0344	
Replicate F	1.576	0.165	1.358	0.408	3.797	
Replicate Prob(F)	0.2250	0.9190	0.2830	0.7485	0.0255	
Treatment F	2.914	0.401	3.051	0.800	0.767	
Treatment Prob(F)	0.0270	0.8912	0.0223	0.5959	0.6211	
Crop Type, Code C, G-ByrC7 = EPPO species (Bayer) codes CNISA, BDIC, Cannabis sativa, Marijuana = US Part Rated PLOT = plot C = Crop is Part Rated Rating Type PHYGEN = phytotoxicity - general / injury STAOBJ = stand - objective (based on counts) YIELD = yield Rating Unit % = percent kg/ha = kilograms per hectare						

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
 * Adjusted means