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 Always consult a current label prior to making any pesticide application.

Dry Bulb Onion Herbicide Efficacy 2019 - Mineral Soil

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Location: Arlington Agricultural Research Station, field 623

Plot Information:

Soil Type: Plano Silt Loam, 9% sand - 62% silt - 28 % clay, OM 3.4%, pH 6.4

Variety: 'Montclair'

Date Planted: 4-25-2019

Row Spacing: 6' wide plot with 4 rows spaced 18" apart centered in plot

Plant Spacing: 1" in row

Date Harvested: 9-6-2019

Plot Size-Design: 6' x 15', 3 reps

Rating Dates: 5-30, 6-7, 6-10, 6-17, 7-12

Phytotoxicity (PHYGEN) Rating Scale: 0% = no crop injury, 100% = dead crop plants

Phytotoxicity (PHYSTU) Rating Scale: % stunting relative to Handweeded Check

Weed Control Rating Scale: 0% = no control, 100% = complete control

Application Equipment: Backpack CO2 pressure sprayer. GPA 20, PSI 27, MPH 3.3,
 Nozzle - 20 GPA Appl. XR8003VS, Nozzle spacing 18", Height 18".

Nozzle - 60 GPA Appl. XR8008VS, Nozzle spacing 18", Height 18", 55 PSI.

Herbicide Application Data:

Date	5-3-19	6-4-19	6-11-19	6-11-19	7-2-19
Time	1:00 pm	1:45 pm	5:15 AM	6:45 AM	4:00 PM
Treatment	PRE	1-LF	2-LF	2-LF	4-6 LF
Application Timing	A	B	C	CC	D
Soil Moisture					
SF	moist	moist	dry	dry	moist
1"	moist	moist	moist	moist	moist
3"	moist	moist	moist	moist	moist
Soil Temp (F°)					
SF	68.9	80.4	63.5	63.7	100.4
3"	58.2	67.7	62.5	62.5	87.9
Air Temp (F°)	57.8	80.8	61.4	63.9	89.6
Wind (mph/dir.)	2.8 SE	3.8 SW	0.2 W	0.5 W	2.8 W
%RH	48.2%	52.5%	63.2%	58.0%	50.6%
Sky Condition (% clouds)	100%	10%	5%	5%	30%
Crop Stage	-----	1-LF	2-LF	2-LF	5-6 LF
Weed & Size	-----		COLQ 1-2"	COLQ 1-2"	COLQ 1-4"
			RRPW 1"	RRPW 1"	RRPW 1-2"
			VELE 1-2"	VELE 1-2"	VELE 2-4"
			HANS 1-2"	HANS 1-2"	HANS 2-6"
			SHPU 1-4"	SHPU 1-4"	

Weed Abbreviations

COLQ = Common Lambsquarter

RRPW = Redroot Pigweed

VELE = Velvetleaf

HANS = Hairy Nightshade

SHPU = Shepards Purse

COPU = Common Purslane

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Trt No.	Treatment Name	Rate	Appl Unit	Timing	5/30/2019	% Injury 5-30-2019		% Weed Control 5-30-19	
					Stand/A	PHYGEN	PHYSTU	COLQ	RRPW
1	Untreated Check				257488	0	0	0	0
2	Handweeded Check				252325 ab	0 f	0 e	100 a	100 a
3	Zidua	1.25 oz/a		PRE	165205 c-f	26.7 e	23.3 d	100 a	100 a
4	Zidua	2.5 oz/a		PRE	77440 g	53.3 d	43.3 c	100 a	100 a
5	Zidua	3.5 oz/a		PRE	140683 efg	70 c	53.3 b	100 a	100 a
6	Zidua	5 oz/a		PRE	82603 g	85 ab	70 a	100 a	100 a
7	Zidua	1.25 oz/a		PRE	232320 abc	33.3 e	20 d	100 a	100 a
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
8	Zidua	2.5 oz/a		PRE	98736 fg	63.3 cd	50 bc	100 a	100 a
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
9	Zidua	3.5 oz/a		PRE	151653 d-g	73.3 bc	56.7 b	100 a	100 a
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
10	Zidua	5 oz/a		PRE	107125 fg	88.3 a	66.7 a	100 a	100 a
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
11	Ethotron	1 pt/a		PRE	258779 ab	3.3 f	1.7 e	98.5 a-d	100 a
	Zidua	1.25 oz/a		1-LF					
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
12	Ethotron	1 pt/a		PRE	227803 abc	0 f	0 e	99.4 abc	100 a
	Zidua	2.5 oz/a		1-LF					
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
13	Ethotron	1 pt/a		PRE	260069 ab	0 f	0 e	98 bcd	99.3 ab
	Zidua	3.5 oz/a		1-LF					
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
14	Ethotron	1 pt/a		PRE	251035 ab	0 f	0 e	98.5 a-d	100 a
	Zidua	5 oz/a		1-LF					
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
15	Ethotron	1 pt/a		PRE	258779 ab	0 f	0 e	96 cd	100 a
	Goal Tender	3 oz/a		2-LF					
	Zidua	1.25 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
16	Ethotron	1 pt/a		PRE	192309 b-e	0 f	0 e	99.1 a-d	100 a
	Goal Tender	3 oz/a		2-LF					
	Zidua	2.5 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
17	Ethotron	1 pt/a		PRE	237483 abc	0 f	0 e	98.5 a-d	100 a
	Goal Tender	3 oz/a		2-LF					
	Zidua	3.5 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
18	Ethotron	1 pt/a		PRE	223285 a-d	0 f	0 e	98.5 a-d	100 a
	Goal Tender	3 oz/a		2-LF					
	Zidua	5 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					

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Trt No.	Treatment Name	Rate	Unit	Appl Timing	5/30/2019	% Injury 5-30-2019		% Weed Control 5-30-19	
					Stand/A	PHYGEN	PHYSTU	COLQ	RRPW
19	Ethotron	1	pt/a	PRE	216832 a-d	0 f	0 e	98 bcd	100 a
	A16003 - 20 GPA	3.42	oz/a	2-LF					
	NIS	0.25	% v/v	2-LF					
20	Ethotron	1	pt/a	PRE	253616 ab	0 f	0 e	97.8 bcd	100 a
	A16003 - 20 GPA	6.84	oz/a	2-LF					
	NIS	0.25	% v/v	2-LF					
21	Ethotron	1	pt/a	PRE	241355 ab	3.3 f	0 e	99.8 ab	100 a
	A16003 - 20 GPA	3.42	oz/a	2-LF					
22	Ethotron	1	pt/a	PRE	263941 ab	0 f	0 e	99.1 a-d	100 a
	Moxy - 20 GPA	12	oz/a	2-LF					
23	Ethotron	1	pt/a	PRE	207152 a-e	0 f	0 e	98.5 a-d	100 a
	GoalTender-20 GP/	3.99	oz/a	2-LF					
24	Ethotron	1	pt/a	PRE	254261 ab	0 f	0 e	98.5 a-d	100 a
	A16003 - 60 GPA	3.42	oz/a	2-LF					
	NIS	0.25	% v/v	2-LF					
25	Ethotron	1	pt/a	PRE	280075 a	0 f	0 e	99.8 ab	100 a
	A16003 - 60 GPA	6.84	oz/a	2-LF					
	NIS	0.25	% v/v	2-LF					
26	Ethotron	1	pt/a	PRE	205216 a-e	0 f	0 e	99.8 ab	99.3 ab
	A16003 - 60 GPA	3.42	oz/a	2-LF					
27	Ethotron	1	pt/a	PRE	243291 ab	0 f	0 e	99.1 a-d	100 a
	Moxy - 60 GPA	12	oz/a	2-LF					
28	Ethotron	1	pt/a	PRE	260715 ab	0 f	0 e	95.7 d	98.3 b
	GoalTender-60 GP/	3.99	oz/a	2-LF					

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Trt No.	Treatment Name	Rate	Appl Unit	Timing	% Weed Control 5-30-19		6/7/2019	% Injury 6-10-2019	
					VELE	HANS	Stand/A	PHYGEN	PHYSTU
1	Untreated Check				0	0	247808	0	0
2	Handweeded Check				100 a	100 a	144940 a-e	0 f	0 e
3	Zidua	1.25 oz/a		PRE	100 a	100 a	76577 e-h	16.7 ef	20 de
4	Zidua	2.5 oz/a		PRE	100 a	100 a	23471 hi	76.7 ab	80 a
5	Zidua	3.5 oz/a		PRE	100 a	100 a	50459 ghi	94.3 a	88.3 a
6	Zidua	5 oz/a		PRE	100 a	100 a	9981 i	97.7 a	95 a
7	Zidua	1.25 oz/a		PRE	100 a	100 a	156776 a-e	46.7 cd	50 b
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
8	Zidua	2.5 oz/a		PRE	100 a	100 a	55485 f-i	60 bc	46.7 bc
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
9	Zidua	3.5 oz/a		PRE	100 a	100 a	100685 d-g	81.7 ab	80 a
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
10	Zidua	5 oz/a		PRE	100 a	100 a	21649 hi	93.3 a	96.7 a
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
11	Ethotron	1 pt/a		PRE	95.7 bc	99.3 a	245372 abc	26.7 de	26.7 cd
	Zidua	1.25 oz/a		1-LF					
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
12	Ethotron	1 pt/a		PRE	96.7 bc	93.3 abc	142064 b-f	0 f	0 e
	Zidua	2.5 oz/a		1-LF					
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
13	Ethotron	1 pt/a		PRE	96.7 bc	91.7 abc	156068 a-e	0 f	0 e
	Zidua	3.5 oz/a		1-LF					
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
14	Ethotron	1 pt/a		PRE	98.9 abc	89.3 abc	240581 abc	0 f	0 e
	Zidua	5 oz/a		1-LF					
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
15	Ethotron	1 pt/a		PRE	96.1 bc	96 ab	244668 abc	0 f	0 e
	Goal Tender	3 oz/a		2-LF					
	Zidua	1.25 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
16	Ethotron	1 pt/a		PRE	96.1 bc	95 ab	238571 abc	0 f	0 e
	Goal Tender	3 oz/a		2-LF					
	Zidua	2.5 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
17	Ethotron	1 pt/a		PRE	95.7 bc	93.3 abc	212305 abc	0 f	0 e
	Goal Tender	3 oz/a		2-LF					
	Zidua	3.5 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
18	Ethotron	1 pt/a		PRE	92.2 c	92.7 abc	235176 abc	0 f	0 e
	Goal Tender	3 oz/a		2-LF					
	Zidua	5 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					

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					VELE	HANS	Stand/A	PHYGEN	PHYSTU
19	Ethotron	1	pt/a	PRE	92 c	92.7 abc	250515 abc	0 f	0 e
	A16003 - 20 GPA	3.42	oz/a	2-LF					
	NIS	0.25	% v/v	2-LF					
20	Ethotron	1	pt/a	PRE	92 c	92.7 abc	229478 abc	0 f	0 e
	A16003 - 20 GPA	6.84	oz/a	2-LF					
	NIS	0.25	% v/v	2-LF					
21	Ethotron	1	pt/a	PRE	99.4 ab	92.7 abc	211760 a-d	0 f	0 e
	A16003 - 20 GPA	3.42	oz/a	2-LF					
22	Ethotron	1	pt/a	PRE	97.1 abc	92.7 abc	248848 abc	0 f	0 e
	Moxy - 20 GPA	12	oz/a	2-LF					
23	Ethotron	1	pt/a	PRE	94.8 bc	79.3 abc	271213 a	0 f	0 e
	GoalTender-20 GP/	3.99	oz/a	2-LF					
24	Ethotron	1	pt/a	PRE	96.1 bc	85 abc	263439 ab	0 f	0 e
	A16003 - 60 GPA	3.42	oz/a	2-LF					
	NIS	0.25	% v/v	2-LF					
25	Ethotron	1	pt/a	PRE	92 c	82.7 abc	244226 abc	0 f	0 e
	A16003 - 60 GPA	6.84	oz/a	2-LF					
	NIS	0.25	% v/v	2-LF					
26	Ethotron	1	pt/a	PRE	96.1 bc	71.7 bc	230343 abc	0 f	0 e
	A16003 - 60 GPA	3.42	oz/a	2-LF					
27	Ethotron	1	pt/a	PRE	94.9 bc	68.3 c	134309 c-g	0 f	0 e
	Moxy - 60 GPA	12	oz/a	2-LF					
28	Ethotron	1	pt/a	PRE	93.3 c	72 bc	239322 abc	0 f	0 e
	GoalTender-60 GP/	3.99	oz/a	2-LF					

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					COLQ	RRPW	VELE	HANS	SHPU
1	Untreated Check				0	0	0	0	0
2	Handweeded Check				100 a	100 a	100 a	100 a	100 a
3	Zidua	1.25 oz/a		PRE	98 bcd	100 a	97.7	95 ab	100 a
4	Zidua	2.5 oz/a		PRE	100 a	100 a	100 a	100 a	100 a
5	Zidua	3.5 oz/a		PRE	100 a	100 a	100 a	100 a	100 a
6	Zidua	5 oz/a		PRE	100 a	100 a	100 a	100 a	100 a
7	Zidua	1.25 oz/a		PRE	99.8 ab	100 a	99.3 a	100 a	100 a
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
8	Zidua	2.5 oz/a		PRE	98.9 abc	100 a	99.3 a	100 a	100 a
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
9	Zidua	3.5 oz/a		PRE	100 a	100 a	100 a	100 a	100 a
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
10	Zidua	5 oz/a		PRE	100 a	100 a	100 a	100 a	100 a
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
11	Ethotron	1 pt/a		PRE	94.8 c-f	99.4 abc	95 abc	96.7 ab	93.3 b-e
	Zidua	1.25 oz/a		1-LF					
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
12	Ethotron	1 pt/a		PRE	96 cde	100 a	98 ab	87.7 ab	94.8 bcd
	Zidua	2.5 oz/a		1-LF					
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
13	Ethotron	1 pt/a		PRE	96.1 cde	100 a	97.7 ab	85 abc	96.7 bc
	Zidua	3.5 oz/a		1-LF					
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
14	Ethotron	1 pt/a		PRE	93.5 d-g	99.8 ab	98.7 ab	83.3 abc	88.4 c-f
	Zidua	5 oz/a		1-LF					
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
15	Ethotron	1 pt/a		PRE	85.2 ghi	99.4 abc	93.3 a-d	68.3 a-d	89.1 c-f
	Goal Tender	3 oz/a		2-LF					
	Zidua	1.25 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
16	Ethotron	1 pt/a		PRE	93.5 d-g	99.8 ab	95 abc	62.7 bcd	91.8 c-f
	Goal Tender	3 oz/a		2-LF					
	Zidua	2.5 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
17	Ethotron	1 pt/a		PRE	93.5 d-g	98.9 a-d	94.3 abc	68.3 a-d	89.2 c-f
	Goal Tender	3 oz/a		2-LF					
	Zidua	3.5 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
18	Ethotron	1 pt/a		PRE	85 hi	92.2 e	85 ef	43.3 d	80.7 f
	Goal Tender	3 oz/a		2-LF					
	Zidua	5 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					

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					COLQ	RRPW	VELE	HANS	SHPU
19	Ethotron	1	pt/a	PRE	85.2 ghi	92 e	85 ef	63.3 a-d	93.5 b-e
	A16003 - 20 GPA	3.42	oz/a	2-LF					
	NIS	0.25	% v/v	2-LF					
20	Ethotron	1	pt/a	PRE	81.7 i	94.8 de	83.3 f	65 a-d	94.8 bcd
	A16003 - 20 GPA	6.84	oz/a	2-LF					
	NIS	0.25	% v/v	2-LF					
21	Ethotron	1	pt/a	PRE	92 e-h	95.5 cde	90 c-f	70 a-d	85.2 def
	A16003 - 20 GPA	3.42	oz/a	2-LF					
22	Ethotron	1	pt/a	PRE	91.8 e-h	91.8 e	88.3 c-f	71.7 a-d	88.4 c-f
	Moxy - 20 GPA	12	oz/a	2-LF					
23	Ethotron	1	pt/a	PRE	90.4 e-i	96.7 b-e	87.7 c-f	67.7 a-d	89.1 c-f
	GoalTender-20 GP/	3.99	oz/a	2-LF					
24	Ethotron	1	pt/a	PRE	88.4 f-i	97.1 b-e	91.7 b-e	65 a-d	93.5 b-e
	A16003 - 60 GPA	3.42	oz/a	2-LF					
	NIS	0.25	% v/v	2-LF					
25	Ethotron	1	pt/a	PRE	90.4 e-i	99.4 abc	86.7 def	63.3 a-d	92.5 b-f
	A16003 - 60 GPA	6.84	oz/a	2-LF					
	NIS	0.25	% v/v	2-LF					
26	Ethotron	1	pt/a	PRE	86.8 ghi	93.5 de	93.3 a-d	49.3 cd	82.2 ef
	A16003 - 60 GPA	3.42	oz/a	2-LF					
27	Ethotron	1	pt/a	PRE	93.3 d-h	97.6 b-e	94.3 abc	63.3 a-d	98.9 ab
	Moxy - 60 GPA	12	oz/a	2-LF					
28	Ethotron	1	pt/a	PRE	86.1 ghi	92.2 e	85 ef	61.7 bcd	88.4 c-f
	GoalTender-60 GP/	3.99	oz/a	2-LF					

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Trt No.	Treatment Name	Rate	Appl Unit	Timing	% Injury 6-17-2019		% Weed Control 6-17-2019			
					PHYGEN	PHYSTU	COLQ	RRPW	VELE	HANS
1	Untreated Check				0	0	0	0	0	0
2	Handweeded Check				0 e	0 f	100 a	100 a	100 a	100 a
3	Zidua	1.25 oz/a	PRE		43.3 d	19.3 e	90 bcd	100 a	96.7 c	93.3 abc
4	Zidua	2.5 oz/a	PRE		88.3 b	75 c	100 a	100 a	99.8 ab	98.7 a
5	Zidua	3.5 oz/a	PRE		96.7 a	97.6 ab	100 a	100 a	100 a	100 a
6	Zidua	5 oz/a	PRE		100 a	100 a	100 a	100 a	100 a	100 a
7	Zidua	1.25 oz/a	PRE		46.7 d	30 e	98.7 a	100 a	100 a	100 a
	Goal Tender	3 oz/a	2-LF							
	Chateau	1.5 oz/a	4-6 LF							
8	Zidua	2.5 oz/a	PRE		76.7 c	50.5 d	100 a	100 a	100 a	100 a
	Goal Tender	3 oz/a	2-LF							
	Chateau	1.5 oz/a	4-6 LF							
9	Zidua	3.5 oz/a	PRE		97.7 a	93.3 b	100 a	100 a	100 a	100 a
	Goal Tender	3 oz/a	2-LF							
	Chateau	1.5 oz/a	4-6 LF							
10	Zidua	5 oz/a	PRE		100 a	100 a	100 a	100 a	100 a	100 a
	Goal Tender	3 oz/a	2-LF							
	Chateau	1.5 oz/a	4-6 LF							
11	Ethotron	1 pt/a	PRE		0 e	0 f	96.7 ab	100 a	100 a	100 a
	Zidua	1.25 oz/a	1-LF							
	Goal Tender	3 oz/a	2-LF							
	Chateau	1.5 oz/a	4-6 LF							
12	Ethotron	1 pt/a	PRE		0 e	0 f	96 ab	100 a	100 a	100 a
	Zidua	2.5 oz/a	1-LF							
	Goal Tender	3 oz/a	2-LF							
	Chateau	1.5 oz/a	4-6 LF							
13	Ethotron	1 pt/a	PRE		0 e	0 f	99.3 a	100 a	100 a	100 a
	Zidua	3.5 oz/a	1-LF							
	Goal Tender	3 oz/a	2-LF							
	Chateau	1.5 oz/a	4-6 LF							
14	Ethotron	1 pt/a	PRE		0 e	0 f	100 a	100 a	100 a	100 a
	Zidua	5 oz/a	1-LF							
	Goal Tender	3 oz/a	2-LF							
	Chateau	1.5 oz/a	4-6 LF							
15	Ethotron	1 pt/a	PRE		0 e	0 f	63.3	100 a	100 a	100 a
	Goal Tender	3 oz/a	2-LF							
	Zidua	1.25 oz/a	2-LF							
	Chateau	1.5 oz/a	4-6 LF							
16	Ethotron	1 pt/a	PRE		0 e	0 f	94.3 abc	100 a	99.8 ab	99.3 a
	Goal Tender	3 oz/a	2-LF							
	Zidua	2.5 oz/a	2-LF							
	Chateau	1.5 oz/a	4-6 LF							
17	Ethotron	1 pt/a	PRE		0 e	0 f	93.7 abc	99.3 ab	100 a	100 a
	Goal Tender	3 oz/a	2-LF							
	Zidua	3.5 oz/a	2-LF							
	Chateau	1.5 oz/a	4-6 LF							
18	Ethotron	1 pt/a	PRE		0 e	0 f	95.3 ab	100 a	100 a	96.7 ab
	Goal Tender	3 oz/a	2-LF							
	Zidua	5 oz/a	2-LF							
	Chateau	1.5 oz/a	4-6 LF							

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Dry Bulb Onion Herbicide Efficacy - Arlington, WI - 2019

Trt No.	Treatment Name	Rate	Unit	Appl Timing	% Injury 6-17-2019		% Weed Control 6-17-2019			
					PHYGEN	PHYSTU	COLQ	RRPW	VELE	HANS
19	Ethotron	1	pt/a	PRE	0 e	0 f	83.3 d	97.7 abc	85.2 de	83.3 abc
	A16003 - 20 GPA	3.42	oz/a	2-LF						
	NIS	0.25	% v/v	2-LF						
20	Ethotron	1	pt/a	PRE	0 e	0 f	85 d	95 c	81.7 e	72.7 bcd
	A16003 - 20 GPA	6.84	oz/a	2-LF						
	NIS	0.25	% v/v	2-LF						
21	Ethotron	1	pt/a	PRE	0 e	0 f	86.7 cd	96.7 bc	88.4 de	75 a-d
	A16003 - 20 GPA	3.42	oz/a	2-LF						
22	Ethotron	1	pt/a	PRE	0 e	0 f	100 a	100 a	99.4 ab	100 a
	Moxy - 20 GPA	12	oz/a	2-LF						
23	Ethotron	1	pt/a	PRE	0 e	0 f	86.7 cd	100 a	98.5 bc	93.3 abc
	GoalTender-20 GP/	3.99	oz/a	2-LF						
24	Ethotron	1	pt/a	PRE	0 e	0 f	83.3 d	98.3 ab	87 de	70 cd
	A16003 - 60 GPA	3.42	oz/a	2-LF						
	NIS	0.25	% v/v	2-LF						
25	Ethotron	1	pt/a	PRE	0 e	0 f	86.7 cd	98.3 ab	86.8 de	71.7 bcd
	A16003 - 60 GPA	6.84	oz/a	2-LF						
	NIS	0.25	% v/v	2-LF						
26	Ethotron	1	pt/a	PRE	0 e	0 f	75 e	97.7 abc	90.4 d	53.3 d
	A16003 - 60 GPA	3.42	oz/a	2-LF						
27	Ethotron	1	pt/a	PRE	0 e	0 f	99.3 a	100 a	99.8 ab	100 a
	Moxy - 60 GPA	12	oz/a	2-LF						
28	Ethotron	1	pt/a	PRE	0 e	0 f	85 d	100 a	99.8 ab	91.7 abc
	GoalTender-60 GP/	3.99	oz/a	2-LF						

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Dry Bulb Onion Herbicide - Arl., WI - 2019				6/17/2019					
Trt	Treatment	Rate	Appl	% Control	% Injury 7-2-2019		% Weed Control 7-2-19		
No.	Name	Rate	Unit	Timing	SHPU	PHYGEN	PHYSTU	COLQ	RRPW
1	Untreated Check				0	0	0	0	0
2	Handweeded Check				100 a	0 g	0 g	100 a	100 a
3	Zidua	1.25 oz/a		PRE	100 a	30 f	0 g	70.3 ghi	93.3 b
4	Zidua	2.5 oz/a		PRE	100 a	70 d	49.3 b	99.4 ab	100 a
5	Zidua	3.5 oz/a		PRE	100 a	83.3 bc	33.1 cd	99.8 ab	100 a
6	Zidua	5 oz/a		PRE	100 a	98 a	85.2 a	99.8 ab	100 a
7	Zidua	1.25 oz/a		PRE	100 a	30 f	10 f	90.4 cde	100 a
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
8	Zidua	2.5 oz/a		PRE	100 a	73.3 cd	15.9 e	100 a	100 a
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
9	Zidua	3.5 oz/a		PRE	100 a	91.7 ab	27.2 d	100 a	100 a
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
10	Zidua	5 oz/a		PRE	100 a	98.7 a	97.6 a	100 a	100 a
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
11	Ethotron	1 pt/a		PRE	98.3 ab	0 g	0 g	88.9 c-f	100 a
	Zidua	1.25 oz/a		1-LF					
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
12	Ethotron	1 pt/a		PRE	100 a	0 g	0 g	90.4 cde	100 a
	Zidua	2.5 oz/a		1-LF					
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
13	Ethotron	1 pt/a		PRE	100 a	0 g	0 g	90.4 cde	100 a
	Zidua	3.5 oz/a		1-LF					
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
14	Ethotron	1 pt/a		PRE	100 a	0 g	0 g	90 cde	100 a
	Zidua	5 oz/a		1-LF					
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
15	Ethotron	1 pt/a		PRE	93.3 abc	0 g	0 g	66.7 hij	100 a
	Goal Tender	3 oz/a		2-LF					
	Zidua	1.25 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
16	Ethotron	1 pt/a		PRE	95 abc	0 g	0 g	80.7 c-h	100 a
	Goal Tender	3 oz/a		2-LF					
	Zidua	2.5 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
17	Ethotron	1 pt/a		PRE	98.3 ab	0 g	0 g	71 f-i	100 a
	Goal Tender	3 oz/a		2-LF					
	Zidua	3.5 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
18	Ethotron	1 pt/a		PRE	91.7 bcd	0 g	0 g	70.8 ghi	100 a
	Goal Tender	3 oz/a		2-LF					
	Zidua	5 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					

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Dry Bulb Onion Herbicide - Arl., WI - 2019				6/17/2019					
Trt No.	Treatment Name	Rate	Appl Unit	% Control	% Injury 7-2-2019			% Weed Control 7-2-19	
			Timing	SHPU	PHYGEN	PHYSTU	COLQ	RRPW	
19	Ethotron	1 pt/a	PRE	93.3 abc	53.3 e	39.2 bc	88.4 c-g	95 ab	
	A16003 - 20 GPA	3.42 oz/a	2-LF						
	NIS	0.25 % v/v	2-LF						
20	Ethotron	1 pt/a	PRE	91 b-e	83.3 bc	80 a	94.8 bc	96.7 ab	
	A16003 - 20 GPA	6.84 oz/a	2-LF						
	NIS	0.25 % v/v	2-LF						
21	Ethotron	1 pt/a	PRE	83.3 e	56.7 e	34.3 cd	54.7 ij	86.7 c	
	A16003 - 20 GPA	3.42 oz/a	2-LF						
22	Ethotron	1 pt/a	PRE	100 a	0 g	0 g	99.4 ab	99.3 ab	
	Moxy - 20 GPA	12 oz/a	2-LF						
23	Ethotron	1 pt/a	PRE	94.3 abc	0 g	0 g	73.5 e-i	100 a	
	GoalTender-20 GP/	3.99 oz/a	2-LF						
24	Ethotron	1 pt/a	PRE	85 de	56.7 e	42.2 bc	80.2 d-h	100 a	
	A16003 - 60 GPA	3.42 oz/a	2-LF						
	NIS	0.25 % v/v	2-LF						
25	Ethotron	1 pt/a	PRE	90 cde	86.7 ab	80 a	93.5 bcd	100 a	
	A16003 - 60 GPA	6.84 oz/a	2-LF						
	NIS	0.25 % v/v	2-LF						
26	Ethotron	1 pt/a	PRE	85 de	53.3 e	42.2 bc	46 j	93.3 b	
	A16003 - 60 GPA	3.42 oz/a	2-LF						
27	Ethotron	1 pt/a	PRE	100 a	0 g	0 g	94.8 bc	98.3 ab	
	Moxy - 60 GPA	12 oz/a	2-LF						
28	Ethotron	1 pt/a	PRE	96.7 abc	0 g	0 g	70.8 ghi	100 a	
	GoalTender-60 GP/	3.99 oz/a	2-LF						

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Dry Bulb Onion Herbicide Efficacy - Arlington, WI - 2019					7/12/2019				
Trt	Treatment	Rate	Appl	% Wd Control 7-2-19		% Injury 7-12-2019		% Control	
No.	Name	Rate	Unit	Timing	VELE	HANS	PHYGEN	PHYSTU	COLQ
1	Untreated Check				0	0	0	0	0
2	Handweeded Check				100 a	100 a	0 i	0 h	100 a
3	Zidua	1.25 oz/a		PRE	83.3 b	79 cd	20.2 def	0 h	36.7 def
4	Zidua	2.5 oz/a		PRE	93.3 a	89.8 a-d	76.4 ab	33 cd	93.3 a
5	Zidua	3.5 oz/a		PRE	100 a	98.9 ab	85.8 a	31.1 cd	93.3 a
6	Zidua	5 oz/a		PRE	100 a	100 a	97 a	39.3 bc	100 a
7	Zidua	1.25 oz/a		PRE	100 a	100 a	18.3 ef	1.2 g	86.7 ab
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
8	Zidua	2.5 oz/a		PRE	100 a	100 a	55.3 abc	15.9 ef	100 a
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
9	Zidua	3.5 oz/a		PRE	100 a	100 a	93.3 a	31.8 cd	100 a
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
10	Zidua	5 oz/a		PRE	100 a	100 a	99.3 a	88.8 a	100 a
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
11	Ethotron	1 pt/a		PRE	100 a	100 a	3.9 gh	0 h	86.7 ab
	Zidua	1.25 oz/a		1-LF					
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
12	Ethotron	1 pt/a		PRE	100 a	100 a	0 i	0 h	91 ab
	Zidua	2.5 oz/a		1-LF					
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
13	Ethotron	1 pt/a		PRE	100 a	100 a	0 i	0 h	94.3 a
	Zidua	3.5 oz/a		1-LF					
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
14	Ethotron	1 pt/a		PRE	100 a	100 a	0 i	0 h	88.3 ab
	Zidua	5 oz/a		1-LF					
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
15	Ethotron	1 pt/a		PRE	100 a	100 a	1.2 hi	0 h	48.3 c-f
	Goal Tender	3 oz/a		2-LF					
	Zidua	1.25 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
16	Ethotron	1 pt/a		PRE	100 a	100 a	0 i	0 h	66.7 bc
	Goal Tender	3 oz/a		2-LF					
	Zidua	2.5 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
17	Ethotron	1 pt/a		PRE	100 a	100 a	0 i	0 h	66.7 bc
	Goal Tender	3 oz/a		2-LF					
	Zidua	3.5 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
18	Ethotron	1 pt/a		PRE	100 a	100 a	0 i	0 h	60 cd
	Goal Tender	3 oz/a		2-LF					
	Zidua	5 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					

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Dry Bulb Onion Herbicide Efficacy - Arlington, WI - 2019					7/12/2019				
Trt No.	Treatment Name		Rate Unit	Appl Timing	% Wd Control 7-2-19		% Injury 7-12-2019		% Control
					VELE	HANS	PHYGEN	PHYSTU	COLQ
19	Ethotron		1 pt/a	PRE	100 a	87.5 bcd	8.5 fg	10 f	66.7 bc
	A16003 - 20 GPA		3.42 oz/a	2-LF					
	NIS		0.25 % v/v	2-LF					
20	Ethotron		1 pt/a	PRE	100 a	93.3 abc	52 a-d	63.2 ab	86.7 ab
	A16003 - 20 GPA		6.84 oz/a	2-LF					
	NIS		0.25 % v/v	2-LF					
21	Ethotron		1 pt/a	PRE	100 a	87.5 bcd	20.9 c-f	22.9 cde	30 fg
	A16003 - 20 GPA		3.42 oz/a	2-LF					
22	Ethotron		1 pt/a	PRE	94.3 a	100 a	0 i	0 h	100 a
	Moxy - 20 GPA		12 oz/a	2-LF					
23	Ethotron		1 pt/a	PRE	96.7 a	98.9 ab	0 i	0 h	23.3 fg
	GoalTender-20 GP/		3.99 oz/a	2-LF					
24	Ethotron		1 pt/a	PRE	100 a	63.9 de	18.3 ef	20.9 de	56.7 cde
	A16003 - 60 GPA		3.42 oz/a	2-LF					
	NIS		0.25 % v/v	2-LF					
25	Ethotron		1 pt/a	PRE	100 a	96.3 abc	59.4 ab	63.2 ab	91 ab
	A16003 - 60 GPA		6.84 oz/a	2-LF					
	NIS		0.25 % v/v	2-LF					
26	Ethotron		1 pt/a	PRE	100 a	41.9 e	30 b-e	18.3 def	10 g
	A16003 - 60 GPA		3.42 oz/a	2-LF					
27	Ethotron		1 pt/a	PRE	93.3 a	100 a	0 i	0 h	91.7 ab
	Moxy - 60 GPA		12 oz/a	2-LF					
28	Ethotron		1 pt/a	PRE	100 a	93.3 abc	0 i	0 h	33.3 efg
	GoalTender-60 GP/		3.99 oz/a	2-LF					

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Dry Bulb Onion Herbicide Efficacy - Arlington, WI - 2019

Trt No.	Treatment Name	Rate	Appl Unit	Timing	% Weed Control 7-12-2019				Yield 9-6-2019
					RRPW	VELE	HANS	COPU	tons/A
1	Untreated Check				0	0	0	0	1.418
2	Handweeded Check				100 a	100 a	100 a	100 a	24.866 ab
3	Zidua	1.25 oz/a		PRE	86.2 a	50 d	68.3 bc	93.3 ab	3.519 ij
4	Zidua	2.5 oz/a		PRE	100 a	65 cd	81.7 abc	100 a	4.596 ij
5	Zidua	3.5 oz/a		PRE	100 a	96.7 a	93.3 abc	100 a	3.086 ij
6	Zidua	5 oz/a		PRE	100 a	100 a	100 a	100 a	1.423 j
7	Zidua	1.25 oz/a		PRE	100 a	100 a	100 a	100 a	13.032 efg
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
8	Zidua	2.5 oz/a		PRE	100 a	100 a	100 a	100 a	8.930 ghi
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
9	Zidua	3.5 oz/a		PRE	100 a	100 a	100 a	100 a	2.911 j
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
10	Zidua	5 oz/a		PRE	100 a	100 a	100 a	100 a	0.917 j
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
11	Ethotron	1 pt/a		PRE	100 a	100 a	100 a	100 a	19.655 bcd
	Zidua	1.25 oz/a		1-LF					
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
12	Ethotron	1 pt/a		PRE	100 a	100 a	100 a	100 a	26.959 a
	Zidua	2.5 oz/a		1-LF					
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
13	Ethotron	1 pt/a		PRE	100 a	100 a	100 a	100 a	24.769 ab
	Zidua	3.5 oz/a		1-LF					
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
14	Ethotron	1 pt/a		PRE	100 a	100 a	100 a	100 a	22.341 abc
	Zidua	5 oz/a		1-LF					
	Goal Tender	3 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
15	Ethotron	1 pt/a		PRE	100 a	100 a	100 a	100 a	17.344 cde
	Goal Tender	3 oz/a		2-LF					
	Zidua	1.25 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
16	Ethotron	1 pt/a		PRE	100 a	100 a	100 a	100 a	20.522 bcd
	Goal Tender	3 oz/a		2-LF					
	Zidua	2.5 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
17	Ethotron	1 pt/a		PRE	100 a	100 a	100 a	100 a	20.517 bcd
	Goal Tender	3 oz/a		2-LF					
	Zidua	3.5 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					
18	Ethotron	1 pt/a		PRE	100 a	100 a	100 a	100 a	15.444 def
	Goal Tender	3 oz/a		2-LF					
	Zidua	5 oz/a		2-LF					
	Chateau	1.5 oz/a		4-6 LF					

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Dry Bulb Onion Herbicide Efficacy - Arlington, WI - 2019

Trt No.	Treatment Name	Rate	Unit	Appl Timing	% Weed Control 7-12-2019				Yield 9-6-2019
					RRPW	VELE	HANS	COPU	tons/A
19	Ethotron	1	pt/a	PRE	89.8 a	90 ab	76.7 abc	90 ab	5.692 hij
	A16003 - 20 GPA	3.42	oz/a	2-LF					
	NIS	0.25	% v/v	2-LF					
20	Ethotron	1	pt/a	PRE	93.3 a	100 a	96.7 a	95 ab	2.819 j
	A16003 - 20 GPA	6.84	oz/a	2-LF					
	NIS	0.25	% v/v	2-LF					
21	Ethotron	1	pt/a	PRE	62.4 b	91.7 ab	73.3 abc	81.7 b	5.457 hij
	A16003 - 20 GPA	3.42	oz/a	2-LF					
22	Ethotron	1	pt/a	PRE	100 a	71.7 bc	100 a	51.7 c	23.905 ab
	Moxy - 20 GPA	12	oz/a	2-LF					
23	Ethotron	1	pt/a	PRE	100 a	96.7 a	95 ab	98.3 a	10.905 fgh
	GoalTender-20 GP/	3.99	oz/a	2-LF					
24	Ethotron	1	pt/a	PRE	95 a	100 a	66.7 c	93.3 ab	11.948 efg
	A16003 - 60 GPA	3.42	oz/a	2-LF					
	NIS	0.25	% v/v	2-LF					
25	Ethotron	1	pt/a	PRE	98.3 a	100 a	83.3 abc	95 ab	1.738 j
	A16003 - 60 GPA	6.84	oz/a	2-LF					
	NIS	0.25	% v/v	2-LF					
26	Ethotron	1	pt/a	PRE	86.6 a	96.7 a	36.7 d	96.7 ab	3.366 ij
	A16003 - 60 GPA	3.42	oz/a	2-LF					
27	Ethotron	1	pt/a	PRE	96.6 a	86.7 ab	100 a	41.7 c	15.331 def
	Moxy - 60 GPA	12	oz/a	2-LF					
28	Ethotron	1	pt/a	PRE	96.6 a	100 a	83.3 abc	100 a	13.613 efg
	GoalTender-60 GP/	3.99	oz/a	2-LF					

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