

## Processing Pea Herbicide Efficacy 2019

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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: early pea 'PLS304' (1340 heat units), mid pea 'PLS167' (1450 heat units)

Date Planted: 5-4-2019

Row Spacing: 7.5 inches

Plant Spacing: 1.5" in row

Date Harvested: early pea - 7/8/19, mid pea - 7/11/19

Plot Size-Design: 12' x 20', 3 reps

Rating Dates: 6/3, 6/10, 7/8

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

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

Application Equipment: tractor mounted air-pressure sprayer. GPA 20, PSI 27, MPH 3.3,

Nozzle - XR8003VS, Nozzle spacing 18", Height 18".

### Herbicide Application Data:

Date	5/4/19	
Time	6:00 pm	
Treatment	PREPRE	
Soil Moisture		
	SF	dry
	1"	moist
	3"	moist
Soil Temp (F°)		
	SF	64.0
	3"	62.0
Air Temp (F°)		67.3
Wind (mph/dir.)		4.0 SW
%RH		48.3%
Sky Condition (% clouds)		100%
Crop Stage		seed
Weed & Size		-----

*Summary:* This trial was set up to evaluate the potential for the active ingredient flumioxazin as a herbicide in Wisconsin processing peas. Identical treatments were applied to two varieties including both an early (PLS304 - 1340 heat units) and a mid-season (PLS167 - 1450 heat units) processing pea. 2019 was likely a worst case scenario for injury from a pre-emergence herbicide application as 5.85 inches of rain was received after application during the month of May (multiple rain events and a single event of 2.2 inches). High levels of injury were observed in all Chateau treatments with degree of injury increasing with rate of application. Resulting crop stand and yield were negatively affected suggesting even from only one year of data that the risk of crop injury is too great to actively pursue the use of flumioxazin on processing pea at rates of 1 oz/A or greater.

### Notes:

#### Weed Abbreviations

COLQ = Common Lambsquarter

LASW = Ladysthumb Smartweed

SHPU = Shepherds Purse

VELE = Velvetleaf

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-----Early Season Processing Pea PLS304 (1340 heat units)-----

Trt No.	Treatment Name	Rate	Appl Unit	6-3-2019 early pea		6-10-2019 early pea	
				PHYTO	Stand	PHYTO	Stand
				% Injury	Plants/A	% Injury	Plants/A
1	UTC - Weedy			0	413530	0	437923
2	UTC-Handweeded			0 d	425146 a	0 c	404237 a
3	Lorox	1.5 lb/a	PREPRE	0 d	423984 a	0 c	428630 a
4	Optill	1.5 oz/a	PREPRE	0 d	425146 a	0 c	398429 a
5	Chateau	1 oz/a	PREPRE	56.7 c	123130 b	75 b	199795 b
6	Chateau	2 oz/a	PREPRE	87 b	78989 bc	91.7 a	176563 b
7	Chateau	3 oz/a	PREPRE	95 a	52272 c	94.3 a	145200 b

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

Trt No.	Treatment Name	Rate	Appl Unit	early-season pea				Yield 7-8-2019 tons/A
				% Weed Control 6-10-2019				
				COLQ	VELE	LASW	SHPU	
1	UTC - Weedy			0	0	0	0	2.189
2	UTC-Handweeded			100 -	100 -	100 -	100 -	2.484 a
3	Lorox	1.5 lb/a	PREPRE	98.3 -	96.7 -	98.3 -	100 -	2.756 a
4	Optill	1.5 oz/a	PREPRE	100 -	100 -	100 -	100 -	2.524 a
5	Chateau	1 oz/a	PREPRE	100 -	100 -	100 -	100 -	1.199 b
6	Chateau	2 oz/a	PREPRE	100 -	100 -	100 -	100 -	0.548 bc
7	Chateau	3 oz/a	PREPRE	100 -	100 -	100 -	100 -	0.363 c

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

-----Mid-Season Processing Pea PLS167 (1450 heat units)-----

Trt No.	Treatment Name	Rate	Appl Unit	6-3-2019 mid pea		6-10-2019 mid pea	
				PHYTO	Stand	PHYTO	Stand
				% Injury	Plants/A	% Injury	Plants/A
1	UTC - Weedy			0	458832	0	521558
2	UTC-Handweeded			0 c	469286 a	0 d	496003 a
3	Lorox	1.5 lb/a	PREPRE	0 c	444893 a	0 d	520397 a
4	Optill	1.5 oz/a	PREPRE	6.7 c	463478 a	0 d	462317 a
5	Chateau	1 oz/a	PREPRE	70 b	218381 b	75 c	256714 bc
6	Chateau	2 oz/a	PREPRE	93.3 a	92928 c	91.7 b	183533 c
7	Chateau	3 oz/a	PREPRE	96 a	65050 c	96 a	189341 c

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

Trt No.	Treatment Name	Rate	Appl Unit	mid-season pea				Yield 7-8-2019 tons/A
				% Weed Control 6-10-2019				
				COLQ	VELE	LASW	SHPU	
1	UTC - Weedy			0	0	0	0	2.069
2	UTC-Handweeded			100 -	100 -	100 -	100 -	1.418 b
3	Lorox	1.5 lb/a	PREPRE	100 -	90 -	96.7 -	100 -	2.048 a
4	Optill	1.5 oz/a	PREPRE	100 -	100 -	100 -	100 -	1.732 ab
5	Chateau	1 oz/a	PREPRE	100 -	90 -	100 -	100 -	0.565 c
6	Chateau	2 oz/a	PREPRE	100 -	92.5 -	100 -	100 -	0.524 c
7	Chateau	3 oz/a	PREPRE	100 -	100 -	100 -	100 -	0.247 c

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