

Cirpreme XC (florasulam+halauxifen+clopyralid) In The Peace River Region of Canada

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Introduction

Timothy is the third largest grass seed crop grown in western Canada. Timothy seed growers and companies require registration of herbicides that are safe on stands to ensure high quality seed production. Cirpreme XC (florasulam+ halauxifen + clopyralid) is a Corteva Agriscience herbicide for annual and perennial broadleaf weed control in wheat and barley. Cirpreme XC is a mixture of two Group 4 (halauxifen+clopyralid) and one Group 2 (florasulam) active ingredients providing a wide spectrum of weed control.

Cirpreme XC provides control of many hard-to-kill broadleaf weeds including Canada thistle and scentless chamomile, and also provides suppression of night-flowering catchfly and white cockle. The addition of MCPA ester to Cirpreme XC increases the number of broadleaf weeds controlled.

Objective

To evaluate the effects of Cirpreme XC with and without MCPA ester on established timothy grown for seed production.



Figure 1. Timothy herbicide and growth regulator trials.



Figure 2. Swathing timothy herbicide tolerance trials.

Materials and Methods

Four field research trials were conducted on grower's fields in the Peace River Region of Alberta from 2019 to 2022. Cirpreme XC was applied at 1x and 2x registered rate used in wheat and barley. Cirpreme XC 1x was also applied with MCPA ester.

Table 1. Treatments applied to established timothy in the spring.

Treatment	Active Ingredient (AI)	Concentration	AI Rate (kg/ha)
Cirpreme XC+Agral 90 1x	halauxifen	20%	0.005
	florasulam	20%	0.005
	clopyralid	600 g/l	0.075
	Agral 90		0.25% v/v
Cirpreme XC+ Agral 90 1x	halauxifen	20%	0.01
	florasulam	20%	0.01
	clopyralid	600 g/l	0.15
	Agral 90		0.25% v/v
Cirpreme XC+MCPA ester 1x	halauxifen	20%	0.005
	florasulam	20%	0.005
	clopyralid	600 g/l	0.075
	MCPA ester	600 g/l	0.350

- Experimental design was a randomized complete block design with four replications. Plot size was 3m x 10m.
- Treatments were applied with a 2-meter handheld boom (4 TeeJet 80001 nozzles) pressurized by a propane sprayer. The sprayer and walking speed were calibrated to provide 100 l/ha of water at a pressure of 270 kPa.
- Treatments were applied the third week of May each year prior to or early stem elongation stage of timothy.
- Visual crop tolerance ratings were conducted at three dates throughout the year but were generally 7 days after treatment (DAT), 28 DAT and prior to harvest.
- Harvesting was done by swathing down the middle of each plot with a Zurn 540 High Clearance Tool Carrier and then thrashed with a WinterSteiger plot combine with a pickup header generally a week after swathing. Harvested area was 15 m².
- Samples are dried, cleaned and weighed to determine seed yield and dockage. Germinations and 1000 SWT were conducted.
- Data was statistically analyzed using ANOVA means separation using (P=.05), Student-Newman-Keuls.

Results

Spring applied Cirpreme XC at 1x and 2x registered rates used in wheat and barley crops applied to established timothy did not result in any visual damage over the four-year period of the study. There were no significant differences in seed yields between the check and both rates of Cirpreme XC with or without MCPA ester in all years.

Although a non-significant variation in seed yield between Cirpreme XC+MCPA ester and the check were observed, there was a strong trend of seed yield reduction with the addition of MCPA ester to Cirpreme XC at two of the four sites. Although data is not shown none of the Cirpreme XC treatments with or without MCPA ester affected seed germination and 1000 SWT.

Table 2. Seed yields (kg/ha) of timothy following applications of Cirpreme XC over four years.

Treatment	2019	2020	2021	2022
Cirpreme XC+Agral 90 1x	546	602	273	531
Cirpreme XC+Agral 90 2x	537	531	268	513
Cirpreme XC+MCPA ester	517	560	230	483
Check	573	565	268	519
CV%	13.4	5.1	8.5	6.6
LSD P=.05	NSD	NSD	NSD	NSD

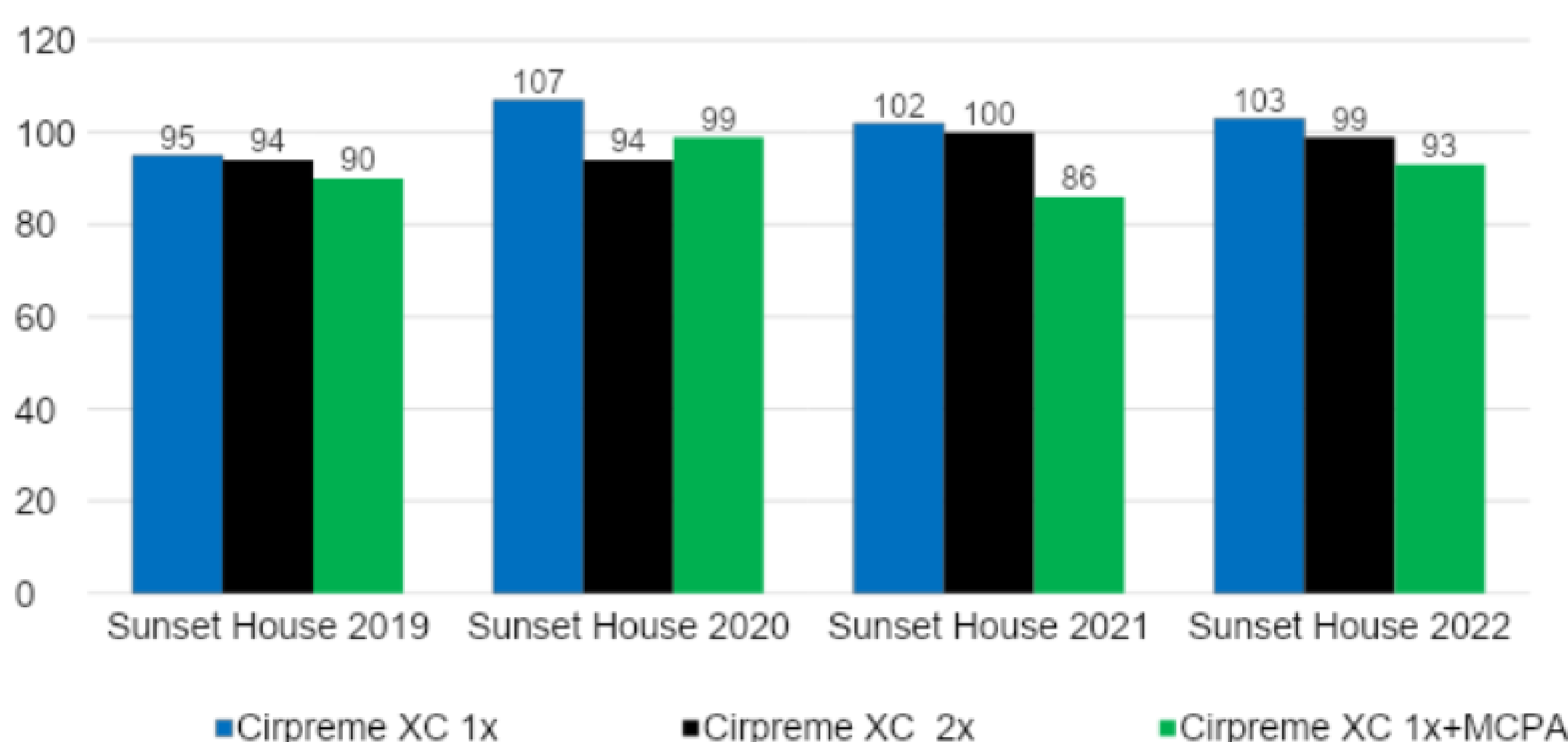


Figure 3. Tolerance of established timothy seed crops to Cirpreme XC with and without MCPA Ester (% Seed Yield of Check).

Summary

Cirpreme XC alone shows good potential for use on timothy grown for seed production and should be considered for a User Requested Minor Use Label Expansion. The addition of MCPA ester to Cirpreme XC 1x appeared to slightly lower timothy seed yields.



Figure 4. Combining herbicide tolerance trials on timothy.

Acknowledgements

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