Herbicides for perennial weed control in raspberry
Final Report

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Take home message

We evaluated the effect of quinclorac applied as a fall application for the control of perennial weeds on brambles. Quinclorac was applied by itself and tank-mixed with other herbicides that are labeled for use on raspberries. All treatments showed to be safe for use on raspberries in tank-mix with quinclorac. Results showed that quinclorac mixed with flumioxazin (Chateau) has potential for the control of honeyvine milkweed and other perennial weeds. Further research is needed to confirm these results, and the effects the treatments used in this experiment will have followed by a spring application of quinclorac.

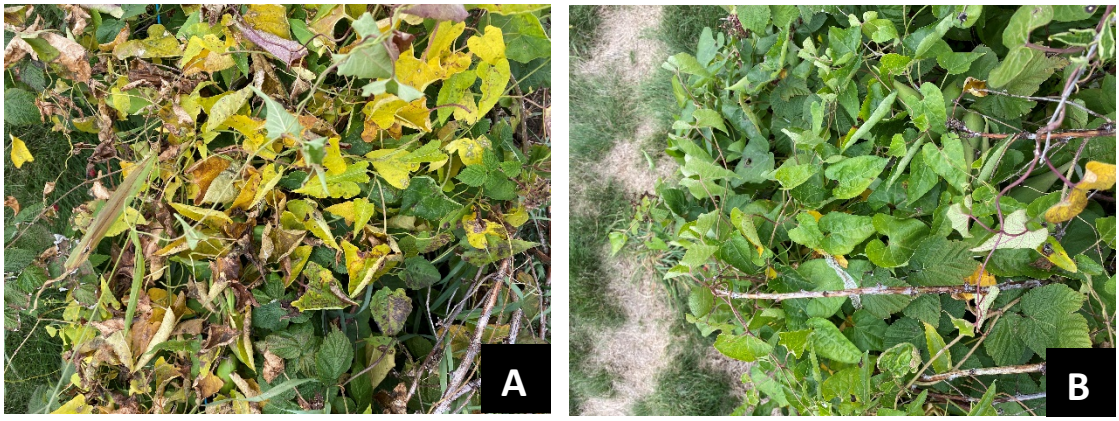
Methods

One experiment was established at the Champaign Berry Farm in Urbana, OH to determine the best herbicide tank mixes to control perennial weeds and vines in raspberries. The experimental design was a randomized complete block with four replications. A total of four herbicides were tested in a tank mix with quinclorac and quinclorac by itself. Herbicides tested in the experiment included: Callisto (mesotrione), Chateau (flumioxazin), Matrix (rimsulfuron), Sinbar (terbacil) and Quinstar (quinclorac) applied during fall before the first killing frost. All treatments included a crop oil concentrate.

A second research site at the Mauer Fruit Farm has been scheduled to start in Spring 2021. Results from this research will not be available until Fall 2021.

Results

Visual assessments were made at 1, 2 and 4 weeks after the treatments (WAT) were applied on 9/30/2020. One more evaluation is scheduled in early spring. Weed control and crop injury were evaluated during every visual assessment on a scale of 0-100%, with 100% being complete weed control or crop injury. The plots were established in a section of the farm that is heavily infested with honeyvine milkweed. Results show that plots treated with quinclorac + flumioxazin (treatment #3) have the best control of honeyvine milkweed overall, causing the vines to wilt and leaf chlorosis. Weakening the vines with a late fall application could be key for a better control of vining weeds in the spring. All other treatments provided some weed control ranging between 20-30% (table 1). All treatments were safe to the crop and raspberries did not show herbicide injury.



Honeyvine milkweed treated with Chateau + Quinstar (A) and Untreated (B) at 1 WAT.

Table 1. Response of some common weeds to herbicides used in raspberry

Trt No.	Treatment	Rate	Honeyvine milkweed Control %						Pennycress Control %						Oxalis Control %					
			9/30/2020		10/7/2020		10/21/2020		9/30/2020		10/7/2020		10/21/2020		9/30/2020		10/7/2020		10/21/2020	
1	Untreated	. .	0	c	0	b	0	b	0	a	0	a	0	a	0	a	0	b	0	a
2	Callisto Facet COC	6 fl oz/a 0.375 lb ai/a 2 pt/a	22.5	bc	22.5	b	50	a	1.3	a	25	a	12.5	a	0	a	0	b	0	a
3	Chateau Facet COC	6 oz wt/a 0.375 lb ai/a 2 pt/a	70	a	62.5	a	68.8	a	0	a	10	a	25	a	5	a	0	b	10	a
4	Matrix Facet COC	4 oz wt/a 0.375 lb ai/a 2 pt/a	30	b	16.3	b	51.3	a	1.3	a	3.3	a	25	a	0	a	0	b	0	a
5	Sinbar Facet COC	2 lb/a 0.375 lb ai/a 2 pt/a	20	bc	21.3	b	52.5	a	0	a	1.3	a	0	a	1.3	a	5	a	37.5	a
6	Facet COC	0.375 lb ai/a 2 pt/a	22.5	bc	21.3	b	57.5	a	0	a	1.7	a	0	a	0	a	0	b	0	a

Note: Evaluations at 4 WAT happened after the first killing frost, it was difficult to differentiate between injury caused by frost or the treatments.