Comparative performance of Group 14 herbicides against advanced milk thistle

Trial location: Spring Ridge

Weed target: Advanced (flowering) milk thistle at application

Secondary germination of deadnettle occurred after herbicide application, so residual activity was assessed on this species at 25 days after application (DAA)

100L/ha Rain water 110015 AIXR @ 2 Bar 6km/hr 3 Reps

	Date	Weed size	Time	Temp	RH%	Delta T
Timing 1	10/09/2025	Flowering	10am	20°C	65%	4.7

Objectives of the trial

- Understand the relative performance of Group 14 standards at high and low label rates +/- paraquat
- How does epyrifenacil compare to existing standards at 'expected' use rates.

Milk thistle at application was well outside of the labelled growth rate for these contact herbicides. Readers should concentrate on the relativity between herbicide treatments and not expect these treatments to deliver full control of weeds of this size and maturity.

All treatments had 1% Hasten added.		
Treatment list	**Rate**	**Active ingredient**
Carvero® **	275 mL/ha	55 g/L epyrifenacil
Sharpen®	17 g/ha	700 g/kg saflufenacil
Terrad'or®	20 g/ha	700 g/kg tiafenacil
Voraxor®	100 mL/ha	250 g/kg saflufenacil + 125g/L trifludimoxazin
Paraquat 250	1.5 L/ha	250 g/L paraquat
Paraquat 250 + Carvero **	1.5 L/ha + 185 mL/ha	
Paraquat 250 + Sharpen	1.5 L/ha +17 g/ha	
Paraquat 250 + Terrad'or	1.5 L/ha + 20 g/ha	
Paraquat 250 + Voraxor	1.5 L/ha + 100 mL/ha	
Carvero **	375 mL/ha	
Sharpen	34 g/ha	
Terrad'or	40 g/ha	
Voraxor	240 mL/ha	
Paraquat 250	3 L/ha*	
Paraquat 250 + Carvero **	1.5 L/ha + 270 mL/ha	
Paraquat 250 + Sharpen	1.5 L/ha + 34 g/ha	
Paraquat 250 + Terrad'or	1.5 L/ha + 40 g/ha	
Paraquat 250 + Voraxor	1.5 L/ha + 240 mL/ha	
Control		
Glufosinate 200 + Voraxor	3.75 L/ha + 240 mL/ha	200 g/L glufosinate

*Note that 3L is the lowest optical spot sprayer rate for paraquat - however the optical spot sprayer rate for larger milk thistle is 6-9L
** Cavero (epyrifenacil) is not yet registered. Final label use rates may differ to those included in this trial.

Trial site managed by AMPS Research on behalf of ICAN

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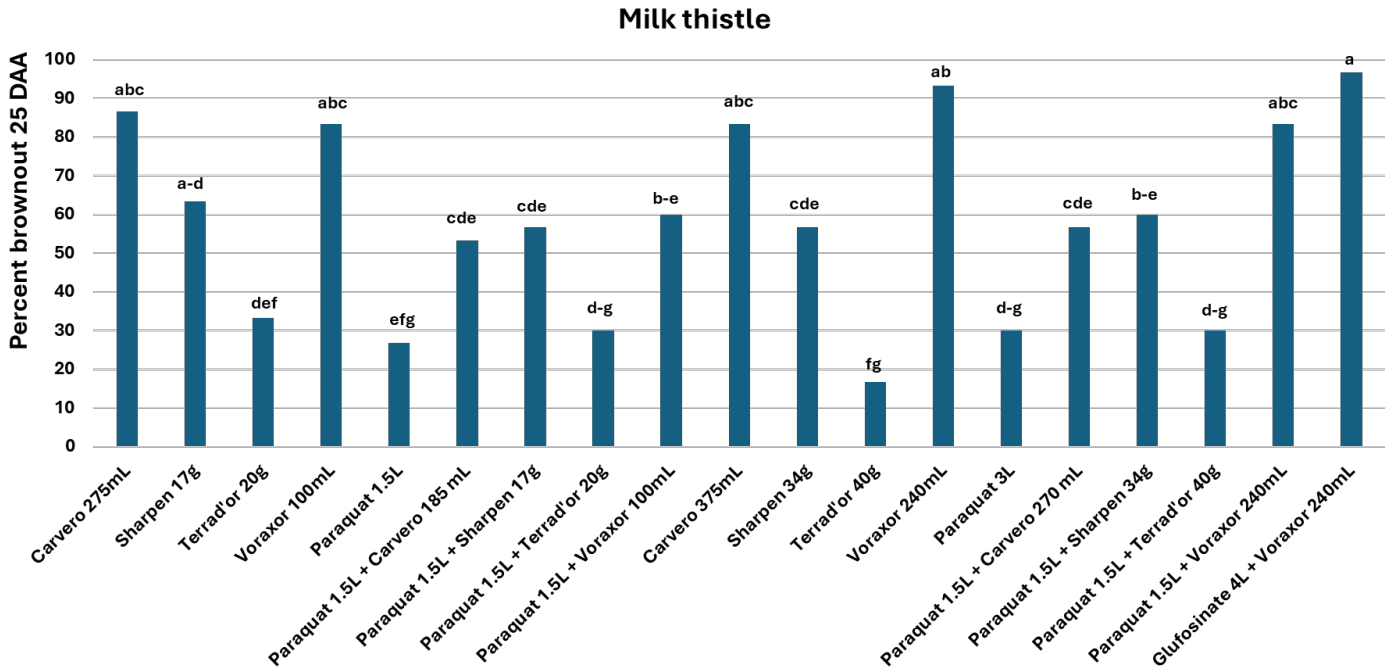
Advanced milk thistle was assessed for biomass brownout at 10 and 15 days after application (data not shown), with a final assessment at 25 DAA. Across the trial there was considerable variation, resulting in considerable statistical crossover between many treatments.



As can be seen from the graph above, paraquat alone, Terrad'or alone and paraquat + Terrad'or at both application rates failed to deliver acceptable control, with no treatments delivering more than 40% biomass brownout of the advanced plants at 25 DAA.

Carvero and Voraxor provided good levels of brownout at the 25DAA assessment when applied alone. Numerically, tank mixing paraquat with either herbicide tended to reduce control, although this was not statistically significant.

Sharpen treatments (+/- paraquat) tended to fall somewhere between the Terrad'or treatments and the Carvero or Voraxor treatments, with no dose response evident.

A subsequent germination of deadnettle (*Lamium purpureum*) occurred before the 25DAA assessment (data not shown). While there was some unevenness in germination across the trial, some observations can be made:

- Paraquat and Terrad'or alone or in combination provided very little / no residual activity against deadnettle at this assessment timing

- Sharpen at both rates (+/- paraquat) provided some useful level of residual activity at 25DAA, although control was variable between treatments. The variability across treatments may be reflective of uneven deadnettle pressure across the site.

- The four Carvero treatments (alone or with paraquat) were all rated between 7 and 9 out of 10 for residual control of deadnettle at 25DAA

- All of the four Voraxor treatments (alone or with paraquat) provided almost complete residual control of deadnettle at 25DAA.

- However, the Voraxor + glufosinate treatment (which provided the highest level of brownout of milk thistle present at application) provided very poor residual control of deadnettle, and significantly behind other Voraxor treatments even at lower application rates. This remains unexplained.

Photos of selected treatments at 25 DAA

Untreated

Paraquat 250 @ 3L/ha

Terrad'or @ 40g/ha

Voraxor @ 240 mL/ha

Sharpen @ 34g/ha

Carvero @ 375mL/ha

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Disclaimer: This document is based on the results from individual trials. Variability in product performance is expected across trials and environments. Different outcomes are possible under different trial situations; brand of herbicide applied; environmental conditions before, at and following application; sprayer setup; adjuvant choice; water quality and spray volume; weed size and weed stress; and herbicide resistance status of the population. Trials seek to build on current knowledge – therefore this summary may contain experimental use patterns that are currently not specifically labelled for all of the weed(s) targeted in the trial, or treatments applied at a weed growth stage or application timing that may differ to the product label. In some circumstances, inclusion of a particular treatment is included to demonstrate why this product should not be used in that particular situation. Any research with unregistered agricultural chemicals or of unregistered products, rates or use patterns reported in this document does not constitute a recommendation for that particular use by the authors or the authors' organisations. All agricultural chemical applications must accord with the currently registered label for that particular agricultural chemical, crop and region.

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