HERBICIDES FOR CONTROL OF OLD MAN'S BEARD

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Old man's beard (*Clematis vitalba*) is an introduced vine, first identified in New Zealand 50 years ago, and now widespread in some parts of the country. Unlike the 10 native species of *Clematis* in New Zealand, old man's beard is a quick growing deciduous plant which smothers the plants over which it grows and forms dense canopies at the top of host trees, eventually killing them. Its requirement for light has so far limited its spread to riverbanks, roadsides and open areas of bush, but it is now encroaching into areas of denser native bush and exotic forests (Anon. 1984).

Cultural methods of control are practical only where infestations are small and the vines can be pulled out by hand. Cutting large plants provides only short term relief as cut vines regrow vigorously. Control by chemical methods offers one solution to what is now recognised as a threat to New Zealand's native bush areas.

Popay (1986) achieved very good control of old man's beard by knapsack spraying with picloram (with 2,4,5-T, triclopyr or 2,4-D), clopyralid or glyphosate.

This report presents results from field trials in Canterbury, Nelson and Manawatu using different application techniques for controlling old man's beard.

TABLE 1: Percent control of old man's beard with different herbicides and methods of application.

Herbicide	Rate	% kill at date shown
Basal spray, applied 1 April 1984		March 1985
	(g ai/10 litres)	
picloram/2,4,5-T (Tordon Brushkiller)	17/68	100
picloram/triclopyr (Garlon 520)	17/68	100
High volume application, 28 March 1985		March 1986
	(g ai/100 litres)	
picloram/2,4,5-T	11/44	100
	22/88	100
clopyralid*	200	100
(Versatill)	300	100
glyphosate**	120	100
(Roundup)	240	100
	360	100
Aerial application, 24 December 1984		December 1985
	(kg ai/ha)	
picloram/2,4,5-T	0.6/2.4	60
	1.3/5.0	90
clopyralid	3.8	30
	7.5	80

* plus Multifilm X -90 at 0.25% v/v

**plus Triton X -45 at 0.25% v/v

Herbicides used, and application dates, are shown in Table 1. Methods of application were as follows:

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1. Knapsack applications of semi-concentrated chemical were made to vines growing up trees, but only the lower 2 m of the vine and foliage was treated. A 10 litre solution treated 13 to 15 trees. Percent control was assessed by classing each vine as alive or dead.
2. High volume spraying using a No. 6 tip and 1700 kPa operating pressure, applied 4000 litre/ha spray. Foliage up to 4 m high was sprayed to point of run-off. There was 100% cover of old man's beard on plots which were 40 to 50 m². Percent control was assessed by classing each vine as alive or dead.
3. In two trials, aerial applications by helicopter using standard disc and core nozzles and the half-overlapping double pass technique, applied 220 or 440 litre/ha of spray solution. Plot size was either 0.4 or 0.7 ha. Control was visually assessed on a percentage scale where 0 = no effect, as in untreated and 100 = all vines dead, no regrowth.

Results are presented in Table 1.

Picloram, with either 2,4,5-T or triclopyr applied only to the base of the vines gave complete control and effectively released the trees from competition.

High volume applications in autumn also gave excellent control with all herbicides tested.

In the two aerial application trials, picloram/2,4,5-T gave 60-90% control and clopyralid 30 to 80% control.

A wide range of both native and introduced trees and shrubs, except for some members of the Compositae and Leguminosae families are tolerant of clopyralid (Sharpe pers. comm.). For this reason clopyralid has potential for use in plantings in amenity areas such as national parks or urban parks and reserves.

Where directed basal application is feasible, picloram/2,4,5-T or glyphosate could be used around woody species which would not tolerate overall sprays.

Where control is incomplete or seedlings strike following treatment, re-application will be necessary, possibly at regular intervals for several years if the seed source is large. Establishing a competitive ground cover would probably help to suppress seedling germination.

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REFERENCES

- Anonymous, 1984. Old Man's Beard. (*Noxious Plants Council*) Brochure.
Popay, A.I., 1986. Chemical control of old man's beard (*Clematis vitalba*). *Protect, Journal of the Noxious Plants Officers Institute* 7 (3): in press.