TURF WEED CONTROL WITH CLOPYRALID HERBICIDE

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A good turf lawn is the most characteristic feature of the traditional garden and a very basic requirement for outdoor and sporting activities of New Zealanders. Turf areas occupy some 54,000 ha in New Zealand requiring \$40 million total annual maintenance costs of which weed control is an important component (Robinson 1980).

Many common problem turf weeds are members of the Compositae or Leguminosae which have been traditionally controlled by treatment with phenoxy herbicides. Increasing awareness of the requirement for selectivity to desirable ornamental and horticultural plants, compounded by the predominantly urban location of turf areas, has demonstrated a need for a herbicide selective to desirable species but effective against the common turf weeds.

Clopyralid (Versatill) is a new turf herbicide tolerated by graminaceous species and many ornamental flowers, shrubs and trees (Anon. 1987) whilst being active on a wide range of broadleaf weeds particularly genera of Compositae and Leguminosae (Anon. 1978).

Eight small scale trials were conducted on turf areas during spring and autumn 1984/85 in both the North and South Islands of New Zealand to determine the level of activity, control spectrum and potential use rates for clopyralid on a range of common problem turf weed species.

Trials were all broadcast applied using a backpack precision sprayer and hand held boom fitted with either Teejet 730-154 or 730-231 flat fan nozzles operating at 200 kpa delivering 200-250 litres/ha. Treatments were applied to 10-20 m² plots, replicated three times and randomised in complete block designs. The sites selected contained a variety of common turf weeds and were sprayed either in spring or autumn when grasses and weeds were actively growing. Standard commercial treatments were included in each trial for comparison. Visual evaluations of percent weed control were made at regular

TABLE 1: Turf weed susceptibility to clopyralid.

Weed	No trials	Rate (kg ai/ha)	Mean% control 8 weeks after treatment
white clover (<i>Trifolium repens</i>)	3	0.15	100
onehunga weed (<i>Soliva</i> spp.)	3	0.15	97
plantain (<i>Plantago</i> spp.)	1	0.15	100
dandelion (<i>Taraxacum</i> spp.)	2	0.15	100
medic (<i>Medicago</i> spp.)	1	0.30	95
daisy (<i>Bellis perennis</i>)	2	0.30	100
oxeye daisy (<i>Chrysanthemum leucanthemum</i>)	1	0.30	100
cape daisy (<i>Arctotheca calendula</i>)	1	0.30	60
hawksbeard (<i>Crepis capillaris</i>)	2	0.30	100
hawkbit (<i>Leontodon</i> spp.)	2	0.30	100
yarrow (<i>Achillea millefolium</i>)	1	0.30	90
scotch thistle (<i>Cirsium vulgare</i>)	1	0.30	100
catsear (<i>Hypochaeris</i> spp.)	1	0.45	95
sowthistle (<i>Sonchus oleraceus</i>)	1	0.60	85
ragwort (<i>Senecio jacobaea</i>)	1	0.60	95
lotus (<i>Lotus pedunculatus</i>)	1	0.60	85

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intervals for up to 16 weeks after treatment. Any phytotoxic effects on the turf grasses were noted.

Weeds found to be susceptible to clopyralid are listed in Table 1 along with the effective use rate and the control level achieved.

Weeds observed to be resistant to clopyralid were *Hydrocotyle* spp., *Oxalis* spp., chickweeds (*Cerastium* spp. and *Stellaria media*), speedwell (*Veronica* spp.), parsley piert (*Aphanes arvensis*), and creeping mallow (*Modiola caroliniana*).

No damage to coarse or fine turf grasses was observed in any of the eight trials.

As expected clopyralid was active against members of the Compositae and Leguminosae (Anon. 1978) with additional activity against the Plantaginaceae (Table 1). This spectrum of activity encompasses most common turf weeds including onehunga weed which represents a considerable nuisance in amenity turf areas (M. Barker pers. comm.).

As Table 1 shows 0.3 kg ai/ha clopyralid controlled the majority of susceptible species with the exception of catsear, sowthistle, ragwort and lotus which occur infrequently as problems in turf. Although rates as low as 0.15 kg ai/ha gave control of some important species, the broad spectrum of weeds encountered in most sites necessitates a minimum of 0.3 kg ai/ha as a standard application rate. This rate is recommended for turf weed control on the product label.

The spectrum of activity of clopyralid and its unique selectivity to many desirable plant species provides the New Zealand turf manager with a new tool to achieve safe effective weed control in turf.

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REFERENCES

- Anonymous, 1978. Lontrel, Technical Information. Dow Chemical Company. Ivon Watkins-Dow Ltd. Private Bag, New Plymouth.
- Anonymous, 1987. Versatill Herbicide, Product Information No. 12. Ivon Watkins-Dow Ltd. Private Bag, New Plymouth.
- Robinson, G.S., 1980. The importance of turf grass to New Zealanders. *Proc. 1st N.Z. Sports Turf Convention*: 1-3.