

## Chemical control of silverleaf nightshade using a ropewick applicator

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Silverleaf nightshade (*Solanum elaeagnifolium* Ca<sup>y</sup>.) is a deep-rooted perennial weed with annual summer top growth. It is widespread in the Murrumbidgee Irrigation Area and the wheat growing areas of New South Wales. Once it is established it is very difficult to eradicate. In trials over several years at Wagga Wagga, the most effective long-term control achieved has been with glyphosate or picloram plus 2, 4-D. Both these herbicides are too expensive for controlling large area infestations and the latter has undesirable soil residue characteristics. Also, both herbicides, when sprayed conventionally, kill desirable summer growing crops or pastures, i.e., they are non-selective.

Ropewick applicators were developed for selectively controlling weeds that are taller than a crop or pasture, by wiping only the weed with ropewick applicators saturated with a concentrated solution of the herbicide. This provides very efficient control as no herbicide misses the target. In the U.S.A. 95% control of silverleaf nightshade was obtained by applying glyphosate with a ropewick applicator (1).

### Methods and Results\

In April 1980 glyphosate was applied with a ropewick applicator to actively growing silverleaf nightshade in small plots (5 m x 3 m) in a summer fallow

in the Wagga Wagga district. The herbicide was applied at 2 separate concentrations, i.e., at ratios of glyphosate to water of 1:2 and 1:3. In the following spring regrowth was measured and there were 7 and 2 plants m<sup>-2</sup> in these plots respectively, compared with 19 plants m<sup>-2</sup> in the unsprayed control. Plots which were conventionally sprayed with glyphosate at 6 and 9 L product ha<sup>-1</sup> had 6 and 4 plants m<sup>-2</sup> respectively. In February, 1981, glyphosate was again tested at these dilutions in similar plots. Picloram plus 2, 4-D was included as a treatment at the ratio of product to water of 1:2. In the following spring plots treated with glyphosate at 1:2 and 1:3 had 2.6 and 1.8 plants m<sup>-2</sup>; picloram plus 2, 4-D plots had 2.5 plants m<sup>-2</sup>; and unsprayed plots had 4.7 plants m<sup>-2</sup> (LSD 5% 0.9).

### Discussion

Glyphosate applied with a rope wick applicator controlled silverleaf nightshade as effectively as conventional spraying especially at the 1:3 concentration. Only a fraction of the product was applied compared with conventional spraying although this varies with weed density, ropes used, dilution of the product etc. In one season picloram plus 2, 4-D controlled the weed as well as glyphosate. Application of both these herbicides using rope wick applicator may provide cheap, long-term control of large areas of silverleaf nightshade. Problems associated with using rope wick applicators include: control of late, short weeds; dust on the wicks may limit fluid flow; and marking areas already treated.

1. Abernathy, J.R. and Keeling, J.W. 1979. In Proc. 32nd Ann. Meet. South Weed Sci. Soc. : 380.