

CHEMICAL CONTROL OF SILVERLEAF NIGHTSHADE IN
WINTER ANNUAL PASTURES

A.R. Leys and E.G. Cuthbertson
Department of Agriculture, New South Wales

Silverleaf nightshade (*Solanum elaeagnifolium*) is a summer growing perennial weed which dries off at the first major autumn frost. This summer growth reduces soil nutrient status and affects subsequent pasture growth.

In an experiment at Wagga 2,4-D amine at 2, 4 and 8 kg a.i., fenoprop at 1, 2 and 4 kg a.i., glyphosate at 0.5, 1.0 and 2.0 kg a.i. and Dowco 290 at 0.25, 0.5 and 1.0 kg a.i. ha⁻¹ were applied to silverleaf nightshade infestations four times during the summer of 1974/75. All herbicides except Dowco 290 at 0.25 and 0.5 kg a.i. ha⁻¹ reduced plant numbers significantly as compared with the untreated control. The chemicals reduced the overall plant numbers from 5.5 to 2.4 m⁻² within 3 months of application. The response to Dowco 290 generally was slower than the response to other formulations and may have been partly due to the lower rates employed. Nevertheless, top-growth kill with all herbicides was excellent following December, January and February application dates. The response to the March application, however, was limited by the rapid onset of dormancy in the post-spraying period.

Regrowth was apparent on all December-sprayed treatments by the end of March. Recovery was significantly faster after 2,4-D and fenoprop treatments than after glyphosate and Dowco 290. Very little regeneration was observed on the January and February sprayed treatments. The reduction in the amount of regeneration in this situation appears to be due more to the onset of winter dormancy than the herbicide treatments.

Winter pasture growth was significantly better on the chemically treated plots than on the unsprayed controls. On the other hand there were no apparent differences between any of the herbicide treatments.

These preliminary results show that silverleaf nightshade can be suppressed chemically and suggest January and February as the optimum period for once-over herbicide application. The slower recovery after glyphosate and Dowco 290 seems to be due to a greater depth of root 'kill'. In this regard, heavier dose rates of the latter herbicide are warranted.

Data on root energy reserves are not yet available. However, one can reasonably expect these reserves to be lowest on the January and February sprayed treatments. Respiration losses would be minimal after the March sprays because of the early