

This pdf was served from: <http://www.nzpps.org>



A paper from
Proceedings of the 17th NZ Weed and Pest Control Conference (1964)
Copyright © 1964 The New Zealand Plant Protection Society (Incorporated)

These proceedings are a record of the papers presented at the New Zealand Plant Protection Society's Annual Conference. Papers published in *New Zealand Plant Protection* and on this website are the property of the Society. The Society reserves the right of the first publication of such papers in complete form. Following publication in *New Zealand Plant Protection*, the society has no objection to publication in condensed form, as long as the full reference to the original paper is given. Reproduction in full of any published paper can only be carried out with the permission of the Society. The Society has no objections to publishing the website location of any particular paper.

The New Zealand Plant Protection Society (Incorporated) is not responsible for statements or opinions advanced in papers and shall not be liable for the commercial performance of any products or any losses arising from the use of the information contained herein.



The NZ Plant Protection Society website is
hosted by HortNET: <http://www.hortnet.co.nz>
HortNET is an Internet-based information product of
The Horticulture and Food Research Institute of New Zealand Limited
Private Bag 11030, Palmerston North, New Zealand. Ph 64-6-356-8080

WEEDS IN THE NELSON DISTRICT

R. INCH

Instructor in Agriculture, Nelson

NELSON has been settled for a very long time. It was originally planned as one of the principal areas set out for farming and the surveys are reputed to have been planned in England. The area was settled by the pioneers after considerable struggle and hardship. Bush was cut and burned and swamps were drained, but after the original fertility induced by ashes from the forest fires declined, it was found that the soils of the area were basically poor. For this reason, many of the early settlers, finding the struggle for existence more than they could bear, moved to more fertile areas further afield.

Over the years much land has been cleared and brought into production, only to revert back eventually to manuka (*Leptospermum* spp.), gorse (*Ulex europaeus*), and bracken fern (*Pteridium esculentum*). Spanish heath (*Erica lusitanica*) came in later and with these others took possession of large tracts of the more acid soils.

With better farming knowledge and the use of both light and heavy machinery, much of the reverted land has now been brought back into production. Some of this improvement has been quite spectacular. Although there is little basically first-class land in the district, it can be seen that, between the well-farmed areas where fertility has been built up, and those waste places still uncared for, there is ample scope for weeds of all kinds to flourish. With an annual rainfall of 39 in. in Nelson to 60 to 80 in. in other parts, plus a warm and humid climate, there are few weeds that cannot be grown. Fortunately, many of them are the so-called low fertility weeds which disappear as farming methods improve and soil fertility is raised. Unfortunately, however, far the larger part of the district comprises hill country far too steep for cultivation. Even on the more rolling country, a large amount of land consists of steep gullies and sidings uneconomic for machines to work, areas that can be a continuing potential seed source for the remainder of the farm.

It is on this country that gorse is possibly the No. 1 enemy. Much labour and many gallons of 2,4,5-T have been expended over the years in controlling this pest. Some good farmers have cleared their properties, but at considerable cost. Some are working away at it, and have it under control. Others just do not bother and let it grow thicker and thicker. 2,4,5-T does not translocate and, unless the plant is wet thoroughly all over, can be disappointing in the final result.

HILL COUNTRY WEEDS

It has been demonstrated that fern and Spanish heath can be readily controlled by oversowing and adequate topdressing after a good burn. There appears to be no reason why regrowth manuka and blackberry cannot be treated in the same way. Thistles of all kinds are a different proposition on hill country and can become a serious pest. Wing thistle (*Carduus tenuiflorus*) is one of the worst. It grows readily where pastures have opened up in a dry

season or in any place where the soil has been disturbed. It is readily killed with hormone sprays, but because of its great vitality, grows readily from seed. Nodding thistle (*C. nutans*) is becoming more prevalent over a wider area and will need to be kept under better control if it is not to become a major problem. Barberry (*Berberis vulgaris*) and hawthorn (*Crateagus oxyacantha*) have a good hold in localized areas, but are gradually being brought under control. Sweet brier (*Rosa rubiginosa*) grows along most of the older roadsides and the abandoned railway line, especially at Motupiko and Tapawera. Apart from the latter places, it never seems to be aggressive. Broom (*Cytisus scoparius*) is not a serious pest. The thickest concentration appears to have spread from the railway line on to the road southwards from Glenhope. Unfortunately, no one seems responsible for doing anything about this and it is only a matter of time before it becomes firmly established in the upper reaches of the Buller River.

PASTURE WEEDS

In sown pastures there are few weeds that cannot be controlled by good husbandry. It is quite astonishing to see the number of poor species of plants disappear as the level of fertility is raised and stock management is improved. There are a few, docks (*Rumex* spp.), most thistles, ragwort (*Senecio jacobaea*), buttercups (*Ranunculus* spp.), rushes (*Juncus* spp.), which appear to thrive almost everywhere on a dairy farm. Where sheep can be introduced, thistles are the only ones to cause serious concern. It is quite surprising what can be done to rushes with drainage, white clover seed, and fertilizer.

POISONOUS WEEDS

Tutu (*Coriaria arborea*), hemlock (*Conium maculatum*) and St. John's wort (*Hypericum perforatum*) are present, but not prevalent in the area. At one time St. John's wort was apparently quite common, but it has now virtually disappeared. Odd plants of hemlock can be seen round buildings in back yards. It is hard to understand the casual attitude taken by the owners when a short time spent with a spade or a spray pump would clean it up once and for all.

Tutu as a native is widespread. In its natural state, competing with fern and small native shrubs, it does not cause much trouble. Stock apparently become accustomed to it and only occasionally does it cause any harm. It is only when a farmer begins to improve his land that the trouble begins. Like gorse, tutu responds wonderfully well to applications of phosphatic fertilizer and can become quite aggressive in a few years. It could be that it becomes more palatable also, for it certainly becomes dangerous to stock. Good kills have been noted with hormone sprays, but the time of application appears important.

CROP WEEDS

Crop spraying is done mostly on peas. Approximately 2,000 to 2,500 acres are grown annually and few would be worth harvesting without treatment for annual weeds. Redroot (*Amaranthus hybridus*), fathen (*Chenopodium album*) and black nightshade (*Solanum nigrum*) are the worst offenders.

There is one crop that Nelson appears to be able to grow — and harvest — with reasonable success — cowgrass or broad

red clover (*Trifolium pratense*). While other small-seed crops can be grown, it is not always possible to get the seed into the bag successfully. Cowgrass growth just seems to fit into the weather cycle, growing and ripening at the proper time. It is claimed that it was once possible to take seed three years running from cowgrass, but that was some time ago. The man who can now harvest two good crops is either a very good farmer, or is very lucky. One weed that is becoming very prevalent in cowgrass, one that is literally sapping the life from the plant, is broomrape (*Orobanche minor*). Broomrape is a parasite that grows on the roots of leguminous plants, though it has also been observed living on the roots of yarrow (*Achillea millefolium*), blue flowering shrub daisy (*Olearia* spp.), hawkweed (*Crepis* spp.), zinnia (Compositae), and carrot (*Daucus carota*). While it doubtless grows on other plants also, it really thrives on cowgrass. It has become so bad in places that even the first harvest of seed has scarcely been worth bothering with, and other areas have to be recultivated after only one crop. A worker grew some plants in pots in order to study them more closely. Unfortunately, he was not able to follow this up because of pressure of other duties, but one interesting fact did emerge. He found that a broomrape plant just beginning to appear through the surface of the soil could be separated from its host, and when planted in sterilized soil would continue to grow with no apparent check, flower, and set seed. Plants were sprayed with different amounts of maleic hydrazide, prophan and dinoseb. Four weeks after treatment there was a slight check in its growth, but this effect gradually disappeared, and from then on the plants grew as vigorously as ever.

Broomrape is seldom seen in pasture, possibly because of tramping by stock. The writer has been unable to find any literature on the control of this parasite. A considerable amount has been written about it; botanical descriptions go into detail of the differences between varieties, but control? No. When it is realized that Nelson, with its very small area of flat ground, grows approximately one-third of the cowgrass seed harvested in New Zealand, some appreciation of the serious nature of the affliction can be gained. Is there anything that can be done to control this pest?

Is it something that must be put up with or is it a problem that can be solved? There are small bad patches of it at Tinwald near Ashburton, and it is probably also prevalent in older clover-growing areas elsewhere. Finding the answer looks like being a big job of work, but it is a job that would be very worth while.