PROGRESS IN THE SUPPRESSION OF NOXIOUS WEEDS IN WANGANUI COUNTY

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To give a reasonably accurate account of weed control in Wanganui County over the last 4 years it will be necessary to describe the type of country, the farms, and the farmers themselves.

In an area of 464 square miles 80 per cent. would be second- and third-class hill country carrying sheep and cattle. The 20 per cent. balance comprises good undulating hill country and fertile flats with a belt of sandy country on the coast line. The whole of this area is more or less badly infested with a variety of noxious weeds.

When the Wanganui County decided to administer the Noxious Weeds Act, 1950, they knew they were taking on a big job. The county could be described as a dirty one, and after having a look around I came to the conclusion that we had more than our fair share of weeds. The majority of ratepayers all had weeds in varying degrees of infestation. I was told at the start to go slow for a year and try to interest the farmers in methods of weed control as well as accustom them to having a weeds inspector. This also gave an opportunity to observe who was going to fall into line and who was not. At this time, the end of 1951, very few farmers had spraying plants and they did not know a great deal about the use of hormones. Many of them knew that they were going to do something, but the problem was where to start. It was decided that talks would be arranged and I was called on to give spraying demonstrations with the county's newly purchased spray equipment. The response from the farmers was excellent, and it wasn't long before they had taken over the spray wand and were showing their friends how it was done.

Talks organised by the council were arranged through the Federated Farmers and were well attended. A field representative from a commercial firm and an officer from the Department of Agriculture were called in for these talks. My part was simply to state that the county was administering the Noxious Weeds Act, and we were prepared to be fair but firm. The farmers were also encouraged to take notes and ask questions. It was also stressed that weed control if not carried out properly, was very expensive.

At this stage it will be necessary to describe the progress in the suppression of the most aggressive weeds we have to deal with.

Gorse will naturally head the list, as this is the weed where the most spectacular progress has been made. There was an estimated 20,000 acres of gorse and most of it growing on hilly country. It seemed a formidable problem at the time. Fortunately prices were good and the advantages of the use of hormones were becoming more widely known. Firms

were becoming active in selling plant and hormones and articles were appearing in "The New Zealand Journal of Agriculture."

Some farmers already had bulldozed tracks, but as time went on contractors were in big demand for track making. It was realised that before any major programme was carried out tracks were essential. This applied to about 7 farms out of 10.

Two spraying contractors started during 1951-52 and were kept fully employed on gorse spraying throughout the season. By the end of 1955 season most farmers owned their own power plants and five contractors were operating, at least two of these spraying over 500 acres of gorse each.

Whether it is a sign of the times I do not know, but some are engaging a contractor to do the bulk of the work and then follow up with their own spray outfit.

In 1951-52 approximately 500 gallons of 2,4,5-T was sold in the county. This increased to 5000 gallons last year. With that amount of money being spent it was to be expected that some farms concerned would show an increase in production.

Giant discing has proved both economical and efficient for easy hill country and flats. This type of control gives a first-class pasture after one season. If possible the gorse is fired first, making it easier for the operator to see where he is going, and it is amazing what these machines can do and the places the operator will drive them. Large areas have been giant discing over the last 4 years and put down in pasture. The follow up with hormones for seedling gorse when the pasture is established makes this method very economical. Although large stands of "old man" gorse have been sprayed, cutting, burning, and sowing and follow up with spray are still considered the best method of dealing with gorse in our district.

Planting of trees has been encouraged where old metal pits exist and odd corners considered uneconomical to clean up. This will result in valuable stands of timber scattered throughout the county in years to come. Last year the county planted 31 acres in trees mainly for gorse control. We consider that it will work out a lot cheaper to control these waste areas than to continue spraying them year after year.

Some farmers are considering the possibilities of giving gorse a light application of 2,4,5-T from the air in preparation for a good burn.

AERIAL SPRAYING EXPERIMENT

Last spring approximately 100 acres of all types of gorse in the county was sprayed from the air as an experiment. P. Ferens, of New Plymouth, I believe, is giving a paper on these trials, so there is no need for me to elaborate on this subject. I may add that if aerial spraying of gorse is successful, the scope around Wanganui will keep pilots busy for some considerable time.

VARIEGATED THISTLE

Variegated thistle runs a close second to gorse. It is a serious weed infesting practically the whole county and is causing concern to all farmers. Of course it is the old story. The farmers who have over the years been able to prevent seeding have had very little to worry about.

A few figures will show what a problem these thistles can be and the progress that has been made.

In October, 1951, two farmers aerial sprayed part of their farms. Their main object was to clear tracks for sheep to go to the shearing shed.

Spring 1953 saw an increase in farmers practising aerial spraying. Six farms were sprayed. At this time the county was only insisting on boundaries being cleared.

In 1954, following the dry summer, the number of young germinating thistles shocked farmers. Even those paddocks that had been sprayed from the air the two previous seasons were again badly infested. Some who had been mixing hormone powder with fertiliser decided that they could not cope with the infestation and had to resort to aerial spraying. One farmer who had not let a variegated thistle seed on his property for five years decided after looking at the infestation that had come where he had burnt gorse the previous autumn that it was hopeless to try and clean by the usual methods. He engaged an aerial contractor and had the infested area sprayed. He told me it took him 4 full days to chase and cut by hand the thistles that germinated in the spring. His total cost for the spraying was £26/10/-. By November 1954 fifty-two farms had been sprayed in our county. Unfortunately most of them decided to leave their spraying until September and October. This resulted in everybody wanting their spraying done at the same time. As there were only three planes operating, some of the spraying was carried out later than it should have been and the results were disappointing in some cases. Farmers who had aerial spraying carried out between May and August inclusive were particularly pleased with the results.

One case of interest happened a few months ago. A farmer who had cleared approximately 20 acres of gorse by cutting and burning followed up by sowing and topdressing by plane. He realised after sowing that variegated and Scotch thistles were so thick that if he did not do something in a hurry he would lose all his grass. As he did not know what to do, he rang us, and we advised immediate action—pre-emergence spraying. The area was sprayed by plane 3 days after sowing. The grass and clover have germinated and thistles have disappeared leaving him a clean paddock.

It is now realised that aerial spraying is the only economical method of controlling variegated thistles for the hill country farmer. This season a good start has already been made. With aircraft available and aerial spraying proved the county is determined that the existing variegated thistle population will be considerably reduced.

I would like to add to this paper the results of Californian thistle spraying. It seems that up to date the main control has been repeat sprayings year after year. Up until 1951 Californian thistle had been regarded as a necessary evil in our county. Other than cutting no spraying had been attempted. In 1951 several areas were sprayed, using 1.3lb. acid equivalent of oil-soluble 2,4-D to the acre. Results were very disappointing. All areas that had been sprayed were finally cut in March. One farmer was persuaded in spring of 1952 to spray a 40-acre paddock heavily infested with Californian thistle, using 0.45lb. in each of three applications of 2,4-D of a formulation containing 3.6lb. acid. The first spraying was done on November 24, 1952, the second on December 4, and the final spraying was started on December 15, 1952. In February 1953 I drove over this area and could not find any thistles. My fingers were crossed all winter and frequent inspections were carried out towards spring. In December 1953 a count was made and it was found that only 33 Californian thistles were growing. Unfortunately I did not check to see if they were seedlings. However, these were treated with a knapsack sprayer. No thistles have appeared in that paddock up to date. The farmer concerned has carried on the following year and sprayed the

remainder of his farm with the same success. Today in this district it is the accepted practice to give three applications and provided that the spraying is done from November to December, we seem to have the thistles under control.

I would like to quote one example of how production can be increased through weed control and good farm management. A property comprising of 1700 acres on the Wanganui River was badly infested with gorse when the owner took over in 1950. Of the 500 acres of flats 300 were in old man gorse. After 2 years all the flats were down in pasture. This was done by giant discing. Last year 250 acres of hill country was sprayed, bringing the total of gorse cleared to approximately 700 acres in 5 years. In 1950 stock consisted of 130 ewes, 400 hoggets, and 300 dry cattle. By giant discing and improved farm practices he had increased his carrying capacity in 1955 to 2400 ewes, 500 hoggets, 240 breeding cows, and 250 dry cattle.

Although gorse and variegated thistle have been given first place in this paper and the progress of these weeds described, we have many others that are being attacked progressively. It will be a long time before we have a weed free county, but we say that farmers are now alive to their weed problems and realise that follow up control is essential.

In conclusion I should like to record my appreciation to the farmers of Wanganui County for the extensive co-operation they have shown, as without this very little would have been achieved. Not only has it made my job easier and pleasant, but they themselves are now experiencing higher returns from property which has been developed using chemical weed control as an adjunct. One important feature with the control of weed growth on fence lines and roadsides, etc., is the neat and tidy appearance given to the farm. This in turn increases the pride of ownership to a competitive level among farmers. Finally, it is important for a weeds inspector to be able to recognise the wide variety of weeds and to keep abreast of the latest chemicals and methods adopted and be able to hand on this knowledge, if he hopes to gain the utmost co-operation from the farmer.

DISCUSSION

Q.—What was the soil type where Californian thistles were killed? Soil type may have an effect on root growth of this thistle and consequently on the effect of chemicals.

A.—The trial was first carried out on alluvial soil formed from river silt, but the results have been applied on other soils.

Q.—What results have you had on the control of pussy willow?

A.—Good control is secured with spraying the bole to a height of 2ft. to 3ft. with the esters of 2,4-D 1 in 10 in diesel oil or power kerosene. But where drainage is poor this should be corrected before or at the time of spraying.