NOXIOUS WEEDS

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It is unfortunate, but nevertheless true, that there has never been a proper approach to nor a full appreciation of the noxious weeds problems in this country. Consequently, when a county decides to assume the responsibility for the administration of the Noxious Weeds Act, it immediately inherits a legacy of maladministration and departmental ineptitude.

I do not think there are many who will disagree with that statement, nor do I think there are many inspectors who would say that they did not have to start from behind scratch if they succeeded a departmental officer. Now I want to make it perfectly clear, gentlemen, that that statement is not a reflection implied or otherwise upon the ability or work of any individual departmental officer. You all know as well as I do just how the efforts of these men are stifled through what is commonly referred to as "red tape" and also because of the multitudinous duties which they are very often called upon to perform. I succeeded a departmental officer who had the combined duties of Rabbit Inspector, Stock Inspector, Inspector of Brands, Dairy Inspector and Noxious Weeds Inspector. It was a physical impossibility for any one person to successfully carry out so many functions, with the result that noxious weeds, being the most contentious, were regarded as a secondary consideration.

Departmental inspectors had to apply to their head office for permission to prosecute and by the time this was received (if ever) the necessity for the prosecution had invariably disappeared. Is it any wonder, then, that noxious weeds flourished and increased? Counties could possibly be in the same predicament to-day if they adopted a similar approach and insisted that inspectors first obtained permission from their councillors before prosecuting.

It is the exception rather than the rule for county inspectors to be required to do this and is no doubt one reason why those counties who have assumed the responsibility for the administration of the Act and have appointed full-time inspectors without restraining influences have achieved a far greater measure of success than when the Act was administered by the Department of Agriculture. With the advent of agricultural hormones I see no reason why this improvement should not be maintained and extended, providing, of course, that county councils and inspectors remain conscious of the responsibilities which they have accepted. What amazes me is that there are still some counties which are reluctant to prosecute and some councillors who believe that the Noxious Weeds Act can be successfully administered on mere words alone. Make no mistake gentlemen! Any inspector who thinks that is only deluding himself. I tried it for two years, without success, of course. The latitude which I extended was in most cases accepted as a weakness. One of the reasons why the Act was unsuccessfully administered previously was the undesirable practice of the combination of duties. In my opinion this practice cannot be too strongly condemned and is one which should on no account be perpetuated by counties. I would suggest that small counties should take advantage of the provisions of the Act and amalgamate under one inspector. This has already been done in the North Island. I feel that inspectors should be regarded as specialists in their particular field and their work confined wholly and solely to noxious weeds. And this brings me to the point where I consider there should be some form of supervision over individual counties to ensure that the Act is administered efficiently and at the same time provide some protection for inspectors.

Under the Act any county may assume noxious weeds control, but merely exercise a token administration and not declare any weeds. There is no one to say that it is compulsory for them to do so. In the North Island, counties within a ward structure have all declared the same weeds. This is a commendable decision and a step in the direction of a universal list. At the moment, however, a cohesive effort on the part of counties appears to be lacking. What is the use of one county administering the Act efficiently if an adjoining one does little or nothing at all? It just does not make sense.

The Act provides for a county to declare a weed not to be noxious. What is to prevent a county from doing this very thing, to the detriment of an adjoining one, if it found that through previous neglect a certain weed had got out of control.

Some form of supervision over individual counties appears to be necessary and I believe there should be two chief inspectors appointed in each Island, selected from present county inspectors, to act in an advisory capacity and with power to define whether counties are doing sufficient in the way of noxious weeds control, to evolve a system which would provide a uniformity of approach to this complex problem, and to take some apparently necessary disciplinary action where it was established that counties were exercising a token administration only. A practical rather than an academic outlook is very much needed. We have had a taste of theorists in the past whose ideas failed lamentably. As a step towards providing some uniformity of approach in the North Island, a Noxious Weeds Inspectors' Association was formed three years ago and conferences are held annually in different districts. In the near future we are to become incorporated. Inspectors in the No. 2 Ward which embraces the Counties of Waikato, Waipa, Waitomo, Kaitieke, Kawhia, Matamata, Otorohanga, Piako, Raglan, and Taumarunui have a meeting every three months where there is a pooling of ideas and exchange of opinions. These "get togethers" serve a very useful purpose, and I commend the idea to others.

In passing, may I say that of 74 counties in the North Island 60 administer the Act, which is 80 per cent. There are 51 counties in the South Island and 17 administer the Act, which is 33 1-3 per cent.

Counties who administer the Act receive a 50 per cent. subsidy for administration and 7d per mile for transport. Surely this fact should be sufficient inducement for all counties to administer the Act.

Because of its dangerous nature, occupiers have always been most reluctant to use sodium chlorate, consequently I think I am right when I say that all inspectors breathed a sigh of relief when agricultural hormones were introduced into this country.

While I do not claim to have achieved any greater measure of success in the destruction of noxious weeds in Hawke's Bay than any inspector in his own district, nevertheless I feel that my achievement in connection with the control of variegated thistle is worthy of mention. When the Hawke's Bay County assumed the responsibility for the administration of the Noxious Weeds Act in 1942, we inherited a legacy in the form of approximately 4,000 acres of variegated thistle growing on the Poukawa Maori Reserve and covering some of the best grazing land in New Zealand. It was at once recognised that this weed was our No. 1 priority and if not tackled immediately, would become to Hawke's Bay what ragwort is to some North Island districts. Consequently my main efforts were directed towards solving the variegated thistle problem. It was considered that the task of clearing the infestation had passed beyond the physical and monetary resources of any individual occupier and that some assistance should be provided and because of the infestation presenting a potential

menace to the whole of Hawke's Bay the problem should be approached as a national one. You remember there was a war on at that time and labour was at a premium. A subsidy was obtained from moneys appropriated for the clearing of noxious weeds on Maori lands.

Until 1946 we used the now antiquated method of chipping and mowing. Then I established that a dusting of 20lb. of sodium chlorate per acre was effective and this method combined with chipping and in some cases mowing was utilised until 1948. Up to this period a very fair measure of control had been obtained. Then in 1948 came hormones, and I feel all will agree that the advent of this chemical has revolutionised farming practices in this country as far as weeds are concerned.

The sodium salt of M.C.P. was first used as a spray with excellent results. Ethyl ester of 2, 4-D was subsequently used with equal success. On steep faces where water was scarce and the cost of transport excessive, 5 per cent. dust of the sodium salt of M.C.P. was applied at a rate of 1½cwt. per acre. This method of clearing is still popular among farmers on this type of country where the infestation has been reduced to a minimum.

From 1946 to 1950 subsidies totalling £8,000 were spent and £800 of this amount recovered. During this time occupiers themselves had also done a lot of work.

Compared with the direct and indirect benefits derived, I consider that this expenditure was fully justified. The progressive diminishing of the infestation which I had visualised at the outset has proved correct, as last year only £30 was spent from a subsidy of £500 and the responsibility for the clearing of variegated thistle has now wholly reverted to individual occupiers who in some cases use as little as 0.25lb. acid equivalent of 2, 4-D in 3 gallons of water per acre through 22 s.c. nozzles applied when the thistles are in the two-leaf stage.

In the Hawke's Bay County we passed from the experimental stage with 2,4-D in 1948, consequently variegated thistle is no longer a problem with us. What little there was this year has already been cleared and it may be of interest for me to tell you that ploughable areas which were previously completely covered with thistles are now producing ryegrass seed, potatoes, and tomatoes and peas for canning. One property of 3,000 acres which carried 3,500 sheep before the thistles were controlled now carries 10,000. This fact alone indicates most forcibly the fallacy in allowing variegated thistles to get out of control.

Although the initial expenditure for clearing any type of weed may appear excessive, one must not lose sight of the fact that this is more than offset by the increased carrying capacity with resultant increased returns.

I established in 1950 per medium of my own experiments that 2,4,5,-T would destroy blackberry and gorse and that best results were obtained when the bushes were given a thorough wetting inside and out.

Until this year we used .04lb. of 2,4,5-T per gallon of water, using a blackberry wand and 46m nozzles. We now use a Bean gun and a mixture of 1 gal. in 150 to 200. And here may I quote Professor Perrin who at Massey College last year at the National Conference said this: "That in his opinion too much emphasis was apparently being placed upon the avoidance of 'run off.'" I agree with this contention entirely, as I have had best results when blackberry and gorse have been given a thorough drenching. Have you ever heard an orchardist complaining about the amount of spray he is obliged to waste? I haven't. He knows full well

that the successful control of orchard pests is dependent upon a complete coverage. The same principle in my opinion applies in the spraying of blackberry and gorse. However, I am quite sure that most users of 2,4,5-T are now well aware of this fact, although I was told by a farmer just the other day that he obtains good results by simply spraying the outsides of his blackberry bushes. It all depends what he calls good. My method produces 100 per cent. kills, which is what I term "good." If we have 2,4,5-T in our tank we use it on anything, excluding pastures of course, and get good results. I know this acceptance of 2,4,5-T as a panacea is frowned upon by some manufacturers, but I believe that the first cost is the cheapest providing you are obtaining results.

The recommended period for the use of 2,4,5-T is between the months of December and March in the North Island. This time factor of course conflicts with the requirements of the Act, which specifies that clearing must be carried out within the time specified by an inspector. This requirement, although apparently not considered very important to hormone distributors, is most important to an inspector. In Hawke's Bay I have found that excellent results have been obtained on blackberry with sprays applied between the months of December to August. In fact, some of our best kills last year were obtained in August. You are all aware, of course, by this time that as the weather becomes colder, so are results progressively delayed. If possible, we commence spraying blackberry when the green berries appear. Gorse is sprayed at any time during the year.

In order to avoid as far as possible any controversy or conflict with the spraying time factor which we have established (i.e., December to August) I refrain from sending out notices for blackberry between the months of August to November.

I recently received a letter per registered post from the solicitors acting on behalf of Messrs. McWilliam's Wines Ltd., who have recently established vineyards in Hawke's Bay, which reads:—

"Occupiers of land in (1) The Eskdale and Bay View District and (2) The Te Awanga District are warned that the use of agricultural hormones for weed extermination or any other purpose is likely to destroy or seriously damage vineyards within an area of a mile or more from the property on which these hormones are applied.

McWilliam's Wines (N.Z.) Limited own and are developing a considerable area of vineyards in the District and will be obliged to hold liable for damages any person or persons causing damage thereto by the use of these sprays.

Dated at Auckland this day of June, 1952."

A number of farmers in these districts have received similar letters. However, if occupiers say that they cannot spray because of possible crop or other damage, then they must adopt alternative methods of weed destruction. The Act (and rightly so) does not make specific mention of the method to be used to "clear" weeds.

As an experiment last year I sprayed blackberry throughout the year. The results, although not as spectacular as with sprays applied from December to August, nevertheless were sufficiently encouraging to suggest that I will ultimately achieve my desirable objective of all the year round blackberry spraying.

In order to carry out my various experiments, I first used a half-ton Plymouth runabout on which was mounted a 1 1-3 h.p. J.A.P. engine and pump and a 44-gallon drum as a spray container. The runabout was burned while using sodium chlorate after the operator had been on fire twice previously. We next purchased a jeep but this was disposed of last year and was replaced with a Land Rover at a cost of £985. This machine is fitted with a boom for spraying variegated thistle on flat land if necessary. A 78-gallon copper tank is fitted into the well deck plus a pump, engine and hose. The whole outfit costs approximately £1200 and answers our purpose quite well, as I do not believe in providing a council service to the extent that the responsibility for clearing weeds eventually devolves upon the administrative body. This could quite easily happen. However, I believe in having at my command the means for doing any clearing at the expense in all things to the occupier if he fails to fulfil his requirements under the Act.

In Hawke's Bay we have no contractors who appear very keen to undertake gorse or blackberry spraying. My council undertakes private work, when our own spraying is completed. Any occupier may have the use of our machine at week-ends providing the council's operator is paid double time or by arrangement. We charge £3 per day for the hire of the machine plus the operator's wages plus material and confine our work as far as possible to road frontages. Our one-man plant distributes 3 gallons of 2,4,5-T per day.

We are now confronted with a fairly extensive infestation of nodding thistle which appears very difficult to destroy if allowed to develop to the flowering stage. I have not carried out any experiments on this weed, but I understand that a rate of 0.5lb. acid equivalent of the ethyl ester of 2,4-D in 20 gallons of water per acre is effective.

Last year we sprayed a few miles of fennel, commencing at the end of October. I find it is not much good spraying fennel after the seed has formed, as there is apparently insufficient sap movement. When the fennel has reached this stage excellent results are obtained if it is cut and the regrowth sprayed when it is about a foot high.

Our declared weeds are all susceptible to hormone sprays and there are few excuses for occupiers to-day.

I hope I have not created the impression that variegated thistle was the only noxious weed problem in Hawke's Bay. Far from it. Practically all the lesser weeds such as hemlock, star thistle and Bathurst burr have been controlled, but we still have blackberry, gorse, fennel, sweet briar, nodding thistle, a small amount of ragwort and St. John's wort, although I will say that we are making fairly good progress towards clearing them. If our present rate of progress is maintained I predict that a blackberry pie will be a thing of the past in another ten years.

If a cohesive Dominion-wide county effort is to be accomplished it is most desirable and essential for all county councils to assume the responsibility for the administration of the Noxious Weeds Act. I believe that counties are the only ones who can successfully handle this problem. South Island inspectors would be well advised to follow the lead given by the North Island and form a Noxious Weeds Inspectors' Association and so provide the means for some uniformity of approach to their weed problems. And because of the many factors associated with the complex problem of weed control—soil types, climatic conditions, locality—they should carry out full-scale experiments in their own districts. I am convinced, however, that the introduction of agricultural hormones has contributed in a very large measure to the solving of one of the most complex problems in the farming economy of this county, and with the

continued use of hormone sprays, with more and more people becoming weed-conscious, with the continued co-operation of manufacturers and distributors and with county councils and inspectors alike remaining conscious of the responsibilities which they have accepted, I feel confident that we will witness a progressive diminishing of weed infestation right throughout the Dominion. When one considers that our very existence depends very largely upon our primary production (so vitally important at the present time—perhaps more important than at any previous period in our history) and that weed control and efficient farming practices are indivisible, one realises at once just how important is the work which inspectors are called upon to perform. I am afraid, however, that this fact is not at the moment readily accepted by some counties, but I have no doubt that in the foreseeable future this attitude will change and inspectors will be accepted as individuals entitled to recognition commensurate with the importance of their work, which is each day becoming increasingly specialised.

As I see it, our job is to lay the foundation for future generations. In my opinion no one can possibly hope to achieve the desirable objective in weed control without unremitting care, toil and constant vigilance.

The price of latitude will mean a victory for our noxious enemies.

With the responsibility for the administration of the Noxious Weeds Act being assumed by county councils and having regard to the success which has attended their efforts in the past, there is very little doubt left in my mind concerning the future.

We who live to-day can, if we will, determine whether noxious weeds are to survive and flourish.

DISCUSSION

Q. Regarding weeds, to what extent does he regard prosecution as being important in relation to action being taken?

A. I do not think the Act can be effectively administered without the power to prosecute.