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MANAGEMENT OF UNWANTED AGRICULTURAL CHEMICALS

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I. Introduction

As the amount of unwanted farm chemicals in New Zealand becomes more apparent, the risks they pose to human, economic and environmental well-being are becoming more widely recognised. As a result, calls are being made to collect and dispose of these chemicals safely. Already some regional councils, including the Waikato Regional Council, have been or are currently collecting these chemicals. Lessons can be learnt from the collections to assist future initiatives.

II. Background

Pesticide, herbicide, insecticide and animal remedy use is important in successful modern farming. Primary produce exports depend on extensive use to meet overseas quarantine standards. Additionally, their use enables more produce to be produced more cheaply, from less land. Estimates are that each dollar invested in pesticides and their application returns at least $3-4 to the user (MFE, 1989).

Modern chemicals are largely environmentally benign, carrying out the job they are applied to do and then degrading harmlessly. Unfortunately, many older chemicals, such as organochlorines do not degrade, but bioaccumulate in the environment. Others, such as organophosphates, are highly toxic, posing real threats to human and animal health.

Significant quantities of chemicals have accumulated on farms over the last thirty to forty years, as a result of changing land use practices and development of more effective and safer chemicals.

The danger is that many of these chemicals are not being disposed of safely, creating adverse environmental and health effects as a result. Anecdotal evidence shows quantities of persistent chemicals have been emptied in offal pits, buried on farms or disposed of in rubbish dumps. These practices can lead to wider contamination of ground and waterways, lowering environmental quality and contaminating stock.

Farmers face three problems in managing redundant chemicals:

- identifying their chemicals;
- knowing the correct method for disposing of the chemicals; and
- being able to dispose of the chemicals safely.

These are insurmountable for many.

III. Chemicals Collection

Taranaki and Northland Regional Councils have undertaken unwanted rural chemicals collections and the Waikato Regional Council has just completed a trial collection. The WRC collected 1,380kg of chemicals from a trial of 150 farms. A third of the chemicals were unidentified or intractables, requiring storage (Fig 1). This suggests some 108 tonnes of chemicals, including 37 tonnes of unidentified or intractable chemicals, may be collected in the Waikato region.

The collection objective is to minimise risk of adverse effects from unwanted farm chemicals by:

- arranging disposal through reuse where appropriate;
- arranging disposal of destructible chemicals; and

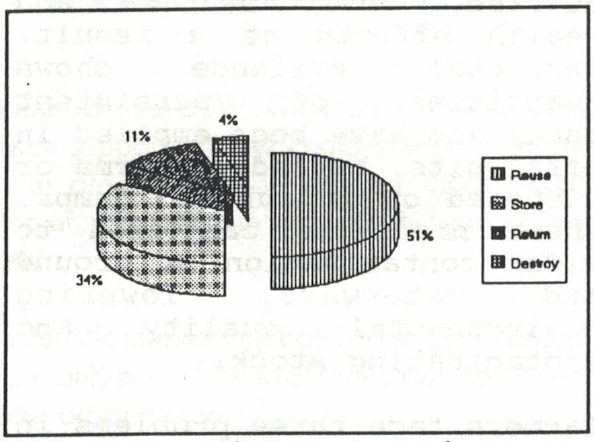

Figure 1: Disposal options for collected chemicals, Roto-o-rangi trial.

- storing safely intractables pending availability of a suitable disposal facility.

Collection is relatively straightforward, though legal requirements are time-consuming initially, including meeting hazardous goods transport regulations and Pesticides and Toxic Substances Acts requirements.

Community support is vital for success. The WRC spent considerable time meeting with community and user groups, mailing out letters and informing local media to engender support. We consider our high contribution rate, collecting from 20% of all farms, compared to 5% in other regions, is largely the result of this effort.

Participation is facilitated by collecting from farms rather than farmers bringing in chemicals to a centre. This is also safer; many containers are in poor condition and often contain toxic chemicals. Improper transport opens possibilities of large scale contamination or toxic spills, defeating the purpose of the collection.

IV. Collection Issues

The significant problems facing collectors are those facing the farmer; identification, treatment and disposal of chemicals.

Expertise exists to identify most chemicals, eg noxious plants officers and AGCARM staff. Many chemicals can be reused and on-farm identification enables farmers to choose to reuse chemicals, saving later processing work. Some chemicals can be returned to the manufacturers for recomposition or disposal. A core remains, however, that the Council has to be prepared to store for at least the medium term. Suitable facilities are needed that comply with hazardous goods storage requirements. Storage and final disposal costs are likely to be considerable and Regional Councils are currently lobbying government to address this, and the associated liability.

V. Summary

Considerable amounts of unwanted chemicals have accumulated over the last thirty to forty years on farms. They are potentially hazardous to human health and the environment. Collections are viable, however logistical matters need to be resolved, the most important of which is disposal of intractables.

References

MfE, (1989). *Pesticides: Issues and Options for New Zealand*. MfE, Wellington.