

# **MAXIMISING COMMUNITY PARTICIPATION IN REGIONAL AGRICHEMICAL COLLECTIONS**

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## **INTRODUCTION**

Redundant and unwanted agrichemicals have long been an issue for New Zealand. Their persistent bioaccumulative nature led to the restriction of their use and the long-term stockpiling on rural properties. Many councils have over the years recognised the risks that these stockpiles posed both to the environment and the public, and have carried out either one-off collections or programmes that have continued for a number of years.

This paper discusses how the Canterbury councils have attempted to raise participation rates in the programme by directly marketing the collection to specific properties, rather than opening it up to all-comers through newspaper and radio adverts.

## **A HISTORICAL LEGACY**

Due to concerns about the lack of disposal options in the late 1990s for Persistent Organic Pollutants (POPs), the Canterbury councils were reluctant to undertake any collections. Initial estimates (Royds Consulting, 1997) indicated a regional stockpile of 54 tonnes (36kg / property) of which 13.5 tonnes (25%) would be POPs. Without an appropriate disposal route the councils would have been required to store this stockpile indefinitely.

In 2001 the Canterbury Hazardous Waste Working Party (CHWWP) identified agrichemicals as one of the seven priority hazardous wastes to be addressed through their strategy (CHWWP, 2001). Investigations were carried out to determine the potential to reuse some of this stockpiled material (Tonkin and Taylor Ltd, 2001) (Agriculture New Zealand Ltd, 2002) with the aim of reducing both the disposal costs to the councils and providing certain agrichemicals with a second chance. However, it became evident that there were significant risks and liabilities involved with such a programme for very little gain. Also, it was recognised that a programme of that type would have very little impact on stockpiled material, much of which was unsuitable for reuse.

With a number of councils around New Zealand undertaking collections, commercial disposal options for POPs became available and the Canterbury councils started to look at options for a regional collection (Tonkin and Taylor, 2002).

## **AGRICHEMICAL COLLECTIONS**

Historically collections within New Zealand have been one of three types:

1. Permanent drop-off facilities – These are short term storage facilities normally located at waste transfer stations where holders may drop-off their agrichemicals.
2. Temporary drop-off facilities – These one-off collection days are promoted via the media (newspaper and radio).

3. Call-out services – Agrichemical holders register to arrange a specific time and date for a specially design vehicle to come to their property and remove their agrichemicals.

These methods have their pros and cons but they have two things in common; they require the participant to know about the collection and be motivated enough to either deliver their agrichemicals or actively register. What the Canterbury councils have attempted to do is to target properties within specific areas to make it easy for those that have redundant agrichemicals to dispose of them.

## **THE WAIMATE PILOT COLLECTION**

### **Getting people to participate**

In 2002 a pilot collection was carried out in the Waimate District. An area containing different types of farming practices (grazing, dairying and cropping farms) was selected. Letters were sent addressed to the owners of the farms promoting the collection and they were asked to reply if they had agrichemicals for collection or not.

Properties that did not respond to the letter were phoned to ensure that they understood what the collection involved and to see if they had any redundant agrichemicals. It is with this more direct approach that it was hoped to successfully remove all of the unwanted agrichemicals within the target area or at least have provided all properties with this opportunity.

### **The pilot collection – picking it all up**

Once the participants have been registered, their locations were given to the hazardous waste contractor who developed a collection route and schedule. The contractor would then arrive at the farm at an arranged time to collect the unwanted agrichemicals.



The agrichemicals were then identified, weighed and given a unique tracking number that followed the chemical from the moment it was collected to the moment it was destroyed.



Once listed on the manifest the agrichemicals were bagged and then placed in open top drums for transport to the temporary local storage facility, before being sent to the contractor's facility for treatment, or shipment overseas for destruction.



### **The Waimate pilot results**

The success of a collection tends to be judged by comparing participation rates. In effect how many properties had agrichemicals collected relative to the number of people you aimed to contact. Therefore, the participation rate is dependant not only on how successfully you have motivated your targeted audience but on whether they have agrichemicals for disposal.

However, the true success of a programme such as this is not how much you have collected but how much has been left behind. This is impossible to quantify as we have no indication of how much is currently stockpiled within the region. To overcome this issue we have calculated the response rate i.e. the number of responses received relative to the number of people contacted. If the councils know that all properties within a target area have been contacted then it is unlikely that there are significant stockpiles remaining after the collection.

For the Waimate pilot 132 properties were sent letters, 29 responded to the letter and 98 were able to be contacted by phone. In total 127 (96% response rate) were able to be contacted and of those 40 (30 % participation rate) had agrichemicals disposed of. Therefore, there were only 5 (4%) properties where stockpiles could still be remaining at the end of the collection.

### **THE REGIONAL COLLECTION**

With the success of the Waimate pilot in 2002 all the participating councils provided funding for their district's collections. Environment Canterbury's contribution was divided evenly. Funding for the disposal of the majority of the agrichemicals collected was provided for the first 3 years by The Ministry for the Environment.

The aim of the regional collection was to provide all properties within the rural areas of Canterbury the opportunity to safely dispose of their historical stockpiles of unwanted agrichemicals. It was not to provide a permanent disposal route for current agrichemicals. Therefore, it was important that the collection was undertaken in a systematic way, and that all properties were provided with the chance to participate. This was done by choosing discreet areas to be targeted each year. Once one area was completed the councils then move on to the next area.

Councils were to maximise the response rate by following the methodology developed during the Waimate pilot collection. That was to:

1. Select a specific area within their district. The size of this area was dependant on the amount of funding available, the number of properties and the type of farming carried out in the area.
2. Contact all property owners / occupiers within the area by letter.
3. Phone those that did not reply to the letter to ensure they did not have agrichemicals for collection.
4. Provide the contractors with a list of properties, contact numbers and estimates of the amount and type of agrichemical that needed to be collected.

The key to motivating the community to participate was considered to be the phone calls. It was hoped that by approaching individuals directly, rather than via the media, those that did not respond to the letter would be convinced to participate and a better assessment of the amount of agrichemicals remaining in the target areas after the collection.



## RESULTS

Targeted programmes have been carried out in various districts during the past 4 years (Figure 1) and are planned to continue for at least the next 3. Most districts have now sent letters to all properties where there are likely to be stockpiled agrichemicals. Those areas not yet covered are shown in white in Figure 1.

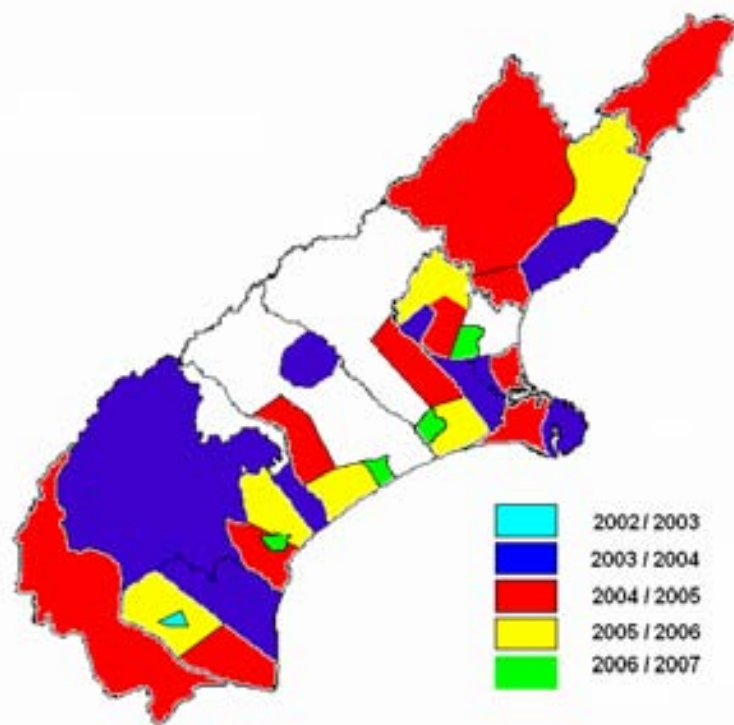


Figure 1: The 30 target areas for the Canterbury agrichemical collection 2002 – 2007

Those that remain are districts that have large cropping areas which are more likely to have significant stockpiles. These impact on the number of properties that can be collected from during a year. It is not unusual for stockpiles of over 1 tonne to be found. In 2003/04 one property had a stockpile of over 12 tonnes of DDT laced fertiliser.

As mentioned above the preferred method was for the councils to send a letter addressed to the owner/occupier of a property and then, if they did not receive anything back, to contact them by phone. The phone calls required a significant amount of staff time both to collect the numbers and to make the calls. Unfortunately not all councils were able to follow the Waimate methodology every year.

This paper uses this variation in methodology to determine whether the initial assumption was correct. Does the more proactive personal approach lead to a more effective collection?

The data from the collections have been separated into three groups. Those that:

- did not carry out any phone calls (10 target areas). Identified as 0%.
- made contact with less than 50% of those that did not respond to the letter (6 target areas), identified as 0-50%.
- made contact with more than 50 % of those that did not respond to the letter (10 target areas). Identified as >50%.

In the four years since the Waimate pilot nearly 19,000 properties have been contacted, with 1,577 having agrichemicals collected. In total nearly 155 tonnes of unwanted agrichemicals have been removed and safely disposed of from Canterbury farms. Of this 155 tonnes about 80% were POPs and required disposal overseas and on average each property had 98kg collected from it. A breakdown of these details is shown in Table 1.

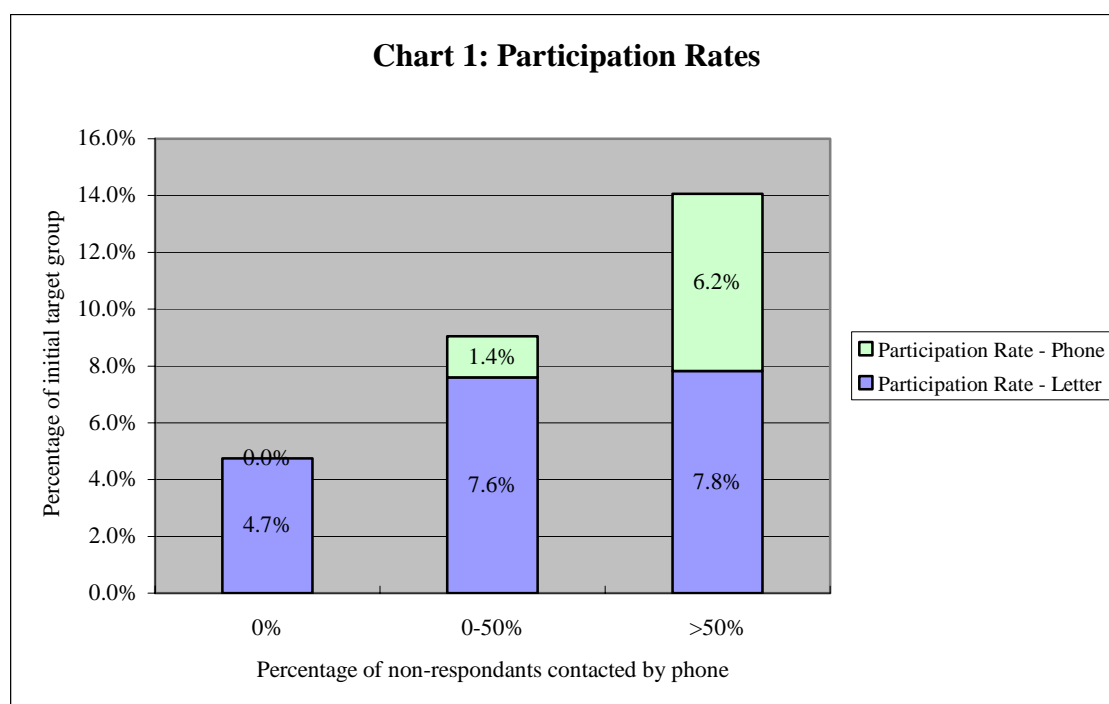
Table 1: Summary of Canterbury Targeted Agrichemical Collection Data

	0%	0-50%	>50%	Regional Total <sup>1</sup>
Number of target areas <sup>2</sup>	10	6	10	30
Number of properties sent letters	9,857	4,016	4,230	18,929
Mean number of properties contacted by letter	986	669	423	631
Total number of participants (had agrichemicals collected)	455	352	594	1,577
Participation rate	4.7	9	14	8.2
Mean number of participants per collection	46	59	59	53
Total weight collected (kg)	39,133	34,834	60,852	154,889
Mean weight per participant (kg)	86.	99	102.	98

<sup>1</sup> Note: 4 collections have been excluded from the 3 groups of analysed data as they contained insufficient data but have been included in the regional totals.

<sup>2</sup> as shown in Figure 1

Chart 1 shows the overall participation rates over the past five years. For the participation rate due solely to the letters, the 0% group has had lower participation than the other two groups. This might be due to variations in the areas that were targeted, but could also be due to less effective mailing techniques as this group sent letters to more than twice the number than the >50% group but collected significantly less agrichemicals.



Despite the lower participation rate for the 0% group, phone calls clearly have increased the number of participants for the other groups. Those collections that contacted more than 50% of the non-respondents to the letter have both the greater percentage of participants and the greater number (Table 1).

As mentioned participants must have agrichemicals and be willing to come forward. Therefore, the participation rate is not necessarily a good indicator of the success of a collection or how effective it has been at removing agrichemicals from long term stockpiling. To do this we also need to look at the response rate, i.e. the number of people who replied to the letter or were able to be contacted by phone.

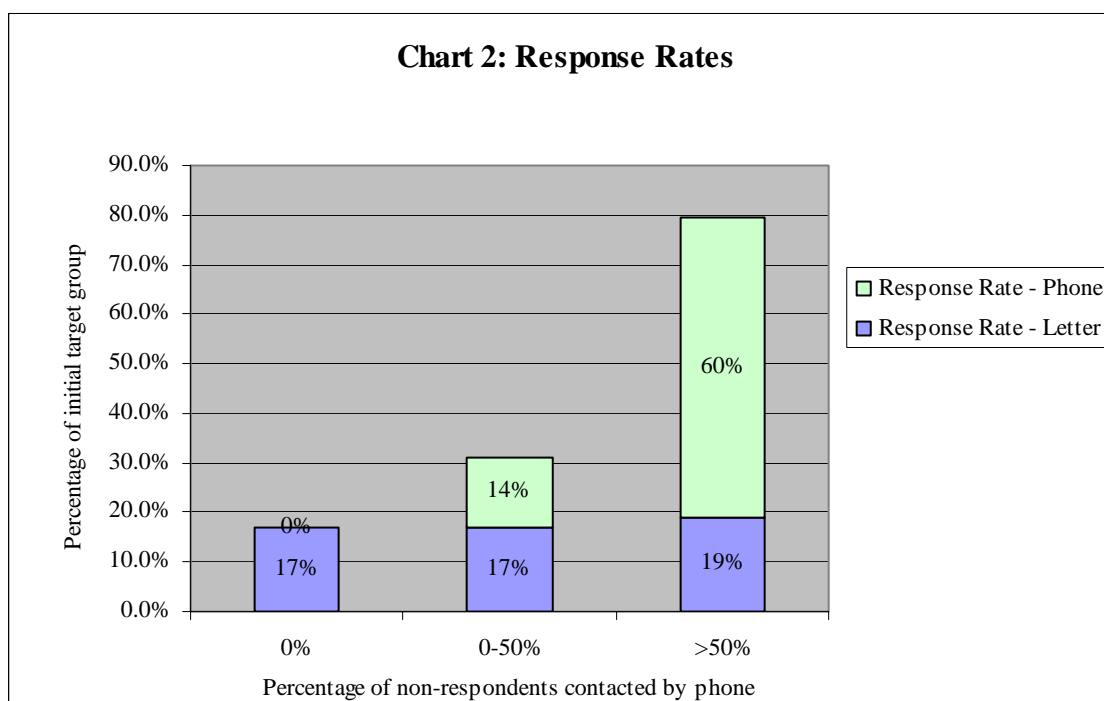
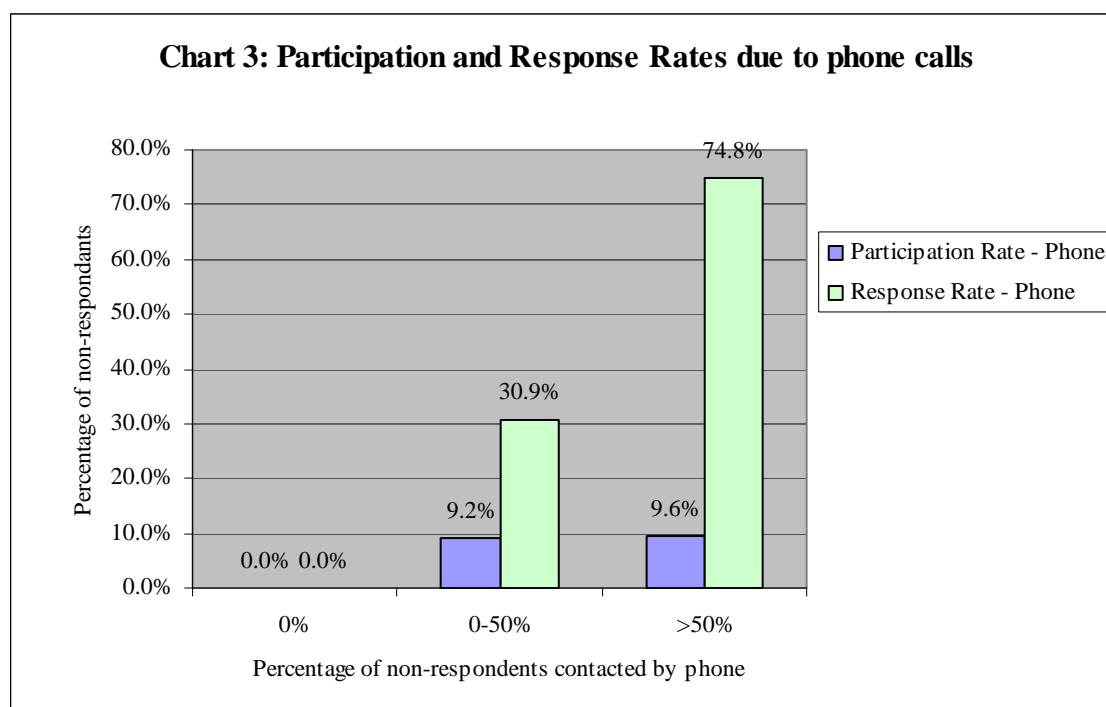


Chart 2 gives the response rate over the past 5 years. The response rate to the letters for each of the groups is reasonable consistent at about 17-19%. However, those collections that then go on to contact the non-respondents by phone significantly increase their response rates.

Chart 1 implies that letters are as effective, if not proportionally more effective, in encouraging participation as phone calls. However, the data in Chart 1 was compared against the total number of properties sent letters rather than the number that did not initially respond to the letters. This is a bias against the phone call approach. Chart 3 shows the participation and response rate if the phone calls are compared to the number of non-respondents rather than the number of properties sent letters.



Comparing the data this way suggests that the phone calls are a more effective way of encouraging participation with a participation rate of around 9% as opposed to the 5-8% achieved through letters alone. Note that these groups have already been offered a collection by letter and have chosen not to participate. It is only through the additional phone calls that they have taken part.

This should be of concern to those councils that did not contact the majority of the non respondents by phone, as up to 9% of them could still have stockpiled agrichemicals. This could mean that up to 1110 properties could still have stockpiled agrichemicals present on their farms. If the size of their stockpiles is consistent with the current average of 98kg, there could be a further 109 tonnes of agrichemicals within the areas already targeted.

## CONCLUSIONS

Looking at the data for the past five years of collections we can conclude that contacting target groups by both letter and telephone is a more effective way to get people to participate in the programme than by letters alone. In fact, phone calls alone would appear to be more effective than letters.

However, what needs to be considered when undertaking such a programme is the amount of resources required to contact individuals by phone. It is both difficult to obtain phone numbers and also, once that is achieved, difficult to make contact. Anecdotally councils have managed to contact around 15 people per hour and it can take as long again to get the initial phone list. When you have a target group of 600 people that could be 80 hours work, half of that time for calls being in the evening.

The advantage though, for those councils that have made the effort to ring the non-respondents, is that for those areas that have a high response rate they can be reasonably confident that the majority of the agrichemicals have been removed. Also, the councils have provided most of their residents with the opportunity to participate. If someone has been



contacted by letter and phone-call, but has still chosen not to safely dispose of their stockpiled agrichemicals , then any future cost to dispose of the stockpile should be borne by the holder of the agrichemicals not the council.

## **ACKNOWLEDGEMENTS**

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