

6. KITCHEN ORGANICS COLLECTION TRIAL

Officer responsible City Water & Waste Manager	Author Tony Moore, Resource Analyst, Solid Waste, DDI 941-6426
--	--

The purpose of this report is to describe the results of a recent kitchen organics collection trial and to provide recommendations concerning the establishment of a regular city-wide collection service.

HOW THE TRIAL WORKED

A kitchen organics collection trial was undertaken to investigate the feasibility of collecting domestic kitchen organics (food scraps) at the kerbside in Christchurch. The trial investigated the costs, operational issues and the community acceptance and participation of the system. Domestic kitchen organics were collected at the kerbside over an eight week period (May to July 2002), from two socio-economically different areas in Christchurch (Fendalton and Burnside). Collection was weekly, on the same day as the refuse and recycling collection. Involvement in the trial was voluntary and each household received all the information and materials required for the trial. Each household received two buckets. One 4 litre bucket (kitchen bucket) was to place the kitchen organics directly into and could be kept in the kitchen under or on the kitchen bench. The other 20 litre bucket (kerbside bucket) was to store the kitchen organics throughout the week and was to be placed at the kerbside by residents for emptying on the collection day. Half the households in each area received biodegradable bags to line their kerbside bucket and the other half received EM Bokashi to help control odour. A full copy of the report is available on the council website: www.ccc.govt.nz/waste/.

THE OVERALL RESULTS

The kerbside collection of kitchen organics was a resounding success. Those involved were overwhelmingly supportive of the service and were both willing to continue to use it, in its current form and were willing to pay for the service in the rates. Nearly all the households involved used the service on a regular basis and most noticed a reduction in the other waste that they produced. The organic material collected was generally odourless, was relatively dry and free of contaminants. The biodegradable bags used, kept the kitchen organics well contained and kept the buckets clean throughout the trial. EM Bokashi minimised odours and the materials collected composted well in an open-air windrow system.

Presented below, are the key results of the research:

KEY RESULTS:

- 23% of households approached, volunteered to take part in the kitchen organics trial.
- 98% of people involved, considered the service to be good or very good and 96% said they would continue using the service if it were provided.
- The Council collected 12 tonnes over the 8 week trial from around 320 households (average 5 kilograms per household per week). This result means that on average each household in Christchurch generates 208 kilograms of kitchen organics a year and city-wide equates to around 26,000 tonnes of kitchen organics.
- Overall participation was good 60% of households set out their kitchen organics for collection on each of the 8 weeks and 97% of households did so on more than 4 occasions.
- 88% of households noticed a reduction in the waste going to landfill, with 27% noticing a large or very large reduction in waste.
- Households with insinkerators were still interested in separating their kitchen organics for collection, but those that composted at home were less willing to participate in the trial.
- Overall the smell and contamination remained low throughout the trial.
- EM Bokashi was effective at reducing the smell and absorbing the moisture in the buckets.
- The biodegradable bags used were strong, remained intact and kept the buckets clean and the kitchen organics well bundled.
- The buckets were not interfered with by animals even when adjacent to refuse bags that were attacked by animals.
- The 4 litre kitchen bucket and the 20 litre kerbside bucket were suitable size for most households.
- The kitchen organics and the biodegradable bags broke down (almost completely) after one week in an open-air windrow composting system.

COST OF A CITY-WIDE SERVICE

The cost of offering a similar service (on a voluntary basis to those that want it) city-wide is estimated at around \$1.5 million or \$140 per tonne (based on 24% of households becoming involved and placing out 5 kilograms of kitchen organics per week for collection. This cost also includes processing costs of \$60 per tonne). Note that these costs would increase as more households become involved in the service. Such costs place this service in the order of the kerbside recycling service (\$160 per tonne, excluding processing costs). However, the costs also need to be weighed up against the economic and environmental benefits that such a service will provide. The benefits of diverting this material chiefly relate to the future avoided landfill costs (approximately \$95 per tonne), the reduction in costs associated with treating leachate and landfill gas, and the beneficial use of the material as a compost product. Taking these 'savings' into account, the relative ease of the collection operation and the overwhelming public support from those involved (albeit on a voluntary, wanted to participate basis), gives confidence in the viability of such a service in Christchurch.

CONCLUSIONS

- Overall, the collection system used was a success, with good participation and was highly regarded by those involved. The City Council should **instigate a kitchen organics collection** system in Christchurch as soon as budgets and processing technologies allow. Further thought will be given to the nature and roll-out of this service on a city-wide basis, including formulating detailed cost estimates for Council consideration.
- The kitchen organics should be used as a **feedstock for the new putrescible processing facility**.
- A future service would require some form of **bucket lining** (eg biodegradable bag or newspaper) for the service to be acceptable and hygienic.
- Retailers and supermarkets will be encouraged to move towards **biodegradable carry bags** issued at the point of sale, so these bags can be used to line the kitchen or kerbside buckets in a future collection service and to minimise the amount of plastics being sent to landfill.
- Consideration will be given to providing a similar **collection service to businesses** for example, small cafes or outlets where kitchen organics are typically disposed of to landfill or enter the wastewater system. This will be done in consultation with pig farmers who also provide another avenue for this material.
- The **container design needs further consideration**:
 - (a) The kitchen container should have a detachable flip-top lid to make it easier to place food scraps into it;
 - (b) The kerbside container needs to be wide and squat, it should have an attached flip-top lid and the container needs to be a distinctive colour to stand out from the other kerbside collection containers.

SUMMARY

Domestic kitchen organics (food scraps) collection is feasible in Christchurch. Those involved in the trial were overwhelmingly supportive of the service and were both willing to continue to use it and were willing to pay for the service in the rates. Such a service could potentially divert 26,000 tonnes per year of domestic organic matter from the landfill. The cost of an initial service would be around \$140 per tonne (\$1.5 million per year) to collect and process the material although these costs will increase as more households become involved in the service. A future kitchen organic collection service should be provided in Christchurch to collect material that can be fed into the new putrescible processing plant. Further thought will be given to the nature and roll-out of this service on a city-wide basis, including formulating detailed cost estimates for Council consideration.

Recommendation: That the Council develop a plan for moving toward a City-wide collection service for kitchen organics and that the introduction of this service be aligned with the completion of the new putrescible processing facility.