

REPORT

Household Organic Material Collection Trial

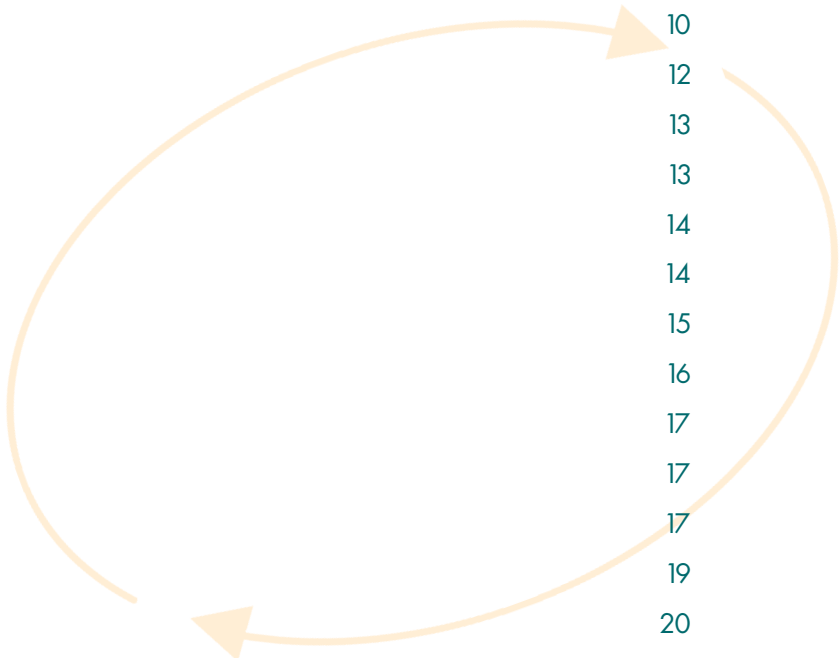
Chifley August 2000 - June 2001



AUSTRALIAN CAPITAL
TERRITORY GOVERNMENT

Table of Contents

Executive Summary	3
Introduction	5
Background	5
Objectives of Trial	6
Pre Trial	6
Selecting the Suburb	6
Purchasing the Equipment	7
Mobile Garbage Bin Selection	7
Kitchen Tidy Selection	7
Service Contracts	7
Education	8
Resident Information Packages	8
Public Consultation	9
Trial Surveys	9
Pre Trial Survey	9
Mid Trial Survey	10
Resident Comments/Feedback	12
Trial Assessment	13
Presentation Statistics	13
Participation Statistics	14
Weekly Tonnages	14
Contamination Levels	15
Trash Packs	16
Odagard GWT Trial	17
Waste Auditing	17
Audits of Residual Garbage	17
Audits of bio bins	19
Audits of Trash Packs	20
Organic Processing	21
Trial Finalisation	21
Conclusions	22
Appendix - Copies of material used in the trial	23



HOUSEHOLD ORGANIC MATERIAL COLLECTION TRIAL

Executive Summary

In the ACT, the composition of domestic garbage bins includes 52% (23 450 tonnes) of food and kitchen wastes. The Chifley household organic collection trial was designed to determine the potential to collect food and kitchen wastes from residential dwellings.

Garden waste has been excluded from domestic collections in the ACT because of the huge volumes we generate (from Garden City—planting's, etc) with over 90,000 tonnes of this material being delivered to recycling services operated by Corkhill Brothers and Canberra Sand & Gravel annually. This is more than double the amount of collected domestic waste (45,000 tonnes).

The ACT Government has a policy of No Waste By 2010. The Chifley household organic material collection trial was designed to help determine whether an organic collection service is able to effectively separate organics into a stream for reprocessing as another step towards No Waste in the ACT.

The objectives of the household organic trial (bio bin trial) were:

- To trial the separate collection of food and kitchen waste for reprocessing.
- To investigate the amount of food and kitchen waste generated by a suburb containing approximately 1000 residences and monitor seasonal variations.
- To determine the viability of separately collecting food and kitchen wastes from the residual garbage stream and reduce frequency of residual waste collections.
- To process the material into a reusable product that meets the Australian Standards.

Public education was an important part of the trial with information pamphlets and survey questionnaires delivered to all Chifley residences (including multi-unit complexes) on a number of occasions.

The presentation statistics collected each week indicated that only 516 (60%) of residents were placing their bio bin out for servicing each week. This information and the responses to the second questionnaire indicate that the majority of residents were only putting their bio bin out for servicing when the bin was full.





Participation statistics were collected on the trial over a six week period. The results indicate that 90% (189 houses) of residents participated in the trial.

The average tonnages collected weekly over the trials 10 month period was 3.7 tonnes or 4.3 kilograms per household. Bin contamination levels were initially very low with an average of 1.3% contamination in the first five (5) months. The contamination level then increased over the final six (6) months of the trial with an average contaminant level of 9.2%.

The majority of Chifley residents used the bio bin service regularly, however a number of residents were either not using the service at all or not using the service correctly. The trial results show that this type of collection system can collect approximately 60% of the household organic material and thereby reduce the waste stream. Because not all residents utilised the provided services correctly, the amount of household organics remaining in the residual waste bins is a concern. The information collected from this trial will be used to assist in determining the future domestic collection system for the ACT.

HOUSEHOLD ORGANIC MATERIAL COLLECTION TRIAL

Introduction

In the ACT, the composition of domestic garbage bins includes 52% (23 450 tonnes) of food and kitchen wastes. The Chifley household organic collection trial was designed to collect the food and kitchen wastes from residential dwellings.

Garden waste has been excluded from domestic collections in the ACT because of the huge volumes we generate (from Garden City—planting's, etc) with over 90,000 tonnes of this material being delivered to recycling services operated by Corkhill Brothers and Canberra Sand & Gravel annually. This is more than double the amount of collected domestic waste (45,000 tonnes).

As over half of our domestic collected waste is organic materials, such as food waste, the Chifley trial was designed to determine whether we can separate and collect this material and therefore halve the amount of residual waste collected. As the current contracts for domestic collections are nearing an end it was considered timely to review the potential to rationalise collection services as part of determining the future services for Canberra, that would assist with the move toward No Waste by 2010.

The first servicing of the Chifley bio bin was undertaken on 9th August 2000.

During the trial statistical information was collected on the following:

- Resident comments/feedback, collected through trial surveys, telephone calls and email;
- Weekly statistics including presentation numbers, tonnages and contamination levels; and
- Waste auditing to assess seasonal aspects.

Background

The Waste Management Strategy for Canberra establishes a framework for sustainable resource management and lists broad actions which are needed to achieve the aim of a waste-free society.

Promoting best practice in waste management will require the development of systems that are safe and environmentally responsible, the rationalisation of recycling and waste handling infrastructure and the redesign of landfills to maximise the recovery of resources.

Prior to the introduction of the current wheeled bin service in 1994, wheeled bin collection trials were conducted in Kaleen and then extended trials to Melba and Dickson. This was important



HOUSEHOLD ORGANIC MATERIAL COLLECTION TRIAL

to ensure that the services were optimal and to gauge public acceptance of the services.

There has been many changes in the domestic collection area since 1994 with many councils bringing in a third wheeled bin collection for green (garden) waste (including Queanbeyan).

The Next Step in the No Waste Strategy documents actions to assist with reducing waste to landfill. The ACT Budget for 2000–2001 financial year included funding to conduct a household organic material collection trial to assist with determining how the future domestic collection services should operate.

Objectives of Trial

The objectives of the household organic material trial (bio bin trial) were:

- 1 To trial the separate collection of food and kitchen waste for reprocessing.
- 2 To investigate the amount of food and kitchen waste generated by a suburb containing approximately 1000 residences and monitor seasonal variations.
- 3 To determine the viability of separately collecting food and kitchen wastes from the residual garbage stream and reduce frequency of residual waste collections.
- 4 To process the material into a reusable product that meets the Australian Standards (4454 - 1999).



Pre Trial

Selecting the Suburb

To select an area for the trial that was representative of Canberra averages, the Australian Bureau of Statistics (ABS) was asked to identify those suburbs that were the closest to average demographics in terms of household numbers, age distribution, income etc. The suburbs also had to be of a size between 800 and 1200 households.

ABS advised that Waramanga, Chifley, Holder and Scullin were the suburbs that best fitted these requirements. These suburbs were then assessed against the current collection arrangements for garbage and recycling to avoid the need to reschedule recycling collections while ensuring other collections could occur on the same day. As a result the only suburb that met these requirements was Chifley. On Tuesday 13 June 2000 it was announced that Chifley had been selected as the trial suburb.

HOUSEHOLD ORGANIC MATERIAL COLLECTION TRIAL

Purchasing the Equipment

Mobile Garbage Bin Selection

Brickwood Holdings supplied 1000 x 85 Litre (L) mobile garbage bins (MGBs) for single households and 96 x 240L MGBs for multi-unit complexes. Based on the following selection criteria and weighting's:

- recycled content / 25%;
- warranty / 20%;
- delivery prior to 30 June 2000 / 25%; and
- costing per bin / 30%.

Brickwood Holdings were selected because they were the only company that could meet the required deadline and their bins contained the highest recycled content (50%). The small and large bins were delivered at a unit cost of \$36.65 and \$47.25 respectively.

Kitchen Tidy Selection

Australian Housewares supplied 1200 kitchen tidy bins. To assist with the separation and storage of food and kitchen waste in the kitchen a 5 litre Australian Housewares bin (bio kitchen bin) was provided to each resident. The 5 litre bio kitchen bins were purchased for \$2.20 each.

Service Contracts

Following a tender evaluation process:

Thiess Environmental Services was awarded the contract for:

- (a) the distribution of the 85L MGBs, kitchen tidies and information kits to single households;
- (b) the collection, transport and delivery of household organic material to the composting site; and
- (c) auditing of the household residual garbage composition during the trial.



HOUSEHOLD ORGANIC MATERIAL COLLECTION TRIAL

Cleanaway was awarded the contract for:

- (a) the distribution of the 240L MGBs, kitchen tidies and information kits to the four (4) separate multi-unit complexes;
- (b) the collection, transport and delivery of household organic material to the composting site; and
- (c) auditing of the residual garbage composition during the trial.



Corkhill Brothers was awarded the contract to:

- (a) compost the organic material collected in compliance with Australian Standard 4454-1999;
- (b) audit household organic material composition;
- (c) to record contamination levels and changes due to seasonal variations; and
- (d) audit the composition of trash packs from 20 randomly selected households in the trial area at the same frequency as the household organics audits.

Thiess and Cleanaway emptied the bio bins weekly on Wednesday's with the organic material being delivered to Corkhills for processing.

Education

Public education is an important part of any trial and the education for this trial commenced prior to the trial and continued throughout the trial. Information pamphlets were delivered to all Chifley residences (including the multi-unit complexes) on a number of occasions.

Copies of the various education/information used in the trial are included in the Appendix.

Resident Information Packages

An information kit was prepared for each residence which consisted of a calendar and an information brochure explaining the operation of the three (3) bin system.

The information kits informed residents that their bio bins would be emptied weekly each Wednesday and their residual garbage bin emptied fortnightly on Wednesdays. The recycling bin collections remained unchanged as fortnightly on alternate weeks throughout the trial.

The kits explained the following information to the residents:

- What is the trial about?
- Why collect organic waste?
- What do I do?
- Contact details

HOUSEHOLD ORGANIC MATERIAL COLLECTION TRIAL

Residents were also advised to keep the bio bins in a cool area out of direct sunlight. It was recommended that the bio kitchen bin be emptied regularly and the contents wrapped in newspaper. Residents could rinse the bio bins out onto the lawn or a bin washing service could be used. The bio bins in the multi-unit complexes were cleaned by the contractor.

To remind residents of the commencement of the trial and to stimulate their participation, a letter was delivered approximately one week prior to the delivery of the bins. Collections of organic materials commenced on 9 August 2000.

The bio kitchen bin, information package and 85L MGB were delivered to each household between 2–4 August 2000. Those in multi-unit complexes also received a bio kitchen bin and information package. The multi-unit complexes were allocated one 240L MGB for each three units for shared use.

Public Consultation

A public consultation meeting regarding the trial was held in the Melrose Primary School Hall on Thursday 22 June 2000 from 7.00pm–8.30pm. The meeting emphasised to the community the importance of their involvement in the trial. Approximately thirty (30) people attended the meeting and the feedback was generally positive.

Trial Surveys

Trial questionnaires were distributed to Chifley residents on two occasions. The questionnaires were designed to obtain information to assist with the evaluation of the trial.

Residents were also invited to provide feedback and comments on the trial to ACT NOWaste via telephone, mail or email.

Pre Trial Survey

A pre trial survey was conducted to investigate how residents managed their different waste streams before the trial commenced.

A total of 1044 pre-trial questionnaires were forwarded to Chifley residents. Table 1 is a summary of the responses received from the residents.

The pre-trial questionnaire was designed to identify pre-trial householder practices. The results showed that the majority of households disposed of kitchen waste via either the domestic collection system or home composting and, therefore, there should be sufficient space in the residual waste bin to allow for a shift to a fortnightly collection.



HOUSEHOLD ORGANIC MATERIAL COLLECTION TRIAL

Table 1—Pre Trial Survey Responses (July 2000)

How do you currently dispose of kitchen wastes?	Number Responses	Percentage Responses
Home compost/Worm farm	202	60%
Domestic collection	202	60%
Shared hopper	20	6%
Trash pack	12	4%
How do you dispose of garden waste?	Number Responses	Percentage Responses
Home compost/worm farm	201	59%
Domestic Collection	46	14%
Car/trailer recycling	143	42%
Car/trailer landfill	56	17%
Trash Pack	78	23%
What type of organic material do you compost/worm farm?	Number	Percentage Responses
Vegetable waste	216	64%
Meat & Dairy	16	5%
Grass Clippings	207	61%
Leaves	211	62%
Prunings	95	28%
Paper/Cardboard	41	12%
None	74	22%

The total resident responses by the date specified in the questionnaire was 338 (32%). There were 47 (14%) unsolicited responses saying it was a 'great idea' or similar.

Mid Trial Survey

A follow-up questionnaire was distributed to all residents in Chifley in November 2000. This questionnaire was designed to review the residents usage of the three bin system, obtain information as to what residents have changed since the trial started, and problems experienced. The survey determined that the majority of residents were satisfied with the service being trialed, however a small number expressed concerns with odours from the bins and the fortnightly collection of the residual garbage bin.

HOUSEHOLD ORGANIC MATERIAL COLLECTION TRIAL

Table 2—Mid Trial Survey Responses (November 2000)

How often do you put out your bins for collection?		Number Responses	Percentage
Garbage Bin	Fortnightly	314	90%
	Monthly	8	2%
	6 Weekly	7	2%
Recycling Bin	Fortnightly	310	89%
	Monthly	16	5%
	6 Weekly	6	2%
Bio Bin	Weekly	262	75%
	Fortnightly	23	7%
	3 Weekly	16	5%

When bins are placed out how full are they?		Number Responses	Percentage
Garbage Bin	Empty	0	0%
	1/4 Full	35	10%
	1/2 Full	69	20%
	3/4 Full	76	22%
	Full	158	45%
Recycling Bin Paper Section	Empty	0	0%
	1/4 Full	16	5%
	1/2 Full	62	18%
	3/4 Full	115	33%
	Full	144	41%
Cans & Container Section	Empty	0	0%
	1/4 Full	49	14%
	1/2 Full	91	26%
	3/4 Full	93	27%
	Full	100	29%
Bio Bin	Empty	11	3%
	1/4 Full	78	22%
	1/2 Full	71	20%
	3/4 Full	60	17%
	Full	110	31%



HOUSEHOLD ORGANIC MATERIAL COLLECTION TRIAL

Table 2—Responses (November 2000) continued

Do you use the bio kitchen bin?	Number Responses	Percentage
Yes	276	79%
No	70	20%

Was the information provided easy to understand/use?	Number Responses	Percentage
Yes	331	95%
No	9	3%

Total response by the date specified in the questionnaire was 350 (34%).

Total mailed out via Australia post was 1,044.

There were 73 (22%) responses requesting the garbage collection revert back to weekly.

Resident Comments/Feedback

Comments received from residents during the trial by telephone included the following:

- A number of callers were concerned that the fortnightly collections of the residual 140L garbage bin were insufficient. An additional garbage bin was delivered to residents experiencing difficulty.
- Residents had bio bins stolen.
- Residents called to discuss odours in the bio bins and residual garbage bins.
- Multi-unit residents were concerned over the misuse of the bio bins in multi-unit complexes.

Following announcement of the end of the trial approximately thirty (30) residents rang to express their disappointment that the trial would be finishing. A number of residents asked for suggestions as to how they could continue to recycle their waste, thus composting and worm farming demonstrations were provided. A number of residents requested that the service be run on a voluntary basis.

HOUSEHOLD ORGANIC MATERIAL COLLECTION TRIAL

Trial Assessment

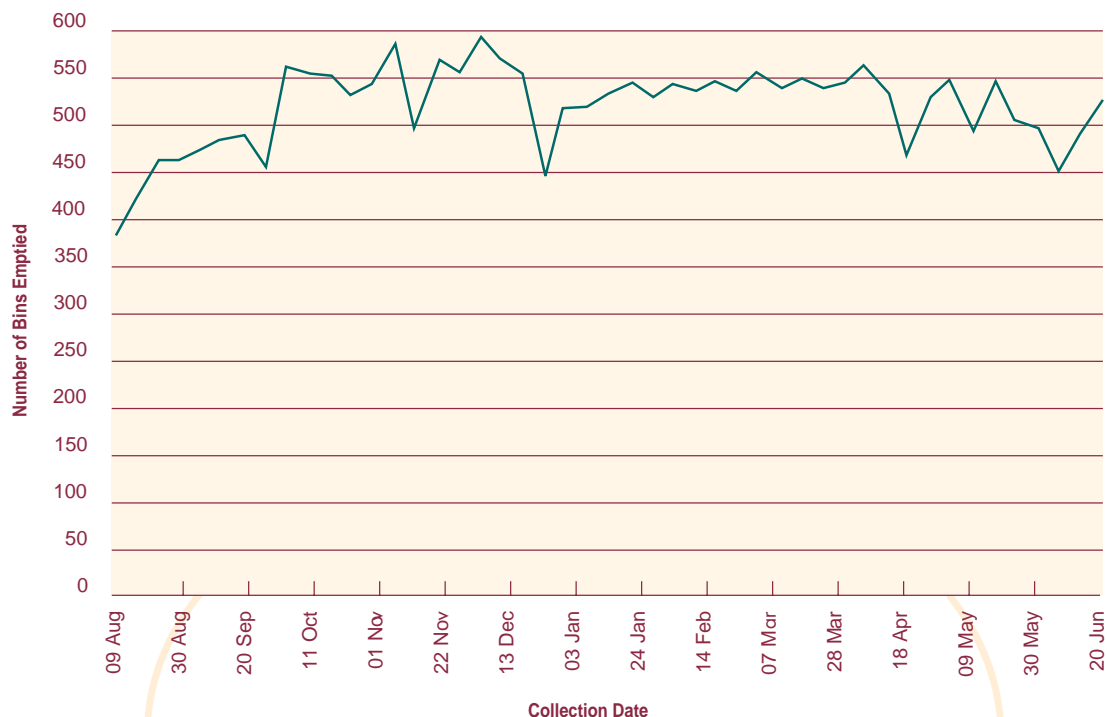
Presentation Statistics

A total of 848 x 85 litre bio bins were delivered to Chifley residences prior to the commencement of the trial. With the construction of new dwellings over the duration of the trial the bio bin total increased to 852.



Figure 1 reveals an increase in bio bin presentation numbers as residents became familiar with the new service. The bio bin numbers increased from 381 (45%) bins on the first service to 486 (57%) bio bins in mid September 2000. The holiday periods, particularly over the Christmas period, showed a drop in the number of bio bins presented. The average number of bio bins presented over the duration of the trial was 516 (61%) bio bins.

Figure 1—Bio bin Weekly Presentation



HOUSEHOLD ORGANIC MATERIAL COLLECTION TRIAL

Participation Statistics

Participation statistics were collected for the trial over a six week period starting on 1 November 2000. Approximately one fifth of the suburb (or 210 households) were monitored for presentation rates.

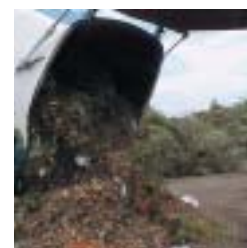
The results indicated that 10% of people did not use their bio bin and were therefore considered not to have participated in the trial. This indicates that 90% (189 houses) of residents participated in the trial.

Table 3—Usage of the Three Bin System

Number of times services used	Bio bin		Garbage (Served Fortnightly)		Recycling (Served Fortnightly)	
	Number	Percentage	Number	Percentage	Number	Percentage
0	21	10%	2	1%	10	5%
1	28	13%	25	12%	31	15%
2	20	9.5%	44	21%	62	29%
3	20	9.5%	139	66%	107	51%
4	25	12%				
5	48	23%				
6	48	23%				
	210	100%	210	100%	210	100%

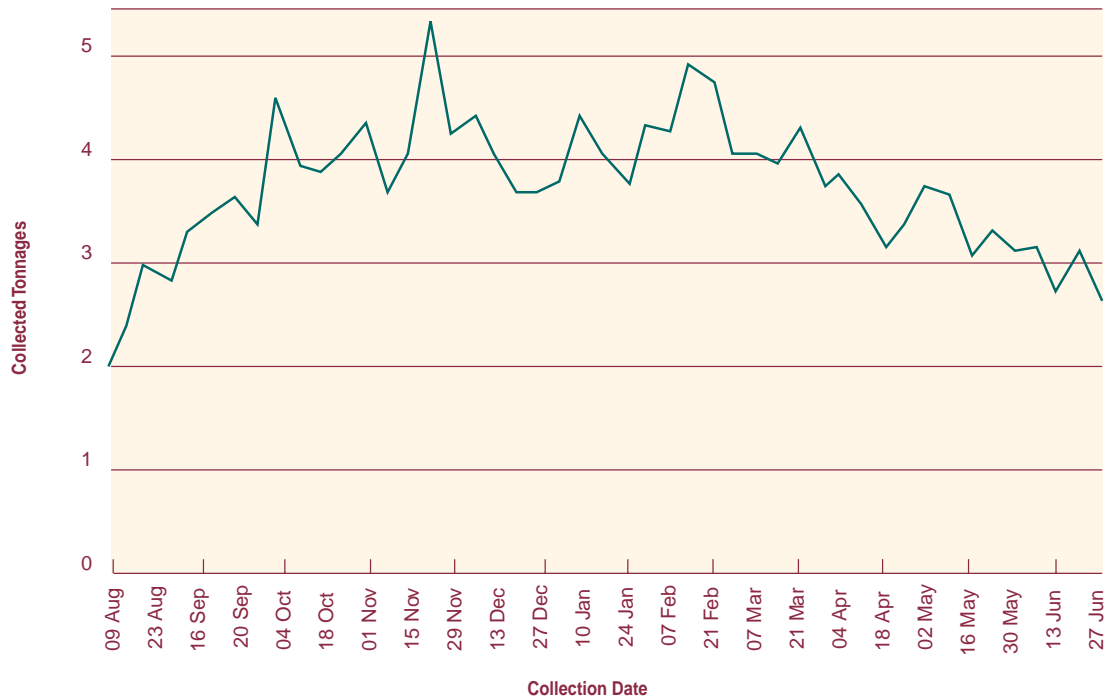
Weekly Tonnages

Figure 2 reveals the weekly tonnages collected in the bio bins. The graph reveals a steady increase of tonnages over the first two months. The tonnages peaked at 5.3 tonnes on 22 November 2000. The months of May and June 2001 saw the tonnages collected slowly decrease to 2.6 tonnes on the final collection day. The average tonnages collected weekly over the trials 10 month period was 3.7 tonnes or 4.3 kilograms per household per week.



HOUSEHOLD ORGANIC MATERIAL COLLECTION TRIAL

Figure 2—Weekly bio bin Tonnages



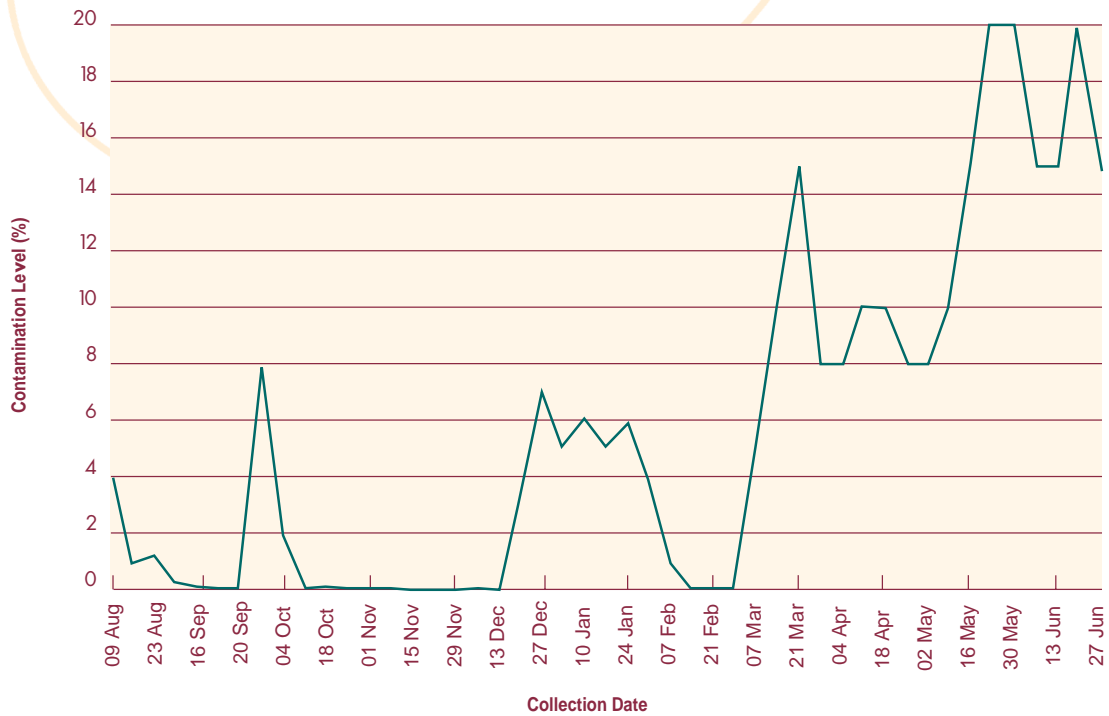
Contamination Levels

Figure 3 highlights contamination levels over the duration of the trial. Contamination is measured as a percentage volume estimate and is considered to be any materials other than those specified in the information brochure (eg. plastics, glass, steel, clothing). The first five months of the trial revealed excellent contamination levels with a bin average of 1.3%. However, over the school holiday periods contamination increased to 8%. From early March 2001 until the end of the trial, there was an increase in contamination to above 8%. The increased contamination level may have been due to some residents putting waste into the bio bins because at the time their garbage bins were overfull or because the trial was finishing and their level of support dropped as a result. A letter notifying residents of the finish of the trial was delivered on 15 May 2001 and contamination levels increased significantly during the conclusion of the trial.



HOUSEHOLD ORGANIC MATERIAL COLLECTION TRIAL

Figure 3—Contamination Levels Volume Percentages



Trash Packs

The announcement of the trial caused a number of trash pack operators to express concerns over the impact that such a service may have on their businesses. It was initially proposed to trial 140 litre bins for the collection of the organic wastes, as this is the standard size being used for domestic garbage collections. This bin size was of concern to the trash pack industry as they considered that it could negatively impact on their businesses given its potential to collect up to 560 litres of garden waste per month (about half the volume of a trash pack). As a result an 85 litre bin was selected as this was considered large enough to hold the food waste generated by large families and would significantly limit the amount of garden waste that could be placed in bins for collection. The trash pack operators were consulted before, during and after the trial to assist with the trial evaluation process.



The trash packs from the Chifley area were audited at seasonal intervals to assist with the trial assessment process. It was not possible to conduct an audit during the spring months due to a change in trash pack operators.

HOUSEHOLD ORGANIC MATERIAL COLLECTION TRIAL

Statistical feedback from the trash pack operators indicated that over the ten (10) month period there was a reduction of approximately 20% in trash pack pick-ups from the Chifley area (423 pick-ups to 355 pick-ups), however there were minimal drop offs in the total number of services.

Odagard GWT Trial

During the bio bin trial a biodegradable, non-toxic product was trialed by a number of residents.

The product is designed to be sprayed onto the surface of the green waste and organic material contained within the bio bin. The spray provides a coating over the material suppressing odours.

Feedback from residents indicated that Odagard GWT did reduce the smell slightly, however most advised that the product may need to be stronger for the amount of organic waste in the bin. No residents experienced problems in using the product.

Waste Auditing

To assist with evaluating the trial, waste audits were conducted on the following waste streams:

- Residual 140 litre garbage bins;
- Residual multi unit hopper bins;
- Organic 85 litre bio bins; and
- Trash packs.

Audits of Residual Garbage

Households

The results from the Waste Inventory (1997) were used as baseline data. Audits of the residual garbage bins were undertaken during the following seasonal intervals:

- Winter audit in August 2000;
- Spring audit in November 2000;
- Summer audit in February 2001; and
- Autumn audit in May 2001.

The seasonal audits were based on 50 randomly collected residual garbage bins collected from Chifley residences. The results (Table 4) reveal that:

- following an initial decrease from 52% by weight in food/kitchen waste between the Inventory and Winter audit (15.6%) there has been a 7% increase over the Spring (20.4%), Summer (22.6%) and Autumn (22.1%) audits.



HOUSEHOLD ORGANIC MATERIAL COLLECTION TRIAL

- there was an increase in garden waste from the Inventory 5% by weight to the Winter (10.2%) to the Spring audits (17%), however this figure dropped by approximately 14% in the Summer (3.3%) audit and again by 0.6% in the Autumn (2.7%) audit.

Table 4—Household Residual Waste Audits

Composition	Percentage by Weight				
	Inventory Audit (1997)	Winter	Spring	Summer	Autumn
Food/Kitchen	52%	15.6%	20.4%	22.6%	22.1%
Garden	5%	10.2%	17%	3.3%	2.7%
Paper/Cardboard	17%	19.9%	12.9%	14.5%	17.3%
Glass	6%	4.1%	4%	4.4%	4.1%
Plastic (1,2&3)	1%	2.2%	1.5%	3.6%	1.1%
Plastic (other)	9.5%	21.2%	19.7%	23%	30%
Steel	2.5%	8.9%	3.9%	3.6%	2.5%
Aluminium	1%	0.5%	0.7%	0.4%	0.7%
Ceramics	0%	0.1%	1.3%	1.4%	0.5%
Footwear/clothing	2.5%	3.2%	4%	2.5%	3.7%
Disposable nappies ¹	2%	9.7%	1.5%	11.1%	6.2%
Residual/hazardous	1.5%	4.5%	13.1%	9.6%	10.1%

The increases in food/kitchen waste in the residual garbage bin over the duration of the trial may be due to the fact that some people had a reducing interest in the trial. Although there was an increase in food/kitchen waste from 15% by weight to 22% by weight it was not significant compared to the Inventory (52% by weight). Responses from the survey indicated that some residents decided against using the bio bin during the summer months due to odour issues.

Multi-unit dwellings

The methodology used to audit multi-unit dwellings was to remove two 240L bins from each of the four sites (eight in total) for each audit sample.

¹ The variations that appear in certain composition categories were attributed to the randomised sampling used in the Chifley suburb.

HOUSEHOLD ORGANIC MATERIAL COLLECTION TRIAL

Table 5 reveals a decrease, in the amount of food/kitchen waste going into garbage bins (from 52% by weight to 25% by weight in Winter) since the introduction of the bio bins. However, there was no change in the percentage of food/kitchen waste in the bins from the Spring (17%) to the Summer (16.9%) audit. The audit results reveal that there is still a significant amount of food/kitchen waste in the residual garbage bin which should be collected in the bio bin.

Table 5—Multi-Unit Residual Waste Audits

Composition	Percentage by Weight				
	Inventory Audit (1997)	Winter	Spring	Summer	Autumn
Kitchen	52%	25.2%	17%	16.9%	16.5%
Garden	5%	12.2%	5.2%	2.3%	3.3%
Paper/Cardboard	17%	17.5%	18.5%	11.7%	12.8%
Glass	6%	13.8%	9.5%	10.8%	11.3%
Plastics (1,2&3)	1%	6.2%	6%	3.3%	1.8%
Plastics (other)	9.5%	7.1%	18%	18.7%	17.6%
Steel	2.5%	0.3%	4.5%	0.4%	0.3%
Aluminium	1%	0.5%	3.7%	0.3%	0.1%
Ceramics	0%	0.8%	4%	0%	0%
Footwear/clothing	2.5%	2.3%	3.5%	3.3%	4.8%
Disposable nappies	2%	1.0%	5.7%	5.6%	6.2%
Residual/hazardous	1.5%	13.1%	4.5%	26.7%	25.3%

Audits of bio bins

The audits completed on the organic material from the bio bins are presented in Table 6. The table reveals that between 10% to 15% of the contents of the bio bin is food/kitchen waste. The audit also reveals that between 40% and 50% of the bio bin contents was garden prunings.



HOUSEHOLD ORGANIC MATERIAL COLLECTION TRIAL

Table 6—Bio bin Audits

Composition	Percentage by Weight			
	Winter	Spring	Summer	Autumn
Food/Kitchen	10%	15%	10%	11%
Grass Clippings	10%	25%	37%	26%
Leaves	20%	10%	5%	21%
Prunings	50%	40.5%	44%	39%
Animal Waste	1%	0%	0%	0%
Paper/Cardboard	5.5%	9%	1%	0%
Other Waste	3%	0.5%	3%	3%

Audits of Trash Packs

The trash pack audits reveal that the bulk content, (between 76% and 96%), of the pack was garden waste. Table 7 reveals that small amounts of recyclable materials such as glass, plastics, steel and aluminium are present in the packs.

Table 7—Trash Pack Audits

Composition	Percentage by Weight			
	Pre-trail Audit	Winter	Summer	Autumn
Food/Kitchen	0.2%	0%	0%	0%
Garden	76.7%	96.5%	96.5%	90.4%
Paper/cardboard	10.8%	2.2%	0.4%	2.2%
Glass	0.6%	0%	0.6%	0.2%
Plastic (1, 2 & 3)	0.4%	0%	0.6%	0.1%
Plastic (Other)	6.6%	0.4%	0.7%	1.9%
Steel	0.2%	0%	0.2%	0.2%
Aluminium	0.1%	0%	0.2%	0.4%
Ceramics	0.3%	0%	0%	0.4%
Footwear/clothing	0.5%	0.4%	0%	0.6%
Disposable Nappies	0%	0%	0%	0.2%
Residual/hazardous	3.6%	0.4%	0.8%	3.4%

Note: No audit conducted during the spring months due to a change in trash pack operators.

HOUSEHOLD ORGANIC MATERIAL COLLECTION TRIAL

Organic Processing

The desired outcome from the processing of the household organic material was to compost the material into a useable garden product that complied with the Australian Standard 4454-1999.

Following collection of the household organic material, it was:

1. decontaminated – removing obvious contaminants such as glass, plastics, etc;
2. shredded through a 75 millimetre screen size to reduce the material;
3. mixed – shredded green waste was mixed with the shredded household organic material to achieve an appropriate C:N balance; and
4. windrowed – the mixed material was composted into windrows, which were turned regularly. The composting period was extended to twenty (20) weeks instead of the normal period of fifteen (15) weeks to ensure complete pathogen removal.

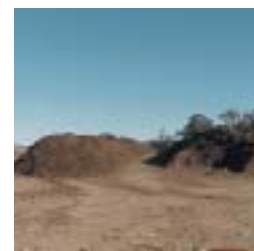
The compost was tested at 4, 6, 10 and 14 weeks in accordance with the Australian Standard. The N.P.K levels were found to be much higher than in the general composted green waste due to the food waste content. These levels aided in the composting process and produced a high quality product.

The final composted product is screened and size graded and will be used by the Government in gardens surrounding the proposed No Waste Education Centre at Mugga Lane. An amount of the final product was also donated to the Melrose Primary School for use in the restoration of their garden beds.

Trial Finalisation

To coincide with the completion of the trial it was decided to provide Chifley residents with options to continue the separation of food and kitchen wastes. ACT NOWaste ran three composting and worm farming workshops in the grounds of the Melrose Primary School on Sunday 24 June 2001 between 10am and 3pm. Approximately fifty (50) people attended on the day.

An information pamphlet on the progress of the trial, including information to assist residents with the completion of the trial at the end of June, was distributed to all residents. The pamphlet also provided residents with information on the collection services for their garbage and recycling bins to apply from July 2001.





HOUSEHOLD ORGANIC MATERIAL COLLECTION TRIAL

A letter was forwarded to all residents in July 2001 thanking residents for their support, participation in the trial, and also provided them with statistics collected during the trial.

As a good will gesture, Chifley residents who wished to keep their bio bins were able to keep them for free. Residents who did not want to keep their bins were able to place them out for collection. Surplus bio bins were sold to the public at a cost of \$15 per bin.

Conclusions

While 90% of households participated in the trial, the presentation statistics collected each week indicated that only 60% of residents placed their bio bin out for servicing each week. This information and the responses to the second questionnaire indicate that the majority of residents were only putting their bio bin out for servicing when the bin was full.

The contamination level in the bio bins increased over the last four months of the trial. This increase may be due to the loss of interest by the residents or because the trial was coming to an end.

The audits of the residual garbage bins indicated a significant decrease in food and kitchen waste. The Waste Inventory identified that 52% of garbage bins was food and kitchen wastes. The trial audits for the single households identified that on average 20% of the garbage bins comprised food and kitchen wastes. The multi-unit complexes averaged 19% food and kitchen wastes in the residual garbage bins.

The audits of the bio bins revealed that on average 43% of the contents of the bin were prunings. Approximately 11.5% of the bin contents was food and kitchen waste. Seasonal variations were prevalent, particularly the quantities of grass clippings and leaves in the bin. The material collected in the bio bin was reasonably clean but contamination increased over time.

The majority of Chifley residents used the bio bin service regularly, however a number of residents were either not using the service at all or not using the service correctly. The trial results show that this type of collection system can collect approximately 60% of the household organic material and thereby reduce the waste stream. Because not all residents utilised the provided services correctly, the amount of household organics remaining in the residual waste bins is a concern. The information collected from this trial will be used to assist in determining the future domestic collection system for the ACT.

HOUSEHOLD ORGANIC MATERIAL COLLECTION TRIAL

What is the trial about?

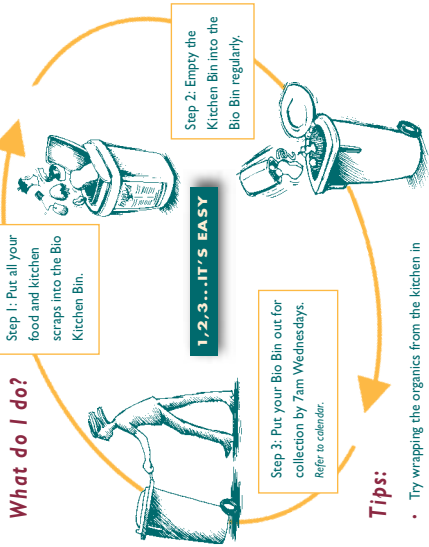
- Chifley has been selected for the organic waste collection trial.
- A third bin called the Bio Bin will be introduced in the trial.
- Each resident will also be provided with a Bio Kitchen Bin.
- The Kitchen Bin is used to collect organics from the kitchen before putting them into the Bio Bin.
- The trial will commence on the 9th August 2000 and will run until the end of June 2001.

Why collect organic waste?

Food and Kitchen waste make up 52% of domestic waste collected. When landfilled, organic material rots and produces leachate (contaminated water), methane and other harmful gases.

The trial aims to recover this material for recycling and reduce the amount of waste going to landfill.

What do I do?



Tips:

- Try wrapping the organics from the kitchen in newspaper and place in Bio Bin.
 - To keep the Bio Bin clean, put leaves in the bottom of the Bio Bin to stop food and kitchen waste sticking to the base of the bin.
 - Store the bin in a shady area out of direct sunlight.
- Remember:** Do not overload your Bio Bin. The lid must be fully closed.

Contamination

Even small amounts of contamination in the bin can make the material very hard to recycle.

What can I put in the Bio Bin?

- Food scraps and Peels
- Tea bags and leaves
- Coffee grounds and paper filters
- Egg shells
- Plate scrapings
- Meat scraps and bones
- Nut shells
- Dairy products
- Vacuum dust
- Hair
- Shredded paper
- Tissues
- Paper towel
- Small prunings
- Flowers
- Grass clippings
- Leaves
- Plant clippings
- Bedding plants (remove excess soil)
- Animal waste



These items must not be put in the Bio Bin

- Plastic bags/Plastics
- Garbage
- Glass bottles and jars
- Ceramic materials
- Sharps
- Nappies
- Personal hygiene products
- Large branches
- Soil
- Cigarette butts or ashes
- Kitty litter
- Textile materials

Q: What can I do with garden waste that won't fit in the Bio Bin?

A: Corkhill Bros or Muggo Lane Landfill and Canberra Sand and Gravel at West Belconnen Landfill accept garden waste free of charge.

Q: What happens to the collected organics?

A: The material is shredded and mixed with garden waste and composted. Over time the material breaks down into an earth-like material, and can be used as a soil conditioner or food for the garden.

HOUSEHOLD ORGANIC MATERIAL COLLECTION TRIAL

Multi-unit Complexes Information Brochure

your guide to using the new collection services

bio kitchen bin

NO WASTE BY 2010

URBAN SERVICES

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 Sustainable Capital Recovery Governance,
 ACT Waste, Department of Urban Services,
 47-49 Livingstone, Canberra ACT 2602

THE BIO BIN WILL BE COLLECTED WEEKLY

KEEPING YOUR BIO KITCHEN BIN CLEAN
 Soak in hot soapy water and rinse or simply place in dishwasher.

IF YOU HAVE ANY QUESTIONS OR PROBLEMS CONTACT
 Gerard Gillespie on 6207 5335
 Email: no.waste@act.gov.au
 Website: www.act.gov.au/nowaste

THE RECYCLING OF ORGANIC MATERIAL IS A FURTHER STEP TOWARDS 'NO WASTE BY 2010'

BIO KITCHEN BIN
 This bin is for household food scraps, garden waste, coffee grounds, tea bags, and other organic materials. Do not put in any other waste, including plastic, paper, metal, or glass. For more information, visit www.act.gov.au/nowaste.

URBAN SERVICES
 ACT Waste, Department of Urban Services,
 47-49 Livingstone, Canberra ACT 2602

TEA

HOUSEHOLD ORGANIC MATERIAL COLLECTION TRIAL



What is the trial about?

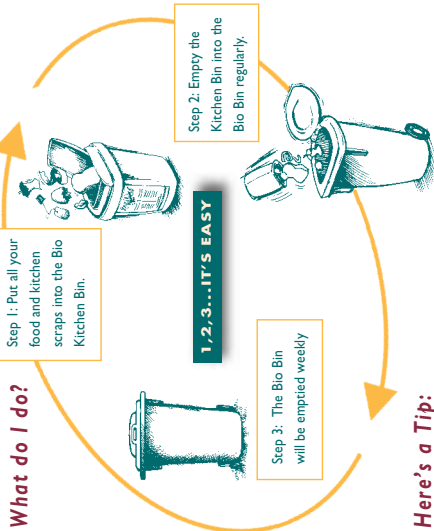
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What do I do?



Here's a Tip:

Try wrapping the organics from the kitchen in newspaper and place in Bio Bin.

Contamination

Even small amounts of contamination in the bin can make the material very hard to recycle.



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- Coffee grounds and paper filters
- Egg shells
- Plate scrapings
- Meat scraps and bones
- Nut shells
- Dairy products
- Vacuum dust
- Hair
- Shredded paper
- Tissues
- Paper towel
- Small prunings
- Flowers
- Leaves
- Plant clippings
- Bedding plants (remove excess soil)
- Animal waste



These items must not be put in the Bio Bin

- Plastic bags/Plastics
- Garbage
- Glass bottles and jars
- Ceramic materials
- Sharps
- Nappies
- Personal hygiene products
- Large branches
- Soil
- Cigarette butts or ashes
- Kitty litter
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A: The material is shredded and mixed with garden waste and composted. Over time the material breaks down into an earth-like material, and can be used as a soil conditioner or food for the garden.

HOUSEHOLD ORGANIC MATERIAL COLLECTION TRIAL

Chifley Collection Calendar




household organic material collection trial calendar

ALL COLLECTIONS ARE CONDUCTED ON WEDNESDAYS

		2000					
Aug			9	16	23	30	
Sept			6	13	20	27	
Oct			4	11	18	25	
Nov			1	8	15	22	29
Dec	6		13	20	27		

		2001					
Jan			3	10	17	24	31
Feb	7		14	21	28		
Mar	7		14	21	28		
Apr	4		11	18	25		
May	2		9	16	23	30	
June			6	13	20	27	

Recycling Bin and Bio Bin
Garbage Bin and Bio Bin



REMEMBER - PUT YOUR BINS OUT BEFORE 7AM ON COLLECTION DAY

Enquiries: phone Gerard Gillespie 6207 5335
www.act.gov.au/nowaste

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 Waste, Department of Urban Services, by
 Publishing Services, Publication No. 00/1729



HOUSEHOLD ORGANIC MATERIAL COLLECTION TRIAL

Sticker on bio bin lid

ORGANICS ONLY

PUT IN *bio bin* **LEAVE OUT**

Food waste from the home
food scraps & peel • tea bags
egg shells • meat scraps • hair
vacuum dust • tissues &
paper towels • nut shells
flowers • shredded paper

Small amounts of garden waste
leaves • flowers • small prunings
grass clippings • bedding plants
animal waste

Enquiries: Phone (02) 6207 5335

Plastics • plastic bags
sharps • nappies
personal hygiene products
garbage • glass • ceramics

STEPS

1. Collect small food and kitchen scraps in your small kitchen bin
2. Empty kitchen bin contents into Bio-bin with small amounts of garden waste if available
3. To keep your bin clean, hose it out regularly or contact bin cleaners listed in the Yellow Pages

THIS SIDE TO KERB

HOUSEHOLD ORGANIC MATERIAL COLLECTION TRIAL

Sticker on bio kitchen bin



PUT IN

food scraps
& peel
tea bags
egg shells
meat scraps
hair
vacuum dust
tissues &
paper towels
nut shells
flowers
shredded paper

LEAVE OUT

plastics
plastic bags
sharps
garbage
glass
ceramics

Enquiries:
Phone 6207 5335

STEPS

1. Collect organic materials in the Bio Kitchen Bin
2. Regularly empty contents of this bin into the Bio bin
3. Clean your bin regularly (it's dishwasher safe!)

Hint: Try wrapping the organic materials in newspaper to avoid odours



HOUSEHOLD ORGANIC MATERIAL COLLECTION TRIAL

Pre trial survey (July 2000)



household organic material collection trial

NO STAMP
REQUIRED IF
POSTED IN
AUSTRALIA

Reply Paid 788
ACT Waste
Department of Urban Services
PO Box 788
Civic Square ACT 2608

STAPLE OR TAPE HERE



household
organic material
collection trial

As part of the ACT Government's commitment to the No Waste by 2010 Strategy, a trial of household organic material collection will be undertaken in your suburb of Chifley. To facilitate the organic collections trial an additional wheeled bin, kitchen tidy and information kit will be supplied to each residence in late July before the trial commences.

Could you, or a member of your household, please complete this short questionnaire and return it by folding along the lines indicated and post back before Friday, 7 July 2000. The information obtained from this questionnaire will assist the ACT Government to evaluate the success of the trial.

Enquiries: Gerard Gillespie on 6207 5335

HOUSEHOLD ORGANIC MATERIAL COLLECTION TRIAL

1. How do you currently dispose of your **kitchen waste** materials? (Please tick all relevant boxes.)

- Home Compost/Worm Farm
- Domestic Collection (green top bins)
- Shared Hopper (eg units)
- Trash Packs
- Other(specify) _____
- _____
- _____

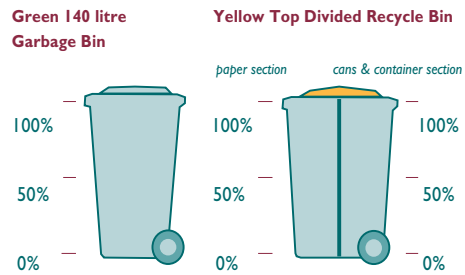
2. How do you dispose of your **garden waste** - leaves, grass clippings, prunings ? (Please tick all relevant boxes.)

- Home Compost/Worm Farm/Mulch
- Domestic Collection (green top bin)
- Shared Hopper
- Car/trailer to recycling centre (Corkhills/Canberra Sand & Gravel)
- Car/trailer to landfill
- Trash Packs
- Other(specify) _____
- _____
- _____

3. What type of organic materials do you Home Compost or Worm Farm? (Please tick all relevant boxes.)

- Vegetable Waste
- Meat and Dairy Products
- Grass Clippings
- Leaves
- Prunings
- Paper/Cardboard
- None
- Other (specify) _____
- _____
- _____

4. What percentage full are each of the following household domestic bins on collection day? (Please mark on the scale.)



5. Do you have any comments or suggestions about the collection of organic waste?

6. How many people live in your household?

Number:

7. What type of dwelling do you occupy?

- Single house with yard
- Town house with yard
- Flats or Apartments (without yard)

8. Optional

Name: _____

Address: _____

Contact number: _____

Thank you for your time in completing this questionnaire. Please refold and post back.



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HOUSEHOLD ORGANIC MATERIAL COLLECTION TRIAL

Mid trial survey (November 2000)



household organic material collection trial - follow up

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Department of Urban Services
PO Box 788
Civic Square ACT 2608

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household
organic material
collection trial

As part of the ACT Government's commitment to the No Waste by 2010 Strategy, a trial of household organic material collection is being undertaken in your suburb of Chifley.

Could you, or a member of your household, please complete this short questionnaire and return it by folding along the lines indicated after removing the calendar, and post back before Friday, 15 December 2000. The information obtained from this questionnaire will assist the ACT Government to evaluate the success of the trial.

Enquiries: Andrea Garnsey on 6207 5335
or by email: nowaste@act.gov.au
Website: www.act.gov.au/nowaste

update

The trial has been running now for just over three months. We would like to commend you on your efforts and participation in the trial.

The trial to date has been going well. Contamination in the Bio Bins has been less than 2% and this is very encouraging. We endeavour to achieve no contamination, so remember not to put any plastic bags, containers or glass into the Bio Bin.

Only about half of the Bio Bins are being put out for collection each week. We suggest that you put your Bio Bin out weekly even if it is not full. We also encourage everyone to participate in the trial. Full participation means that potential problems can be identified and over come. Also remember to put all meat and food waste in the Bio Bins and not in the garbage bins.

With the warmer weather approaching it is important to keep your bin clean and the lid closed. To avoid odours it is a good idea to wrap your food waste in newspaper before putting it in the Bio Bin. The easiest way to keep your Bio Bin clean is to rinse it regularly with water.

Some residents have been putting their recycling and garbage bins out on the incorrect week. To help you with this remember some event that happens each fortnight. For example Recycling Bins are collected the day before Government Pay Day! (Refer to the calendar days over the page).

The response rate to the first questionnaire was great. It is hoped that this questionnaire will have an even greater response. It is important that we receive maximum feedback from the trial, in order to be able to evaluate the success and to enable the service to be improved.

HOUSEHOLD ORGANIC MATERIAL COLLECTION TRIAL



household organic material collection trial - follow up questionnaire

1. What type of dwelling do you occupy?

- Single house with yard
- Town house with yard
- Unit/Flat/Apartment without yard

2. How many people live in your household

Number

3. How often do you put out your bins for collection? Circle

Garbage Bin (Green Lid)

Fortnightly Monthly 6 Weekly

Other specify _____

Recycling Bin (Yellow Lid)

Fortnightly Monthly 6 Weekly

Other specify _____

Bio Bin (Maroon Lid)

Weekly Fortnightly 3 Weekly

Other specify _____

4. When bins are placed out how full are they? Circle

Garbage Bin (Green Lid)

Empty 1/4 1/2 3/4 Full

Recycling Bin (Yellow Lid)

Paper Section
Empty 1/4 1/2 3/4 Full

Cans and Container Section
Empty 1/4 1/2 3/4 Full

Bio Bin (Maroon Lid)

Empty 1/4 1/2 3/4 Full

5. What have you changed since the trial started?
(eg. used to home compost but now use bio bin)

6. Do you use the bio kitchen bin?

Yes No

Comments _____

7. Was the information provided easy to understand/use?

Yes No

Comments _____

8. Have you experienced any problems or can you suggest ways the service can be improved?

9. Optional

Name: _____

Address: _____

Contact number: _____

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Thank you for your time in completing this questionnaire.
Please retain the calendar below, refold this questionnaire
and post back.



household organic material collection trial calendar

ALL COLLECTIONS ARE CONDUCTED ON WEDNESDAYS
2000

Nov	1	8	15	22	29
Dec	6	13	20	27	

2001

Garbage Bin and Bio Bin	Jan	3	10	17	24	31
Recycling Bin and Bio Bin	Feb	7	14	21	28	
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	Apr	4	11	18	25	
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	June		6	13	20	27

URBAN SERVICES
Enquiries: phone 6207 5335
www.act.gov.au/nowaste

REMEMBER - PUT YOUR BINS OUT BEFORE 7AM ON COLLECTION DAY



HOUSEHOLD ORGANIC MATERIAL COLLECTION TRIAL



Chifley "bio bin" Trial Update and Finish

The Chifley bio bin trial has been running for 9 months and is due to finish at the end of June 2001. We would like to thank residents for their support and efforts so far.

Our November 2000 survey indicated that the majority (or ~60%) of residents are very supportive of the trial. However a number have expressed concerns about odours and fortnightly collection of the green lid garbage bin. To reduce odours in the green lid bin, we recommend that you rinse meat trays and other plastic food packaging prior to disposal.



The main concerns raised with the bio bin were organic odours, and waste sticking to the bin sides. These problems are overcome by wrapping food in newspaper before putting it in the

bio bin. An entire newspaper in the base of the bio bin will also help during emptying.

We are finding that many of the bio bins in multi-unit developments are not being used. If you decide not to use your bio bin for organics collection, please do not put other rubbish in it.

Which bin is the right bin?



Organic Waste: Despite a significant drop, there is still a large amount of organic material, approximately 20%, being disposed of in the green lid garbage bin instead of the

bio bin. It is important that all food and kitchen organic material be placed in the bio bin. This includes all food scraps (meat, dairy, peelings, tea bags etc), tissues, paper towel, and small amounts of grass clippings, leaves and small prunings.

Green Waste: 10% of green waste is still being disposed of in the green lid garbage bins. If you have too much green waste for the bio bins, or if your prunings are too large, please use the free green waste drop-off centres at both Mugga Lane and Belconnen Landfills.



Paper Waste: If you find that you are filling up the paper section of your recycling bin, remember the drop off centre at Phillip or that you are able to put the excess paper in the bio bin.

Cans & Containers: There is still a small amount of recyclable plastic (classes 1, 2, 3 & R), glass, steel and aluminium that is being put into the green lid bin. These items should be placed in the yellow lid recycling bin.

Remember, your bio bin is for food, organic material and small amounts of green waste only. Please do not put other material, such as plastic garbage bags, plastic containers or glass into the bin, as it makes it very difficult to recycle!

The Finish of the Chifley Bio Bin Trial

The Chifley bio bin trial will finish at the end of June 2001.



On Wednesday **27 June 2001**, we ask that all residents place their bio bins out for final pick up and collection of the bins.

A reminder notice will be delivered to all households prior to the final collection.

New calendars will be forwarded to all residents. The collection schedule will change back to a weekly collection of garbage bins and fortnightly collection of recycling bins. On Wednesday 4 July 2001, both the garbage and recycling bins will be emptied.

Free Compost/Worm Farming

Demonstration: A free compost/worm farming demonstration for all Chifley residents will be run at the Melrose Primary School at a date to be advised. Watch your letterbox for further details.

Thank you: We would like to take this opportunity to thank all Chifley residents for their participation, time and patience with the bio bin trial.

Contact Details: Should you have any queries relating to the bio bin trial please contact Andrea Garnsey on 6207 5335 or e-mail andrea.garnsey@act.gov.au



www.act.gov.au/nowaste

Australian Capital Territory Government

HOUSEHOLD ORGANIC MATERIAL COLLECTION TRIAL

IMPORTANT INFORMATION



Chifley "bio bin" Trial

The Chifley bio bin trial will finish on Wednesday, 27 June 2001.

Final Servicing: We ask that all residents place their maroon-lidded bio bins out for final emptying on Wednesday, **27 June 2001**.

What to do with your bio bin:

Residents can EITHER:

1. Leave the bio bin out after the final emptying and a contractor will collect it. Do not put any material in the bio bin after emptying (bin collection to begin on 28 June 2001 and be completed by 2 July 2001). OR
2. Take the bio bin in and keep it as a thank you for your participation in the trial. (If you choose to keep the bio bin it becomes your property).

Your white bio kitchen bin will not be collected so please keep it for reuse.

New Collection Services: The collection services for Chifley will change from 1 July 2001.



- **Garbage bins** will be emptied **weekly** on Tuesday starting on 3 July 2001.
- **Recycling bins** will be emptied **fortnightly** on **Wednesday** starting on 4 July 2001.

New calendars will be forwarded to all residents.



Free Compost/Worm Farming Demonstration:

On Sunday 24 June 2001 a free compost/worm farming demonstration for all Chifley residents will be run at the Melrose Primary School, MacLaurin Crescent, Chifley. There will be 3 demonstrations during the day 10am, 12pm and 2pm. Opportunities will arise for hands on activities so bring your gloves.

Feedback/Comments: We are interested in your comments and feedback on the trial. Please forward comments to ACT No Waste PO Box 788, Civic Square, ACT 2608 or e-mail andrea.garnsey@act.gov.au

Thank you: We would like to thank all Chifley residents for their participation and patience with the bio bin trial.

Should you have any queries please contact Andrea Garnsey on 6207 5335



www.act.gov.au/nowaste

Australian Capital Territory Government



HOUSEHOLD ORGANIC MATERIAL COLLECTION TRIAL

IMPORTANT INFORMATION

Collection service details for Chifley Residents:

Garbage bins – Garbage bins (green lid) will be emptied **weekly** on **Tuesdays** with the next collection on 10 July.

Recycling Collection – Recycling bins (yellow lid) will be emptied **fortnightly** on **Wednesdays** with the next collection on 18 July.

Place Bins out for collection by 7am on the day of collection.

All residents should have received a new collection calendar. If you have not received a copy contact PWM Australia on 6260 1472 or look on the ACT NOWaste website: www.act.gov.au/nowaste



What can go into the garbage bin?



Deposit all household waste that cannot be recycled into the garbage bin.

DO NOT put **GARDEN WASTE**, hot ashes, commercial waste, industrial waste, building waste, rocks, soil, dead animals, paint, solvents, oil or recyclable materials into the garbage bin.

Garden waste (leaves, lawn clippings and prunings) can be taken, free of charge, to Corkhill Bros at Mugga Lane landfill or Canberra Sand and Gravel at West Belconnen landfill and Vicars Street Mitchell.



For further details contact ACT NOWaste on 62076323 or e-mail no.waste@act.gov.au

