HOUSEHOLD COMPOST SURVEY

Final Report

Prepared for:

Metro

Prepared by:

Gilmore Research Group

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Executive Summary

The Household Compost Survey was undertaken to assist Metro in evaluating the effectiveness of its past efforts and in designing future home composting initiatives. Gilmore Research Group completed 606 telephone interviews among randomly selected households in the tri-county area in May 2001. In order to qualify for the interview respondents had to live in a single-family house, mobile home, 2-4 unit residence or a townhouse/condo – comparable to the population that qualifies for curbside recycling and yard debris pickup.

Following are highlights of the 2001 survey. Where applicable, comparisons are made to results of a similar previous study done by Gilmore Research Group for Metro in 1998.

The majority of 2001 households (67%) have one standard size can per week as their regular garbage service, and this finding holds true among composters (67%) and non-composters (66%). The next most common level of service was a mini-can per week (15% total, 13% composters, 17% non-composters). These findings are quite comparable to those of the 1998 survey.

In 2001, 53% of these households reported composting yard debris, up from 48% in 1998. This increase is statistically significant at the 90% confidence level. Households participating in food scrap composting showed a smaller jump, increasing from 28% to 32% in this three-year period, not a statistically significant increase. Overall, more than half of the region's single-family households (55%) are participating in either yard debris or food scrap composting. Between mid-1998 and mid-2001, nearly 24,000 households started composting either food scraps or yard debris in this time period.

Compared to 1998, the overall proportion of composters in single-family and mobile homes reporting use of Metro bins for composting increased significantly, from 17% to 26% in 2001. Of the 74 households that reported purchasing a Metro compost bin in 2001, 88% indicated that they were still composting with the bin.

Of those that tried yard debris composting, 88% in 1998 and 87% in 2001 are still composting.
Of those that have tried food scrap composting, 82% in 1998 and 76% in 2001 are still composting.
Though not a significant decline, it does represent a potential concern if people are trying food scrap composting but not succeeding.

Of households that are doing yard debris composting successfully, there are different levels of success in adding food scrap composting. Of households that tried food scrap composting with the "pile it up" method," only 76% reported that they still compost food scraps. By contrast, of households that successfully used a Metro bin for yard debris composting and tried food scrap composting, 90% were still composting their food scraps. This difference is statistically significant at the 90% level of confidence, and it indicates that households that are successful with using a Metro bin for composting yard debris are much more likely to succeed with food scrap composting compared to those households that use a pile it up method.

Twenty-seven percent (27%) of all 2001 respondents reported that a neighbor composts at home. Of those having neighbors who compost, 37% reported sharing information with those neighbors who compost. Fewer respondents reported problems with neighbors' compost in 2001 (3%) than in 1998 (6%).

The most common reasons for never having composted yard debris were simply that respondents had *never thought of it* (14%) and *not enough space/no place for it* (14%). The most common reason for having stopped composting yard debris was also *not enough space/no place for it* (28%). The most common reason for never having composted food scraps was also *never thought of it* (35%), suggesting a tremendous opportunity for stimulating more food scrap and yard debris composting through education and outreach. The most common reason for having stopped composting food scraps was *not enough space/no place for it* (19%).

About one in ten yard debris (10%) and food scrap (11%) composters had *expert* knowledge of composting (i.e., knew the ideal 1 part green/2 parts brown ratio). In addition to the knowledge question, composters were asked how often they stir or mix materials in their compost. They were most likely to say *infrequently* (36%) or weekly (23%); 19% mixed monthly, and 16% never stirred their compost materials.

Yard debris composters were most apt to use the *pile it up* method (47%), followed by a *Metro bin* (24%) and *homemade bin* (22%). Food scrap composters were most likely to use a *Metro bin* (26%), *homemade bin* (25%), and the *pile it up* method (23%).

Among respondents with yard debris, 15% said yes they would be interested in purchasing a Metro bin in the next two years.

It appears that having a combination vegetable and flower garden may significantly increase the likelihood of home composting. Among composters, 59% reported a combination vegetable and flower garden, compared to 32% among non-composters. These are likely large gardens, as well. Non-composters and composters were about equally likely to have a vegetable garden (13% versus 10%). Non-composters were actually significantly more likely than composters to have a flower garden only (58% versus 28%).

Both composters and non-composters were most apt to describe their yard debris service as *one standard 32-gallon can or sack every other week* (34% for composters compared to 30% for non-composters), which is the standard with most curbside yard debris programs. Composters were significantly more likely than non-composters to have *no service/self-haul* (19% versus 12%). This finding is corroborated by a separate survey done by Gilmore (June 2001 Customer Intercept Survey for Metro South and Metro Central Transfer Stations) of self-haul cash customers at Metro transfer stations, which found that 64% participated in home composting of yard debris, a higher level of participation than the 53% of single-family households reported in this survey. Non-composters were significantly more likely than composters to dispose of *one extra large can per week* (12% versus 7%) or *one extra large can every other week* (19% versus 12%). Nevertheless, composters' use of yard debris service is substantial, suggesting that composters are generally big yard debris generators who compost to keep from incurring extra service charges for setting out extra yard debris for curbside collection.

Respondents were asked how they manage various forms of yard debris as well as food scraps. They were most likely to use *curbside recycling* for leaves and pine needles (45%), followed by *home composting* (34%). Grass clippings were managed most often by home composting (36%) and curbside recycling (33%). Brush waste was most likely to be put in *curbside recycling* (53%). Plant or garden waste was most apt to be either put out for *curbside recycling* (45%) or taken care of by *home composting* (46%). Food scraps were by far most apt to be disposed of by *regular garbage* (72%) or *put down garbage disposal or drain* (41%).

Composters were significantly more likely to say they don't have a garbage disposal unit than non-composters (47% compared to 29%). Non-composters with garbage disposals were significantly more likely than composters with garbage disposals to say they use their units *several times a day* (36% versus 27%).

In addition to food scraps and yard debris, composters could potentially add a variety of materials to their pile. When offered a list of potential materials, most composters (88%) said they do not compost any of them. However, some did report adding *paper* (7%), such as paper towels, Kleenex, newspaper or junk mail, as well as *pet waste* (3%) to their household compost.

Composters were asked if they had ever experienced problems with their own home composting, and if so, what those problems were. Eight percent (8%) of yard debris composters and 11% of food scrap composters reported composting problems. Overall, the most common problem was *rats* (39%). About three-quarters of those reporting problems (73%) said their problems were eventually resolved. Those who resolved their composting problems were asked where they found help for their home composting problem. Two respondents (or 10% of those with composting problems) mentioned *Metro/Recycling Info. Center/234-3000*.

Most respondents (81%) had never used or attended any of the Metro-sponsored composting programs. The bin distribution events have the greatest participation of all Metro-sponsored home composting support services. Just over one in ten respondents (13%) reported that they had purchased a home compost bin on Metro's bin distribution day. Usage of the other programs was lower: 2% had attended a school education program on composting, 4% had visited one of Metro's composting demonstration sites, and 2% had attended a home composting workshop.

Background and Methodology

Introduction and Purpose

As the regional government agency responsible for solid waste planning and disposal, Metro has initiated various strategies to reduce household waste. One of these efforts is the home composting program that Metro promotes through home compost bin distribution, home composting workshops and home compost demonstration sites. The following survey was undertaken to assist Metro in evaluating the effectiveness of its past efforts and in designing future home composting initiatives. The household survey discussed in this report was conducted in conjunction with other surveys of home compost bin purchasers and workshop attendees, available in other reports.

The objectives of the household telephone survey were to:

- Identify and measure the level of home composting among area households.
- Determine household waste management techniques for grass, leaves, brush, and food scraps.
- Investigate reasons for not composting.
- Determine incidence of Metro's bin use among households.
- Assess awareness and participation in Metro's composting programs.
- Examine ways to remove barriers to increased home composting.
- Explore incentives to increase home composting.
- Determine interest in various Metro home composting activities, including additional bin distribution.

Methodology

Gilmore Research Group completed 606 telephone interviews among randomly selected households in the tri-county area. Interviewing was conducted May 16 - June 5, 2001 with "an adult member of your household who is at least 18 years of age and shares in the responsibility of your home's yard debris or the disposal of your household's food scraps." The average interview lasted 10 minutes, with an average of 1.1 surveys completed per hour. In order to qualify for the interview respondents had to live in a single family house, mobile home, 2-4 unit residence or a townhouse/condo. Residents in multi-family units (5+) were disqualified.

The sampling method was designed so that the results of the survey are valid for a population that characterizes households that have the opportunity for curbside recycling and yard debris collection.

The survey instrument was developed by Steve Apotheker, Metro and Denise Bauman, Gilmore Research Group, then pre-tested and revised. A copy of the questionnaire is included in the Appendix. Five attempts were made to reach respondents during evening and weekend hours, with at least one daytime attempt.

For questions answered by the 500 respondents, the maximum expected margin of error is ±4.0% at the 95% confidence level for questions that are answered 50/50 (i.e., half "yes" and half "no"). Any questions for which the split exceeds 50/50 (such as 60/40) will have a lower error rate. For questions asked of subgroups, the maximum margin of error increases. The maximum margin or error increases to ±5.6% for the 326 composters and ±6.0% for 275 non-composters. Subgroups with cell sizes smaller than 30 respondents have been highlighted because of their large margin of errors. Except where specifically stated, any discussion of a "statistically significant" difference refers to the 95% level of confidence.

FINAL SAMPLE CALLING OUTCOME

No answer/Answering machine/ busy signal	792
Respondent not available/ too busy/gone for duration of study	74
Business/fax/modem	827
Disconnect	1099
Blocked phone number	255
Could not respond due to language/hearing problem/other	90
Not qualified – miscellaneous (moving, etc.).	15
Not qualified - Live in 5+ unit	174
Refused to participate/terminated interview	733
Completed interview	606
TOTAL	**4665**

Respondent Demographics: 2001 v. 1998

The demographic characteristics of the sample are outlined in Table 1. Respondents who compost are very similar to those who do not compost, partly because the survey excluded households without yard debris. Among the 2001 sample, respondents who composted tended to live in larger households, be better educated and have lower incomes. Bin composters appear better educated and older than the sample as a whole. The 2001 and 1998 samples were quite similar, with the exception of income--the 2001 sample reported slightly higher incomes, due to the inclusion of apartment dwellers (5+ unit building) who composted food scraps in the 1998 survey.

Table 1: **Respondent Demographics: 2001 v. 1998**

	Total 2001	Composter	Non-Composter	Have Metro bin	Total 1998	Tri-County 1998
Total respondents	*606*	*326*	*275*	*76**	*500*	(Geneysis Sampling)
Gender:						
Male	42%	45%	39%	46%	43%	48%
Female	58	55	61	54	57	52
Home Ownership						
Own	83%	83%	83%	95%	86%	61%
Type of Home						
Single family	92%	95%	89%	97%	92%	
Duplex /triplex / fourplex	7	5	9	3	4	
Mobile home	1	0	2	0	2	
Age:						
Under 34	24%	23%	26%	18%	23%	30%
35-44	23	23	23	24	22	25
45-64	38	40	35	46	37	29
65 or Older	13	13	14	11	16	16
Number in Household:						
One	16%	13%	18%	9%	13%	
Two	38	37	39	42	42	
Three	21	26	15	24	17	
Four	16	16	16	18	16	
Five or more	9	8	11	7	11	
Education:						
High School or Less	17%	16%	19%	6%	24%	63%
Some College	27	27	28	24	27	⇓
4 year College Grad	36	35	37	51	31	27%
Post Grad Degree	20	22	16	18	16	⇓
Ethnicity:						
White or Caucasian	88%	88%	88%	91%	88%	87%
Black / African American	1	1	2	0	2	
Asian	1	1	2	3	2	
Hispanic/Latino	2	1	3	1	--	
Other minorities	4	5	4	1	4	
Refused	4	4	1	4	2	
Household Income:						
Under $25,000	8%	9%	7%	7%	14%	
$25,001 to $50,000	23	25	21	24	32	
$50,001 to $75,000	21	20	21	25	21	
$75,001 or more	30	30	33	36	17	19%
Refused	17	16	18	8	16	

Totals may not add to 100% due to rounding and/or exclusion of *don't know/refused* responses

Level of Regular Garbage and Yard Debris Service: 2001 v. 1998

The survey explored the level of garbage and yard debris collection service used by respondents. The majority of 2001 households (67%) have one standard size can per week, and this finding holds true among composters (67%) and non-composters (66%). See Table 2. The next most common level of service was a mini-can per week (15% total, 13% composters, 17% non-composters). These findings are quite comparable to those of the 1998 survey.

Table 2
Level of Regular Garbage Service: 2001 v. 1998

	Total 2001	Composters	Non-Composters	Total 1998
All Respondents	*606*	*326*	*275*	*500*
One mini can per week	15%	13%	17%	18%
One standard size can per week	67	67	66	64
One or more extra large cans per week	7	4	10	7
One standard size can per month	4	5	2	3
Two or more standard size cans per week	1	1	1	2
On-call service for standard size can	1	1	<1	1
Self-haul	3	5	2	4
No service	1	1	<1	--
Other	2	2	2	1
Don't know/not sure	1	1	0	--

Question 44: Which of the following best describes your household's level of garbage service, how often it is available not how often you use it?
Totals may not add up to 100% due to rounding and exclusion of *don't know/refused* responses.

Eighty-seven percent (87%) of all 2001 respondents (n=606) reported participating in curbside recycling for paper, glass, metals, and plastic (Q45). This finding is nearly identical for composters (88%) and non-composters (87%).

Detailed Findings

Incidence of Home Composting: 2001 v. 1998

Table 3 compares the incidence of composting activities between the 1998 and 2001 surveys among single-family residences, including mobile homes. In 2001, 53% of these households reported composting yard debris, up from 48% in 1998. This increase is statistically significant at the 90% confidence level. Households participating in food scrap composting showed a smaller jump, increasing from 28% to 32% in this three-year period, not a statistically significant increase. Overall, more than half of the region's single-family households (55%) are participating in either yard debris or food scrap composting. Between mid-1998 and mid-2001, nearly 24,000 households started composting either food scraps or yard debris in this time period.

Table 3
Metro Region Residential* Composting Rates: 2001 Versus 1998

	1998		2001	
	n	%	n	%
Total owner-occupied single-family homes screened for interview	*527**	100%	*563*	100%
Compost yard debris	*254*	48%	*299*	53%
Compost food scraps	*150*	28	*180*	32
Compost Total**	*272*	52%	*309*	55%

Question 7:Does your household currently compost yard debris, such as grass, leaves, prunings and small branches?
Question 10: Does your household currently compost any food scraps, such as fruit and vegetable trimmings, egg shells or coffee grounds?
* Based on a sample of single-family and mobile homes in the region.
**Households composting either yard debris or food scraps.

The 1998 and 2001 surveys had several differences in their methodology. In the 1998 survey, households without yard debris were terminated, unless they composted food scraps. However, in the calculation of the 1998 composting rates, those households that were terminated due to lack of yard debris were added to the results of the survey in order to derive a regional composting rate for all single-family households (and mobile homes). The result allows comparison to previous telephone surveys of the region's single-family households.

By contrast, all single-family households were kept in the 2001 survey. Any households that terminated the survey for whatever reason prior to its end were assumed to resemble the sample actually interviewed.

A second difference between the two surveys was that households having yard debris were defined differently. In 1998 respondents were asked if they EVER had yard debris. In 2001, they were asked (Q2, 3, 4, 6, 6A) if they had a yard, lawn, garden, or trees and any "yes" was defined has having yard debris. Nearly all (99%) of single family/ mobile home households had yard debris in the 2001 survey, compared to an estimated 93% in 1998.

Metro Bin Purchase and Use: 2001 v. 1998

Compared to 1998, the overall proportion of composters in single-family and mobile homes reporting use of Metro bins for composting increased significantly, from 17% to 26% in 2001. Of the 74 households that reported purchasing a Metro compost bin in 2001, 88% indicated that they were still composting with the bin. See Table 4.

Table 4
Metro Bin Purchase and Use: 2001 Versus 1998

	1998				**2001**			
	Total		Single family/mobile home Composters		Total		Single family/mobile home Composters	
	n	%	*n*	%	*n*	%	*n*	%
Residents of single family/mobile homes	*470*	100%	*257*	100%	*563*	100%	*309*	100%
Use Metro Bin for composting*	*44*	9	*44*	17	*79*	14	*79*	26
Purchased Metro Bin on distribution day**	*50*	11	*36*	14	*74*	13	*65*	21

Question 13/13B: Which of the following best describes the composting methods you use for yard debris/food scraps now?
Question 29: Have you or members of your household used or attended any of the following compost programs or resources sponsored by Metro?
*In 1998, 8 households that reported composting with a Metro bin did not purchase it on a Metro bin distribution day. In 2001, 14 households reported using a bin, but not purchasing it.
**In 1998, 14 households indicated purchasing a Metro bin, but not using it for composting. In 2001, 9 households bought a bin, but are not currently using it for composting.
Totals may not add up to 100% due to rounding and exclusion of *don't know/refused* responses.

The surveys in 1998 and 2001 had more households report using a Metro compost bin than obtained it from a Metro distribution day. Since Metro bins have been sold only on annual distribution days, except for a small number during the first year of the program, there may be confusion about the type of bin being used by the household or where it was obtained. Future surveys could improve on the accuracy of the use and purchase of Metro bins by targeting these households for additional information, such as:

1. A description of their bin to see if it matches the Earth Machine bin that has been sold by Metro.
2. Approximate year that they got their Metro bin.
3. Where they obtained their bin (e.g., retail store, parking lot sale).

These additional questions will allow future surveys to provide a more accurate picture of Metro bin use.

Yard Debris and Food Scrap Composting: 2001 v. 1998

Respondents who are not currently composting were asked if they had ever composted in the past. Table 5 summarizes these results and compares them to 1998 findings. In 2001, 53% of respondents in single-family/mobile homes reported composting yard debris and 32% reported composting food scraps in some way. This finding is comparable to 1998 when 51% reported composting yard debris and 33% reported composting food scraps. In 2001, 8% reported composting yard debris in the past and 10% reported composting food scraps in the past, findings also very comparable to 1998.

Table 5
Current and Previous Yard Debris and Food Scrap Composting: 2001 Versus 1998

	1998		2001	
	n	%	n	%
Total single-family/mobile homes	*470**	100%	*563*	100
Compost yard debris (grass, leaves, prunings and small branches)				
Yes, currently	*240*	51%	*299*	53%
In the past but not now	*34*	7	*46*	8
No, never	*178*	38	*184*	33
Someone outside of household takes care of it	*18*	4	*34*	6
Compost food scraps (fruit and vegetable trimmings, egg shells, coffee grounds)				
Yes, currently	*142*	30%	*180*	32%
In the past but not now	*32*	7	*58*	10
No, never	*288*	61	*324*	58

Question 7:Does your household currently compost yard debris, such as grass, leaves, prunings and small branches?
Question 10: Does your household currently compost any food scraps, such as fruit and vegetable trimmings, egg shells or coffee grounds?
*1998 base includes 5 respondents who owned multi-family dwellings.
Totals may not add up to 100% due to rounding and exclusion of *don't know/refused* responses.

Table 5 uses data directly from the 1998 and 2000 surveys without normalizing for regionwide comparison and accuracy. Thus the yard debris and food scrap composting rates are for the samples only and do not represent regionwide numbers (refer to Table 3 for regionwide rates).

Of those that tried yard debris composting, 88% in 1998 and 87% in 2001 are still composting.
Of those that have tried food scrap composting, 82% in 1998 and 76% in 2001 are still composting.
Though not a significant decline, it does represent a potential concern if people are trying food scrap composting but not succeeding.

Of households that are doing yard debris composting successfully, there are different levels of success in adding food scrap composting. Of households that tried food scrap composting with the "pile it up" method," only 76% reported that they still compost food scraps. By contrast, of households that successfully used a Metro bin for yard debris composting and tried food scrap composting, 90% were still composting their food scraps. This difference is statistically significant at the 90% confidence level, and it indicates that households that are successful with using a Metro bin for composting yard debris are much more likely to succeed with food scrap composting compared to those households that use a pile it up method.

Methodology for future surveys should ask ALL respondents that stopped yard debris or food scrap composting what type of composting technology (e.g., bin, pile it up) they had used.

Neighbor's Composting: 2001 v. 1998

Twenty-seven percent (27%) of all 2001 respondents (n=606) reported that a neighbor composts a home (Q25). Of those having neighbors who compost (n=164), 37% reported sharing information with those neighbors who compost (Q26).

Significantly fewer respondents reported problems with neighbor's compost in 2001 (3%) than in 1998 (6%). See Table 6.

Table 6
Problems with Neighbor's Compost: 2001 versus 1998

	1998	**2001**
Total	*500*	*606*
Yes, neighbor's compost caused problems	6%	3%
No/not applicable	90	97
Don't know/not sure	4	<1

Question 27: Has your neighbor's home composting activity ever caused a problem for you such as odor, flies or rats, for you?
Totals may not add up to 100% due to rounding.

Specific complaints reported by those (n=16) having problems with neighbors' composting (Q27A) in 2001 included:

- odor 6 mentions
- rats/mice 8 mentions
- attracts animals 2 mentions
- not nice to look at 1 mention
- other miscellaneous complaints 2 mentions.

Reasons For Not Composting Yard Debris and Food Scraps

Respondents who are not currently composting were asked about their reasons for not doing so. Table 7 summarizes the findings from four questions:

1. Is there a reason why you never compost your yard debris?
2. (If composted in past) Why did you stop composting your yard debris?
3. Is there a reason why you never compost your food scraps?
4. (If composted in past) Why did you stop composting your food scraps?

The most common reasons for never having composted yard debris were simply that respondents had *never thought of it* (14%) and *not enough space/no place for it* (14%). The most common reason for having stopped composting yard debris was also *not enough space/no place for it* (28%). The most common reason for never having composted food scraps was also *never thought of it* (35%), suggesting a tremendous opportunity for stimulating more food scrap and yard debris composting through education and outreach. The most common reason for having stopped composting food scraps was *not enough space/no place for it* (19%).

Table 7
Reasons for Not Composting

	---Yard debris---		---Food scraps---	
	Never Did	Stopped	Never Did	Stopped
Households that don't compost yard debris and/or food scraps	*195*	*50*	*352*	*62*
No reason / never thought of it	14%	0%	35%	2%
Attracts rats/cats/bugs/flies/raccoons	3	2	8	11
Takes too much time / too lazy /easier to throw it away	11	4	6	13
Not enough space / no place for it	14	28	9	19
Don't have much to get rid of / no garden or lawn	9	12	10	10
Use the garbage disposal	0	0	6	3
Have yard debris pickup/ recycle it	13	4	3	0
Smell is bad	1	2	4	5
Too much work / have to turn it	8	12	7	13
Don't have a bin / barrel / equipment	2	8	3	2
Don't know how to do it	8	4	8	0
Just moved so haven't started / don't do it anymore	3	10	1	18
Feed it to animals / chickens / dogs	1	0	1	0
Landlord / homeowners assoc. may not allow it	4	2	1	5
Lawn maintenance crew handles it	4	0	<1	0
Tried and it didn't seem to work	1	14	2	10
Have too much to compost	4	2	0	0
Usually burn it	3	0	0	0
Other miscellaneous reasons	6	10	3	10
Don't know / refused	1	0	1	3

Q8 Why did you stop composting your yard debris? (Multiple responses)
Q9 Is there a reason why you never compost yard debris? (Multiple responses)
Q11 Why did you stop composting your food scraps? (Multiple responses)
Q12 Is there a reason why you never compost your food scraps? (Multiple responses)
Totals may not add up to 100% due to rounding and exclusion of *don't know/refused* responses.

Composting Knowledge

About one in ten yard debris (10%) and food scrap (11%) composters had *expert* knowledge of composting (i.e., knew the ideal 1 part green/2 parts brown ratio). See Table 8. Surprisingly, expert knowledge was more common among yard debris and food scrap composters of only two years duration (14% and 19%, respectively) than among yard debris and food scrap composters with nine or more years experience (5% and 5%). *Expert* level knowledge did not vary significantly among food scrap composters.

Table 8
Composting Knowledge by Material Composted and Composting Tenure

				Years Composting Yard Debris			Years Composting Food Scraps		
	Total	Compost Yard Debris	Compost Food Scraps	2 Years or Less	Three to eight Years	Nine years or more	2 Years or Less	Three to eight Years	Nine years or more
Composters	*326*	*312*	*190*	*87*	*110*	*116*	*54*	*73*	*87*
Expert	10%	10%	11%	14%	12%	5%	19%	12%	5%
Wrong	38	38	42	31	39	36	46	43	38
Don't know/ refused	52	52	47	55	49	59	35	45	57

Question 13C: From what you may have read or heard, which of the following ratios do you think is best for composting?
Totals may not add up to 100% due to rounding and exclusion of *don't know/refused* responses.

In addition to the knowledge question, composters (n=326) were asked how often they stir or mix materials in their compost (Q14). They were most likely to say *infrequently* (36%) or *weekly* (23%). Nineteen percent (19%) mixed *monthly* and 16% *never* stirred their compost materials.

Composting Techniques

Respondents who compost were queried about the various composting methods they may use. Yard debris composters were most apt to use the *pile it up* method (47%), followed by a *Metro bin* (24%) and *homemade bin* (22%). Food scrap composters were most likely to use a *Metro bin* (26%), *homemade bin* (25%), and the *pile it up* method (23%). See Table 9.

Table 9
Current Composting Methods for Yard Debris and Food Scraps

	Yard Debris	Food Scraps
Composters	*312*	*176*
Used a bin from Metro	24%	26%
Bought compost bin from a store	13	14
Made a bin/enclosure at home	22	25
Use the "pile it up" method	47	23
Bury it in the ground	7	11
Worm bin	3	4
Other misc./don't know	4	4

Question 13: Which of the following describes the composting method you use now? (multiple response)
Totals may not add up to 100% due to rounding and exclusion of *don't know/refused* responses.

Interest in Purchasing Metro Bins

Among respondents with yard debris, 15% said yes they would be interested in purchasing a Metro bin in the next two years. Interest did not vary significantly among the five areas of interest, but appears to be highest in Multnomah County outside of Portland (35%). See Table 10.

Table 10
Interest in Bin Purchase by Location

	Total	Portland	Gresham	Multnomah County	Clackamas County	Washington County
Respondents with yard debris	*543*	*206*	*21**	*23**	*132*	*161*
Yes	15%	18%	0%	35%	9%	15%
Maybe	17	17	10	22	19	17
No/don't know	68	65	90	43	72	68

Question 36: Would you be interested in purchasing a composting bin at a reasonable price sometime in the next two years?
* Because of small cell size, use for trend analysis only.
Totals may not add up to 100% due to rounding and exclusion of *don't know/refused* responses.

Management Techniques for Grass, Leaves, and Brush

Incidence of Yard Debris-Producers

Because of the survey qualification requirements, nearly all households interviewed (97%) reported having a yards. Table 11 indicates the incidence of yard debris producers among respondents surveyed, including composters, non-composters, and Metro bin users.

Table 11
Incidence of Yard Debris-Producers

	Total	Composters	Non-composters	Use Metro bin for yard debris
All respondents	*606*	*326*	*275*	*76*
Have yard	97%	98%	98%	100%
Have lawn with grass	93	95	93	93
Have trees in yard	92	95	90	100
Have fallen leaves on property	81	85	76	88
Have garden	68%	79%	56%	82%
Respondents with gardens	*410*	*256*	*153*	*62*
Have food/vegetable garden	12%	13%	10%	11%
Have flower garden	39	28	58	24
Have food/vegetable and flower garden	49	59	32	65

Question 2: Do you have a yard?
Question 3: Do you have a lawn with grass?
Question 4: Do you have a garden?
Question 5: Is that garden for food, flowers, or something else?
Question 6: Do you have trees in your yard?
Question 6A: Do you have fallen leaves on your property?
*Information was volunteered so may undercount total amount.
Totals may not add up to 100% due to rounding and exclusion of *don't know/refused* responses.

It appears that having a combination vegetable and flower garden may significantly increase the likelihood of home composting. Among composters, 59% reported a combination vegetable and flower garden, compared to 32% among non-composters. These are likely large gardens, as well. Non-composters and composters were about equally likely to have a vegetable garden (13% versus 10%). Non-composters were actually significantly more likely than composters to have a flower garden only (58% versus 28%).

Level of Yard Debris Service

The most common level of yard debris service is *one standard 32-gallon can or sack every other week* (32%), followed by no service/self haul (19%). See Table 12. This corresponds with the yard debris service levels offered by local jurisdictions. Both composters and non-composters were most apt to say *one standard 32-gallon can or sack every other week* (34% for composters compared to 30% for non-composters).

Table 12
Level of Yard Debris Service
By Composting Status

	Total	Composters	Non-Composters
All Respondents	*606*	*326*	*275*
One standard can per week	14%	13%	16%
One standard size can every other week	32	34	30
One extra large can per week	9	7	12
One extra large can every other week	16	12	19
No service/self-haul	19	19	12
Once a month service or less	1	1	0
Other	3	3	3
Don't know/refused	10	11	9

Question 19A: Which of the following best describes your yard debris collection service, how often it is available not how often you use it?
Totals may not add up to 100% due to rounding and exclusion of *don't know/refused* responses.

Composters were significantly more likely than non-composters to have *no service/self-haul* (19% versus 12%). This finding is corroborated by a separate survey done by Gilmore (June 2001 Customer Intercept Survey for Metro South and Metro Central Transfer Stations) of self-haul cash customers at Metro transfer stations, which found that 64% participated in home composting of yard debris, a higher level of participation than the 53% of single-family households reported in this survey. Non-composters were significantly more likely than composters to dispose of *one extra large can per week* (12% versus 7%) or *one extra large can every other week* (19% versus 12%). Nevertheless, composters' use of yard debris service is substantial, suggesting that composters are generally big yard debris generators who compost to keep from incurring extra service charges for setting out extra yard debris for curbside collection.

When asked how often they actually put out yard debris for collection (Q19), respondents (n=360) most often said *all of the time* (41%). Twenty-five percent (25%) said *most of the time*, 12% *half the time*, 17% *some of the time*, and 1% *never*.

Disposal of Yard Debris and Food Scraps

Respondents were asked how they manage various forms of yard debris as well as food scraps. They were most likely to use *curbside recycling* for leaves and pine needles (45%), followed by *home composting* (34%). See Table 13. Grass clippings were managed most often by home composting (36%) and curbside recycling (33%). Brush waste was most likely to be put in *curbside recycling* (53%). Plant or garden waste was most apt to be either put out for *curbside recycling* (45%) or taken care of by *home composting* (46%). Food scraps were by far most apt to be disposed of by *regular garbage* (72%) or *put down garbage disposal or drain* (41%).

Table 13
Management Method for Yard Debris and Food Scraps

	Leaves/pine needles	Grass clippings	Brush waste	Plant/ garden waste	Food scraps
Households with specified type of waste	*566*	*566*	*579*	*410*	*606*
Recycle at the curb in a yard debris container	45%	33%	53%	45%	0%
Compost at home / bury it/ put it in a pile	**34**	**36**	**15**	**46**	**23**
Nothing/ leave it where it lies / Use a mulching lawnmower	16	24	1	5	0
Use as mulch / put in flower beds	6	8	0	2	0
Lawn maintenance or someone outside home takes care of it	10	10	9	3	0
Haul to composting or transfer facility	7	3	11	4	0
Burn it	4	1	16	2	<1
Made into chips with a chipper	0	0	5	<1	0
Dispose in regular garbage	2	3	3	4	72
Put down garbage disposal or drain	0	0	0	0	41
Fed to animals / birds	0	1	0	1	18
Sweep out loose into the street	2	0	0	0	0
Dump/spread/pile somewhere else/over fence	1	0	2	1	0
Something else	<1	<1	<1	<1	1
Don't have any	1	0	3	2	1
Don't know / not sure	<1	1	<1	1	<1

Questions 15,16,17,18, 22: What all do you do with your fallen leaves or pine needles/grass clippings / brush waste such as twigs and prunings /plant or garden waste/food scraps? (Multiple responses)
Totals may not add up to 100% due to rounding and exclusion of *don't know/refused* responses.

Since many respondents employ more than one method to handle their organic materials, the interview investigated the degree to which each method was used. Respondents were queried about whether they disposed of *some, half,* or *most* of their leaves, grass clippings, brush and food scraps by each of the methods they listed. If respondents only listed one method, then it was assumed that they manage *all* of that type of material that way. The following four tables show the amount of organics managed through various methods.

Fallen Leaf Disposal

Table 14 lists management methods for leaves and pine needles. Respondents using a maintenance service were most apt to let the service handle *all* of their fallen leaves (78%). Thankfully, only 36% of those who *sweep it out loose into the street* handle all of their fallen leaves in that way.

Table 14
Management Method and Amount for Fallen Leaves or Pine Needles

	n=	Some	Half	Most	All
Compost at home / bury it/ put it in a pile	*191*	13%	11%	21%	55%
Recycle at the curb in a yard debris container	*256*	15	7	12	66
Nothing/ leave it where it lies	*90*	24	7	10	59
Lawn maintenance or someone outside home takes care of it	*54*	4	2	17	78
Haul to composting or transfer facility	*37*	22	3	24	51
Sweep it out loose into the street	*11**	36	0	18	36
Dispose in regular garbage	*11**	18	0	9	73

Questions 15a-h: Would you say that some, half or most of your leaf debris is ____?
"All" defined as having only one response to disposal method question.
* Because of small cell size, use for trend analysis only.
Totals may not add up to 100% due to rounding and exclusion of *don't know/refused* responses.

Level of Grass Clipping Disposal

Respondents using a maintenance service were most likely to let the service handle *all* of their grass clippings (95%). Only 47% of those who *use it as mulch* handle all their grass clippings in that way. See Table 15.

Table 15
Management Method and Amount for Grass Clippings

	n=	Some	Half	Most	All
Compost at home / bury it/ put it in a pile	*206*	14%	12%	11%	63%
Recycle at the curb in a yard debris container	*189*	7	12	12	69
Nothing/ leave it where it lies / Use a mulching lawnmower	*135*	10	7	10	71
Use it as mulch / put in flower beds	*45*	33	7	13	47
Lawn maintenance or someone outside home takes care of it	*55*	0	0	4	95
Haul to composting or transfer facility	*18**	11	11	6	72
Dispose in regular garbage	*15**	13	0	0	87

Questions 16a-h: Would you say that some, half or most of your grass clippings are ____?
"All" defined as having only one response to disposal method question.
* Because of small cell size, use for trend analysis only.
Totals may not add up to 100% due to rounding and exclusion of *don't know/refused* responses.

Level of Brush Disposal

Respondents using a maintenance service were most likely to let the service handle *all* of their brush waste (86%). Only 48% of those who *make it into chips* handle all their brush waste in that way. See Table 16.

Table 16
Management Method and Amount for Brush

	n=	Some	Half	Most	All
Compost at home / bury it/ put it in a pile	*84*	19%	11%	20%	50%
Recycle at the curb in a yard debris container	*306*	6	5	10	79
Nothing/ leave it where it lies	*5**	0	20	20	60
Lawn maintenance or someone outside home takes care of it	*51*	8	0	6	86
Haul to composting or transfer facility	*65*	14	9	8	69
Burn it	*92*	16	2	3	75
Dispose in regular garbage	*18**	6	0	6	83
Make into chips with a chipper	*29**	21	7	24	48

Questions 17a-i: Would you say that some, half or most of your brush waste is ____?
"All" defined as having only one response to disposal method question.
* Because of small cell size, use for trend analysis only.
Totals may not add up to 100% due to rounding and exclusion of *don't know/refused* responses.

Level of Plant or Garden Waste

All respondents using a maintenance service let the service handle *all* of their plant and garden waste (100%). Only 63% of those who *haul to a composting/transfer facility* handle all their plant and garden waste in that way. See Table 17.

Table 17
Management Method and Amount for Plant or Garden Waste.

	n=	Some	Half	Most	All
Compost at home / bury it/ put it in a pile	*189*	8%	12%	11%	70%
Recycle at the curb in a yard debris container	*184*	10	11	7	73
Nothing/ leave it where it lies	*19*	16	5	5	74
Lawn maintenance or someone outside home takes care of it	*13*	0	0	0	100
Haul to composting or transfer facility	*16**	25	13	0	63
Burn it	*6**	17	0	0	83
Dispose in regular garbage	*18**	28	0	6	67

Questions 18a-i: Would you say that some, half or most of your plant or garden waste is ____?
"All" defined as having only one response to disposal method question.
* Because of small cell size, use for trend analysis only.
Totals may not add up to 100% due to rounding and exclusion of *don't know/refused* responses.

Food Management Practices

As for yard debris, respondents were asked how often they use various methods for disposing of food scraps. Twenty-six percent (26%) of those who food scrap composters said they compost *all* of their food scraps. See Table 18.

Table 18
Management Method and Amount for Food Scraps

	n=	Some	Half	Most	All
Compost at home	*141*	28%	18%	29%	26%
Dispose in regular garbage	*433*	26	14	17	43
Put down the garbage disposal or drain	*249*	32	18	22	27
Feed to animals	*109*	54	14	11	20

Questions 23a-f: Would you say that some, half or most of your food scrap are ____?
"All" defined as having only one response to disposal method question.
Totals may not add up to 100% due to rounding and exclusion of *don't know/refused* responses.

Composters were significantly more likely to say they don't have a garbage disposal unit than non-composters (47% compared to 29% in Q21A). Non-composters with garbage disposals were significantly more likely than composters with garbage disposals to say they use their units *several times a day* (36% versus 27%).

Fifty-two percent (52%) of all respondents (n=606) said they eat out one or two meals per week (Q21). Non-composters were significantly more apt to say they eat out three to five meals per week than composters (20% versus 14%).

Food Scrap Composting

Nearly one in three of all respondents (31%) in the 2001 survey reported that they compost their food scraps (based on Q10).

Materials composted (Q20) by food composters (n=180) include:

Fruit trimmings	89%
Vegetable trimmings	95%
Plate scrapings	39%
Bread and grains	39%
Eggshells	68%
Coffee grounds/tea bags	70%
Fish	10%
Meat	8%
Dairy products	10%

In addition to food scraps and yard debris, composters could potentially add a variety of materials to their pile (Q24). When offered a list of potential materials, most composters (88%) said they do not compost any of them. However, some did report adding *paper* (7%), such as paper towels, Kleenex, newspaper or junk mail, as well as *pet waste* (3%) to their household compost.

Composting Problems

Composters were asked if they had ever experienced problems with their own home composting, and if so, what those problems were. Eight percent (8%) of yard debris composters and 11% of food scrap composters reported composting problems. Overall, the most common problem was *rats* (39%). See Table 19. About three-quarters of those reporting problems (73%) said their problems were eventually resolved.

Table 19
Composting Problems By Compost Type

	Total	Compost Yard Debris	Compost Food Scraps
Composters	*326*	*312*	*190*
Yes, experienced problem(s)	8%	8%	11%
Problem--*Composters with problem(s)*	*26**	*25**	*20**
Odor	15%	16%	15%
Rats	39	36	40
Attracts animals	23	20	25
Other	31	32	43
Yes, problem(s) resolved	73%	72%	70%

Question 28: Have you ever had a problem with your home composting?
Question 28A: What type of problem have you experience? (multiple responses)
Question 28B: Did you resolve your composting problem?
* Because of small cell size, use for trend analysis only.
Totals may not add up to 100% due to rounding and exclusion of *don't know/refused* responses.

Those who resolved their composting problems (n=21) were asked where they found help for their home composting problem (Q28C). Two respondents (or 10%) mentioned *Metro/Recycling Info. Center/234-3000*. Other responses included:

- *asked friend/family* 3 mentions
- *local government* 1 mention
- *county extension* 1 mention
- *library* 1 mention
- *problem went away* 3 mentions
- *neighbor* 3 mentions
- *website/Internet* 1 mention
- *newspaper* 1 mention
- *magazine* 2 mentions
- *figured it out/trial and error* 4 mentions
- *other misc. responses* 5 mentions

While it may be useful to examine composting problems among respondents with varying levels of composting knowledge, composting experience, and compost content, the subsample sizes realized in this research due not permit such detailed break-out of results.

Use of Metro's Composting Support Services

Most respondents (81%) had never used or attended any of the Metro-sponsored composting programs (Q29). The bin distribution events have the greatest participation of all Metro-sponsored home composting support services. Just over one in ten respondents (13%) reported that they had purchased a home compost bin on Metro's bin distribution day. Usage of the other programs was lower: 2% had attended an education program on composting, 4% had visited one of Metro's composting demonstration sites, and 2% had attended a home composting workshop. Some respondents volunteered that they had read brochures on composting by Metro (2%), called Metro's recycling hotline (<1%), or used some other Metro resource on composting (2%).

Sources of Compost Information

Those respondents with yard debris (n=602) were read a list of information sources for home composting and asked which, if any, they had gotten information or assistance from (Q31). They mentioned the following:

- *friends/family/neighbors* 35%
- *newspaper articles* 33%
- *direct mail* 27%
- *newsletters from local government* 26%
- *website on composting* 9%
- *Master Gardener program* 6%
- *County extension* 6%
- *self-guided tour of compost information site* 6%
- *home composting workshops* 4%
- *books* 3%
- *information that came with compost bin* 3%
- *magazines* 3%
- *TV show/news* 2%
- *composting information hotline* 2%
- *other miscellaneous responses* 4%

Twenty-nine percent (29%) of respondents said *none/never got information*, and 3% did not know or refused to name information sources.

Appendix: Questionnaire