Food Waste
Australian Household
Attitudes and Behaviours
National Benchmarking Study
Disclaimer:
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Purpose

This research was commissioned to establish a national baseline on current community knowledge, attitudes and behaviours around household food management and food waste. The research was commissioned by the Steering Group of the Fight Food Waste Cooperative Research Centre (FFW CRC) project titled ‘Designing Effective Interventions to Reduce Household Food Waste’ and is the first of a series of research pieces to be conducted over the four-year project. This research will provide empirical evidence to inform the project participants and other interested parties to assist with effectively targeting messaging, programs and interventions to change household behaviour to reduce and divert food waste.

The 2019 Australian National Food Waste Strategy Baseline1 identified that, in 2016/17, 34% of Australia’s food waste was generated in households, equating to an estimated 2.5 million tonnes of household food waste for the year. Reducing food waste in the home will be an important part of meeting Australia’s commitment to halve food waste by 20302. Food waste in the home arises through hundreds of food purchasing, planning, shopping, storing and food disposal behaviours which are performed by individuals over a period of days, weeks and months. Food waste is also affected by broader influences and factors, from household size and make-up to food prices and social norms. Acknowledging the complexity of the household food waste problem, this first piece of research interrogated a large range of household features, such as household demographics, food purchasing and management behaviours, attitudes and awareness as well as food disposal options. In most questions, the survey asked participants to self-report about the seven days prior to completing the online survey.


Research methodology

This research was delivered in four stages:

> **Stage 1:** Workshop to identify research target audiences and quotas

> **Stage 2:** In-home interviews with 20 participants to test the survey instrument

> **Stage 3:** Online survey of 5,272 respondents from 14-28 June 2019

> **Stage 4:** Analysis and reporting

Participants were sent a pre-survey note 7-days prior to prepare them for the survey as research has indicated this can facilitate more accurate responses.

The pre-survey note advised:

‘Next week we will send you a questionnaire that covers how you handle food in the days leading up to the day that you complete the survey. We ask that you don’t change anything about what you would normally do. Just pay closer attention to all the stages of the usual food purchasing, preparation and disposal in your household and how you and your household normally respond at each stage.”

—

Extract from the pre-survey note

Survey participants

The survey participants were people who self-identified as being primarily or jointly responsible for making decisions in their household on food purchasing, preparation, storage and disposal. Survey participants are referred to interchangeably in this report as household food managers, respondents, participants or people.

To ensure the survey results were representative of a typical week, participants were also required to identify if the previous seven days had been a typical week for them across the five areas examined. 89–92% of participants confirmed that the preceding week was a ‘typical week’ in their household.

Participant samples were required to meet quotas to ensure a representative sample across every Australian state and territory and across age ranges.

<table>
<thead>
<tr>
<th>Location</th>
<th>n=</th>
<th>Accuracy level</th>
<th>% of sample</th>
<th>Age</th>
<th>n=</th>
<th>%</th>
<th>Australian population %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total sample</td>
<td>5272</td>
<td>+/-1.36%</td>
<td>100</td>
<td>Total sample</td>
<td>5272</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>NSW</td>
<td>1476</td>
<td>+/-2.58%</td>
<td>28</td>
<td>18-24</td>
<td>276</td>
<td>5</td>
<td>13</td>
</tr>
<tr>
<td>VIC</td>
<td>1215</td>
<td>+/-2.87%</td>
<td>23</td>
<td>25-34</td>
<td>855</td>
<td>16</td>
<td>18</td>
</tr>
<tr>
<td>QLD</td>
<td>957</td>
<td>+/-3.27%</td>
<td>18</td>
<td>35-44</td>
<td>931</td>
<td>18</td>
<td>17</td>
</tr>
<tr>
<td>SA</td>
<td>407</td>
<td>+/-4.90%</td>
<td>8</td>
<td>45-54</td>
<td>852</td>
<td>16</td>
<td>17</td>
</tr>
<tr>
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<td>10</td>
<td>55-64</td>
<td>1017</td>
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<td>15</td>
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<tr>
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<td>4</td>
<td>65-74</td>
<td>1056</td>
<td>20</td>
<td>11</td>
</tr>
<tr>
<td>ACT</td>
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<td>+/-4.38%</td>
<td>8</td>
<td>75+</td>
<td>285</td>
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<td>9</td>
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<td>NT</td>
<td>100</td>
<td>+/-9.80%</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1: Sample profile
How much food do Australians estimate they throw away?

Household food managers were asked to estimate the amount of food their household disposed of in the previous week, including any food, edible or inedible, that went to pets, composting or other disposal methods. To help participants provide a more accurate estimate, they were asked to estimate using the following categories and units of measurement:

<table>
<thead>
<tr>
<th>Item category</th>
<th>Unit of measurements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresh vegetables and herbs</td>
<td>One cup</td>
</tr>
<tr>
<td>Fresh fruit</td>
<td>One cup</td>
</tr>
<tr>
<td>Dairy products</td>
<td>One cup</td>
</tr>
<tr>
<td>Frozen foods</td>
<td>One cup</td>
</tr>
<tr>
<td>Bread and bakery items</td>
<td>One standard slice</td>
</tr>
<tr>
<td>Meat and seafood</td>
<td>A small steak (approx. 100gms)</td>
</tr>
<tr>
<td>Packaged and pantry food</td>
<td>One cup of uncooked pasta or rice</td>
</tr>
<tr>
<td>Prepared food, including takeaway</td>
<td>One medium-sized dinner plate</td>
</tr>
<tr>
<td>Drinks</td>
<td>One litre</td>
</tr>
<tr>
<td>Inedible food waste</td>
<td>One cup</td>
</tr>
<tr>
<td>Meal leftovers</td>
<td>One cup</td>
</tr>
</tbody>
</table>

The results included:

- 47% said they threw away fresh vegetables and herbs, with an average quantity of 1.06 cups. 50% reported throwing away none during the previous week and 3% did not know.
- 44% reported throwing away uneaten prepared food - 1.07 cups on average.
- 46% said they threw out bread and bakery items - 1.4 slices on average.
- A third (33%) reported disposing of fresh fruit - 0.81 of a cup on average.
- About one quarter (26%) reported throwing away meat and seafood - 0.75 of a 100gm serve (75gm) on average.
- 81% reported no wastage of frozen foods and drinks.
- 72% reported no wastage of packaged and pantry food or dairy products.
- 73% reported no wastage of prepared food including takeaway and home-delivery.
- Inedible food waste (including peels, cores, bones, skins and seeds) was reported as the most commonly wasted food in all states and territories.

The combined average reported food waste per household over 7 days, across vegetables and herbs, fresh fruit, dairy, meat and seafood, bread and bakery items, frozen foods, dry goods, drinks, leftovers and inedible food equated to 2.65 litres.
**Discussion**

The self-estimates by participants of their household food waste appear to be very low when compared with the quantities found in a range of household waste bin audits conducted by state and local governments around Australia. This includes the 2013 state-wide bin audits by Sustainability Victoria\(^3\), which found 7.81 litres, or 3.43 kilograms, of food was disposed of in kerbside bins per week per household in Victoria. Similar quantities of food waste have been found in 2014 kerbside bin audits undertaken in the Australian Capital Territory\(^4\) and Burnside, South Australia\(^5\).

The self-estimates in this current survey are also well below those in the 2017 NSW Love Food Hate Waste tracking survey in which NSW households reported disposing of an average of 5.46 litres of food waste weekly.

This survey’s estimates also appear to be lower than the 2019 National Food Waste Baseline\(^6\), which combined a range of food waste estimates to identify that households threw away 2.5 million tonnes of food waste in 2016/17, or 4.9 kilograms per household per week (based on 9,901,496 households\(^7\)).

Although self-reported data and waste audit data are not directly comparable methodologies, the low quantities of reported food waste in this survey suggest that household food managers may be underestimating how much food goes to waste in the home or may find it difficult to quantify and report in the format used in this survey.

Household food managers may lack an understanding of their personal contribution to the issue of food waste, or are at least, unwilling to share it through a survey. Furthermore, the fact that household food managers reported inedible food to be the most commonly wasted category suggests that households see most of their food waste as unavoidable.

Further research is needed to better identify the gap between self-reported food waste quantities and actual food waste volumes generated in Australian homes as well as the barriers and opportunities to changing food waste behaviours to reduce waste.

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“Further research is needed to better identify the gap between self-reported food waste quantities and actual food waste volumes generated in Australian homes.”
What causes food waste in Australian homes?

Household food managers were asked why food was left uneaten in their household in the past seven days. Results included:

- household members don't always finish their meal (18%)
- too much food is being cooked (14%)
- food has been stored for too long in the fridge or freezer (11%)

Attributing the cause of food waste to meals being left unfinished was more common by families with children under 16 (34% compared with the national average of 18%) and families in general (31% versus 18%).

Respondents were also asked why they disposed of food in the last few months. The top five reasons for disposing of food were:

- 32% reported they could not tell whether food was safe to be consumed based on seeing, smelling or tasting it
- nearly one-quarter (23%) were unsure whether anyone would actually eat the food if saved and consequently chose to dispose of it instead
- 18% were unsure of the meaning of the expiry/use by/best before date and as a result, threw a food item away
- a lack of knowledge about how to use the food (14%)
- unsure whether it was safe to be reheated (12%).
Recall of food waste communications

The study asked participants if they had seen, read or heard anything about food waste in the past 12 months. 23% of household food managers recalled seeing something while 17% weren’t sure. The majority (60%) did not recall any communications about food waste in the preceding 12 months.

Of those who did recall seeing information about food waste, the main sources were cited as:

- ABC-TV’s War on Waste program (13%)
- a general TV program or advertising segment (11%)
- information on the importance of using the correct bins (7%)

The major channels recalled by participants were:

- TV (62%)
- the internet (21%)
- local council communications (21%)
- Facebook (19%)
- community newspapers (13%)
- newspapers (12%)
- radio (11%)
- magazines (8%).
How motivated are people to reduce their food waste?

Participants were asked how motivated they were to reduce their household food waste. 42% of household food managers said they were very motivated and 34% fairly motivated to reduce their food waste. Only 22% were slightly motivated or less so and 2% did not know.

The survey participants were also given a list of possible motivating factors and asked which would be the factor most likely to change how they managed food. The results included:

> saving money (51%), this was particularly prominent for families (54%),
> saving the planet (16%),
> doing the right thing (18%), particularly for non-family households (20%),
> education of children or others (5%).

“42% of household food managers say they were very motivated and 34% fairly motivated to reduce their food waste.”
How is food managed within households?

Key points about food planning

Participants were asked to report how often they perform four food planning behaviours before they shop for groceries.

Seventy-five percent of household food managers report checking what food is already in the home most times or every time, with 24% reporting they did this half the time or less.

Fewer than half (46%) mostly planned meals they would cook with the rest planning meals half the time or rarely.

Only 33% of food managers said they wrote comprehensive shopping lists most or every time and 27% prepared a basic list of essentials.

Families with children were more likely to plan their meals most or every time than households without children (51% compared to 44%).

Key points about food shopping

The survey asked participants how often they perform nine food shopping behaviours. Sticking to a budget divides food shoppers: 40% of household food managers reported mostly having a set budget while 41% rarely did.

Buying only what is on the shopping list is also polarising with 39% of the total sample size mostly likely to do so and 39% rarely likely to do this.

A similar division was apparent when buying specials: 42% usually bought them when they shopped and 32% rarely did.

Some food shopping behaviours were reasonably well entrenched, including:

- buying the freshest ingredients (66% of Australian food managers mostly do this, while 13% rarely do)
- checking the use by dates prior to purchase (58% mostly do this)
- buying in bulk (16% often do, while a large majority of 65% rarely do).
Key points about preparing and eating food

- **44%** reported making extra food ‘just in case’ half the time or more
- **22%** said they mostly made extra food without knowing how hungry the eaters would be
- **38%** said they prepared extra for planned future meals most of the time and 25% did this about half the time
- Less than half (47%) reported making use of leftovers most of the time – 17% did so about half the time and over a third (36%) rarely saved and ate leftovers.

Families, in particular those with children, were less likely to consider portion sizes most of the time when preparing food (40% compared to the sample average of 44%). Families were also more likely to make extra food most of the time, whether for a future planned meal (42% compared to 38%), just in case (31% compared to 24%) or due to the unpredictability of how hungry member of the household are (30% compared to 22%). Families were also slightly more likely to save leftovers and eat them later (50% compared to the sample average of 47%). However, they were also more likely to often throw leftovers away uneaten (11% compared to 7%).
Key points about storing food

Seven food storage behaviours were investigated in the survey.

The majority of household food managers (67%) reported that, most of the time, they try to store their food to keep it as fresh as possible. However, almost a third (32%) were making this effort half the time or less.

Sixty-one per cent said they usually froze food to extend its shelf life but 18% only did this half the time and 20% of people rarely did.

A third of people (33%) reported that at least half of the time, their fridge or freezer was too full to store more food.
Key points about food disposal

A range of food disposal options are available to Australian households with varying levels of access and usage. Options include kerbside general waste bins, kerbside green organic/food waste bins, home compost or worm farms, feeding to pets and animals, taking directly to waste transfer stations and community composting sites.

Almost two-thirds of respondents (61%) nominated the kerbside general waste bin as their main method of food disposal. Kerbside green organic/food disposal bins were available to 20% of household food managers, with three-quarters of those who had them, using them.

Nearly all of the 25% of participants with a household-managed system such as a compost system or worm farm used these as a disposal option. A quarter of those surveyed also had a pet they could feed leftovers to, with 19% of participants doing so.

Eight percent of people reported having access to a waste transfer station or tip, with only 3% reporting they disposed of food waste there.

Three percent had access to local community composting systems with 2% reporting they used them.
Does the community understand food labels?

Survey respondents were asked to select the meanings of Best Before and Use By dates from a list of four possible definitions. Seventy per cent of Australian household food managers understood that ‘best before’ food labels mean the food is still safe to be eaten as long as it is not damaged, deteriorated or perished in any way. Significantly more people aged 50 or over understood this correctly (74%).

A total of 74% of Australian household food managers knew that ‘use by’ labels meant ‘food should not be eaten after this date as it may be unsafe’. Significantly more people aged 18–34 years understood this label (82%), as did those aged 35–54 years (78%).

However, only 51% of household food managers understood the meaning of both food date labels with 49% explaining the meaning of at least one of the labels incorrectly. Notably, 7% of people surveyed did not understand either label.
How does the community shop for food?

How people purchase food can influence household food waste quantities. The survey investigated grocery shopping frequency, locations and method.

A total of 76% of household food managers across Australia reported shopping weekly for groceries, accompanied by ‘top-up’ shopping as needed. A further 12% only do a main grocery shop without any top-up while another 12% just shopped as they needed food.

The main grocery shop is undertaken once a week for a majority of Australians (61%).

Although different for each store, the main reasons for food shoppers’ choice of store were:

- convenience of location (usually first reason)
- easy parking
- good prices
- having products they like.

Twelve per cent of respondents to the survey shopped online for their groceries in the previous seven days. Families were more likely to shop online for groceries than non-families (15% versus 11%).

How often do households report eating out of the home?

Participants were asked about their eating habits, including getting takeaway and eating out.

Household food managers reported moderate levels of consumption of takeaway or home-delivered meals in the seven days before the survey. In fact, 58% didn’t order a takeaway or home-delivered meal over that time while 27% ordered one meal and 14% two or more meals.

Similarly, low levels of eating out of the home were reported with 60% claiming they did not eat out of the home at a café, restaurant or someone else’s home in the previous seven days.

However, when these two sources of food prepared out of the home are combined, 60% of household food managers ate at least one meal out of the home or ordered a takeaway or home-delivered meal in the week before the survey, while only 40% did not.

Forty-nine per cent of all out-of-home prepared meals were last-minute decisions.
The combined average reported food waste per household over 7 days, across vegetables and herbs, fresh fruit, dairy, meat and seafood, bread and bakery items, frozen foods, dry goods, drinks, leftovers and inedible food equated to 2.65 litres.

Almost one third of participants reported that they could not tell if something was safe to eat so disposed of it.

51% of household food managers understood the meaning of both use by and best before food date labels.

4 in 10 people (44%) reported making extra food ‘just in case’ half the time or more

A third of people (33%) reported that at least half of the time, their fridge or freezer was too full to store more food.

Less than half (47%) of Australian household food managers reported making use of leftovers most of the time and over a third (36%) rarely saved and ate leftovers.

“Almost one third of participants reported that they could not tell if something was safe to eat so disposed of it.”

Key statistics

32% of participants reported that they could not tell if something was safe to eat so disposed of it.

51% of household food managers understood use by and best before food date labels.

44% reported making extra food ‘just in case’ half the time or more.

36% of people reported they rarely saved and ate leftovers.
About this project

This research was commissioned by the Project Steering Group for the project ‘Designing Effective Interventions to Reduce Household Food Waste’ and led by the NSW Department of Planning, Industry & Environment. It is part of a four-year research program delivered through the Fight Food Waste Cooperative Research Centre.

The 2019 National Food Waste Strategy Baseline report estimated households generated 34% of all food waste across the supply chain in 2016-17, of which 92% ends up in landfill.

This cooperative research project aims to provide empirical evidence on behaviours leading to food waste in households throughout Australia to increase the ability of all parties to deliver effective household food waste reduction programs.

The Project Steering Group members are:
Date: September 2019
Prepared for: Project Steering Group, ‘Designing Effective Interventions to Reduce Household Food Waste’
Consultants: Instinct & Reason: David Donnelly and Eric Wu