Environment Protection Authority

# Love Food Hate Waste Tracking Survey 2021–22

# Contents

# Executive summary

## Introduction

The NSW EPA has been monitoring community attitudes and behaviours towards food waste since 2009 when the Love Food Hate Waste (LFHW) campaign started in NSW. Seven waves of community research were undertaken between 2009 and 2021.

Love Food Hate Waste educates households, communities and businesses on how to make the most of their food and reduce their food waste.

The LFHW campaign reached 54% of the NSW community in 2021 and has:

- been successful in contributing to changing behaviours, especially up until 2019
- continued to support positive food waste behaviour change even though COVID-19 disrupted the food management behaviours of many.

This evaluation report covers the following:

- NSW community food waste attitudes and behaviours in 2021
- changes in community attitudes and behaviours towards food waste in NSW between 2009 and 2021
- impacts of COVID-19 on behaviours and attitudes towards food waste in NSW
- LFHW campaign impacts.

## Changes in food waste avoidance behaviours since 2009

The community monitoring survey found statistically significant improvements in behaviours involving lower food waste between 2009 and 2019.

- Food planning – 50% of people mostly/always plan the meals to be cooked in the next few days, up from 35% in 2009.
- Food shopping – 61% of people mostly/always write a list and stick to it as much as possible, up from 53% in 2009.
- Food storage and disposal – 60% of people mostly/always eat leftovers saved in the fridge, up from 52%, 35% make extra for a future meal, up from 28% in 2009, and 52% understand food date labels correctly, up from 35% in 2015.
- Behaviours that have not changed significantly since 2009 are buying food because it is 'on special' (42%) and buying items 'in bulk' (22%).

## Impacts of COVID-19 pandemic on behaviours in NSW

The COVID-19 pandemic impacted several behaviours in NSW.

- 88% of people shop for food as needed (rather than just doing one main weekly shop) with 24% reporting three or more main grocery shops a week (up from 15% in 2019). Even the 93% of people who do a main weekly shop have started topping up, with an increase in bi-weekly main grocery shops, up to 17% from 14%.
- 48% of the NSW community shopped online for groceries in the week preceding the survey, up from 13% in 2019.
- Eating out is more frequent and more spontaneous, with 69% of the NSW community ordering takeaway or home delivery in the seven days preceding the survey (up from 48% in 2019) and 58% having eaten out.

- 25% claimed the choice to eat food prepared outside their home was planned, down from 41% in 2019.

## How COVID-19 impacted behaviours and attitudes towards food waste

Analysis of variance (ANOVA) was used to explore the relationship between food waste and food management behaviours, and COVID-19. The 2019 LFHW survey included questions asking participants to estimate how many cups of food they threw away. While the self-reported quantity of food thrown away is not an accurate measure it was possible to identify those who recognised they threw away a lot of food and those who believed they threw away less food.

ANOVA identified the five behaviours associated with higher levels of food waste in 2019. These same five behaviours were examined in detail in 2021 to see if they increased during the COVID-19 pandemic and if this led to increased food waste.

Since the beginning of the COVID-19 pandemic, the following five behaviours increased within the NSW community:

1. buying takeaway or getting a home delivered meal
2. making last-minute decisions to order takeaway, home delivery or eat out
3. buying food when shopping 'just in case'
4. buying food when shopping without knowing what to use it for
5. buying items 'in bulk'.

When looking at the lower levels of food waste avoidance behaviours reported in 2021, these five behaviours identified by ANOVA account for most of this adverse change.

Knowledge gaps on food safety also rose during the COVID-19 pandemic period:

- 62% do not understand food expiry date labelling, up from 50% in 2019.
- 20% are unsure if reheated leftovers can be eaten (up from 12% in 2019).
- There is general uncertainty about how to know if eggs (15%, up from 9% in 2019), seafood (13%, up from 5% in 2019) and cooked rice and pasta (13%, up from 9% in 2019) are fresh.
- 33% are uncertain whether food is safe to eat based on sight, smell or taste, consistent with 32% in 2019.

## Impacts of the Love Food Hate Waste campaign

The 2021 community monitoring survey found that more than half (54%) of the NSW community recalled seeing LFHW campaign materials in the last 12 months. Among the 42% of the NSW community that reported having seen campaign materials, recognition was highest for the imperfectly perfect zucchini asset (18%), followed by the LFHW icon (16%).

Recognition of the Love Food Hate Waste icon has consistently risen since 2011. In 2011, 2% of the community had seen the icon in the previous 12 months. By 2021, 16% said they had seen the icon when asked whether they had ever seen it.

In NSW, 71% of those who recognised the LFHW communications say the campaign motivates them to reduce their food waste. For another 21%, the images made them think about the issue of food waste, though they were not motivated to take any action. Only 6% did not feel the LFHW campaign motivated them.

There is a strong expectation that the government and supermarkets should play a role in helping to reduce the amount of food wasted. Compared to 2019, significantly more people feel the onus is on government and industry to help individuals in NSW reduce food waste, with 78% believing local government is most responsible (71% in 2019), 67% state government (57% in 2019) and 58% federal government (48% in 2019). More people would also like to see retailers becoming involved, with 72% of people feeling supermarkets should have a role, up from 62% in 2019.

### Level of motivation to act on food waste

Three quarters of NSW residents surveyed in 2021 report feeling fairly or quite motivated to reduce their household food waste. Only 6% do not feel motivated to reduce their food waste. Motivation to reduce food waste remains largely unchanged since 2019.

Saving money remains the primary motivation for reducing food waste in NSW. Among residents surveyed in 2021, 84% are motivated by saving money and 42% feel it is the top factor that would motivate them to change their behaviour. However, significantly fewer residents feel this way than in 2019, with saving money being the primary motivator for 42% in 2021, down from 49%, with other factors increasingly relevant, such as easing guilt (8% in 2021, up from 5% in 2019).

### Key impacts for the LFHW aware

After seeing LFHW materials, the top behaviours triggered were to consider how much food was needed (29%), and to check food date labels in-store (26%). One quarter of residents surveyed wrote a shopping list after seeing the materials and 23% cooked the correct serving sizes.

### The LFHW brand promotes food waste reduction

Of the NSW residents surveyed, 76% said Love Food Hate Waste is a good or very good brand for promoting food waste reduction. Few feel the brand is not suited to its objective (2%), 13% are unsure and a further 9% don't feel strongly either way.

### LFHW triggered behaviour change

The Love Food Hate Waste campaign raised awareness of the issues associated with food waste and waste avoidance behaviours and motivated NSW community members to change their behaviours. After seeing LFHW materials, residents recorded the following behaviours:

- buying the right amount of food and avoiding cooking too much (28%)
- looking for ideas for using leftovers in new meals and finding alternatives to throwing the food away (27%)
- checking date labelling in-store before buying food to make sure there was time to use it (26%)
- buying less food more frequently to reduce the risk that food spoils and is wasted (25%)
- talking to family and friends about food waste (24%)
- writing a shopping list (24%)
- cooking the correct serving sizes (22%)
- planning meals in advance (22%)
- reading storage instructions to make sure they know how to store it until needed (21%).

After seeing LFHW campaign materials, 19% visited the LFHW website and 14% followed the LFHW campaign on social media.

# Background and objectives

## Background

Wasting food wastes money and the considerable energy, water and other resources used to produce food. Preventing food waste is a positive outcome for the environment.

In NSW, more than one-third of the waste we send to landfill is food. That adds up to about $10 billion worth of food thrown away every year by NSW households. The EPA's Love Food Hate Waste campaign shows NSW households and businesses how to avoid wasting food.

Love Food Hate Waste (LFHW) NSW has been tracking NSW household attitudes and behaviours about food waste since 2009.

A tracking study was undertaken in 2021 to determine the current knowledge, attitudes and behaviours around food waste and food management in NSW households.

## Campaign objectives and outcomes

The objective of the 2021 research study is to determine whether the Love Food Hate Waste campaign was successful in educating households and businesses about food waste and improving behaviours to reduce it. This report documents:

1. how the Love Food Hate Waste campaign performed up until 2021, including the impacts of COVID-19
2. changes in community attitudes and behaviours towards food waste in NSW between 2009 and 2021
3. impacts of COVID-19 on behaviours and attitudes towards food waste in NSW.

## Research purpose and objectives

| Research Purpose | To reduce the volume of food waste generated and disposed at the household level and to influence new habits and norms or behaviour with a shift towards more efficient approaches to food purchase, storage, preparation and consumption |
|---|---|
| **Research Objectives** | To measure general environmental knowledge, attitudes and behaviours |
| | To measure knowledge of food wastage issues, including values and attitudes |
| | To understand barriers to and drivers for reducing food wastage in the home |
| | To measure self-reported behaviours and actions relating to household food management and waste (including relevant behaviours around food purchasing and food management in the home) |
| | To measure reach and recall of program materials including recent media |

# Methodology

## Methodology for LFHW NSW community tracking

The research conducted in 2021 replicates research conducted in the past. The sample for this wave matches the proportions achieved in the previous five representative surveys conducted by Instinct and Reason and is the same in terms of gender, age and geography (based on postcodes in Sydney, Newcastle, Wollongong), large country town (population over 15,000), small country town (population between 3,000 and 15,000) and rural areas of NSW.

The following tables include the unweighted sample data across the waves. The * includes unknown data prior to 2015 undertaken by a previous research agency.

**Table 1    Age distribution of participants, 2009–21**

|  | 2009 | | 2011 | | 2012 | | 2015 | | 2017 | | 2019 | | 2021 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Age | n= | % | n= | % | n= | % | n= | % | n= | % | n= | % | n= | % |
| 18-34 | * | * | * | * | * | * | 375 | 28 | 379 | 27 | 135 | 26 | 412 | 28 |
| 35-54 | * | * | * | * | * | * | 530 | 40 | 496 | 36 | 201 | 38 | 528 | 36 |
| 55+ | * | * | * | * | * | * | 432 | 32 | 514 | 37 | 187 | 36 | 523 | 36 |
| Total | 1200 | 100 | 100 | 100 | 1300 | 100 | 1337 | 100 | 1389 | 100 | 523 | 100 | 1463 | 100 |

**Table 2    Gender of participants, 2009–21**

|  | 2009 | | 2011 | | 2012 | | 2015 | | 2017 | | 2019 | | 2021 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gender | n= | % | n= | % | n= | % | n= | % | n= | % | n= | % | n= | % |
| Male | * | * | * | * | * | * | 559 | 42 | 589 | 42 | 218 | 42 | 660 | 45 |
| Female | * | * | * | * | * | * | 778 | 58 | 800 | 58 | 303 | 58 | 803 | 55 |
| Prefer not to say | * | * | * | * | * | * | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| Total | 1200 | 100 | 100 | 100 | 1300 | 100 | 1337 | 100 | 1389 | 100 | 523 | 100 | 1463 | 100 |

**Table 3    Geographical distribution of participants, 2009–21**

|  | 2009 | | 2011 | | 2012 | | 2015 | | 2017 | | 2019 | | 2021 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Geography | n= | % | n= | % | n= | % | n= | % | n= | % | n= | % | n= | % |
| Sydney | * | * | * | * | * | * | 843 | 63 | 863 | 62 | 321 | 61 | 930 | 64 |
| Newcastle | * | * | * | * | * | * | 103 | 8 | 116 | 8 | 36 | 7 | 123 | 8 |
| Wollongong | * | * | * | * | * | * | 63 | 5 | 58 | 4 | 30 | 6 | 60 | 4 |
| Large country town | * | * | * | * | * | * | 157 | 12 | 171 | 12 | 56 | 11 | 170 | 12 |
| Small country town | * | * | * | * | * | * | 111 | 8 | 110 | 8 | 50 | 10 | 110 | 8 |
| Country rural area | * | * | * | * | * | * | 60 | 4 | 71 | 5 | 30 | 6 | 70 | 5 |
| Total | 1200 | 100 | 100 | 100 | 1300 | 100 | 1337 | 100 | 1389 | 100 | 523 | 100 | 1463 | 100 |

The surveys were conducted online with representative samples aged 18 or over. Respondents were primarily, equally or partially responsible for food purchasing, shopping, cooking or preparation, storage or disposal in their household. Also, no participants were away for three or more nights in the seven days preceding their survey. These screening criteria excluded 1.96% and 18.36% of participants, respectively.

This wave of research was conducted between 9 December 2021 and 19 December 2021. The average time taken to complete the survey was 21.3 minutes with a median time of 16.3 minutes.

## Online sample

The online sample was drawn, as in previous waves, from the largest market and social research panel dedicated to research. No panel member is approached for other marketing purposes to make sure of the integrity of the contact and their motivation for being panel members. The panel members receive a small incentive for completing surveys. The Dynata panel had over 400,000 audited panel members who represent everyday Australians who have agreed to participate in surveys.

Each panel member's participation meets the requirements of the General Data Protection Regulation that provides data protection for members by governing the transmission and storage of personal data relating to individuals. The regulation stipulates data subjects must give consent to the processing of their personal data, have a right to access their personal data and have a right to request erasure of personal data.

All panel members have been double-authenticated for their permission for their data to be used.

The system:

- prevents respondents from entering the same survey more than once
- monitors the length of time taken to complete a survey (with very fast outliers removed in the data-cleaning process).

The survey only accepted people who qualified as being primarily, jointly or partly responsible for planning for grocery shopping or doing the grocery shopping or storing the food (i.e. of grocery items and leftovers) or doing the cooking/food preparation in their household or disposing of leftover food.

## Survey changes 2009–21

The survey was adapted over time. The key changes were:

- 2011 – key behavioural questions around planning, shopping, cooking/preparing, storing and disposal remain
  - a new question added about estimating food waste in litres, including fresh food, packaged and long-life and leftovers
  - new questions about awareness of the LFHW program and logos
- 2012 – key behavioural questions around planning, shopping, cooking/preparing, storing and disposal remain
  - a new question about reasons for food waste, and the main reason
  - a new question about seeing, reading or hearing of LFHW communications in the last year
  - new questions about which media source communications and logo were seen on
  - a new question about actions taken as a result of being motivated by the LFHW program
  - a new question about estimating the dollar value of food waste saved in a week as a result of the program

- 2015 – key behavioural questions around planning, shopping, cooking/preparing, storing and disposal remain
  - a new question about the proportion of weight of waste made up of packaging, food, paper, garden clippings or other materials
  - new questions about food-related activities outside the home in the past three months, such as eating out
- 2017 – key behavioural questions around planning, shopping, cooking/preparing, storing and disposal remain
  - a new question about motivations for reducing food waste
  - new questions about perceptions of what foods are avoidable waste and what are unavoidable, or not waste at all, and what were included in the estimate of food waste
  - a new question on average weekly grocery spend
  - a new question on fridge clean-outs
  - a new question on meal preparation and consumption at home
- 2019 – key behavioural questions around planning, shopping, cooking/preparing, storing and disposal remain
  - a new question about the role agencies should have in assisting households to reduce the amount of food they waste, including local, state and federal levels of government
  - new questions about food management behaviours
  - multiple questions about awareness, reading, hearing or seeing about Love Food Hate Waste program and materials were removed
  - multiple questions about attitudes towards food waste, including perceptions of what foods are avoidable waste and what are unavoidable, or not waste at all, and what were included in the estimate of food waste were removed
  - a question about concern around the impact of food waste was removed
  - multiple questions about perceptions towards the volume of a household's food waste and the makeup of the food waste were removed
- 2021 – key behavioural questions around planning, shopping, cooking/preparing, storing and disposal remain
  - a new question about the impact of COVID-19 lockdowns on food waste behaviours
  - new questions about reading, hearing or seeing about Love Food Hate Waste program materials and logo were added back in
  - a new question determining how effective the LFHW brand is at promoting food waste reduction
  - questions asking participants to detail why they were motivated to reduce their food waste, and then answer whether food waste was reduced were removed
  - questions about visits to grocery stores and supermarkets in the past seven days were removed
  - a question about estimating the food types wasted in ranked order rather than estimating volume was modified
  - a question showing different sources of information for seeing the LFHW program materials was modified
  - a question about which disposal methods are used was modified
  - a question about which grocery stores/supermarkets food was purchased from was modified.

## Data handling

### Weighting of the data

The actual sample profile provides the unweighted responses. The results presented in the rest of the report are weighted to the Love Food Community samples from the pre-campaign based on data by age, gender and household structure.

### Statistical significance

All tests for statistical significance have been undertaken at the 95 per cent level of confidence, and unless otherwise noted, any notation of a 'difference' between subgroups means that the difference discussed is significant at the 95 per cent level of confidence. When reporting significant differences in segments, (+x%; x%) represents the difference in % above total sample, and % of total sample respectively.

A green, square or red circle next to a value denotes that the result is significantly greater or lower (respectively) than that of the total region sample result for that question in the pre-campaign study:

e.g.

### Treatment of means

Where responses are scale variables, for example 1 to 5 where 1 is disagree strongly and 5 is agree strongly, the mean is also calculated with the removal of 'don't know'.

### Rounding of figures

All results have been rounded to the nearest whole percentage figure and anomalies of about +/- 1% may occur in charts i.e. total percentages for each bar add to 99%, or 100% or 101% due to rounding error.

### Net figures are also rounded

Net results are also rounded after summing the separate proportions rather than simply summing two rounded figures (e.g. '% total agree'). For this reason, anomalies of about 1% sometimes occur between net results and rounded results shown in charts. For example, a proportion of 33.3% 'agree' rounds to 33%, and a proportion of 12.4% 'strongly agree' rounds to 12%. However, when combined to derive the total agree (i.e. agree plus strongly agree), 33.3% plus 12.4% equals 45.7%, which would be rounded to 46%. In this case, the results would be shown in a chart as 33% agree and 12% strongly agree, but the proportion reported as 'total agree' would be 46%.

# Community changes 2009–19

In NSW, more than a third of the waste sent to landfill is food. That adds up to about $10 billion worth of food that is being thrown away every year by NSW households. The Love Food Hate Waste campaign (LFHW) started in the United Kingdom (UK) in 2007 and helped reduce the amount of food that UK households threw out. The campaign was also run in Vancouver, Canada, and in NSW and Victoria in Australia. (Source: NSW EPA website https://www.lovefoodhatewaste.nsw.gov.au/)

The food waste behaviours and attitudes of NSW households has been monitored since 2009.

The evaluation surveys conducted in 2009, 2011, 2012, 2015, 2017, 2019 and 2021 asked people about 15 behaviours believed to contribute to food waste. The data showed that up until 2019 (pre the COVID-19 pandemic), most behaviours had improved significantly since 2009.

However, the 2021 survey revealed some reversals in behaviours and attitudes towards food waste as a result of the COVID-19 pandemic. This chapter focuses on the gains made by Love Food Hate Waste up until 2019.

The 2019 survey asked NSW community members how frequently they undertook the following behaviours:

- check what food is already in the house (before shopping for food)
- plan the meals to be cooked in the next few days
- buy food according to a set budget
- buy food based on what is on special (including two-for-one deals) – **negative behaviour**
- buy items 'in bulk' – **negative behaviour**
- check the 'use by' or 'best before' dates before buying food items
- consider portion sizes and make only as much as you need
- make extra for a future planned meal (e.g. lunch or dinner the next day)
- make extra just in case it is needed – **negative behaviour**
- save leftovers in the fridge and eat them afterwards
- save leftovers in the fridge and throw them out later – **negative behaviour**
- save leftovers in the freezer and eat them afterwards
- save leftovers in the freezer and throw them out later – **negative behaviour**
- dispose of leftovers immediately after the meal – **negative behaviour**.

The monitoring survey found statistically significant improvements in the following positive behaviours:

- **Food planning** – in 2019, 50% of people mostly/always planned the meals to be cooked in the next few days, up from 35% in 2009.
- **Food storage and disposal** – in 2019, 60% of people mostly/always ate leftovers saved in the fridge, up from 52% in 2009, and 35% made extra for a future meal, up from 28% in 2009.
- **Food waste decreased** – in 2019, 24% of people reported not wasting any food in their household, up from 11% in 2009.

Although unchanged in the last decade, 67% continued to check the food in the house before shopping. However, 33% still do not do this regularly and only 47% buy according to a set budget. 53% of the NSW community does not regularly shop to a set budget. These results have remained relatively unchanged since 2009.

Other behaviours that have not changed since 2009 were buying food because it was 'on special' (42%) and buying items 'in bulk' (22%).

**Table 4      Food planning, shopping, cooking and preparation, storage and disposal behaviours (2009 to 2019)**

| Relevant behaviours<br>Mostly or always | 2009<br>(n=1200) | 2019<br>(n=523) |
|---|---|---|
| Check what food is already in the house | 66 | 67 |
| Plan the meals to be cooked in the next few days | 35 | 50 |
| Buy food according to a set budget | 46 | 47 |
| Buy food based on what is on special (including two-for-one deals) | 42 | 42 |
| Buy items 'in bulk' | 18 | 22 |
| Check the 'use by' or 'best before' dates before purchasing food items | 66 | 68 |
| Consider portion sizes and only make as much as you need | 46 | 48 |
| Make extra for a future planned meal (e.g. lunch or dinner the next day) | 28 | 35 |
| Make extra just in case it is needed | 20 | 22 |
| Save leftovers in the fridge and consume them afterwards | 52 | 60 |
| Save leftovers in the fridge and throw them out later | 10 | 12 |
| Save leftovers in the freezer and consume them afterwards | 36 | 39 |
| Save leftovers in the freezer and throw them out later | 8 | 9 |
| Dispose of leftovers immediately after the meal | 11 | 9 |

The 2019 survey was incorporated into the National Food Waste benchmark study with 5,243 respondents and 1,476 in NSW. The behavioural measures were slightly altered and some new measures were added.

The 2019 study analysed people who had seen, read or heard something about food waste and/or how to avoid food waste in the past 12 months. For example, advertising, articles, TV segment/ programs or ads, radio program/segments, etc. There were a number of behaviours that were improved by awareness of food waste, as outlined in the following chart.

Some significant differences included:

- trying to eat leftovers (60% of those that were aware of food waste and 46% of those that were unaware)
- saving leftovers in the fridge to be eaten later (+11%)
- using storage tools to prolong the life of food (+12%)
- always bringing leftover food from restaurants home (+8%).

**Table 5      Behaviours improved by awareness of food waste**

| Relevant behaviours<br>Mostly or always | Aware of food waste 2019 (n=321) | Unaware of food waste 2019 (n=1155) |
|---|---|---|
| Plan the meals to be cooked | 48 | 45 |
| Write a list of basic essentials | 30 | 27 |
| Buy food according to a set budget | 46 | 39 |
| Buy food based on what is on special (including two-for-one deals) | 40 | 41 |
| Check the 'use by' or 'best before' dates before purchasing food items | 61 | 60 |
| Only buy the freshest food | 40 | 35 |
| Consider the best way to store food to keep it as fresh as possible | 71 | 65 |
| Use storage tools to prolong the life of food | 73 | 65 |
| Freeze food to extend its shelf life where possible | 62 | 59 |
| Buy food that is in season | 68 | 61 |
| Make extra for a future planned meal (e.g. lunch or dinner the next day) | 42 | 35 |
| Try to use food that's getting close to its use-by date | 76 | 70 |
| Consider how much each person is likely to eat when serving onto plate | 64 | 62 |
| Try to eat the leftovers | 60 | 46 |
| Save leftovers in the fridge and eat them afterwards | 55 | 44 |
| Save leftovers in the freezer and eat them afterwards | 31 | 26 |
| When eating out, take leftovers home to eat later on | 27 | 19 |

The proportion of NSW households engaging in food waste avoidance behaviours (i.e. behaviours that typically lead to lower food waste) rose to a mean score of 5.7 in 2019 compared to 5.26 in 2012.

**Figure 1      Food planning, shopping, cooking, preparation and disposal**

| | 2012 | 2015 | 2017 | 2019 | 2021 |
|---|---|---|---|---|---|
| mean /10 | 5.26 | 5.88 | 5.37 | 5.70 | 5.19 |
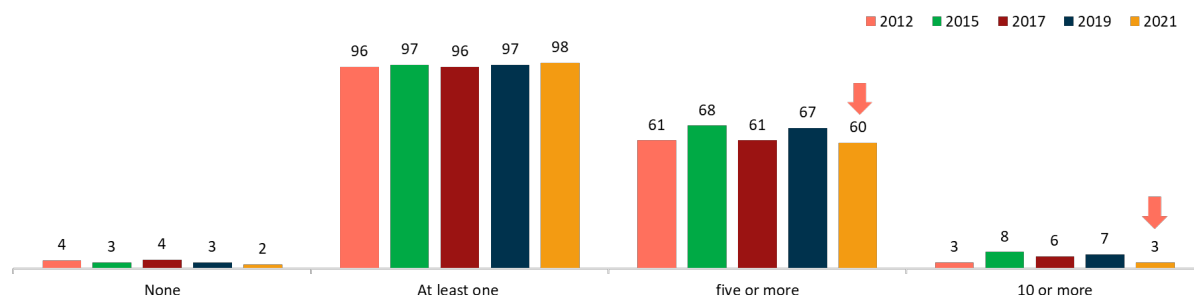


QB1 food planning + B2 food shopping + B4 cooking and preparation + B5 disposal: how often do you or your household, do the following?
**Base:** Total sample: 2012 (n=1300), 2015 (n=1337), 2017 (n=1389); 2019 (n=523); 2021 (n=1463)

The study found that 24% of NSW community members continue to misunderstand the 'best by' label. Qualitative research conducted for the Fight Food Waste CRC reveals that many do not believe they are capable of determining if food is still safe to eat.

There has been little change in understanding between 2009 and 2019 about the 'best before' dates. By 2019, understanding what a 'best before' date means was unchanged, from 70% in 2009 to 71% in 2019.

**Figure 2    Understanding of 'best before' dates**
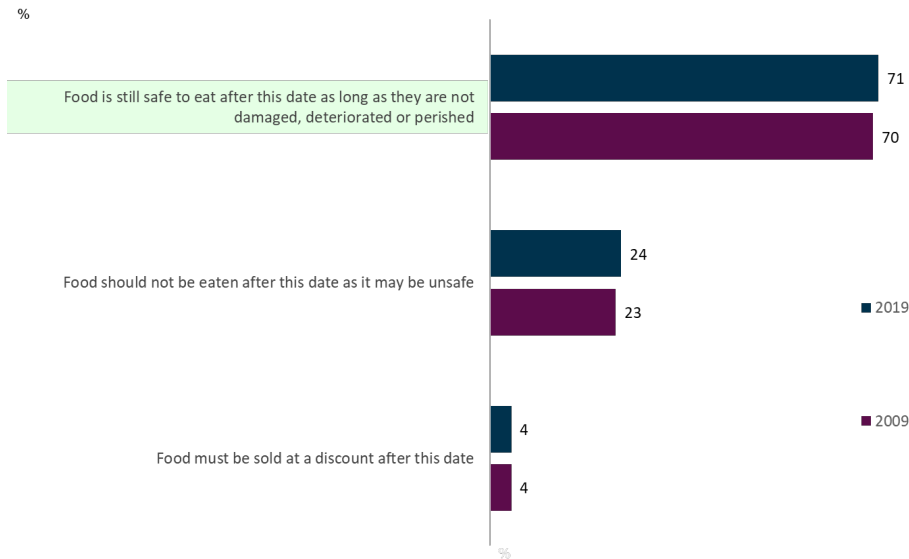


C1. What is meant by the 'best before' date as it relates to food and drinks?
**Base:** *Total sample: 2009 (n=1200), 2011 (n=1200), 2012 (n=1300), 2015 (n=1337), 2017 (n=1389); 2019 (n=523); 2021 (n=1463)*    *2% other understanding and 1% unsure / don't know not shown*

In contrast, understanding what a 'use by' date means had risen significantly, from 64% in 2009 to 74% in 2019.

**Figure 3    Understanding of 'use by' dates**
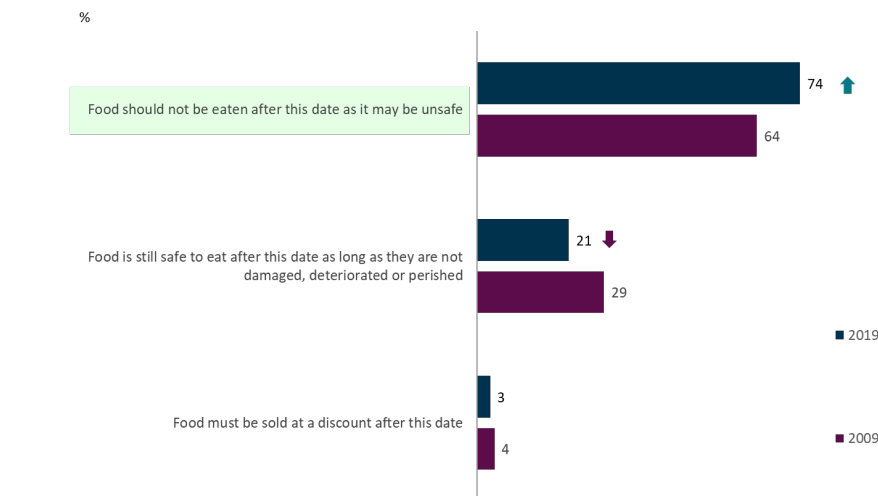


QC2. What is meant by the 'use by' date as it relates to food and drinks?
**Base:** *Total sample: 2009 (n=1200), 2011 (n=1200), 2012 (n=1300), 2015 (n=1337), 2017 (n=1389); 2019 (n=523); 2021 (n=1463)*    *2% other understanding and 1% unsure / don't know not shown*

**Figure 4    Understanding of date labels**

| % | 2015 | 2017 | 2019 | 2021 |
|---|---|---|---|---|
| | n=1337 | n=1389 | n=523 | n=1463 |
| Correctly understands best before + use by | 45 | 43 | 52 | 38 ⬇⬇ |
| Only understands best before | 28 | 30 | 19 | 14 |
| Only understands use by | 20 | 18 | 22 | 34 ⬆ |
| Doesn't understand either | 8 | 9 | 7 | 13 ⬆ |

C1. What is meant by the 'best before' date as it relates to food and drinks? **QC2.** What is meant by the 'use by' date as it relates to food and drinks?
**Base:** *Total sample: 2015 (n=1337), 2017 (n=1389); 2019 (n=523); 2021 (n=1463)*

**Figure 5    Actions taken with foods reaching 'best before' date**
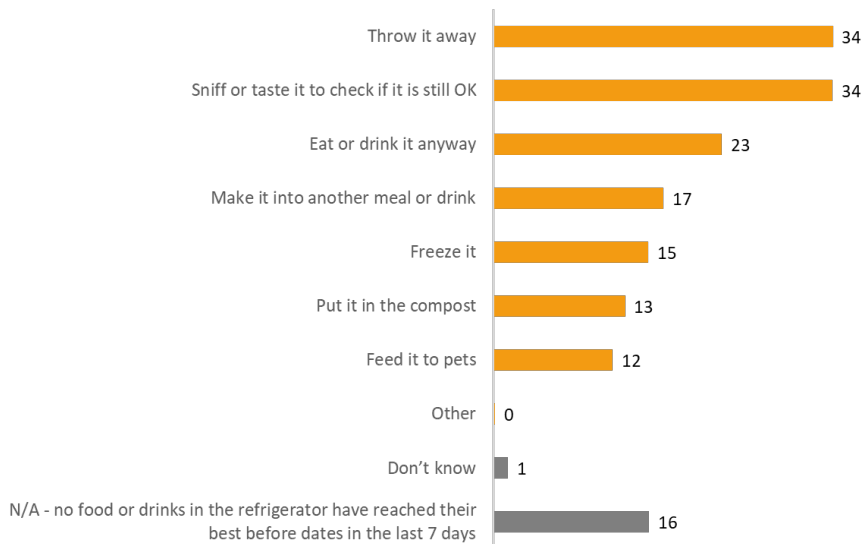


C3. In the last 7 days, which of the following have you done when your food or drink in the refrigerator has reached its 'best before' date?
**Base:** *Total sample: 2021 (n=1463)*

# Food waste in 2021

## Responsibility for household food management

The COVID-19 pandemic impacted a number of food waste behaviours in the two years before the 2021 survey. The following chart highlights the decline of positive behaviours the LFHW campaign is working to improve. In particular, many community members stopped planning their meals during COVID-19. Their shopping was driven by greater concern about getting access to food rather than thinking carefully about how much they would use so they were not working to a strict shopping list.

**Figure 6     Behaviours that have changed since 2019**

| | | Change since earliest record | Change since 2019 |
|---|---|---|---|
| **Meal planning and shopping** *Earliest record 2015* | B1F. When shopping for food, I think carefully about how much I will use | ⬇ 25%* | ⬇ 26% |
| | B1G. I plan meals in advance and shop to a strict list | ⬇ 20%* | ⬇ 20% |
| **Food planning behaviour – before shopping** *Earliest record 2019* | B1A. Check what food is already in the house | ⬆ 5% | ⬌ No change |
| | B1B. Plan the meals to be cooked in the next few days | ⬆ 11% | ⬌ No change |
| | B1E. Write a list and stick to it as much as possible | ⬇ 30% | ⬇ 30% |
| **Food shopping behaviour – while shopping** | B2A. Buy food according to a set budget | ⬇ 4% | ⬇ 5% |
| | B2C. Buy item items in bulk | ⬆ 7% | ⬆ 3% |
| | B2D. Check the 'use by' or 'best before' dates before purchasing food items | ⬇ 7% | ⬇ 11% |
| **Food preparation behaviour** | B4A. Consider portion sizes and only make as much as you need | ⬌ No change | ⬇ 5% |
| | B4B. Make extra for a future planned meal | ⬆ 9% | ⬌ No change |
| | B4C. Make extra just in case it is needed | ⬆ 9% | ⬆ 7% |
| **Food leftovers behaviour** | B5C. Save leftovers in the fridge and consume them afterwards | ⬌ No change | ⬇ 9% |
| | B5D. Save leftovers in the fridge and throw them out later | ⬆ 10% | ⬆ 8% |
| | B5F. Save leftovers in the freezer and throw them out later | ⬆ 10% | ⬆ 9% |
| | B5G. Dispose of leftovers immediately after a meal | ⬆ 9% | ⬆ 11% |

In April 2021, The NSW EPA conducted the Food Management in COVID–19 study, which showed that almost half (46%) of the NSW community was more concerned about the reliability of the food supply than trying to avoid wasting food and 32% of respondents bought food out of fear that stock would run out.

The results of the 2021 community monitoring survey suggest that the behaviour change triggered by the pandemic continued through to December 2021.

The survey shows a decline in mostly/always undertaking the following:

- planning meals in advance and shopping to a strict list, down to 32% in 2021, from 52% in 2019
- checking date labels, down to 57% in 2021, from 68% in 2019
- consideration for portion sizes, down to 43% in 2021, from 48% in 2019.

Among behaviours first measured in the 2019 national benchmark survey for NSW residents, we see additional declines in regularity of:

- use of storage tools like sealable containers or bags, bag clips or wrappers to prolong the life of food, down to 60% mostly/always or always doing this in 2021, from 67% in 2019
- use of oldest ingredients, down to 63% in 2021, from 70% in 2019
- consideration of other people's appetites, down to 55% in 2021, from 62% in 2019
- planning meals to be cooked in the next few days, down to 46% in 2021, from 50% in 2019
- writing a list and sticking to it as much as possible, down to 43% in 2021, from 61% in 2019 (suggesting many NSW community members have given up writing lists when they shop)
- fewer people understanding the correct meaning of date labels, down to 53% in 2021, from 71% in 2019
- understanding that 'use by' dates mean 'food should not be eaten after this date as it may be unsafe', down to 72% in 2021, from 74% in 2019 (though this remains significantly higher than the baseline measure in 2009 of 64%).

Some negative behaviours that have increased since the start of the pandemic include buying food 'for just in case' (up 7% to 22% in 2021), finding it difficult to prepare a meal from leftover ingredients or food at hand (up 8% to 20% in 2021) and having leftovers after meals (up 4% to 27% in 2021).

**Figure 7      Behaviours that have changed since 2019**

| | | | Change since 2019 |
|---|---|---|---|
| Food planning behaviour – before shopping | Write a complete list of everything needed | ⬇ | 4% |
| Food shopping behaviour – while shopping | Buy food for 'just in case' | ⬆ | 7% |
| | Check packaging for portion size information | ⬆ | 8% |
| Food preparation and cooking behaviour | Use storage tools to prolong the life of food | ⬇ | 7% |
| | Try to use food that's getting close to its use by date | ⬇ | 8% |
| | Try to use up the oldest food first | ⬇ | 7% |
| | Consider how much each person is likely to eat when serving onto dinner plates | ⬇ | 7% |
| Food leftovers behaviour | Find it difficult to prepare a meal from leftover ingredients or food at hand | ⬆ | 8% |
| | When eating out, I take leftovers home to consume later on | ⬆ | 13% |
| | There are leftovers after meals | ⬆ | 4% |
| | Feed leftovers to the pets | ⬆ | 12% |
| | Most of our leftover food goes into the compost | ⬆ | 12% |

Despite the impact of COVID-19, a few food-planning behaviours have continued to improve, including:

- mostly or always checking what food is already in the house (71% in 2021, up from 66% in 2009)
- planning the meals to be cooked in the next few days (46% in 2021, up from 35% in 2009).

**Figure 8      Food planning behaviour (1)**
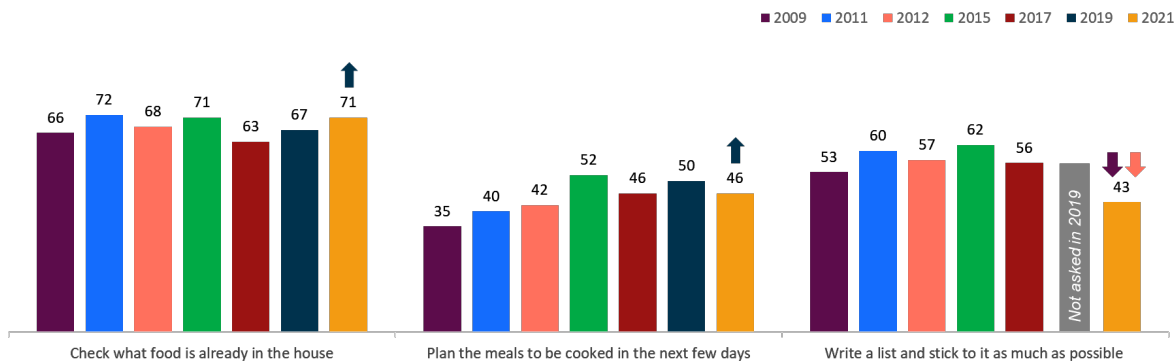
■ 2009 ■ 2011 ■ 2012 ■ 2015 ■ 2017 ■ 2019 ■ 2021



Check what food is already in the house: 66, 72, 68, 71, 63, 67, 71

Plan the meals to be cooked in the next few days: 35, 40, 42, 52, 46, 50, 46

Write a list and stick to it as much as possible: 53, 60, 57, 62, 56, Not asked in 2019, 43
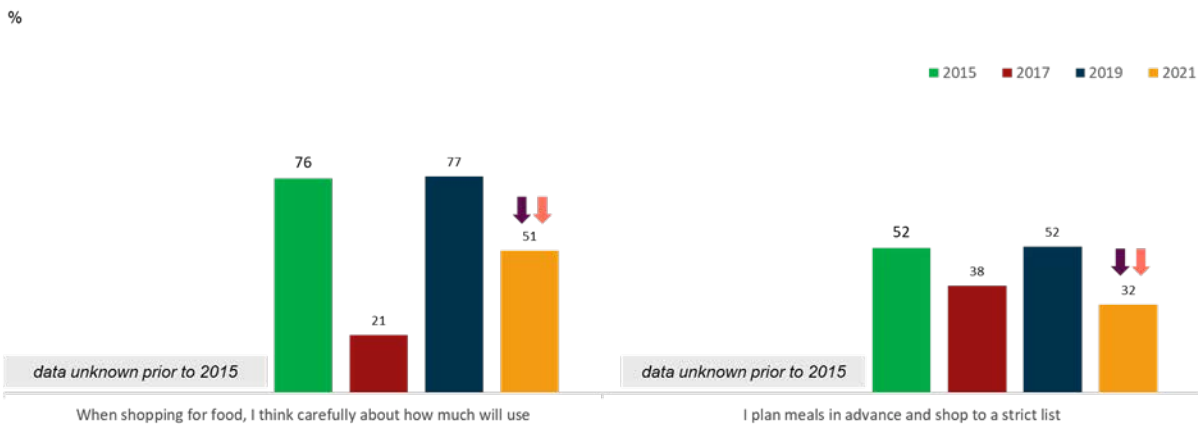
**QB1.** Before **you** or your **household** does the main grocery shopping, how often do you or your household, do the following? (Most/Always)
**Base:** Total sample: 2009 (n=1200), 2011 (n=1200), 2012 (n=1300), 2015 (n=1337), 2017 (n=1389); 2019 (n=523); 2021 (n=1463)

Some planning behaviours declined, probably as a result of COVID-19:

- In 2021 half (51%) of the NSW community reported thinking carefully about the amount of food they will use up most or every time they shop, compared to 77% in 2019.
- In 2021, 32% of the NSW community planned most meals in advance and shopped to a strict list, compared to 52% in 2019.

**Figure 9      Food planning behaviour (2)**

%

■ 2015 ■ 2017 ■ 2019 ■ 2021



When shopping for food, I think carefully about how much will use: data unknown prior to 2015, 76, 21, 77, 51

I plan meals in advance and shop to a strict list: data unknown prior to 2015, 52, 38, 52, 32

**QB1.** Before **you** or your **household** does the main grocery shopping, how often do you or your household, do the following? (Most/Always)
**Base:** Total sample 2015 (n=1337); 2017 (n=1389); 2019 (n=523); 2021 (n=1463)

When it comes to grocery shopping, 42% are now mostly or always buying food according to a budget, down from 47% in 2019, and 57% are mostly or always checking date labels before buying items, down from 68% in 2019.

Buying items mostly or always 'in bulk' has risen to 25% from 22% in 2019, up from 18% in 2009. Buying food 'on special' was almost unchanged since the survey began in 2009 and has continued unchanged throughout the COVID-19 period.

**Figure 10    Food shopping behaviour**

Legend: ■ 2009  ■ 2011  ■ 2012  ■ 2015  ■ 2017  ■ 2019  ■ 2021



Buy food according to a set budget: 46, 44, 43, 51, 46, 47, 42
Buy food based on what is on special (including 2 for 1 deals): 42, 50, 39, 43, 41, 42, 41
Buy items 'in bulk': 18, 17, 18, 23, 20, 22, 25
Check the 'use by' or 'best before' dates before purchasing food items: 66, 71, 66, 69, 63, 68, 57
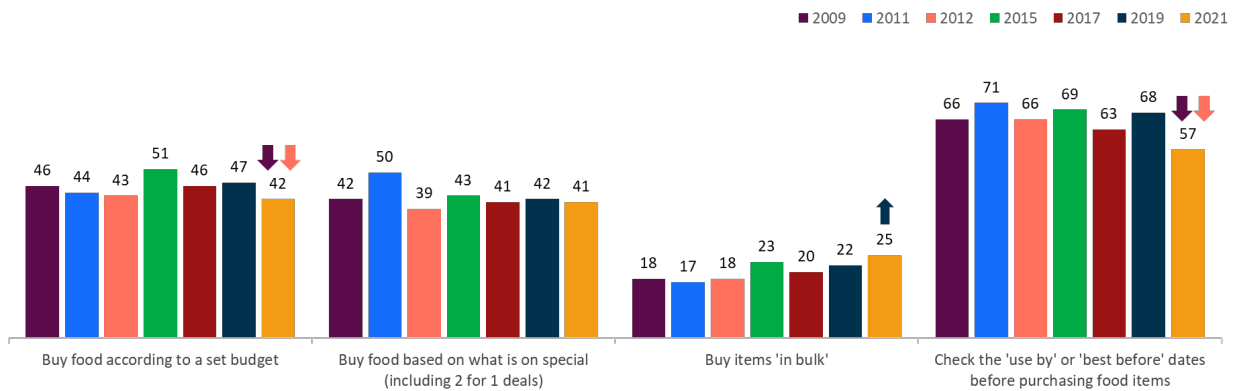
**QB2.** About how often do **you**, or your **household**, do the following when doing the **main** grocery shopping? (Most/Always)
**Base:** *Total sample: 2009 (n=1200), 2011 (n=1200), 2012 (n=1300), 2015 (n=1337), 2017 (n=1389); 2019 (n=523); 2021 (n=1463)*

People were less likely to consider portion sizes and to cook only what they need, most/all of the time in 2021, down to 43% from 48% in 2019. Conversely, more people were mostly/always making extra food for future planned meals, up to 37% in 2021 from 35% in 2019, while buying food 'just in case' it was needed was 29%, up from 22% in 2019.

**Figure 11    Food cooking and preparation behaviour**

Legend: ■ 2009  ■ 2011  ■ 2012  ■ 2015  ■ 2017  ■ 2019  ■ 2021



Consider portion sizes and only make as much as you need: 46, 47, 47, 56, 48, 48, 43
Make extra for a future planned meal (e.g. lunch or dinner the next day): 28, 34, 32, 35, 31, 35, 37
Make extra just in case it is needed: 20, 14, 17, 24, 20, 22, 29

**QB4.** About how often do you or your household do the following when preparing a main meal? (Most/Always)
**Base:** *Total sample: 2009 (n=1200), 2011 (n=1200), 2012 (n=1300), 2015 (n=1337), 2017 (n=1389); 2019 (n=523); 2021 (n=1463)*

Fewer people (51%) are saving leftovers in the fridge and mostly/always consuming them, compared to 60% in 2019 while more people are throwing them out straight away, up to 20% in 2021, from 12% in 2019, and 10% in 2009.

**Figure 12    Food disposal behaviour (1)**
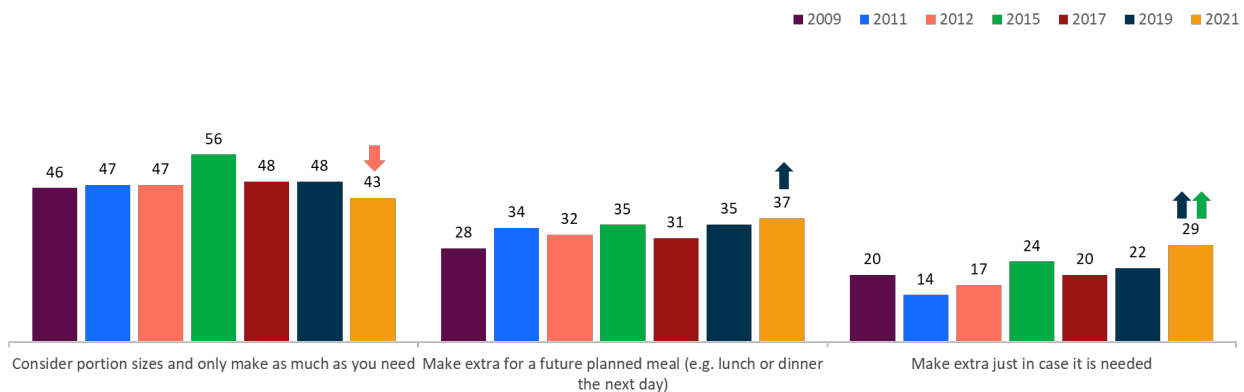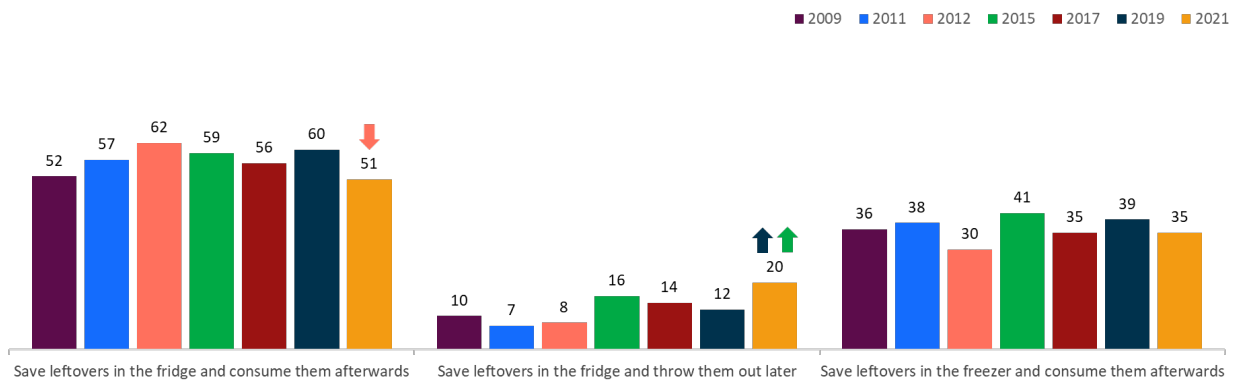


2009  2011  2012  2015  2017  2019  2021

**QB5.** When there are leftovers in your household, about how often do you or your household do the following? (Most/Always)
**Base:** *Total sample: 2009 (n=1200), 2011 (n=1200), 2012 (n=1300), 2015 (n=1337), 2017 (n=1389); 2019 (n=523); 2021 (n=1463)*

More people report mostly or always throwing out food they had initially saved in the freezer, up from 8% in 2009, and 9% in 2019, to 18% in 2021.

In 2021, 20% acknowledge they throw leftovers away right after a meal rather than saving them in the fridge or freezer for later. This shows significantly more people undertaking this behaviour on a regular basis than in 2019 (9%) or even 2009 (11%).

**Figure 13    Food disposal behaviour (2)**
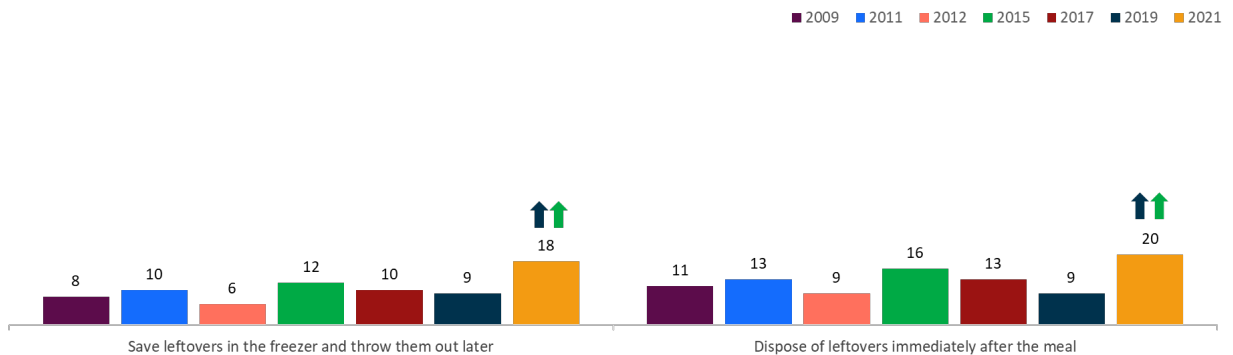


2009  2011  2012  2015  2017  2019  2021

**QB5.** When there are leftovers in your household, about how often do you or your household do the following? (Most/Always)
**Base:** *Total sample: 2009 (n=1200), 2011 (n=1200), 2012 (n=1300), 2015 (n=1337), 2017 (n=1389); 2019 (n=523); 2021 (n=1463)*

## Reasons for wasting food

The top five reasons that NSW householders gave for wasting food they could have eaten in 2021 were:

- food was left too long in the fridge or freezer (27%)
- some members of the household didn't finish the food they were served (25%)
- they cooked too much food (25%)
- food goes off before the date label (18%)
- food bought on sale that didn't always last long enough (16%).

**Figure 14    Reasons food is left uneaten in the household (1)**
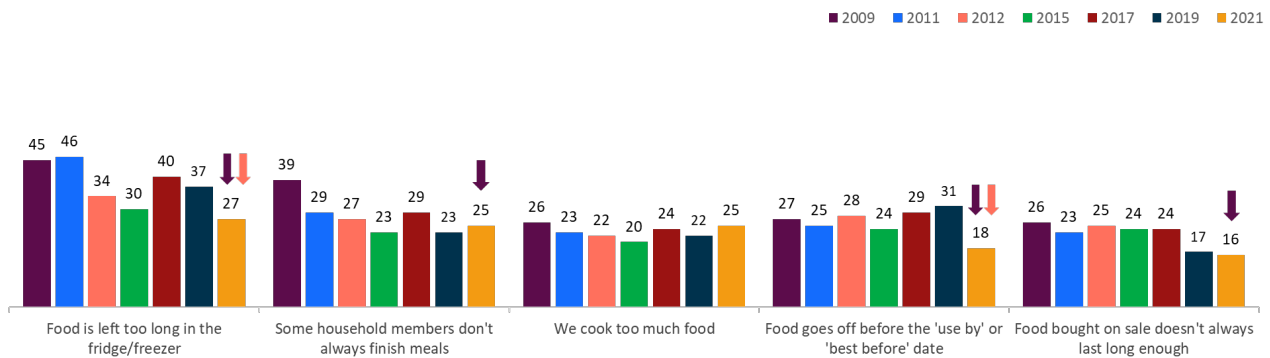
■ 2009  ■ 2011  ■ 2012  ■ 2015  ■ 2017  ■ 2019  ■ 2021



D4a. What are the reasons that food is left uneaten in your household?
**Base:** *Total sample: 2009 (n=1200), 2011 (n=1200), 2012 (n=1300), 2015 (n=1337), 2017 (n=1389); 2019 (n=523); 2021 (n=1463)*

In 2021, a higher proportion of people felt poor knowledge of how to store food was to blame for food waste most/all of the time (7%, up from 3% in 2019) and that they were not able to store food properly (6%, up from 4% in 2019). In 2021, 12% said the main reason for wasted food was that they cooked too much food, up from 8% in 2019.

Fewer people felt they were not wasting any food in 2021 (15%), down from 24% in 2019.

**Figure 15    Reasons food is left uneaten in the household (2)**

■ 2009  ■ 2011  ■ 2012  ■ 2015  ■ 2017  ■ 2019  ■ 2021



D4a. What are the reasons that food is left uneaten in your household?
**Base:** *Total sample: 2009 (n=1200), 2011 (n=1200), 2012 (n=1300), 2015 (n=1337), 2017 (n=1389); 2019 (n=523); 2021 (n=1463)*

**Figure 16    Reasons food is left uneaten in the household (3)**



■ 2009  ■ 2011  ■ 2012  ■ 2015  ■ 2017  ■ 2019  ■ 2021

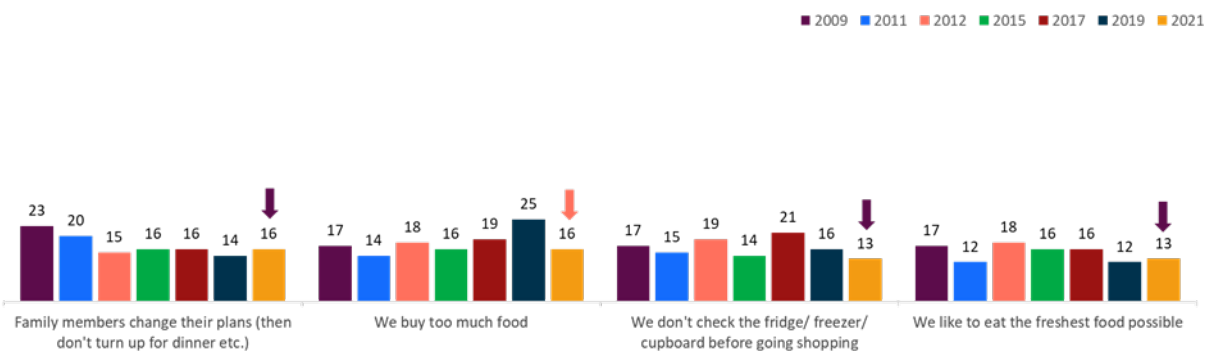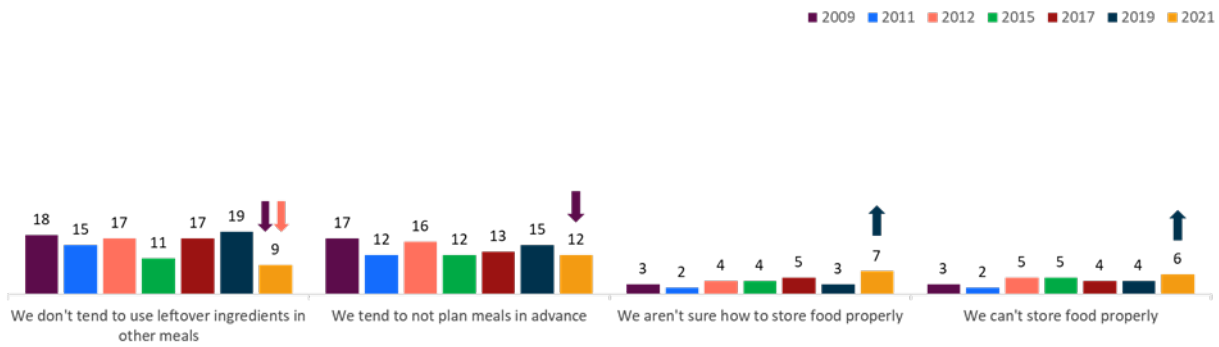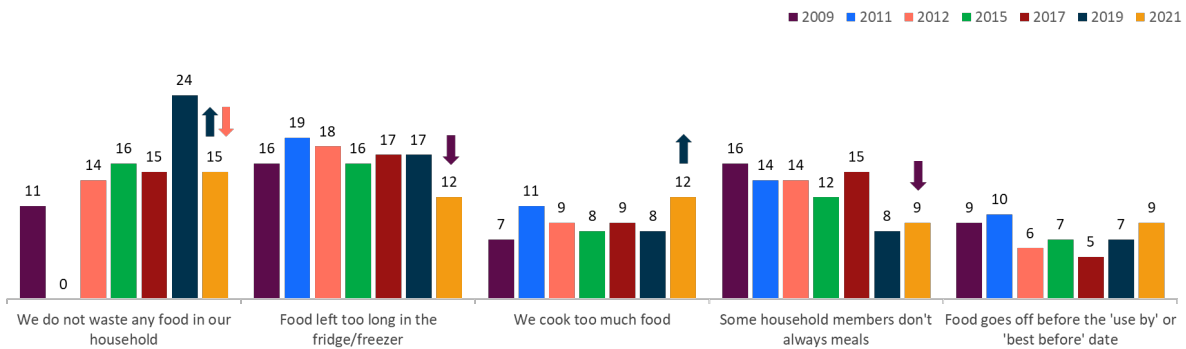| | We don't tend to use leftover ingredients in other meals | We tend to not plan meals in advance | We aren't sure how to store food properly | We can't store food properly |
|---|---|---|---|---|
| 2009 | 18 | 17 | 3 | 3 |
| 2011 | 15 | 12 | 2 | 2 |
| 2012 | 17 | 16 | 4 | 5 |
| 2015 | 11 | 12 | 4 | 5 |
| 2017 | 17 | 13 | 5 | 4 |
| 2019 | 19 | 15 | 3 | 4 |
| 2021 | 9 | 12 | 7 | 6 |

**D4a.** What are the reasons that food is left uneaten in your household?
**Base:** *Total sample: 2009 (n=1200), 2011 (n=1200), 2012 (n=1300), 2015 (n=1337), 2017 (n=1389); 2019 (n=523); 2021 (n=1463)*

**Figure 17    Main reason food is left uneaten in the household**



■ 2009  ■ 2011  ■ 2012  ■ 2015  ■ 2017  ■ 2019  ■ 2021

| | We do not waste any food in our household | Food left too long in the fridge/freezer | We cook too much food | Some household members don't always meals | Food goes off before the 'use by' or 'best before' date |
|---|---|---|---|---|---|
| 2009 | 11 | 16 | 7 | 16 | 9 |
| 2011 | 0 | 19 | 11 | 14 | 10 |
| 2012 | 14 | 18 | 9 | 14 | 6 |
| 2015 | 16 | 16 | 8 | 12 | 7 |
| 2017 | 15 | 17 | 9 | 15 | 5 |
| 2019 | 24 | 17 | 8 | 8 | 7 |
| 2021 | 15 | 12 | 12 | 9 | 9 |

**D4b.** Which is the **main** reason?
**Base:** *Total sample: 2009 (n=1200), 2011 (n=1200), 2012 (n=1300), 2015 (n=1337), 2017 (n=1389); 2019 (n=523); 2021 (n=1463)*

**Figure 18    Understanding of 'best before' dates**
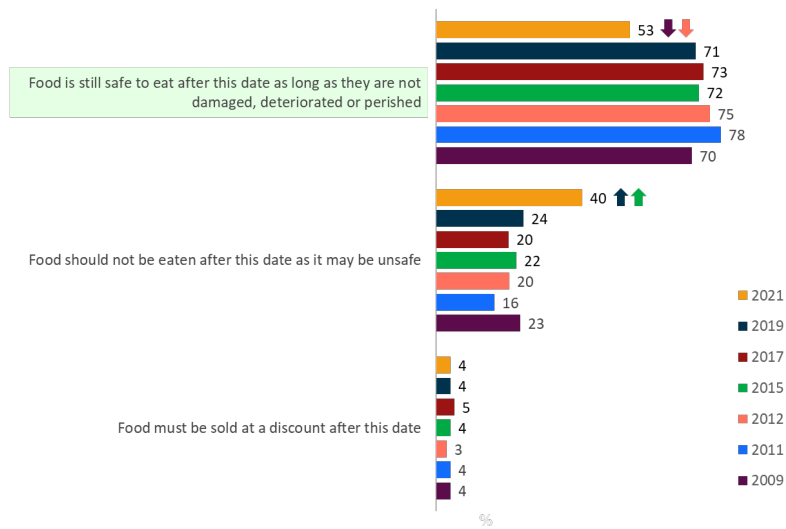


| | |
|---|---|
| Food is still safe to eat after this date as long as they are not damaged, deteriorated or perished | 53 ↓↓ |
| | 71 (2019) |
| | 73 (2017) |
| | 72 (2015) |
| | 75 (2012) |
| | 78 (2011) |
| | 70 (2009) |
| Food should not be eaten after this date as it may be unsafe | 40 ↑↑ |
| | 24 |
| | 20 |
| | 22 |
| | 20 |
| | 16 |
| | 23 |
| Food must be sold at a discount after this date | 4 |
| | 4 |
| | 5 |
| | 4 |
| | 3 |
| | 4 |
| | 4 |

Legend: 2021, 2019, 2017, 2015, 2012, 2011, 2009

**C1.** What is meant by the 'best before' date as it relates to food and drinks?
**Base:** *Total sample: 2009 (n=1200), 2011 (n=1200), 2012 (n=1300), 2015 (n=1337), 2017 (n=1389); 2019 (n=523); 2021 (n=1463)*

*2% other understanding and 1% unsure / don't know not shown

**Figure 19    Understanding of 'use by' dates**



| | |
|---|---|
| Food should not be eaten after this date as it may be unsafe | 72 ↑ |
| | 74 |
| | 61 |
| | 64 |
| | 65 |
| | 67 |
| | 64 |
| Food is still safe to eat after this date as long as they are not damaged, deteriorated or perished | 20 ↓ |
| | 21 |
| | 33 |
| | 30 |
| | 31 |
| | 28 |
| | 29 |
| Food must be sold at a discount after this date | 4 |
| | 3 |
| | 4 |
| | 4 |
| | 3 |
| | 3 |
| | 4 |

Legend: 2021, 2019, 2017, 2015, 2012, 2011, 2009

**QC2.** What is meant by the 'use by' date as it relates to food and drinks?
**Base:** *Total sample: 2009 (n=1200), 2011 (n=1200), 2012 (n=1300), 2015 (n=1337), 2017 (n=1389); 2019 (n=523); 2021 (n=1463)*

*2% other understanding and 1% unsure / don't know not shown

The proportion of NSW community members who correctly identified both date labelling terms was 38% in 2021, down from 52% in 2019.

**Figure 20    Correct understanding of date labelling**

| % | 2015 | 2017 | 2019 | 2021 |
|---|---|---|---|---|
| | n=1337 | n=1389 | n=523 | n=1463 |
| Correctly understands best before + use by | 45 | 43 | 52 | 38 ⬇⬇ |
| Only understands best before | 28 | 30 | 19 | 14 |
| Only understands use by | 20 | 18 | 22 | 34 ⬆⬆ |
| Doesn't understand either | 8 | 9 | 7 | 13 ⬆⬆ |

## Support for goverment assistance

There is a stronger expectation for all levels of government, as well as supermarkets, to help people reduce food waste. In 2021, 78% of people felt local governments have a role (up from 71% in 2019), 67% of people thought state government has a role, up from 57% in 2019, 58% of people federal government, up from 48%. More people also thought supermarkets should play their part (72% up from 62% in 2019).

**Figure 21    Role of agencies in assisting community to reduce food waste**
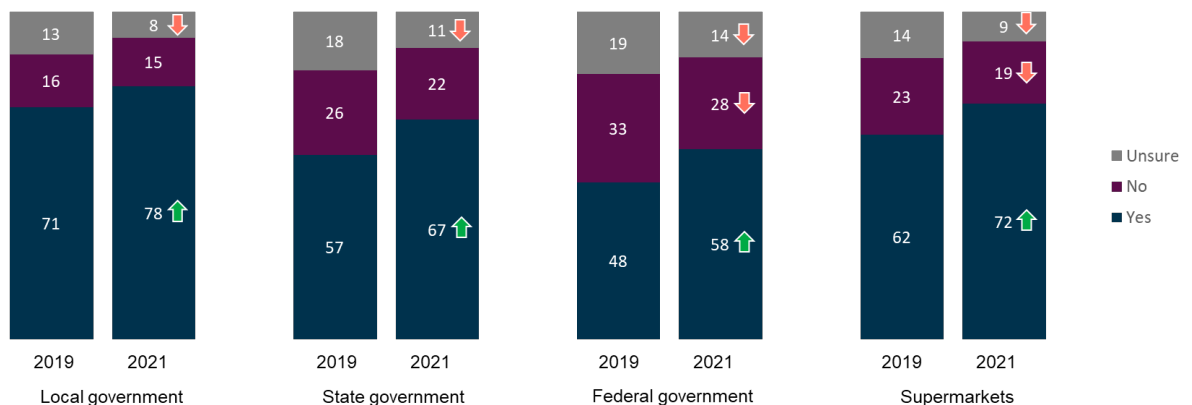


**F1.** Do you think the NSW Government should have a role in assisting the people of NSW to reduce the amount of food they waste?
**Base:** *Total sample: 2019 (n=523); 2021 (n=1463)*

## Level of motivation to act on food waste

Three quarters of NSW residents surveyed report feeling fairly or quite motivated to reduce their household food waste. In 2021, only 6% of the NSW community do not feel motivated to reduce their food waste. Motivation to reduce food waste remains largely unchanged since 2019.

**Figure 22    Motivation to reduce food waste**
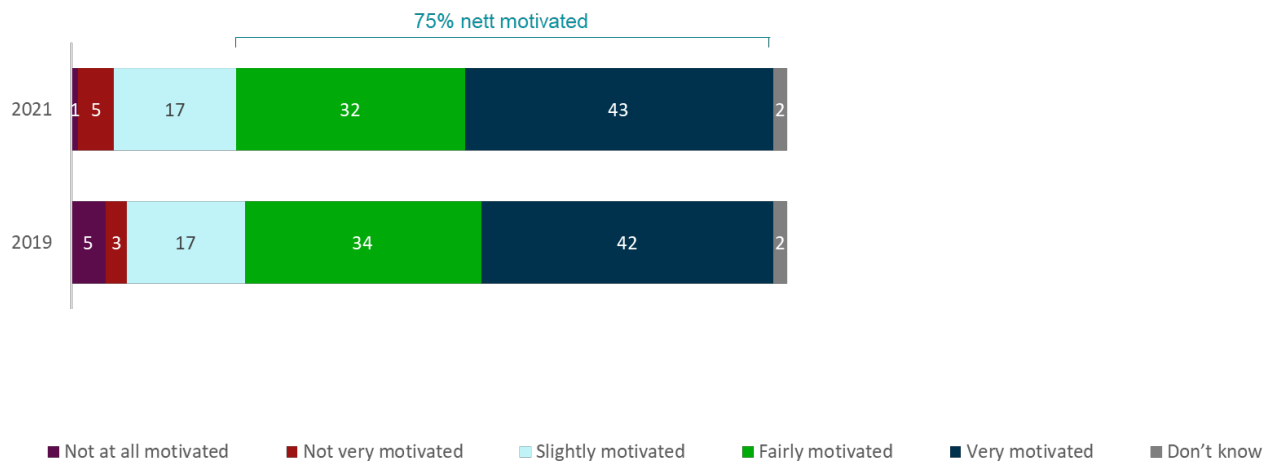


D1. How motivated or unmotivated are you to reduce your household's food waste?
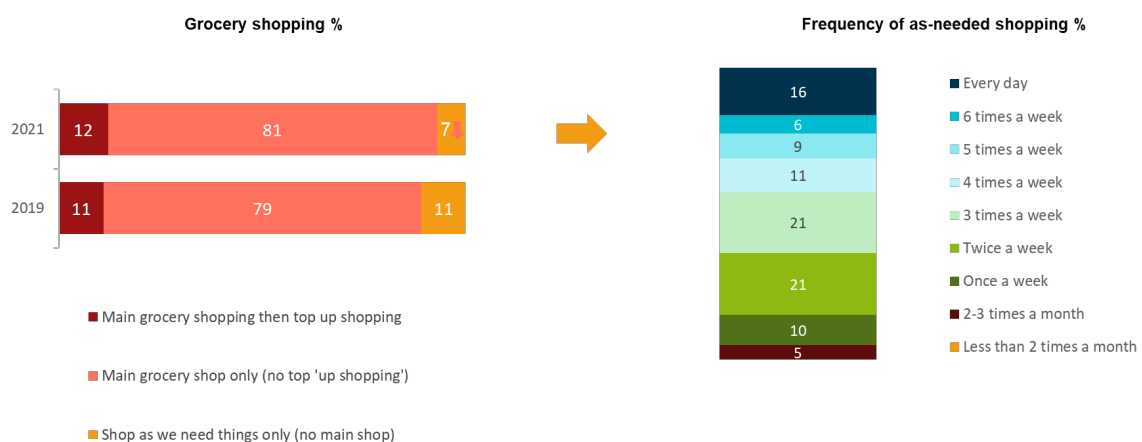**Base:** *Total sample 2021 (n=1463)*

# Impacts of COVID-19

In response to the COVID-19 pandemic, a number of food waste behaviours of NSW householders changed.

## More shop for food as needed

When it comes to grocery shopping, 81% of NSW community members surveyed do a main shop each week and do 'top up' shopping as needed. In 2021, fewer people are grocery shopping only as they need things, down to 7% from 11% in 2019. Among the 7% that shop only as needed, 16% report grocery shopping daily and 85% shop more than once a week.

**Figure 23**   **Regularity of grocery shopping in the household and frequency of as-needed household grocery shopping**



**Grocery shopping %**

| | | | |
|---|---|---|---|
| 2021 | 12 | 81 | 7 |
| 2019 | 11 | 79 | 11 |

- Main grocery shopping then top up shopping
- Main grocery shop only (no top 'up shopping')
- Shop as we need things only (no main shop)

**Frequency of as-needed shopping %**

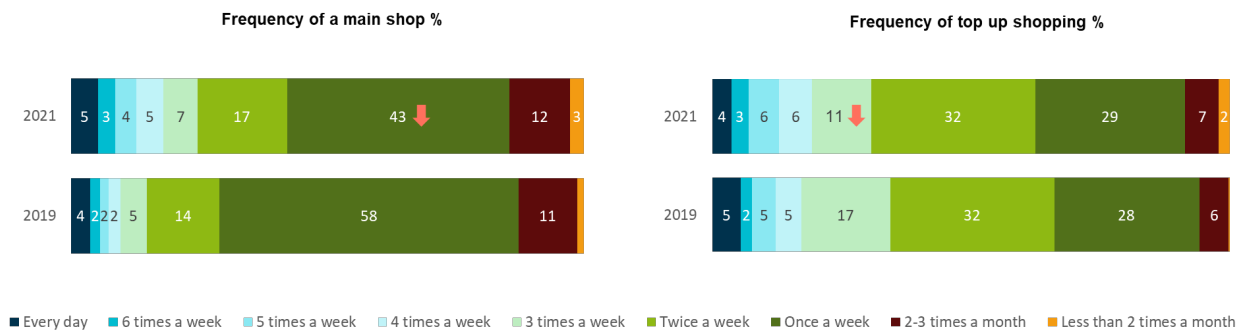| Value | Category |
|---|---|
| 16 | Every day |
| 6 | 6 times a week |
| 9 | 5 times a week |
| 11 | 4 times a week |
| 21 | 3 times a week |
| 21 | Twice a week |
| 10 | Once a week |
| 5 | 2-3 times a month |
| | Less than 2 times a month |

**A1a.** Which statement best describes your household? **Base:** *Total sample 2021 n=1463; (2019 n=523)*
**A1c.** How often does your household shop as you need things. **Base:** *Sample that shops as needed 2021 n=98*

## A main weekly shop and a top up

For the 93% of NSW community members surveyed in 2021 who do main grocery shops, fewer are doing weekly big shops than in 2019 (43%, down from 58%in 2019). Instead, there is an increased uptake in bi-weekly main grocery shops, up to 17% from 14%. More people report more frequent shopping, with 24% reporting doing three or more main grocery shops a week (up from 15% in 2019). For the 81% that not only do a main shop but also top up on groceries when they are needed, the majority top up once or twice a week (61%).

**Figure 24    Frequency of main and top up household grocery shopping**

**Frequency of a main shop %**



**Frequency of top up shopping %**



■ Every day  ■ 6 times a week  ■ 5 times a week  ■ 4 times a week  ■ 3 times a week  ■ Twice a week  ■ Once a week  ■ 2-3 times a month  ■ Less than 2 times a month

**A1b.** How often does your household usually do the **main grocery shopping?** This doesn't include 'top-up' shopping. **Base:** *Sample that does main grocery shopping 2021 n=1365; (2019 n=468)*
**A1c.** How often does your household usually do **'top-up'** grocery shopping. **Base:** *Sample that does a main shop and tops up as needed 2021 n=1183; (2019 n=468)*

# Online shopping for food became normal

There has been a significant increase in online shopping during COVID-19. In 2021, 48% of those surveyed report having shopped online for groceries in the week leading up to completing the survey, up from 13% in 2019. Online grocery shopping is largely undertaken with the major retailers such as Woolworths, Coles and IGA (92%), though 31% have bought groceries online from independent supermarkets too, such as Harris Farm.

**Figure 25    Online shopping for groceries in the last 7 days and stores from which groceries were purchased**
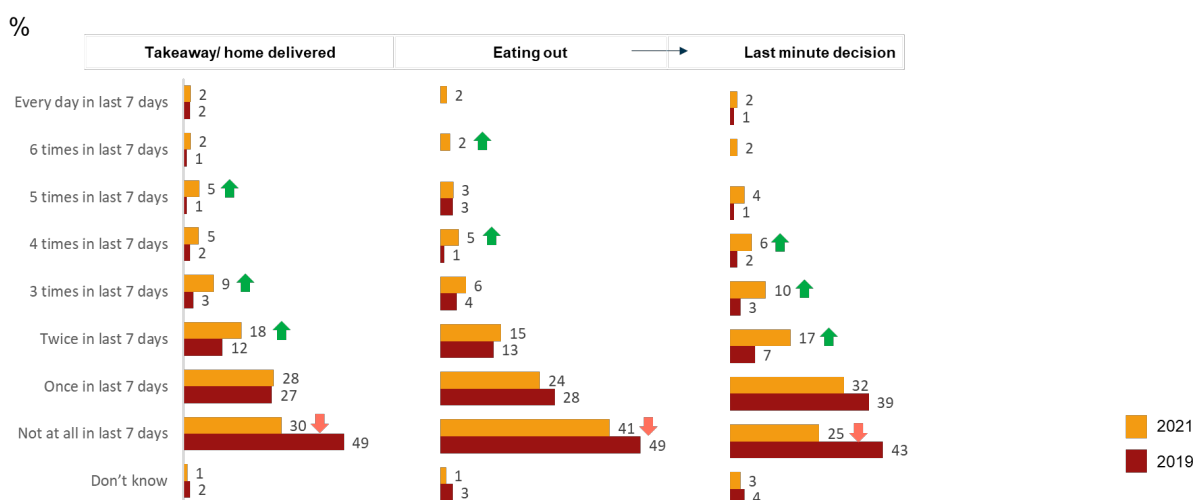
**online grocery shopping %**



■ Yes
■ No
■ Don't know

▲ **Up 35%**
**from 13% in 2019**

**online stores %**
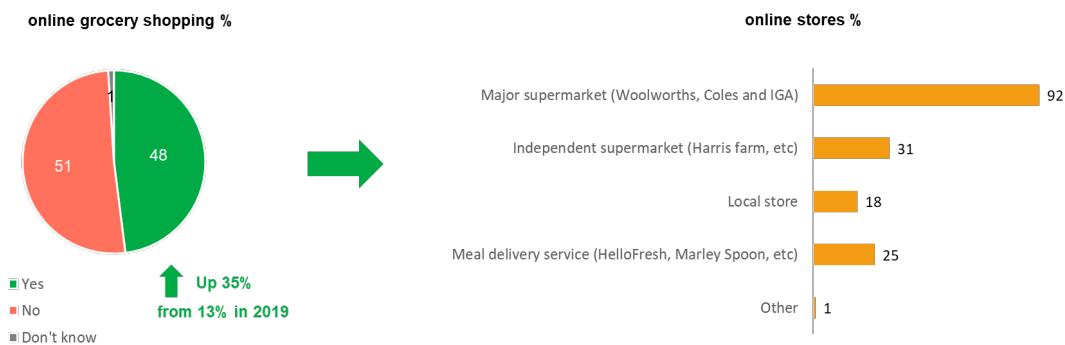


**A3a.** Did you personally shop online for groceries (excluding alcohol) in the last 7 days? **Base:** *Total sample 2021 (n=1463)*
**A3b.** Which companies did you personally shop with online for groceries (excluding alcohol) in the last 7 days? **Base:** *Ordered groceries online in last week 2021 (n=687).*
*n.b. significance testing not undertaken for A3b as it has been modified*

# Eating out is more frequent and more spontaneous

The 2021 survey has seen an increase in eating food prepared outside the home, with 69% having ordered takeaway or home delivery and 58% having eaten out in the week preceding the survey (compared to 49% and 48% in 2019). Frequency has also increased for both.

The choice to eat food prepared outside the home has also become more spontaneous in 2021, with 25% of people saying all were planned, down from 41% in 2019.

**Figure 26    Frequency of meals bought/eaten out of the home and their spontaneity**

# How did COVID-19 impact food waste?

Analysis of variance (ANOVA) was used to explore the relationship between food waste and food management behaviours, and COVID-19. The 2019 LFHW survey asked participants to estimate how many cups of food they threw away, as well as the behavioural questions. While the self-reported quantity of food thrown away is not an accurate measure, it was possible to compare those who recognised they threw away a lot of food and those who believe they throw away less food.

ANOVA identified the five behaviours associated with higher levels of food waste in 2019. These same five behaviours were examined in detail in 2021 to see if they increased during the COVID-19 pandemic and if this led to increased food waste.

In response to the COVID-19 pandemic, the following five behaviours increased with the NSW community:

1. buying takeaway or getting a home delivered meal
2. making last-minute decisions to order takeaway, home delivery or eat out
3. buying food when shopping 'just in case'
4. buying food when shopping without knowing what to use it for
5. buying items 'in bulk'

These five behaviours account for most of the adverse change in food waste avoidance behaviours impacting on food waste.

## Behaviours affected by COVID-19 linked to higher levels of food waste

### Behaviour 1: Takeaway or gets a home delivered meal

The results show that if a household ordered takeaway or got a home delivered meal ONCE in the last 7 days, they were wasting on average 2.4 cups per week more than a household that did NOT order takeaway.

If a household ordered takeaway more than once in the last 7 days, they were wasting 4.2 cups more than a household that did NOT order takeaway.

This difference is significant (ANOVA, F=12.151 P=0.00).

**Table 6** ANOVA modelling of food waste by frequency of food bought outside the home in the last week (2019)

| Frequency of takeaway orders in last 7 days | N= | Mean cups of food waste |
|---|---|---|
| None | 692 | 9.20 |
| Once | 359 | 11.58 |
| More than once | 179 | 13.40 |

## Behaviour 2: Making last-minute decisions to order takeaway, home delivery or eat out

The 2021 result show that if eating out of the home ONCE a week (takeaway, home delivery or eating out) was a last-minute decision, those households were wasting on average 1.8 cups more per week than a household that did NOT order takeaway.

If it was a last-minute decision for a household to order takeaway, home delivery or eat out meal more than once, they were wasting 5.8 cups more than a household that did NOT order takeaway.

This difference is significant (ANOVA, F=11.637 P=0.00).

**Table 7** ANOVA modelling of food waste by frequency of last-minute decisions to eat food from outside the household (2019)

| Frequency of eating out of home in last 7 days | N= | Mean cups of food waste |
|---|---|---|
| None | 844 | 9.67 |
| Once | 302 | 11.49 |
| More than once | 84 | 15.46 |

## Behaviour 3: Buying food 'just in case'

The 2021 result show that if a household bought food 'just in case' about half the time when doing the main grocery shopping, they were wasting on average 2.6 cups more per week than a household that did it sometimes/rarely or never.

If a household bought food 'just in case' every time/most times when doing the main grocery shopping, they were wasting on average 4.5 cups more than a household that did it sometimes/ rarely or never.

This difference is significant (ANOVA, F=14.961 P=0.00).

**Table 8** ANOVA modelling of food waste by frequency of food purchases for 'just in case' (2019)

| Frequency of buying food for 'just in case' in last 7 days | N= | Mean cups of food waste |
|---|---|---|
| None | 763 | 9.24 |
| Once | 260 | 11.82 |
| More than once | 199 | 13.77 |

### Behaviour 4: Buying food without knowing what to use it for

The 2021 result show that if a household bought food without knowing what to use it for about half the time when doing the main grocery shopping, they were wasting on average 1.5 cups more per week than a household that did it sometimes/rarely or never.

If a household bought food without knowing what to use it for every time/most times when doing the main grocery shopping, they were wasting on average 3.4 cups more than a household that did it sometimes/rarely or never.

This difference is significant (ANOVA, F=7.456 P=0.00).

**Table 9    ANOVA modelling of food waste by frequency of purchases without knowing what to use the food for (2019)**

| Frequency of buying food without knowing what to use it for in last 7 days | N= | Mean cups of food waste |
|---|---|---|
| None | 791 | 9.72 |
| Once | 237 | 11.17 |
| More than once | 190 | 13.15 |

### Behaviour 5: Buying items 'in bulk'

The COVID-19 pandemic saw stock shortages of fresh foods and other staples in stores and supermarkets. Many food shoppers reported more regularly buying additional groceries to avoid running out. This was alongside an increase in 'bulk buying', or buying items in larger quantities than necessary, to mitigate the perceived risk that the item wouldn't be available to buy when they next needed it.

The 2021 results show that if a household bought items 'in bulk' about half the time when doing the main grocery shopping, they were wasting on average two cups more per week than a household that did it sometimes/rarely or never.

If a household bought items 'in bulk' every time/most times when doing the main grocery shopping, they were wasting on average 2.1 cups more per week than a household that did it sometimes/rarely or never.
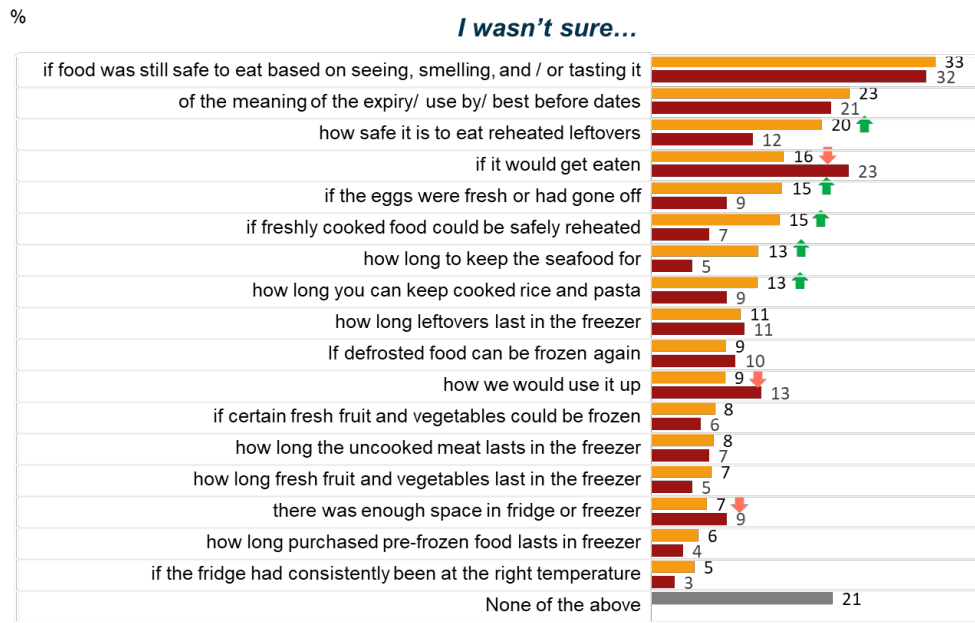
This difference is significant (ANOVA, F=4.188 P=0.02).

**Table 10    ANOVA modelling of food waste by frequency of food bought in bulk (2019)**

| Frequency of buying food 'in bulk' in last 7 days | N= | Mean cups of food waste |
|---|---|---|
| None | 824 | 9.89 |
| Once | 223 | 11.85 |
| More than once | 172 | 11.96 |

## Lingering knowledge gaps

The biggest knowledge gap leading to food waste among people surveyed was being unsure if the food was safe to eat based on sight, smell or taste (33%). Following this, 23% of people acknowledged not fully understanding food expiry date labelling, and 20% reported feeling unsure if reheated leftovers could be eaten, up from 12% in 2019. Specific knowledge gaps include determining if eggs (15%), seafood (13%) and cooked rice and pasta (13%) are fresh.

**Figure 27    Knowledge gaps causing food waste**

%

### I wasn't sure…



| | |
|---|---|
| if food was still safe to eat based on seeing, smelling, and / or tasting it | 33 / 32 |
| of the meaning of the expiry/ use by/ best before dates | 23 / 21 |
| how safe it is to eat reheated leftovers | 20 ▲ / 12 |
| if it would get eaten | 16 ▼ / 23 |
| if the eggs were fresh or had gone off | 15 ▲ / 9 |
| if freshly cooked food could be safely reheated | 15 ▲ / 7 |
| how long to keep the seafood for | 13 ▲ / 5 |
| how long you can keep cooked rice and pasta | 13 ▲ / 9 |
| how long leftovers last in the freezer | 11 / 11 |
| If defrosted food can be frozen again | 9 / 10 |
| how we would use it up | 9 ▼ / 13 |
| if certain fresh fruit and vegetables could be frozen | 8 / 6 |
| how long the uncooked meat lasts in the freezer | 8 / 7 |
| how long fresh fruit and vegetables last in the freezer | 7 / 5 |
| there was enough space in fridge or freezer | 7 ▼ / 9 |
| how long purchased pre-frozen food lasts in freezer | 6 / 4 |
| if the fridge had consistently been at the right temperature | 5 / 3 |
| None of the above | 21 |

**E3.** Were any of the factors on this list, reasons why **you** disposed of food in the last few months? …" I wasn't sure
**Base:** *Total sample: 2019 (n=1476); 2021 (n=1463)*
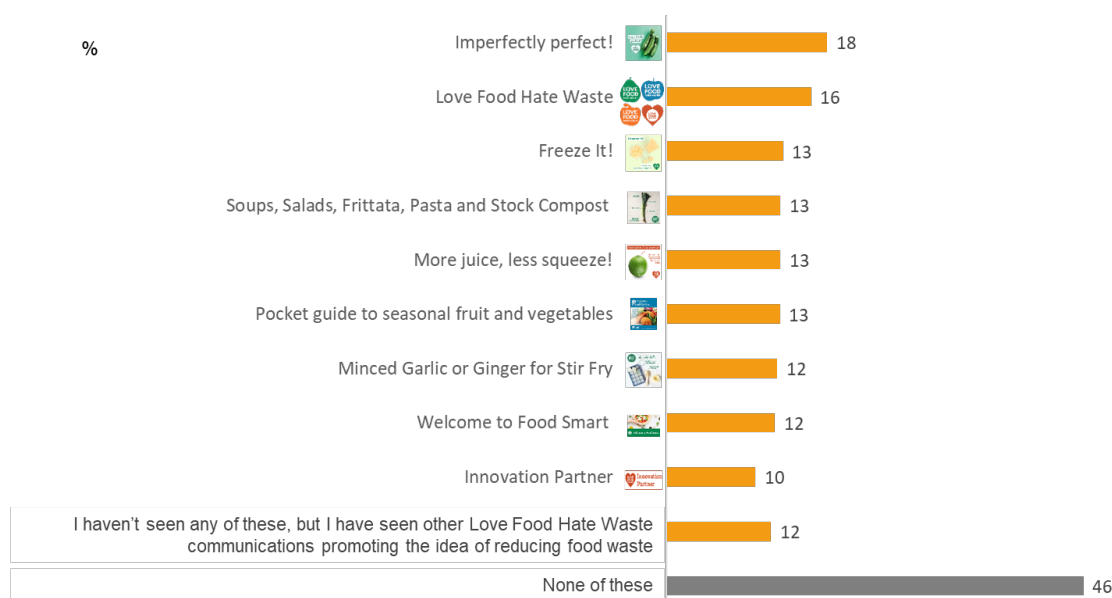
*None of the above added in 2021*

# LFHW campaign impact

## Awareness of LFHW campaign

The 2021 community monitoring survey found that more than half (54%) of NSW householders recall seeing LFHW campaign materials in the last 12 months. Of these, 12% reported being unfamiliar with the materials shown in the survey but had seen other Love Food Hate Waste communications.

Among the 42% of community members that reported having seen campaign materials tested in the survey, recognition was highest for the imperfectly perfect zucchini asset (18%), followed by the LFHW icon (16%). The results indicate that the Love Food Hate Waste campaign has reached 16% of those surveyed.

**Figure 28    Recognition of LFHW program materials**

| % | |
| --- | --- |
| Imperfectly perfect! | 18 |
| Love Food Hate Waste | 16 |
| Freeze It! | 13 |
| Soups, Salads, Frittata, Pasta and Stock Compost | 13 |
| More juice, less squeeze! | 13 |
| Pocket guide to seasonal fruit and vegetables | 13 |
| Minced Garlic or Ginger for Stir Fry | 12 |
| Welcome to Food Smart | 12 |
| Innovation Partner | 10 |
| I haven't seen any of these, but I have seen other Love Food Hate Waste communications promoting the idea of reducing food waste | 12 |
| None of these | 46 |

**20ci.** Have you seen any of the following images? Please select all that apply:
**Base:** *Total sample 2021 (n=1463)*

### LFHW logo awareness

Recognition of the Love Food Hate Waste icon has consistently risen since 2011. In 2011, 2% said they had seen the icon in the last 12 months. In 2021, this had risen to 16% when asked whether they had ever seen the icon, up from 8% in 2017, when the question was last asked. The profile of those who are aware of the LFHW campaign is as follows:

- more likely to be male (+7% over the average of 51%)
- more likely to be aged 25–44 (+18% over the average of 40%)
- more likely to be mostly responsible for managing food planning (+9% over the average of 71%), shopping (+9% over the average of 72%), storing (+9% over the average of 68%), cooking/preparation (+8% over the average of 62%) and food disposal (+7% over the average of 67%)
- more likely to be a family with children (+18% over the average of 39%)

- more likely to be earning an annual household income of $130,000 or more (+11% over an average of 30%)
- more likely to be university educated (+14% over an average of 55%)
- more likely to be the Spectators Families segment (+19% over the average of 37%)
- less likely to be the Disciples segment (-8% under the average of 12%).

**Figure 29    LFHW logo awareness and changes 2011–21**

The sources that had the highest recognition of the LFHW materials were Facebook (39%) on the internet in general (37%), television (26%) and website/online news (23%).

When it comes to print materials, 17% recall seeing council communications and 15% feel they recognise the materials from the newspaper.

**Figure 30    Sources of recognition for LFHW program materials**
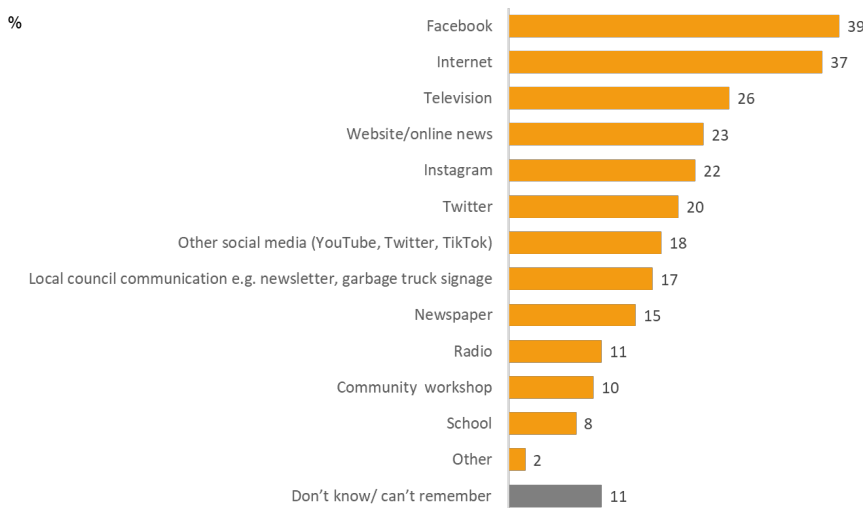
## What impact has the LFHW campaign had on people?

### LFHW campaign motivates people

The 2021 study found that 71% of survey respondents who recognised LFHW communications said the campaign motivated them to reduce their food waste. For another 21%, the images made them consciously think about the issue of food waste, although they were not motivated to take any action. Only 6% did not feel the LFHW campaign motivates them.

**Figure 31    Motivation from seeing LFHW program materials to reduce food waste**
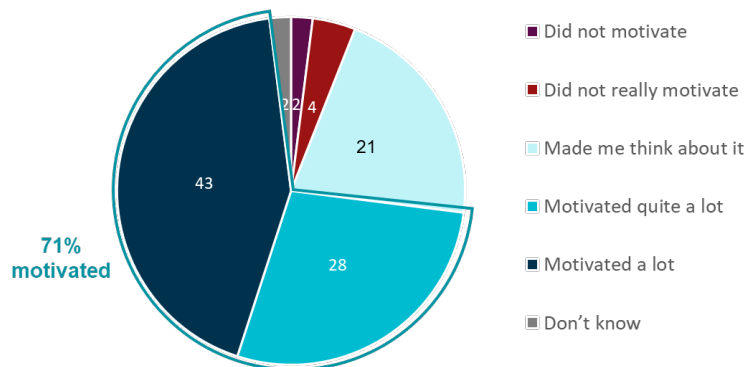


20e. Thinking about the Love Food Hate Waste program, did/does it motivate you to reduce your food waste?
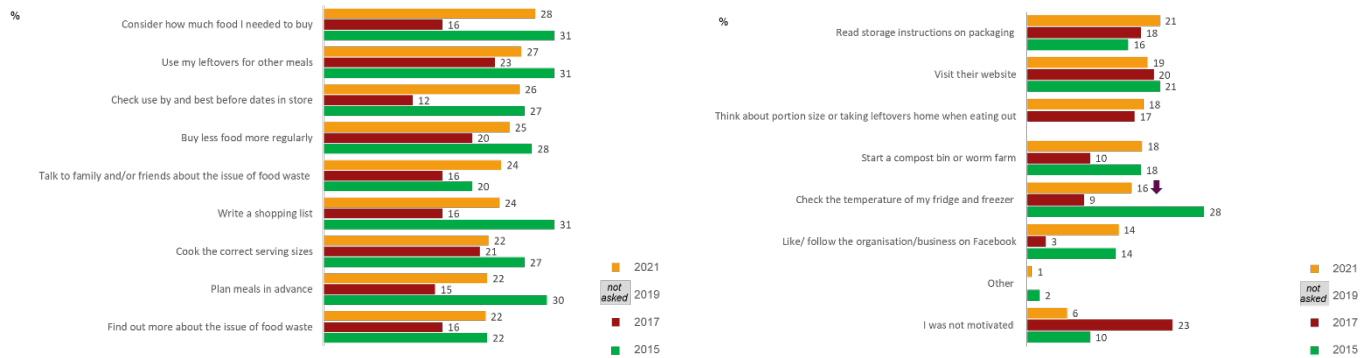**Base:** *NSW residents that recognised program materials 2021 (n=773)*

### LFHW campaign triggered action

After seeing LFHW campaign materials, 19% visited the LFHW website and 14% followed the LFHW campaign on social media.

Awareness of LFHW encouraged greater and more frequent consideration of food deteriorating or being cooked/prepared but going uneaten. After seeing LFHW materials, the top behaviours triggered in 2021 were:

- buying the right amount of food (28%)
- using leftovers for other meals (27%)
- checking date labelling in-store before buying (26%)
- buying less food more frequently (25%)
- talking to family and friends about food waste (24%)
- writing a shopping list (24%)
- cooking the correct serving sizes (22%)
- planning meals in advance (22%)
- reading storage instructions on packaging (21%).

Q20f. After seeing or hearing about the program, were you motivated to do any of the following?
Base: NSW residents that recognised program materials 2015 (n=128); 2017 (n=58); 2021 n=773

Q20f. After seeing or hearing about the program, were you motivated to do any of the following?
Base: NSW residents that recognised program materials 2015 (n=128); 2017 (n=58*); 2021 n=773. *small sample size

## Promoting food waste reduction

The 2021 survey found 76% of people (even those who were not aware of the campaign) thought that Love Food Hate Waste is a good or very good brand for promoting food waste reduction.

Only 2% of people in NSW felt the LFHW brand was not suited to its objective, although 13% were unsure about the value of the name. An additional 9% did not feel strongly either way about the LFHW brand name.

**Figure 33    Perceptions of the effectiveness of the LFHW brand**

%
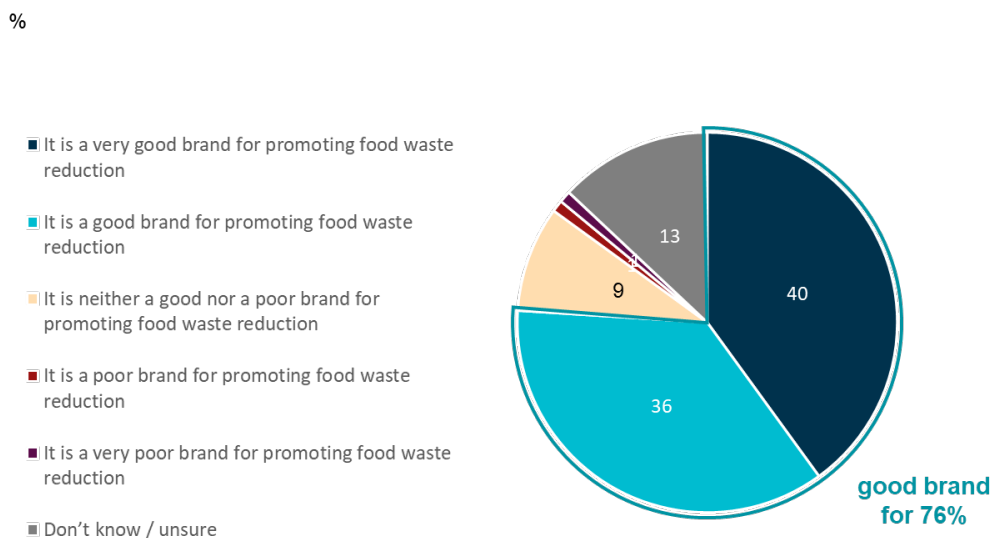


Q21b. How much do you agree or disagree with the following statement about Love Food Hate Waste?
Base: Total sample: 2021 (n=1463)