

SUMMARY

Reducing household food waste and plastic packaging

Ground-breaking new research into the factors affecting how much uncut fresh produce goes to waste in the home.

SUMMARY

Potential impacts

Potential savings of

100,000
TONNES

of food waste and more than

10,300
TONNES

of plastic, equating to

130,000
TONNES

of CO₂e in the UK



Working with signatories to the Courtauld Commitment 2030 and The UK Plastics Pact, WRAP is tackling the climate emergency by reducing food and plastic waste.

Our new ground-breaking research into the relationship between plastic packaging and household food waste, as well as the impact of date labels and storage temperatures, reveals significant opportunities to reduce both food waste and plastic packaging.

21.5k
TONNES

of plastics could be saved if a wider range of products that are sometimes sold loose were **only** sold loose in future.

Selling uncut fresh produce loose and removing Best Before dates across five key product lines (apples, bananas, broccoli, cucumber and potatoes) could **prevent 100,000 tonnes of household food waste** and around **10,300 tonnes of plastic**, saving a combined **130,000 tonnes of CO₂e**. If a wider range of products that are currently sometimes sold loose were **only** sold loose, it would save more than **21,500 tonnes** of plastic.



WHY IS THIS IMPORTANT?

Reducing food and plastic waste

Food waste feeds climate change; globally up to **40% of food produced ends up as waste**, representing 8–10% of all greenhouse gas (GHG) emissions. In the UK, **70% of post-farm gate food waste comes from the home.**

The **£2.1bn¹ of fresh fruit and vegetables thrown away in our homes** are frequently discarded before they are even prepared or cooked because people buy too much, are confused or over-reliant on dates and/or store fresh produce in a way that reduces its shelf-life.

70%

of post-farm gate food waste comes from the home

Meanwhile **most fruit and vegetables are packed using single use plastic.**

While plastic packaging is overall a resource-efficient material, its production is heavily reliant on fossil fuel so the use of **virgin plastic exacerbates climate change.** Recycling plastic is very important, but critically we need to remove plastic where it is unnecessary. And it is not enough to simply switch from one material to another, since all materials have an environmental impact.

Consumer demand is key. Over half of people in the UK already buy some fresh fruit and vegetables loose, but this is limited to a small number of categories representing less than half of what they buy. **59% of those that do are motivated by being able to choose what and how much to buy.**

Two in three UK citizens claim plastic waste is an important issue to them personally.² Tackling food and plastic waste are two areas of impact key to the Courtauld Commitment 2030 and The UK Plastics Pact.



RESEARCH OVERVIEW

WRAP recommendations

**Interactive PDF**

Use the top navigation to jump to each section

WRAP's new research was conducted on five fresh produce items frequently wasted in the home: **apples, bananas, broccoli, cucumber and potatoes.**

The findings demonstrate that selling these five items loose and removing Best Before dates could **prevent 100,000 tonnes of household food waste** and around **10,300 tonnes of plastic, saving a combined 130,000 tonnes of CO₂e.**

RECOMMENDED ACTION 1**Sell loose**

Sell loose unless it can be shown that plastic packaging³ reduces overall food waste.

- ✓ Reduces problematic or unnecessary plastic packaging
- ✓ Reduces household food waste

[READ MORE](#)**RECOMMENDED ACTION 2****Remove date labels**

Do not apply a date label to uncut fresh produce unless it can be shown that a Best Before date reduces overall food waste.

Do not use any alternative wording to 'Best Before' when a date label is applied.

- ✓ Reduces household food waste

[READ MORE](#)**RECOMMENDED ACTION 3****Provide Best Practice guidance on storage (refrigerate below 5°C at home)**

Help people understand the benefits of storing appropriate fresh produce in the fridge, set at the right temperature.

- ✓ Reduces household food waste

[READ MORE](#)

RECOMMENDED ACTION 1

Sell loose



Sell loose unless it can be shown that plastic packaging reduces overall food waste.



For apples, potatoes and bananas, enabling people to **buy the right amount** is the most impactful way in which selling loose will help to reduce food waste.

If all these products were sold loose, household food waste could be reduced by **60,000 tonnes per year** and more than **8,800 tonnes of plastic** could be saved each year. While most supermarkets sell some of these items loose already, the research shows a compelling case that this should be significantly increased, not just across

these three products, but a wider range of fresh fruit and vegetables. Whilst the study focused on five commonly wasted items, there are many more products that are currently sometimes sold loose where the research could also be applied.

This is not without its challenges. Supply chains have been optimised to sell fresh produce packaged and people have become accustomed to buying it that way. Solutions will need to be found to reconfigure supply chains and store operations, and to make it easy and convenient for people to buy loose produce.



6,500 WASTE TRUCKS

worth of food per year could be saved by simply selling these products loose, allowing people to buy the right amount for their needs.

What will this achieve?

The research highlights significant potential to reduce food waste and plastic packaging not only for these five items but a whole range of uncut fresh produce.

1. If all apples, bananas and potatoes were sold loose, it could save **60,000 tonnes of food waste** and **could reduce plastic packaging by 8,800 tonnes** per year. Combined, this is saving more than 80,000 tonnes of CO₂e.
2. More than **21,500 tonnes** of plastic and 70,000 tonnes of CO₂e **could be saved** if a wider range of products that are currently sometimes sold loose were **only** sold loose.

RECOMMENDED ACTION 2

Remove date labels



Do not apply a date label to uncut fresh produce – unless it can be shown that a Best Before date reduces overall food waste. Do not use any alternative wording to ‘Best Before’ when a date label is applied.



Our new evidence indicates that Best Before dates do not support people's ability to judge when to use or dispose of many fresh produce items – confirming WRAP's previous evidence from 2019. This means that the removal of Best Before dates from uncut fresh produce is a priority action. With most fresh produce having a date label applied, including the majority of potatoes and apples, there is significant scope to remove labels and implement the 2019 Best Practice guidance on this topic.

8–11% of people mostly or entirely use the date label for these five products, to choose whether to eat the item, or not, resulting in perfectly edible food being thrown away.

Removing date labels from apples, potatoes, bananas, cucumbers and broccoli alone could save 50,000 tonnes of food wasted in the home, every year.



44,000 CARS

worth of CO₂ emissions could be saved by selling produce loose and removing date labels.



What will this achieve?

50,000 tonnes of food waste prevention. This research, and previous insights highlight significant potential to reduce food waste not only for these five items, but across many types of uncut fresh produce.

1. Removing Best Before dates for the five products tested could reduce household food waste by approximately 50,000 tonnes per year.
2. Implement [2019 Best Practice Guidance](#): by removing Best Before dates from the five products studied could save 240 million fruit and vegetable items from being wasted in UK households each year.

RECOMMENDED ACTION 3



Refrigerate below 5°C

Use Best Practice guidance to help people understand the benefits of storing appropriate fresh produce in the fridge, set at the right temperature (below 5°C).



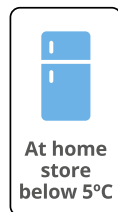
The research looked at how the way people store produce at home affects shelf life: refrigeration vs. ambient conditions and the impact of fridge temperature.

Storing cucumber and broccoli at optimal fridge temperature (4°C) gave significantly more life compared to a sub-optimal fridge temperature (9°C).

In all cases, optimal storage temperatures extended quality product life for days, weeks, and in the case of apples, months.

The vast majority of people do not store apples in the fridge at home. On average, UK fridge temperatures are higher than 5°C.⁴

If people stored more fresh produce in the fridge and maintained their fridge temperature below 5°C, fruit and vegetables would stay fresher for longer and people would have much longer to use what they purchase.



102
DAYS

Loose apples last longer when refrigerated (4°C), almost 70 days longer compared to ambient conditions.

What will this achieve?

The research highlights significant potential to reduce food waste and plastic packaging not only for these five items but a whole range of uncut fresh produce.

1. Engaging with customers and encouraging **the storage of fresh produce in the fridge** could extend the shelf life of items by weeks, if not months.
2. Storing fresh produce at an optimal fridge temperature, below 5°C, increased **shelf life at least three-fold**.
3. Implement 2019 BB guidance: Removing Best Before dates from the five products studied could save **240 million** fruit and vegetable items from being wasted in UK households each year.

WHAT NEXT?

Unpack the opportunities

These recommendations present a great opportunity, from field to fridge, to make choices easier for consumers. Enabling them to drastically reduce household food waste and plastic packaging.

Uneaten food is a waste of money, energy, carbon and resources.

We must all work together to address any challenges.

Action by retailers

This new research indicates the scale of the opportunity to reduce household food waste and single use plastic, as well as giving a clear set of recommendations to work towards – to maximise the positive impact.

Some actions can be taken right away, and others will require greater effort, exploration and collective action.

WRAP is committed to working with retailers and the sector through the Courtauld Commitment 2030 and The UK Plastics Pact to develop and support the action needed to make the most of the opportunities identified.



“
This new research indicates the scale of the opportunities to reduce household food waste and single use plastic.
”

WHAT NEXT?

Commitment to change



Act now

- ✓ Explore opportunities to sell a wider range of fruit and vegetables loose, such as those currently sold loose sometimes.
- ✓ Reduce the number of lines sold packaged.
- ✓ Make loose lines attractive to customers e.g. by changing how lines are displayed and how they are priced.
- ✓ Implement the 2019 Best Practice guidance to remove date labels from more uncut fresh produce.
- ✓ Apply Best Practice labelling to packed items – including the Little Blue Fridge, and numerical storage temperature advice and engage with customers on storing fresh produce in the fridge.

Products to be prioritised for selling loose are:

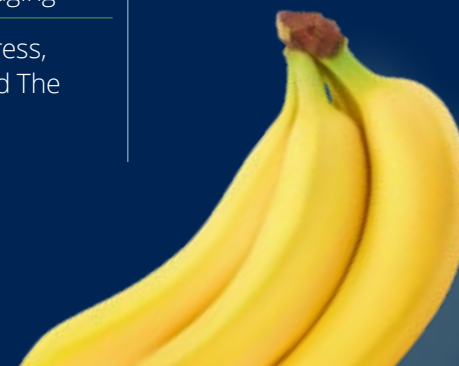
- ✓ Items where there is the greatest opportunity to prevent food waste e.g. potatoes.
- ✓ Where the barriers to removing plastic packaging are less e.g. peelable fresh produce such as bananas.
- ✓ Items already sold loose by at least one major UK retailer.
- ✓ Items that are 'main line' fresh produce and so do not need differentiating in the same way as an organic or tiered line might need to be.

A full list of products to be prioritised can be found in [The UK Plastics Pact Eliminating Problem Plastics report](#).

WRAP will:

- ✓ Work with retailers to develop a Pathway to 2025 for the sale of loose fresh produce
- ✓ Support retailers by convening them to address the specific challenges ahead
- ✓ Work with the sector to update Best Practice Guidance
- ✓ Engage with people to help them reduce food waste and unnecessary plastic packaging
- ✓ Measure and report progress, through Retail Surveys and The UK Plastics Pact.

Retailers and other stakeholders including NGOs are called upon to engage with people to encourage them to buy loose and store in the fridge at the right temperature for optimal use.



WHAT CAN CITIZENS DO?

Take informed actions

Major change must be driven by retailers, but we all have a role to play.

We can all:

- ✔ Buy loose where it is available, buy what you need, and remember to bring your reusable bags to the shops.
- ✔ Put fresh produce in the fridge to increase its life and save you money – check your fridge is set to 5°C or less. Use our [Chill the Fridge Out](#) tool to do this.
- ✔ Use your judgment of when food with a Best Before date is good to eat.

i 'Best Before' refers to quality: your food will be at its best before the date given. After this date, it might not be at its best. Depending on how your food is stored, it has the potential to be good enough to eat for a long time after this date.

i 'Use By' refers to safety: you must not eat food past the 'use by' date. You can freeze food right up to and including the 'use by' date. If you're not sure you will eat it in time, freeze it for another day! Go to [Love Food Hate Waste](#) for tips on how to make best use of leftovers or foods about to be past their best.

Find out more



Go to [Love Food Hate Waste](#) for hints and tips on reducing food waste.



Go to [Clear on Plastics](#) to see how you can reduce your use of plastic packaging.



Go to [Recycle Now](#) to find out what and how to recycle, including plastic bags and wrapping.

ENDNOTES

- 1 Table 14 in https://wrap.org.uk/sites/default/files/2021-03/WRAP-Household-food-waste-restated-data-2007-2015_0.pdf
- 2 <https://wrap.org.uk/resources/report/plastics-tracker-report-2021>
- 3 Substituting another material should not create any additional environmental impact and food waste should not increase because of changes in packaging
- 4 Alessandro Biglia, Andrew J. Gemmell, Helen J. Foster, Judith A. Evans. (2018). Temperature and energy performance of domestic cold appliances in households in England. *International Journal of Refrigeration*. 87. 172-184.



Reducing household food waste and plastic packaging



WRAP works across six continents with governments, businesses and citizens to create a world where resources are sourced and used sustainably.

WRAP's mission is to accelerate the move to a sustainable resource efficient economy through re-inventing how we design, produce and sell products; re-thinking how we use and consume products; and re-defining what is possible through re-use and recycling.

Find out more at www.wrap.org.uk

While we have tried to make sure this report is accurate, we cannot accept responsibility or be held legally responsible for any loss or damage arising out of or in connection with this information being inaccurate, incomplete or misleading.

This material is copyrighted. You can copy it free of charge as long as the material is accurate and not used in a misleading context. You must identify the source of the material and acknowledge our copyright. You must not use material to endorse or suggest we have endorsed a commercial product or service.

For more details, please see our terms and conditions on our website at www.wrap.org.uk

WRAP

Company Registration No. 4125764

Charity No. 1159512

Second Floor, Blenheim Court,
19 George Street, Banbury, Oxon,
OX16 5BH

The Courtauld Commitment 2030

is a voluntary agreement that enables collaborative action across the entire UK food chain to deliver farm-to-fork reductions in food waste, greenhouse gas (GHG) emissions and water stress that will help the UK food and drink sector achieve global environmental goals.

www.wrap.org.uk/courtauld

The UK Plastics Pact brings together businesses from across the entire plastics value chain with UK governments and NGOs to tackle the scourge of plastic waste. We are creating a circular economy for plastics, capturing their value by keeping them in the economy and out of the natural environment.

www.wrap.org.uk/ukplasticspact



**THE UK
PLASTICS
PACT**

