



This Food Science Fact Sheet is one of a series compiled by Institute of Food Science and Technology, providing clear, concise and scientifically reliable information on key food science topics for consumers.

Food Waste

Why does food waste matter?

When food is lost or wasted, it impacts the environment, the economy and availability of resources at a time when many people can't access enough food to eat. Food production processes release carbon dioxide into the atmosphere contributing to climate change. In the UK, the carbon associated with all the edible food that is thrown away is the equivalent of the carbon produced by one in five cars [1]. We have finite land, water and energy resources available to produce food for our planet's population. Food waste is an issue for food security affecting reliable access to sufficient, affordable, safe and nutritious food. There are currently 820 million people estimated to be hungry in the world [2] and our planet's population is growing, so we need to produce more food more efficiently to have enough food available. It is therefore vital to prevent food loss and waste.

What is food waste?

Food waste is when food meant for human consumption is not eaten. Instead it ends up either in a landfill, is recycled, or used in energy recovery. A more appropriate term to use would be 'wasted food'. Some organisations refer separately to **food loss** as the loss of food in the supply chain up until it reaches retailers and **food waste**, when edible food is unused by retailers, distributors or consumers.

How can food waste be prevented?

The Waste and Resources Action Programme (WRAP) is leading the UK's commitment to reduce food waste and provide guidance and support to the food industry and consumers. Ideally, food waste should be avoided in the first place: **prevention**. Unused food can be returned to the food supply chain as another product such as, imperfect vegetables used for making soup.

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How can food waste be prevented?

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Unsold food can be **redistributed** to food charities or repurposed as animal feed. If food waste cannot be prevented, then food should be **recycled to recover** nutrients and/or generate biogas for energy. This can be done by composting or anaerobic digestion. If this is not possible then the wasted food can be incinerated to **recover** energy. See Figure 1.[1]

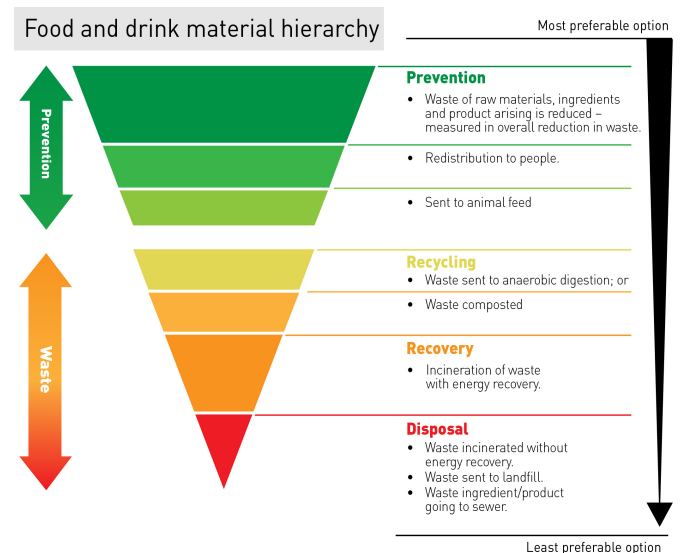


Figure 1: WRAP Food and drink material hierarchy

How can I waste less food?

In the UK, we waste 4.5 million tonnes of edible food that we buy, but don't eat [1]. Consumers are therefore a key part of the solution to preventing food wastage. This can be done in many ways: through meal planning, when shopping, at mealtimes and by managing leftovers. Read our top tips for ideas on how to waste less food and see the Love Food Hate Waste campaign for more information.[3]

FOOD SCIENCE FACT SHEET continued

Food Waste

Top tips for reducing your food waste:

Plan your meals and buy the right amount: By planning meals in advance, you can make sure you only buy what you need. Only buy the portion that you need or buy food in containers that can be re-sealed. Canned, dried and frozen foods last much longer and give you flexibility when planning meals. This can all help to reduce costs.

Understand use-by dates: Dates on packaging can be confusing. Food with a 'best before' label can still be consumed after the best before date so long as the appearance, taste and smell are acceptable. The use-by date is all about safety. Food shouldn't be eaten beyond its "use by" date as it poses a food safety hazard to your health.

Smart home food storage: Store your food correctly. For example, fruit will last longer in the fridge than in a bowl at room temperature. Make sure your fridge and freezer are at the right temperature. Fridges should be below 5°C and freezers below -18°C. [5] This slows down the growth of food spoilage and disease-causing organisms. Check labels for whether food should be frozen, refrigerated, or kept in a cupboard. Some food items are best stored at ambient temperatures e.g. tomatoes or bread, and chilled storage can actually reduce storage life or adversely impact the taste. See Figure 2.[6]

Cook with your leftovers: Cooking with your leftovers reduces food waste and saves money. There are many recipes available to turn one dish into another. Leftovers can also be frozen. Useful tips on using up leftovers and home freezing can be found online.[4]



Top tips for reducing your food waste:

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Smart home food storage:

Do not overfill your fridge or freezer.

Wrap and label fish, meat and poultry you plan to freeze.

Dairy and eggs should be stored in the coolest part of the fridge, away from the door.

Put meat in the meat drawer or lowest shelf in the fridge.

Always cover raw food (including meat, fish and poultry) and keep it separate from ready-to-eat or cooked food.

Keep fruit and vegetables in sealed bags and/or containers in the salad drawer.



Figure 2: Where to store food in your fridge and freezer

References

- [1] WRAP, "Food surplus and waste in the UK – key facts," 2020. www.wrap.org.uk/sites/files/wrap/Food_%20surplus_and_waste_in_the_UK_key_facts_Jan_2020.pdf
- [2] UN FAO, "The State of Food Security and Nutrition in the World 2019," 2019. www.fao.org/state-of-food-security-nutrition
- [3] Love food hate waste. www.lovefoodhatewaste.com/
- [4] NHS Home storage advice. www.nhs.uk/live-well/eat-well/how-to-store-food-and-leftovers/
- [5] Home preservation advice. www.nchfp.uga.edu/index.html
- [6] Academy of Nutrition and Dietetics food storage infographic. www.eatright.org/food/resources/eatright-infographics/food-storage-infographic

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