



MARSDEN

Reducing Food Waste with a Weighing Scale

A Marsden Weighing Group White Paper

www.marsden-weighing.co.uk

In this white paper:

- The causes and the consequences of food waste
- How to reduce food waste in the home
- How to reduce food waste in restaurants
- How to reduce food waste in food processing

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Globally, food waste is costing the economy \$1 trillion (£0.81 trillion)¹ and more than a third of food fails to make it to our forks. With almost one billion people going to bed hungry every night, the incentives are quite clear for businesses and individuals to work harder in order to reduce food waste.

In America, the average family spends \$1,410 (£1138.25) each year on food which is thrown away² – money which can be better spent elsewhere.

But by using weighing scales in your processes – either at home or commercially – you can plan to reduce food waste, and make a positive contribution to both your wallet and the environment. Here's what you need to know – and what you can do.

Current legislation

The EU Waste Framework Directive provides the legislative framework for the collection, transport, recovery and disposal of waste³. Several countries, such as Italy⁴, have legislation designed to reduce the amount of food which is wasted.

However, the UK currently doesn't have legislation like this – but it has been considered⁵, most recently in the 2015 Labour manifesto.

Takeaways

- Food waste costs the global economy \$1 trillion (£0.81 trillion).
- The average US family spends \$1,410 (£1138.25) each year on food which is disposed.
- The EU Waste Framework Directive is the legislation for food waste.
- The UK has considered following other EU legislation aimed at reducing food waste.

Reducing food waste in the home



Key numbers⁶:

- £470** A typical UK household throws out this value of food and drink each year - the average for those with children is £700.
- 15m tonnes** The amount of food waste churned out by the UK every year (7m from households).
- £5.6bn** The value of food and drink which is thrown out when it passes its sell by date.
- £1.9bn** The value of items thrown out because it "didn't taste nice" or was dropped on the floor
- 68%** The percentage of bagged salad that goes to waste.
- 40%** The percentage of apples which are not eaten.
- 17,000** Olympic swimming pools which could be filled with UK food and drink waste, per year.

Household waste equates for 45% of food waste churned out by the UK every year⁷ – a figure larger than the waste produced by commercial organisations, including supermarkets and restaurants.

There are a number of reasons food waste is caused – according to the European Week for Waste Reduction⁸:

Sociological causes

Changes in the structure and organisation of the family, lifestyle changes and changes in attitudes towards food.

Lack of knowledge on how to store food

Misreading "use by" dates, bad refrigerator management etc.

Marketing

Adverts and promotions encouraging consumers to buy products. This doesn't lead directly to waste but it is obvious that by purchasing a product which does not suit the household's needs, in terms of quality and/or quantity, more food waste is created by the consumer.

Buying the right quantities, checking "best before" dates, maintaining the cold chain, organising refrigerated food in a logical way, cleaning the refrigerator out regularly, cooking with left-overs, making compost, choosing fruit and vegetables which are in season – these are all ways of reducing and avoiding food waste.



Using weighing scales to reduce food waste in the home

By using weighing scales in the home to measure food waste, households quickly gather an understanding of their food which is being wasted.

It is recommended that a data sheet⁹ (such as the example below) or inputting data into a spreadsheet is used to track the weight of food being wasted. This can then be analysed and corrective action taken.

Simply add your food waste to the scale and make a note of the value shown on the display.

At the end of each meal or snack, three weights of food waste should be taken, split into:

- Preparation and overproduction waste
- Expired, spoiled or out of date waste
- Plate waste

If you choose the digital spreadsheet option, some Marsden scales include data transfer capability, to make inputting data from the scale to a spreadsheet a one-step process. Contact us for more information on 01709 364296 or email sales@marsdengroup.co.uk.

Track your food waste using this form

	Preparation and overproduction waste	Expired, spoiled or out of date waste	Plate waste
Date:			
Meal 1			
Meal 2			
Meal 3			
Meal 4			
Date:			
Meal 1			
Meal 2			
Meal 3			
Meal 4			
Date:			
Meal 1			
Meal 2			
Meal 3			
Meal 4			
Date:			
Meal 1			
Meal 2			
Meal 3			
Meal 4			

Research by The Waste and Resources Action Programme (WRAP) found that 89% of respondents⁹ who used this process of tracking agreed their awareness of food waste had been raised.

From this, individuals were able to come up with creative solutions for reducing food waste – from using leftovers to sharing portions. The research found that this cumulated in between a 16-22% reduction in grams of food being wasted.

Connecting the scale to an app

Innovative solutions which can calculate the amount of food waste into financial cost are increasingly popular – and this awareness of household spend on food waste can go further to prompt individuals into action¹⁰.

An innovative project in Swadlincote, Derbyshire last year, tracked food waste by families across the village – with families reducing their food waste bill by a third every week as the result.

Marsden provided weighing scales for the project, with the B-100 scale being used to monitor the food waste in grams, which is connected to an iPad. Then, an app called Winnow can be used to transfer the weight information to pounds.

Lisa Edwards, who participated in the project, said: “We were definitely wasting some food before we got involved in the project, but didn’t know how much.”

Her youngest son, Max, dropped a banana on the floor as an example. The B-100 display showed it weighed 118g, and the app stated that it is the equivalent of 15p being wasted.

“Not only do we know the value of what we are wasting – and why – but we are taking steps to reduce it in the first place by planning meals, shopping carefully and using our freezer better.”

Over the previous year, her family food waste has been reduced by more than three quarters – saving £1000.



Helpful tips for saving food waste

- Measure out food portions before starting to cook.
- Many people used in the Swadlincote project stopped peeling veg – finding that they were fine when cooked.
- The most thrown away food item is bread – consider freezing leftovers as soon as possible.
- Try innovative solutions like using leftover fruit to make bread pudding or turning over-ripe bananas into banana bread.

Takeaways

- £470 per year thrown away by households in food and drink waste per year.
- 45% of food waste comes from households.
- People's attitudes towards foods and lack of knowledge are the leading reasons for food waste.
- Keeping a record of the weight of food waste has improved awareness in 89% of those surveyed.
- Connecting weighing scales to app can display the value in £ - further helping to prompt households into action.

Reducing food waste in restaurants



Key numbers^{11 12}:

- £0.97** The average cost of avoidable food waste to businesses.
- £199,100 tonnes** The amount of food waste each year in UK restaurants.
- 22%** The percentage of food waste in the UK Hospitality and Food Service sector which is represented by restaurants.
- 79,000 tonnes** The amount of food waste produced each year by UK hotels.
- £318 million** The annual food waste cost to the hotel sector.

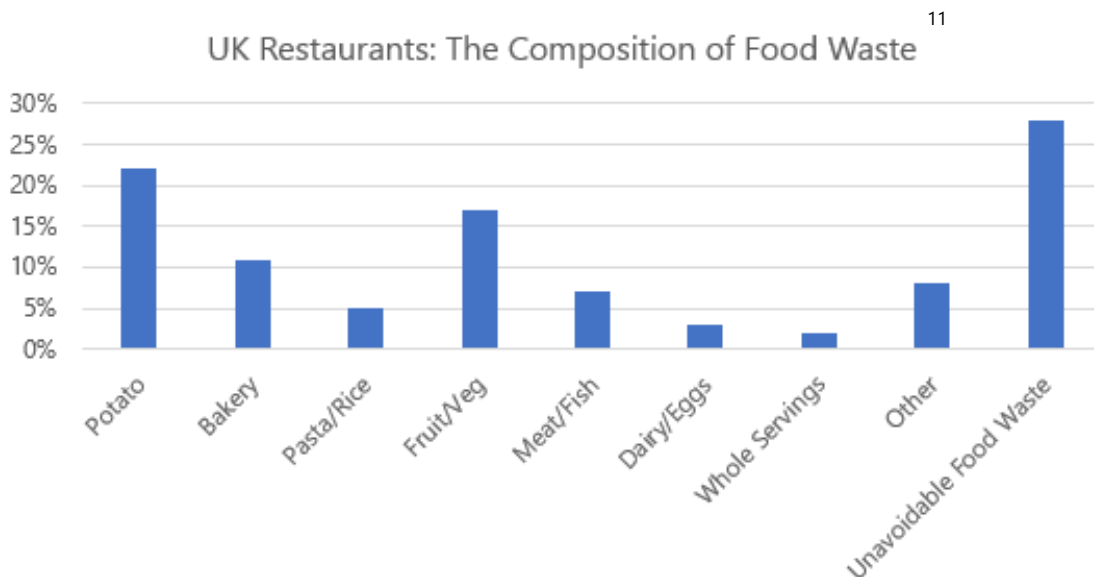
As well as in households, food waste also represents a huge challenge in the hotel and restaurant sectors.

According to research by the Guardian¹³, more than a quarter of people leave food at the end of a meal out. UK restaurants, takeaways, pubs and hotels generate 600,000 tonnes of food waste – with a third of this figure coming from diners.

People are generally unconcerned about leaving food – close to three fifths of respondents said – which leaves it up to the restaurants to try to reduce the wastage.

When asked about the main reasons for leaving food when eating out, 14% said it is because portion size is too big – so this may be a starting point.

Waste from customers only actually makes up 34% of total food waste in restaurants, according to WRAP. The other two thirds comes from food preparation and spoilage. The chart below shows how waste is broken down by food item.



Using weighing scales to reduce food waste in restaurants

It is recommended by WRAP¹¹ that food which is put in the bin is measured and monitored. It is suggested that this be done for a weekly period every six months, but to more closely monitor the amount of waste then this action can be performed more often.

Step 1 Collect food waste in separate bins

For the first stage you will need to separate out the food waste from other general waste. You can then weigh out the food waste on its own and Tare away the value of the bin, using this function on the scale.

Step 2 Use three separate food waste bins

Each bin contains waste from food preparation, spoilage and plate waste. Weigh them daily during your processes in order to find which of your bins is generating the most waste.

Step 3 Calculate the amount of food waste per year

To see a true representation of your waste, calculate the amount of weight for a year by multiplying your value for the week by 52. Multiply this figure by cost per tonne to work out the cost per year for your business.

Step 4 Develop an action plan

When you know where most (and the proportions) of the weight is coming from, you can make plans to change it. Involving your staff, think of ideas on how to improve.

Step 5 Implement the changes and monitor them

Once the changes have been implemented, be sure to monitor progress – again by weighing the food waste bins – to ensure the plans are working as expected, and make more changes if not.



Takeaways

- An average cost of almost £1 per meal is made up of avoidable food waste to businesses.
- 278,100 tonnes of food waste are produced each year by restaurants and hotels in the UK.
- 27% of people leave food at the end of a meal out.
- Waste from customers equates to 34% of total food waste in restaurants.
- By breaking up waste – and measuring it using weighing scales – the amount of waste can be monitored and corrective action taken.

Reducing food waste in food processing



Key numbers^{14 15 16}:

39% The total amount of food lost in the food supply chain comes from manufacturing.

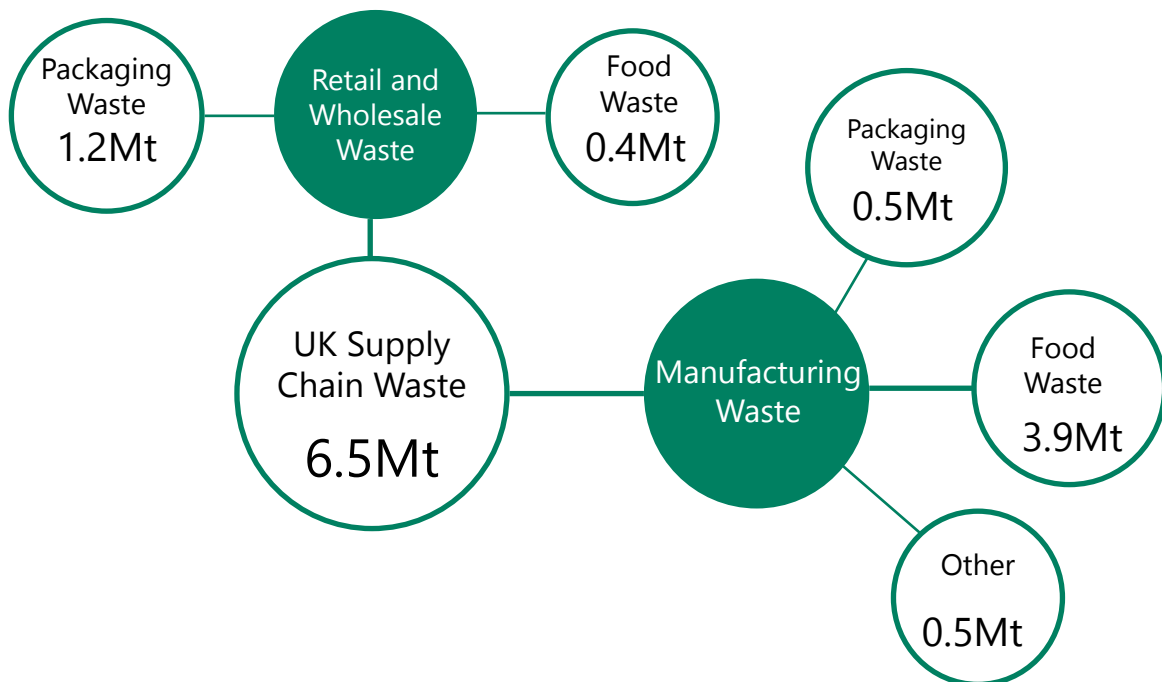
78% The amount of food waste as a percentage of total waste.

4.3 million tonnes Of food waste comes from the grocery sector.

0.4 million tonnes The amount of food waste from the retail and wholesale supply chain.

3.9 million tonnes The amount of food waste from manufacturing.

Total Grocery Waste ¹⁶



Much of the food waste occurs long before it reaches our plates – as much as 39% can be lost as part of the food manufacturing process.

According to Gunders (2012)¹⁵, a lot of food waste lost during food processing is inedible – but there is still a large amount which is edible and is wasted. Food is often ‘trimmed down’ to meet portion size requirements, and often this is where the waste occurs.

Food waste can also occur due to:

- Machinery problems
- Food safety issues
- Damages to products and packaging
- Over-production

A lot of food waste can be unexpected and difficult to predict and do without – but some of the food waste can be avoided.

Helpful tips for reducing food waste in food processing

At this stage certain action can be taken to reduce the amount of food waste – the following are recommended:

Pest control

To reduce the amount of food damage by pests and reduce the threat of contamination

Food Safety

There are a lot of food safety regulations designed to protect foods and therefore to ensure food is edible for consumption – meeting this will go a long way to ensure that food waste is kept to a minimum.

Education

As with the households and restaurant sections, waste often occurs due to a lack of knowledge or desire to change. This can be further helped by taking action such as smart shopping, buying correct portion sizes, saving/utilising leftovers, storing food correctly, following sell by dates.

Using weighing scales to reduce food waste in the food processing

By using weighing scales the amount of food lost can be truly appreciated.

By separating out food waste and weighing each individual bin, you can see how much food waste is lost. By using weighing scales the value in grams will emphasise the amount of waste created.

Once you know when and where food is wasted, you can then work as a team to come up with creative ideas on how to minimise waste, such as the potential for new products from leftovers.



Takeaways

- Food waste equates to 79.6% of manufacturing waste.
- A significant amount of edible food is wasted.
- Machinery, safety, damage and overproduction can also result in food wastages.
- Improvements to education on food waste within businesses can prevent food waste.
- Weighing scales can be used to track food wastage and chart improvements.

Conclusion

All parts of society can contribute to reducing food being wasted at all stages of the food supply chain – which can contribute to financial gains for individuals and businesses, as well as wider positive implications. Your plan to combat food waste can make a difference.

By using weighing scales in your processes, you can track the amount of food in grams that you or your business is wasting every day.

By charting the weight of food waste – either manually or sending the weight data to a spreadsheet - you can analyse the impact food waste is having on your household or organisation. You can then make changes to ensure less waste is created.

Recommended Weighing Scales

Marsden B-100



Capacity: 3kg to 30kg
Accuracy: 0.2g to 5g

Marsden MSS-I-400



Capacity: 3kg to 150kg
Accuracy: 0.2g to 20g

Marsden HSS-I-200



Capacity: 3kg to 150kg
Accuracy: 0.2g to 20g

Marsden S-100



Capacity: 5kg
Accuracy: 2g

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2. <https://www.lichfielddc.gov.uk/Residents/Environment/Recycling-bins-and-waste/What-to-do-with-food-waste.aspx>
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5. <http://www.independent.co.uk/news/uk/home-news/food-waste-ban-government-efra-real-junk-food-project-wrap-inquiry-a7319141.html>
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