

Food surplus and waste in primary production:- Industry reference values

This is a list of food surplus and food waste¹ percentage rates across a range of agricultural sectors. The aim is to help farmers understand average, high and low performance in their sectors. The data is taken from the WRAP report [Food waste in primary production in the UK](#).

WRAP has collated sector-specific food surplus and waste rates for primary production through a literature review. These industry reference values can be helpful for farmers, their advisers and others working in the supply chain in order to compare performance against sector averages.

Recognising that data specific to the UK is not available for many sectors currently, the food surplus and waste rates are based on the best available data taken from the UK or comparable geographies, namely Europe, North America and Australia.

The list of food surplus and waste rates is set out on the following two pages by sector in alphabetical order.

Scope

To fully understand the percentage waste rates listed below, it is important to understand which operations are covered by them. Included are:

- *Crops*: in-field losses from the point at which a crop is ready to harvest, through to and including rejections at grading/packing/quality testing.
- *Dairy*: from the point at which milk is drawn from the dairy animal through to and including rejections at the dairy.
- *Eggs*: from the point at which an egg is laid through to and including rejections at packing.
- *Livestock (including poultry)*: on farm losses from the point at which an animal reaches slaughter weight through to and including rejections at the abattoir.

As well as the start and finish points described above, the scope includes all operations that typically occur in between those points, as relevant to individual sectors.

Where possible, WRAP will update these industry reference values as new data becomes available. If you have relevant data that you would be willing to contribute to this, please contact us at fwipp@wrap.org.uk

¹ For relevant definitions of 'food', 'food surplus' and 'food waste', please see the end of this document.

	Food surplus & waste percentage rates		
	Average	Minimum	Maximum
Apples (culinary)	20.3%	10.0%	39.8%
Apples (dessert)	20.3%	10.0%	39.8%
Asparagus	5.0%	n/a	n/a
Barley	11.5%	5.0%	14.0%
Beans (broad)	17.0%	n/a	n/a
Beans (runner & dwarf)	17.0%	n/a	n/a
Beetroot	33.0%	17.6%	40.0%
Blackcurrants	4.8%	4.5%	5.0%
Broccoli	17.3%	14.5%	20.0%
Brussels Sprouts	25.0%	N/a	N/a
Cabbage	14.0%	N/a	N/a
Carrots	33.0%	17.6%	40.0%
Cattle	1.4%	0.7%	2.0%
Cauliflower	13.0%	n/a	n/a
Celery	5.0%	N/a	N/a
Cherries	15.0%	n/a	n/a
Cider Apples & Perry Pears	5.0%	N/a	N/a
Courgettes	14.2%	1.0%	40.5%
Cucumbers	14.2%	1.0%	40.5%
Eggs	1.8%	0.5%	3.6%
Leeks	17.3%	8.0%	28.8%
Lettuce & other (baby leaf)	24.8%	17%	45.0%
Lettuce (field grown)	24.8%	17%	45.0%
Lettuce (protected)	24.8%	17%	45.0%
Milk	1.3%	0.3%	3.2%
Mushrooms	2.5%	1.0%	4.0%
Oats	11.5%	5.0%	14.0%
Oilseed rape	4.5%	3.0%	6.0%
Onions	17.3%	8.0%	28.8%
Onions, Spring	17.3%	8.0%	28.8%
Other orchard fruit	15.0%	n/a	n/a
Other Soft Fruit	15.0%	n/a	n/a
Parsnips	33.0%	17.6%	40.0%
Pears (dessert)	10.0%	N/a	N/a
Peas, dry (for human consumption)	17.0%	n/a	n/a
Peas, Green	19.0%	17.6%	21.4%
Peas, green - processing	19.0%	17.6%	21.4%
Pigs	2.7%	0.2%	5.0%
Plums	15.0%	n/a	n/a

	Food surplus & waste percentage rates		
	Average	Minimum	Maximum
Potatoes	14.0%	9.0%	23.7%
Poultry	3.5%	1.7%	4.0%
Protein crops (human consumption + animal feed)	17.0%	n/a	n/a
Raspberries	4.8%	4.5%	5.0%
Rhubarb	5.0%	N/a	N/a
Sheep	4.1%	N/a	N/a
Strawberries	10.7%	8.0%	14.0%
Sugar beet	5.0%	4.0%	6.0%
Sweet Peppers	26.0%	n/a	n/a
Tomatoes	13.3%	1.0%	19.5%
Turnips and Swedes	20.0%	n/a	n/a
Watercress	24.8%	17%	45.0%
Wheat	11.5%	5.0%	14.0%

Definitions²

Food Any substance that is – or was at some point – intended for human consumption. This includes both food and drink. This includes material that has spoiled and is therefore no longer fit for human consumption.

Inedible Parts Components associated with a food that would never have been intended to be consumed by humans – such as shells, bones, pits/ stones. ‘Inedible parts’ do not include packaging, or food that could once have been eaten but has been spoiled or passed its ‘use by’ date. For some businesses, it may be helpful to separately quantify ‘inedible parts’ and ‘food’ (e.g. when developing a meaningful food waste reduction target), as opportunities to reduce or redirect the inedible parts to higher value options may be limited. What is considered ‘inedible parts’ can vary in different supply chains and geographies. To enable some consistency for UK businesses, industry stakeholders have agreed specific definitions of ‘inedible parts’ for relevant products. These are available in the following sector guidelines: Meat Processing Sector Guidance; and Fresh Produce Sector Guidance³.

Food waste Any food and inedible parts sent to any of the Food Waste Destinations:

- Anaerobic digestion/Codigestion
- Composting/ aerobic processes
- Incineration/ controlled combustion
- Land application
- Landfill
- Sewer / wastewater treatment
- Not harvested/ploughed-in

² Taken from WRAPs UK measurement and reporting guidelines (WRAP, 2018) available online at http://www.wrap.org.uk/sites/files/wrap/food-waste-measurement-guidelines_0.pdf

³ Both available online at <http://www.wrap.org.uk/food-waste-reduction-roadmap>

- Other (including unmanaged disposal). This definition excludes any material that is sent for redistribution to people, animal feed or, conversion into industrial products (collectively referred to as 'food surplus').

Food surplus For the purposes of the UK guidance, the term 'food surplus' describes any food and inedible parts that were at risk of becoming waste but are instead sent to the following:

- Redistribution to people (e.g. through a charity or commercial redistributor)
- Animal feed
- Bio-based materials/biochemical processing (e.g. feedstock for other industrial products)

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