wrap

Reducing household fresh produce waste

New research: overview

Research

- Consumer research
- Shelf-life testing
- Modelling impacts

Industry advisory group



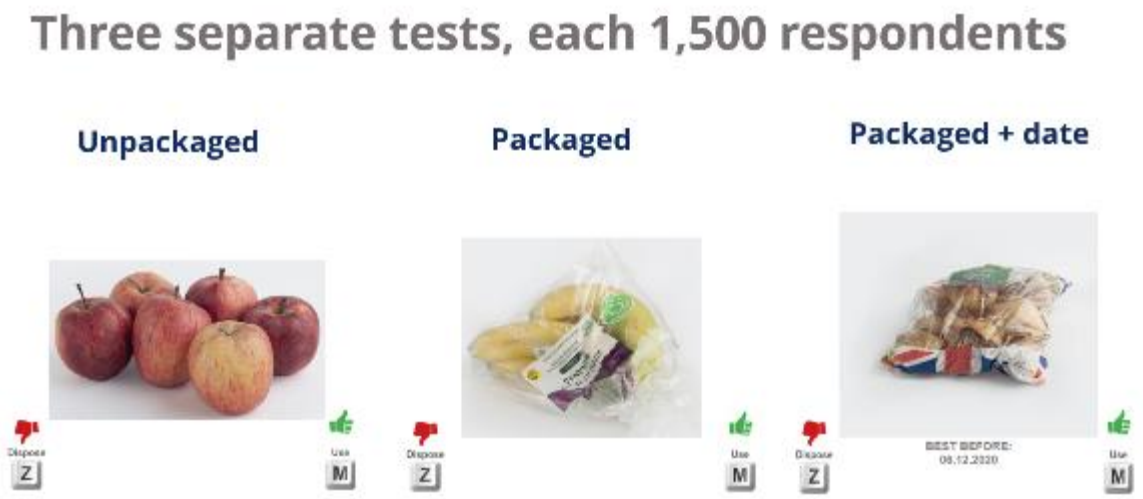


Consumer research - At what point do people throw away food?

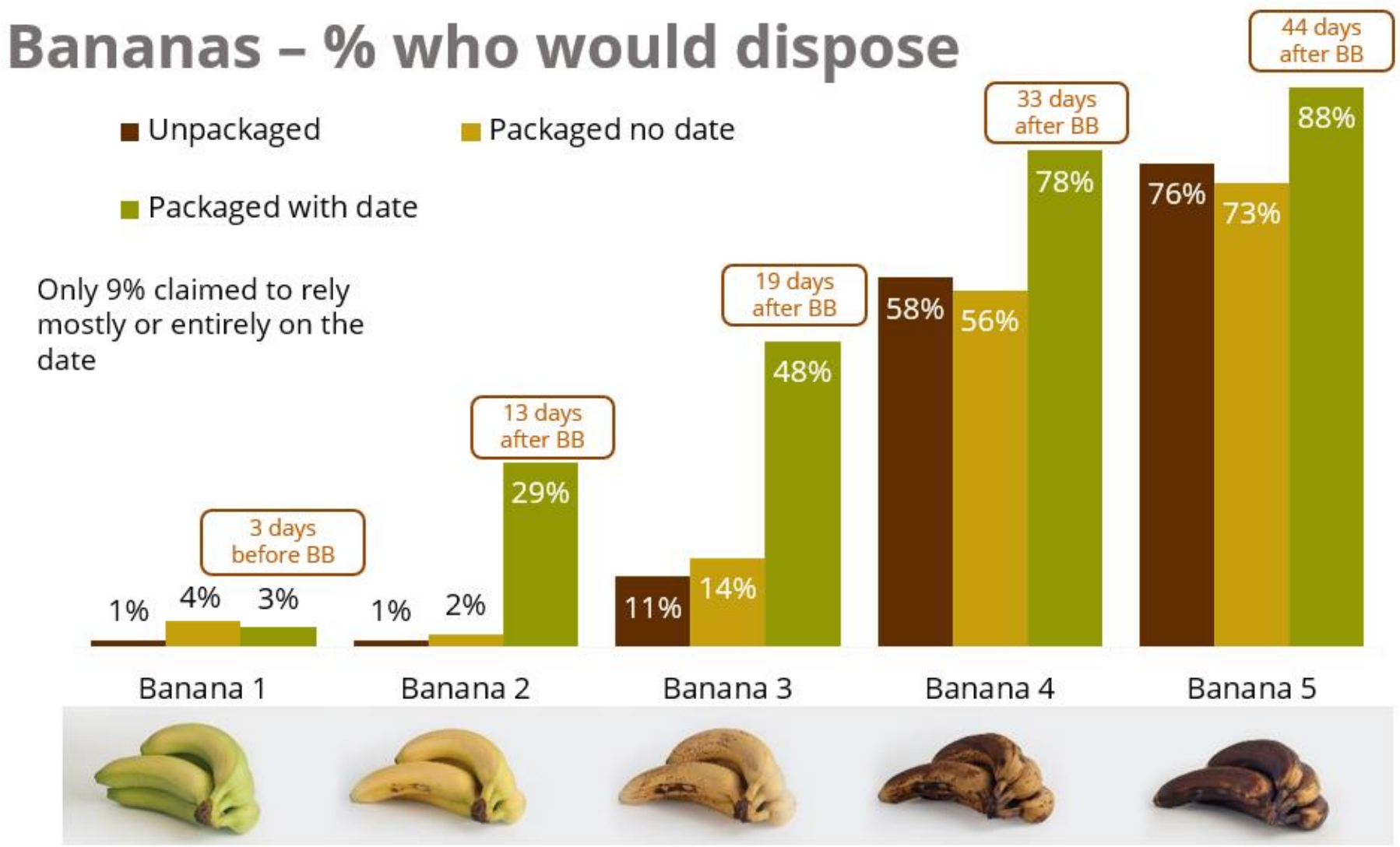
Research Questions:

1. To what extent does the date label impact decision to throw away?
2. How does visual deterioration impact decision to throw away?

Method: IAT (implicit Association Test) and survey questions (online)



Consumer research: findings



Findings consistent for other items tested

*Table [X]: Percentage that chose to 'Dispose' of fresh produce showing some signs of visual deterioration, with and without a date.

	Percentage that chose to dispose when shown image of less-than-perfect fresh produce	Percentage point difference	Number of days beyond the Best Before date
	7% / 46%	+39%	+24 days
	2% / 29%	+27%	+13 days
	36% / 69%	+33%	+12 days
	63% / 82%	+19%	+13 days
	7% / 30%	+23%	+12 days

Without a date With a date

Shelf-life testing

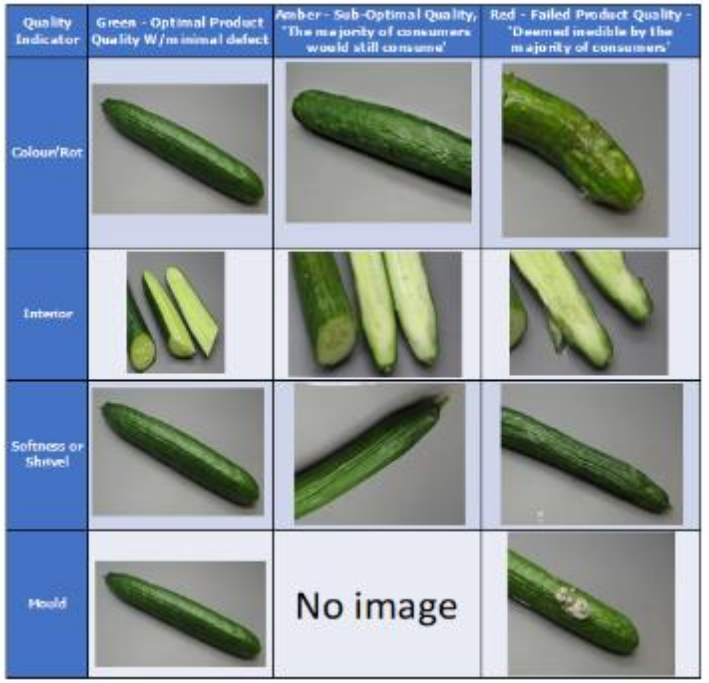
Conditions tested

Product	Packaged vs. loose	Transparency of packaging	Fridge temperature (4°C vs. 9°C)	Refrigerated vs. ambient
Apples	X			X
Banana	X			
Broccoli	X		X	X
Cucumber	X		X	
Potatoes	X	X		X

Example organoleptic quality matrix (cucumber)

	Green	Amber	Red
Appearance	<2% affected by rots. Ideally all free from rot. Greenish-white flesh.	<5% affected by rots. Ideally all free from rot. Customer could easily remove rot.	>5% affected by rots. Ideally all free from rot. Significant darkening browning or yellowing seeds.
Aroma	Natural, fresh.	Parts of cucumber with a musty or stale aroma, easily removable.	Musty, stale aroma over entire cucumber.
Texture	Crisp and juicy. When fresh, cucumbers should feel firm.	Slightly soft, skin easily punctured. Soft spots dotted around the sample. <10-15% of the entire sample. Drying around open end of cucumber over life.	Excessively Soft and dry.
Taste	Clean, cool & fresh with a slight sweetness.	reduced sweet & fresh flavour, free from sour or bitter notes.	Musty, earthy, sour, astringent. Bitter or off flavours/taints detected.

Example organoleptic image matrix



Product life testing - findings

Packaging – extended life in only two conditions

Fridge storage – extended life in all conditions

Optimum fridge storage – significantly extended life

Figure [X]: Comparison of shelf life for optimal fridge (4°C) and ambient conditions for different product/ condition combinations.[3]

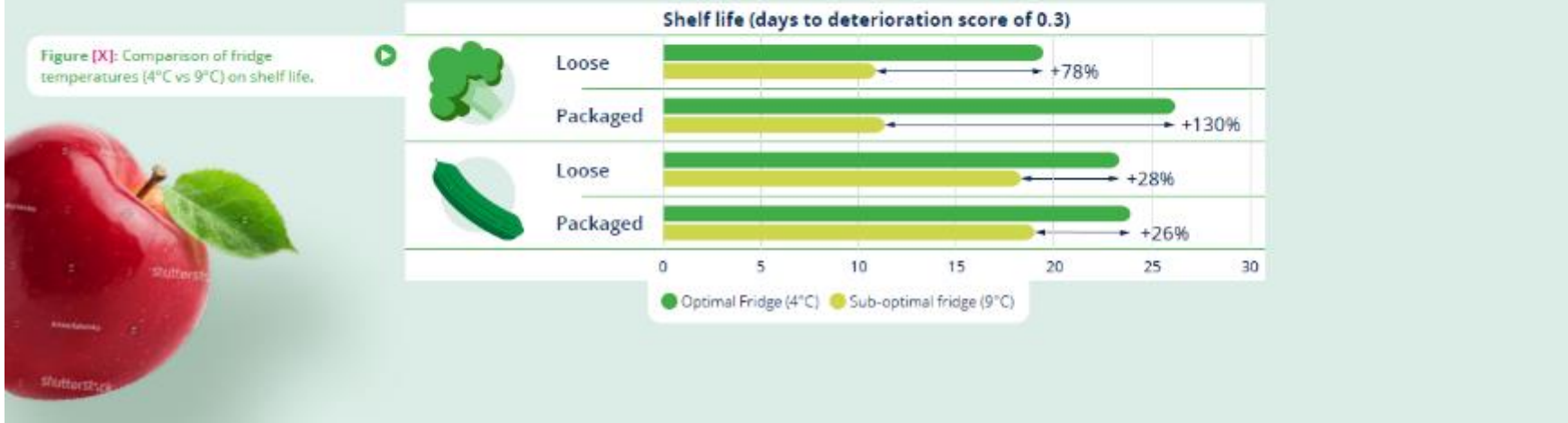


Figure [X]: Comparison of fridge temperatures (4°C vs 9°C) on shelf life.

Product life testing findings

*Table [X]: Comparison between Best Before date and first signs of deterioration (NB products were perfectly edible for some time after first signs of deterioration).

	Storage condition	Best Before date (days after packing)	1st signs of deterioration (days after packing)	Difference between the BB date and 1st signs of deterioration
	Ambient	14	17	3 days after the date (+21%)
	4°C		88	74 days after the date (+530%)
	Ambient	6	7	1 day after the date (+17%)
	Ambient	6	2	4 days before the date (-67%)
	9°C		7	1 day after the date (+17%)
	4°C		21	15 days after the date (+250%)
	9°C	17	17	0 days – no difference
	4°C		18	1 day after the date (+6%)
	Ambient	10	14	4 days after the date (+40%)
	4°C		30	20 days after the date (+200%)

Potential impact

50,000 tonnes per year household food waste prevention from just 4 items

Table [X]: Estimated change in annual 'not used in time' household food waste for removal of Best Before date

	Amount of NUIT waste (tonnes)	% change in NUIT	% market currently packaged	Adjustment for interaction*	Estimate of change in food waste (tonnes)
	40,000	-25%	80%	50%	-3,942
	44,000	0%	n/a	n/a	–
	14,000	-70%	76%	75%	-5,620
	26,000	-17%	97%	75%	-3,255
	180,000	-33%	94%	75%	-41,575
Total	304,000				-54,392

* to take into account interactions between the households sensitive to Best Before dates and what products are purchased.

RECOMMENDED ACTION 1

Sell loose

Sell loose unless it can be shown that plastic packaging[3] 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

Reducing household food waste
and plastic packaging

2

RECOMMENDED ACTION

Remove date labels from fresh produce

wrap.org.uk/uncut

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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

Apples 	52% Best Before, 16% Display Until
Bananas 	15% Best Before, 0% Display Until
Berries 	65% Best Before, 14% Display Until
Carrots 	73% Best Before, 12% Display Until
Potatoes 	71% Best Before, 15% Display Until
Tomatoes 	72% Best Before, 11% Display Until

Retail Survey: 2019