

SERVING UP  
**RESILIENCE**



**TUCO** WINTER CONFERENCE 2026  
The University Caterers Organisation

SERVING UP  
**RESILIENCE**  
TUCO The University Careers Organisation WINTER CONFERENCE 2026



**RACHEL GIBSON, GEORGIA BROWN,  
FIONA LAVELLE, BAJKA BALAZS,  
LISA CONNELLAN & FATIMA WANG**

**Root to Tip**

# Session outline

- **Project background** – Rachel Gibson, Research Lead
  - **Project development** – Balazs Bajka & Fatima Wang, Co-investigator
  - **Project findings** - Fiona Lavelle, Co-investigator
  - **Next steps for Root-to-Tip** – Rachel Gibson, Research Lead
  - **Panel Q&A** – research team and King's Food
-



# Overview of the Root-to-Tip Project – *how to reduce waste and increase fibre*

Dr Rachel Gibson

Senior Lecturer Nutritional Sciences, Research Lead Root-to-Tip



# Maximum nutrition, minimum waste?

UK adults have **low intakes** of:

# meeting recommended amounts



**Fruits & vegetables**

**1 in 3**



**Fibre**

**1 in 10**

## 9.5 million

tonnes of food is wasted each year



**14 billion**

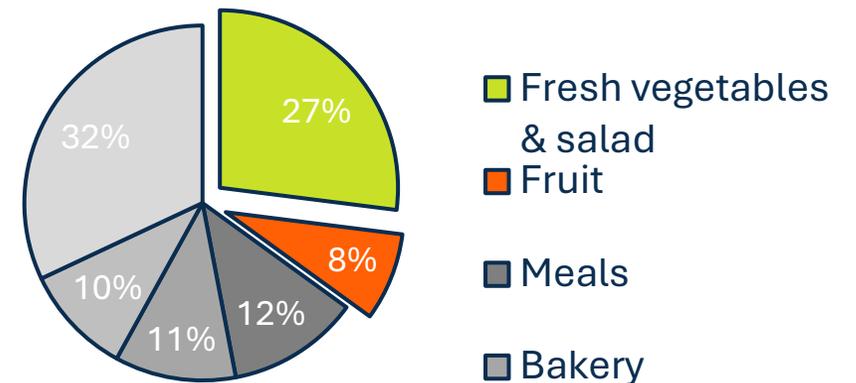
worth of food is thrown away each year



**6.4 million**

tonnes of wasted food could have been eaten!

UK Edible Food Waste by Type



# Catering waste – the reality

Produce	Waste %	Type of Waste
Bell pepper	15%	Stalk and seeds
Celeriac	19%	Skin
Kiwi	21%	Skin
Beetroot	26%	Skin
Fennel	27%	Core and exterior layer
Cauliflower	31%	Core and leaves
Banana	32%	Skin
Pineapple	35%	Skin and core
Watermelon	37%	Skin
Butternut squash	37%	Skin, seeds and 'innards'
Leeks	41%	Tops and roots
Curly Kale	47%	Stalks
Broccoli	51%	Stalk



Source: King's Food Analysis, fruit and vegetables prepared by chefs to 'traditional' catering standards

# The idea...

King's Food, Waterloo campus ... sometime spring 2024

Banana curry with...



Slaw with...



How much fibre is in these peels?

Could using trimmings increase fibre content of meals?

Do people in the UK eat peels?

The big question.....

***Can we increase fibre intake and reduce food waste in the UK population by eating more parts of the plants we harvest?***

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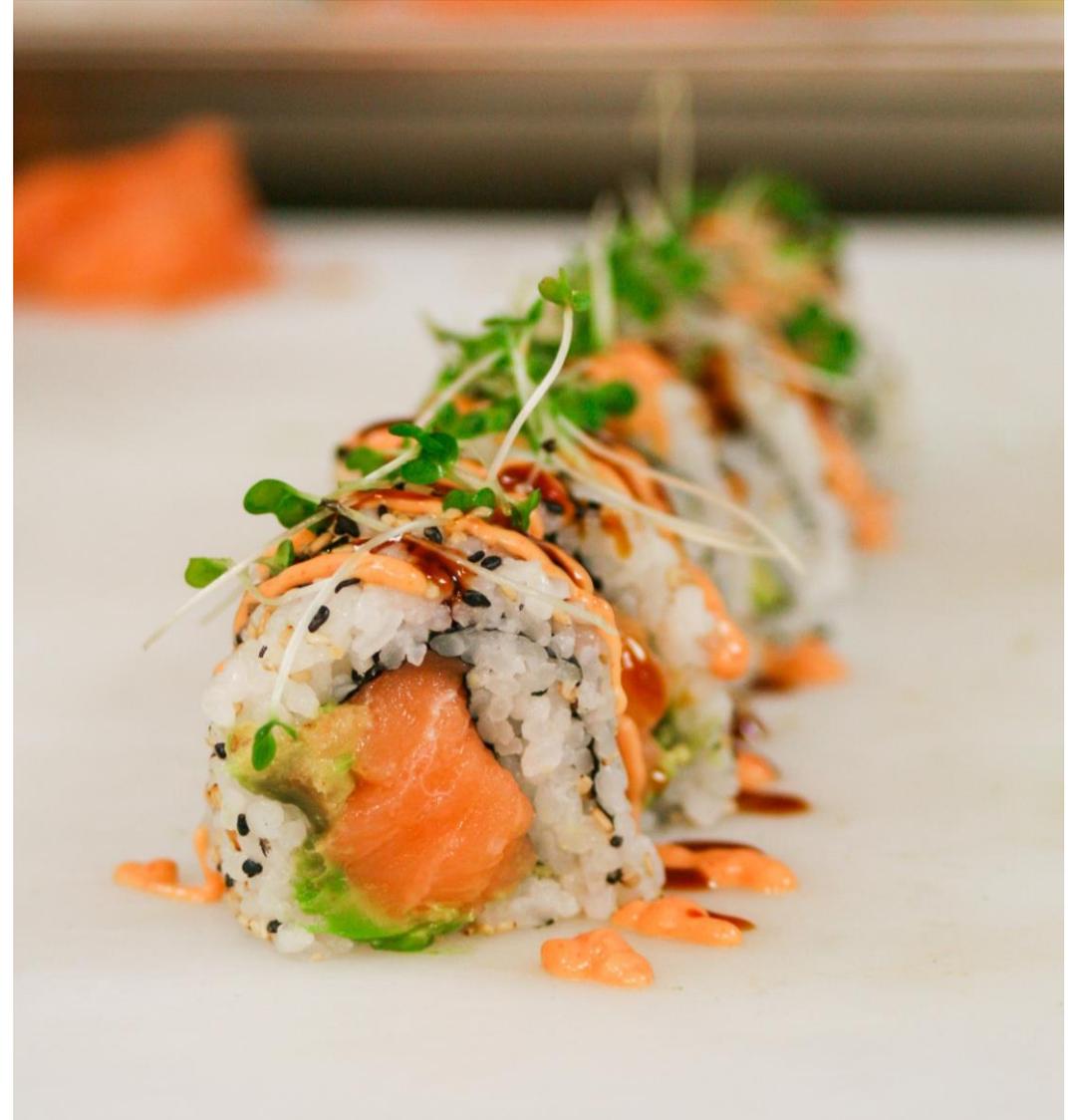
# How to answer the question....



*'Dining halls as living laboratories—dynamic learning environments where applied research is bridged with operational innovation, allowing experimental science to bring far more advanced results in terms of applicability in the real world, compared with traditional academic research'*

Quote from: The Menu of Change University Research Collaborative (MCURC)

- In-house operated catering
- 4 campuses | 17 Buildings
- 22 outlets
- 145 catering staff
- 33 Chefs
- 9,802 events catered for per year
- Up to 1,000 hot meals served per day



# The Root-to-Tip team

## Public health nutrition & food behaviour



**Rachel Gibson**  
Senior Lecturer  
Nutritional Sciences



**Fiona Lavelle**  
Lecturer  
Nutritional Sciences

## Carbohydrate chemistry



**Balazs Bajka**  
Lecturer  
Nutritional Sciences



**Peter Ellis**  
Professor  
Carbohydrate Biochemistry

## Nutrition research & project management



**Georgia Browne**  
Research Assistant  
Nutritional Sciences

## Marketing strategy & branding



**Fatima Wang**  
Senior Lecturer  
Marketing (Sustainability)



**Gillian Brooks**  
Senior Lecturer  
Strategic Marketing

## Food service & catering



**Graeme Collie**  
Associate Director of Catering  
& Events  
King's Food



**The University  
Catering Organisation**

## Student engagement

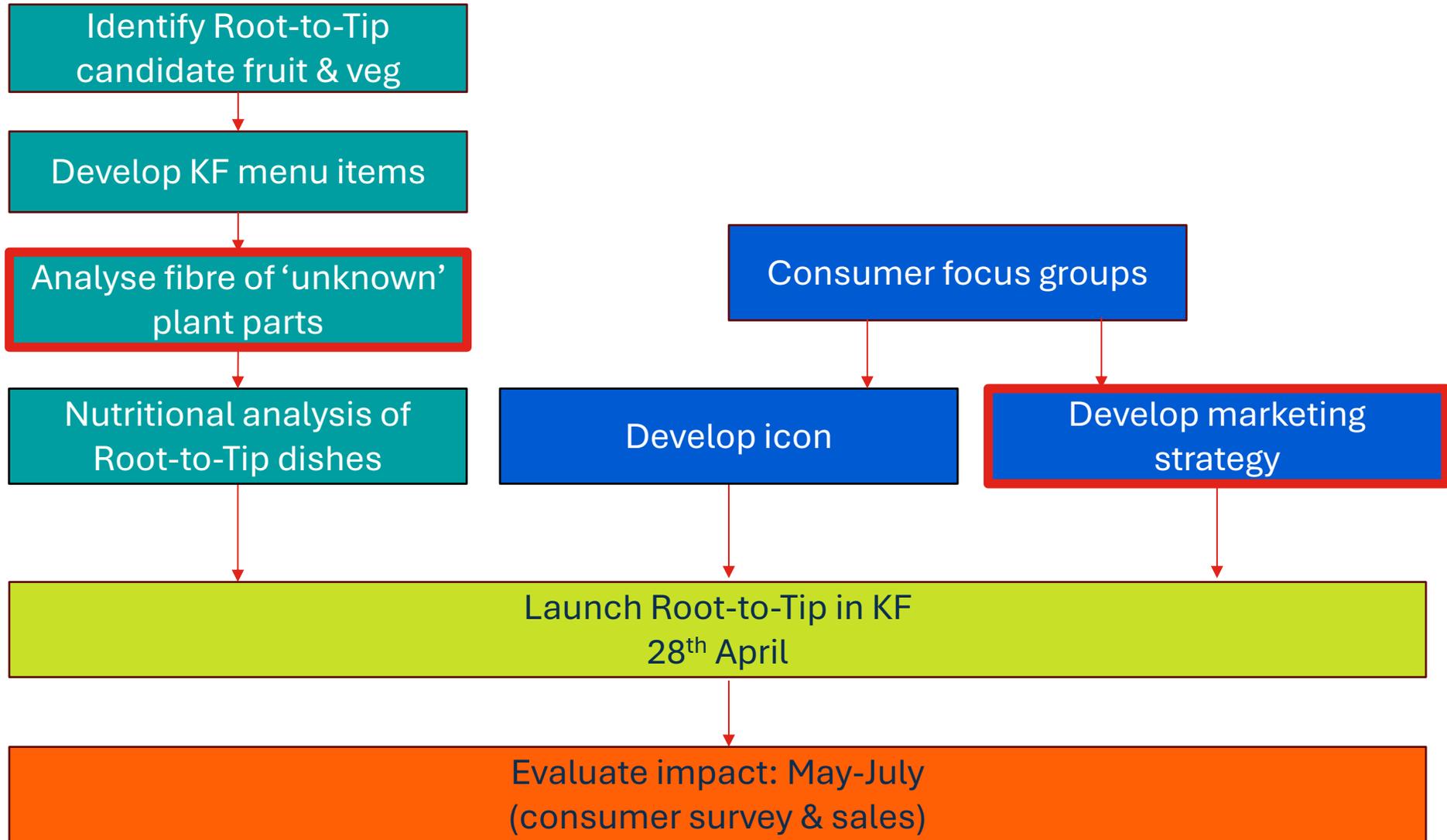


**Eric Wu**  
Affiliate (BSc Dietetics Alumni)  
Nutritional Sciences



**Sam Jackson**  
Student (BSc Nutrition)  
Nutritional Sciences

# Root-to-Tip Project plan

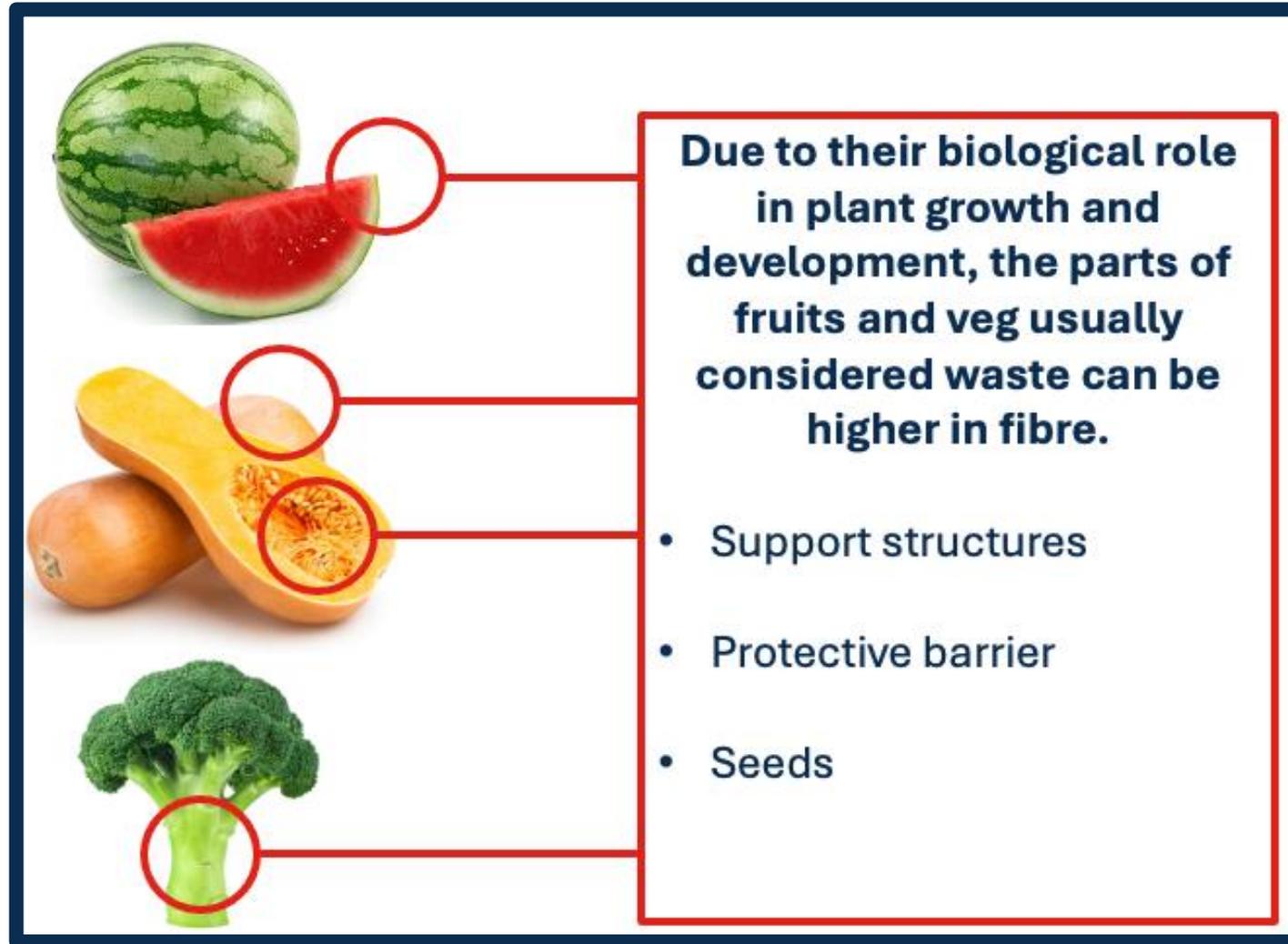


# Project development - *Fibre analysis*

Dr Balazs Bajka  
Lecturer Nutritional Sciences, Co-investigators Root-to-Tip



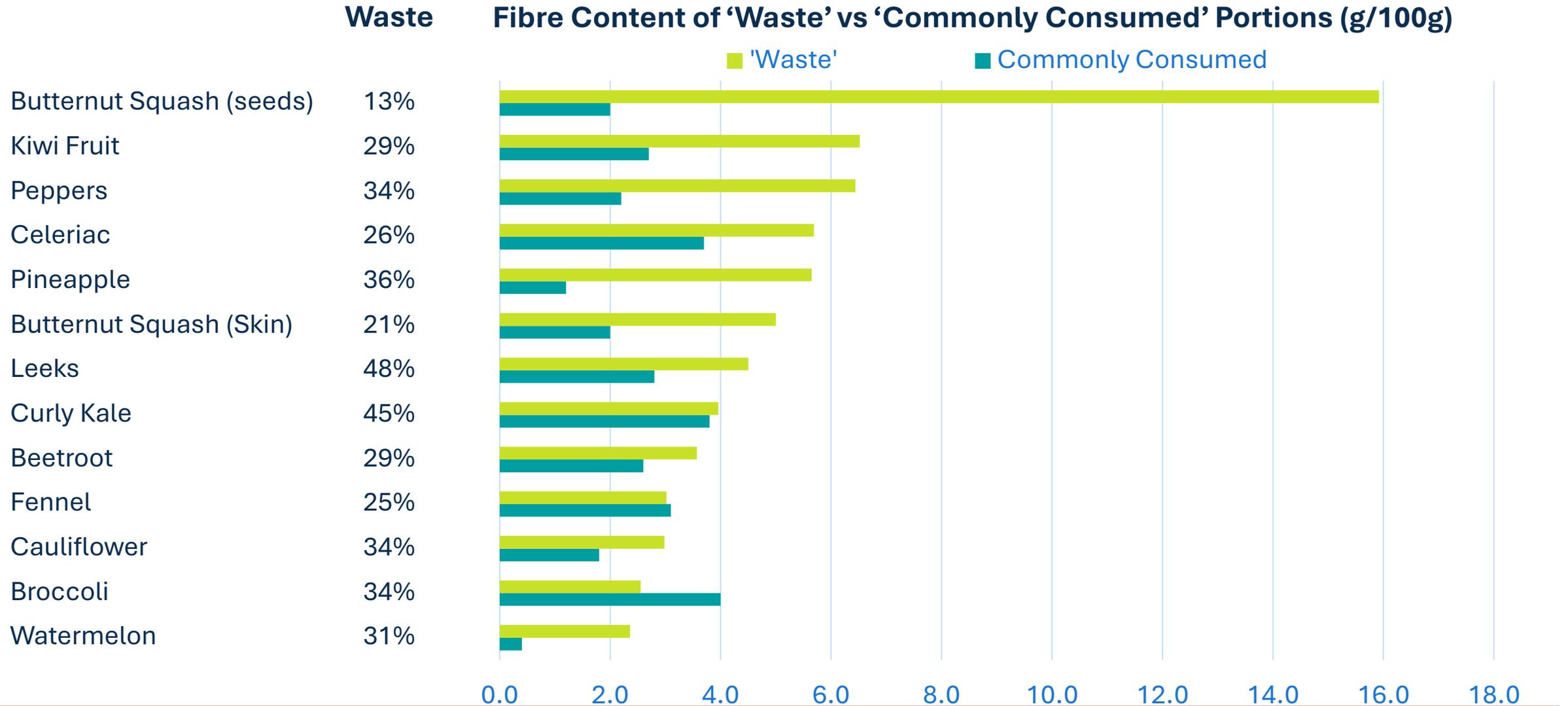
# Fibre is in peels and stalks



**Due to their biological role in plant growth and development, the parts of fruits and veg usually considered waste can be higher in fibre.**

- Support structures
- Protective barrier
- Seeds

# Are peels and stalks higher in fibre?



# **Project development – *Social media campaign***

Dr Fatima Wang  
Senior Lecturer Marketing, Co-investigators Root-to-Tip



# Root-to-Tip Icon development

## Consumer Focus Groups

- 6 focus groups with staff and students from different cultures, backgrounds and ranges in perceptions of sustainability priorities
- Seeking to understand individuals' perceptions of the root-to-tip concept, the extent to which they link it to nutrition and/or food waste, and what ideas they have on recipes



## Icon Design

- Partnered with graphic designer to design a relevant icon for the project based on the consumer focus groups



# Social Media Strategy

- Creating social media content for promotional material with the content aligning with the 'root-to-tip' brand
- Post explanations on root-to-tip to generate **awareness, interest and desire**, and to **incentivise the purchase** of root-to-tip dishes.
- Hashtag for the King's Food Instagram account (3.6K followers) - **#eatroottotip**
- Total of **36 Instagram outputs** (14 posts, 22 stories)
  - Including collaboration with dietitian Dr Emily Leeming



**kclfood** ...  
King's Food  
592 posts 3,945 followers 319 following  
All things food and drink brought to you by King's Food at King's College London!  
Bush House, Strand, London, United Kingdom WC2R 2LS  
[linktr.ee/kclfood](https://linktr.ee/kclfood) and 2 more  
@kclfood

Only 1 in 10 of us get enough fibre in our diets...

...making dishes Root-to-Tip can increase their fibre content

kclfood and dremilyleeming  
Original audio

kclfood Take a big step towards reaching your daily fibre goals with this delicious, nutty, West African Peanut Stew (full recipe below) 🥗  
Ace your preparation with top tips from the wonderful Graeme Collie, Exec Chef at King's College London 🍴  
The secret to this dish? Preparing Root-to-Tip by cooking more parts of the plant – kale, leeks and butternut squash. This stew boasts a fantastic 12g of fibre per serving, almost 1/3 of the recommended daily requirement 🥕  
Cook smart. Eat well. Waste less. 🌱

Watch, learn, prep, enjoy! #EatRootToTip  
🌱 Share to help others support their health.  
Follow @dremilyleeming for more practical health tips and @kclfood for more Root-to-Tip inspiration.

Ingredients  
100 g Smooth Peanut Butter  
15 g Garlic  
17.5 g Fresh Ginger  
500 g Butternut Squash (keep skin & seeds)  
50 g Leeks (keep greens and roots)  
200 g Italian Tomato Paste  
5 g Vegetable Stock Powder or Cube  
20 g Ground Cumin  
15 g Mild Chilli Powder  
125 g Curly Kale (keep stalks)  
2 g Cooking Salt  
1.5 g Ground White Pepper  
7.5 ml Cold Pressed Rapeseed Oil

Instructions

62 likes  
27 June 2025



# Project Findings

Dr Fiona Lavelle  
Research Assistant, Root-to-Tip project



# Menu launch April 2025

## MONDAY

### WORLD STATION

Red Pesto Pasta (VE)  
with sunblushed tomatoes, green beans  
and crispy onions

**£6.75**

**686g Co2e**  
**Very Low**

### ASIAN STATION

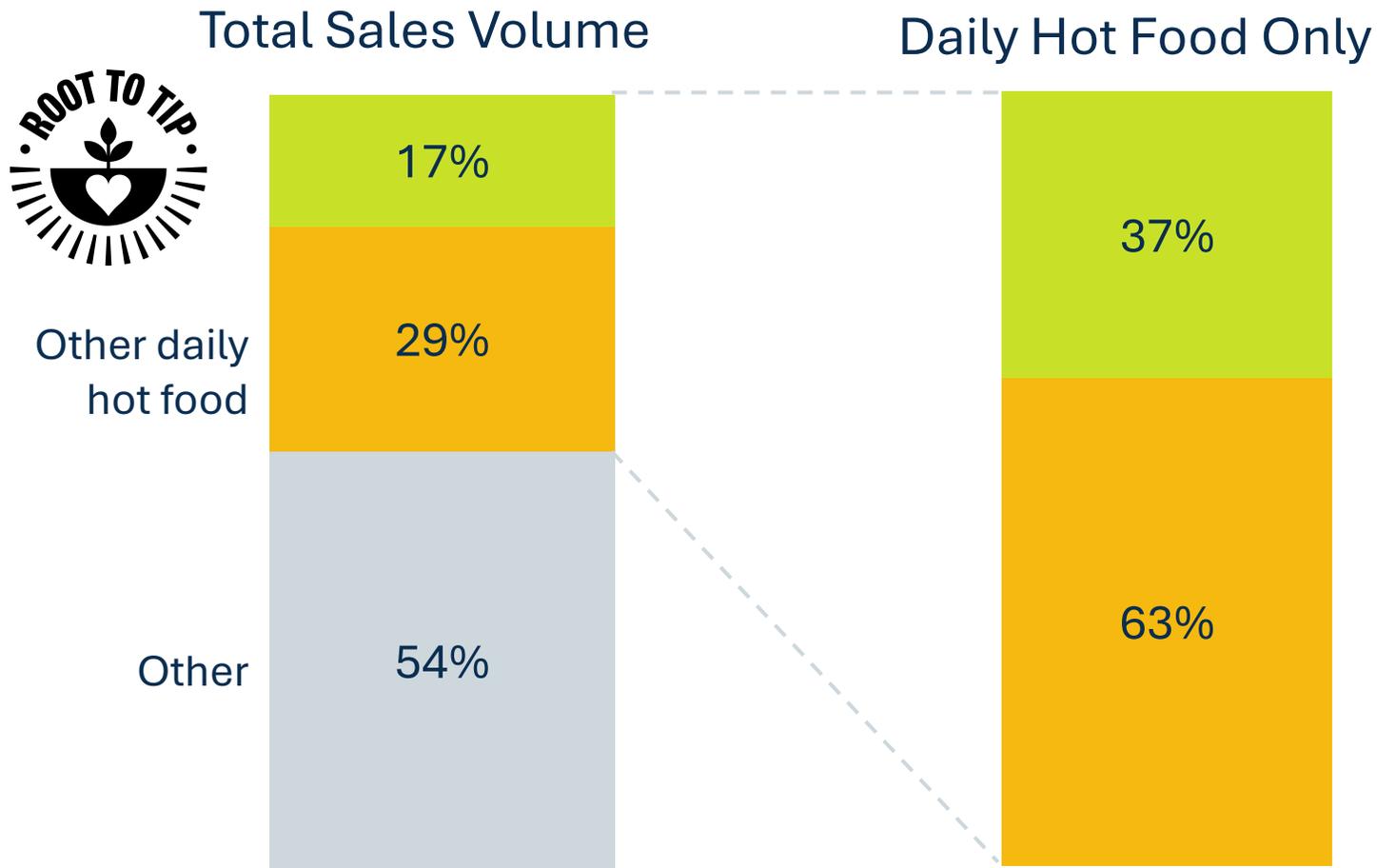
Kaeng Pa (Thai Jungle Curry) (VE)(GF)  
served with steamed mixed rice and lime  
and coriander salad

**£6.00**

**652g Co2e**  
**Very Low**



# Nearly 40% of daily hot food sales were Root-to-Tip



c.6k Root-to-Tip dishes sold

Based on menu structure,  
the estimated Root-to-Tip  
'fair share' of sales is 44%

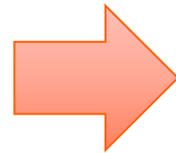
# Up to 241kg of waste saved; plate waste slightly higher for 'Root-to-Tip' dishes

**6,066**  
Root-to-Tip  
meals sold

**40g**  
Avg. plant waste  
saved per meal\*  
(range 7g to 126g)

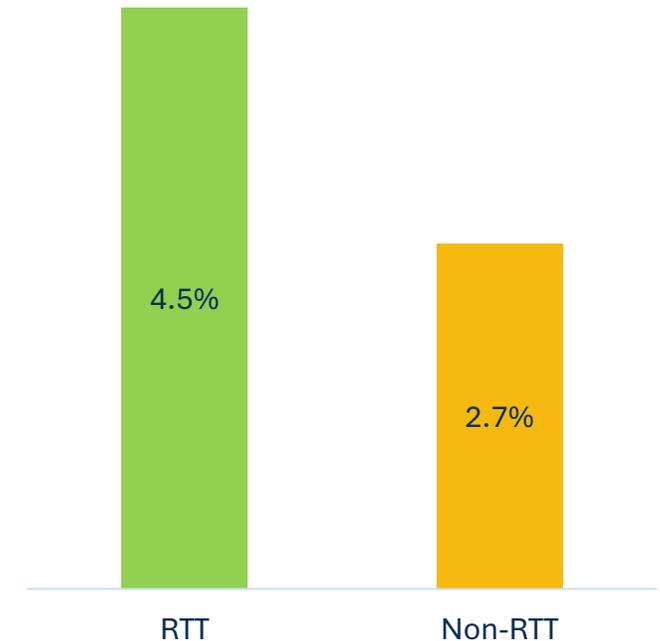


**241kg**  
waste saved



**1.4t**  
waste saved in  
1 year

Average plate waste (%)

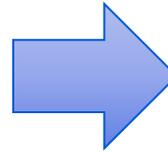


\*sales weighted average

# Up to 3.6kg of additional fibre eaten

**6,066**  
Root-to-Tip  
meals sold

**0.6g**  
Avg. fibre increase  
per meal\*  
(range -0.7 g to 2.8g)

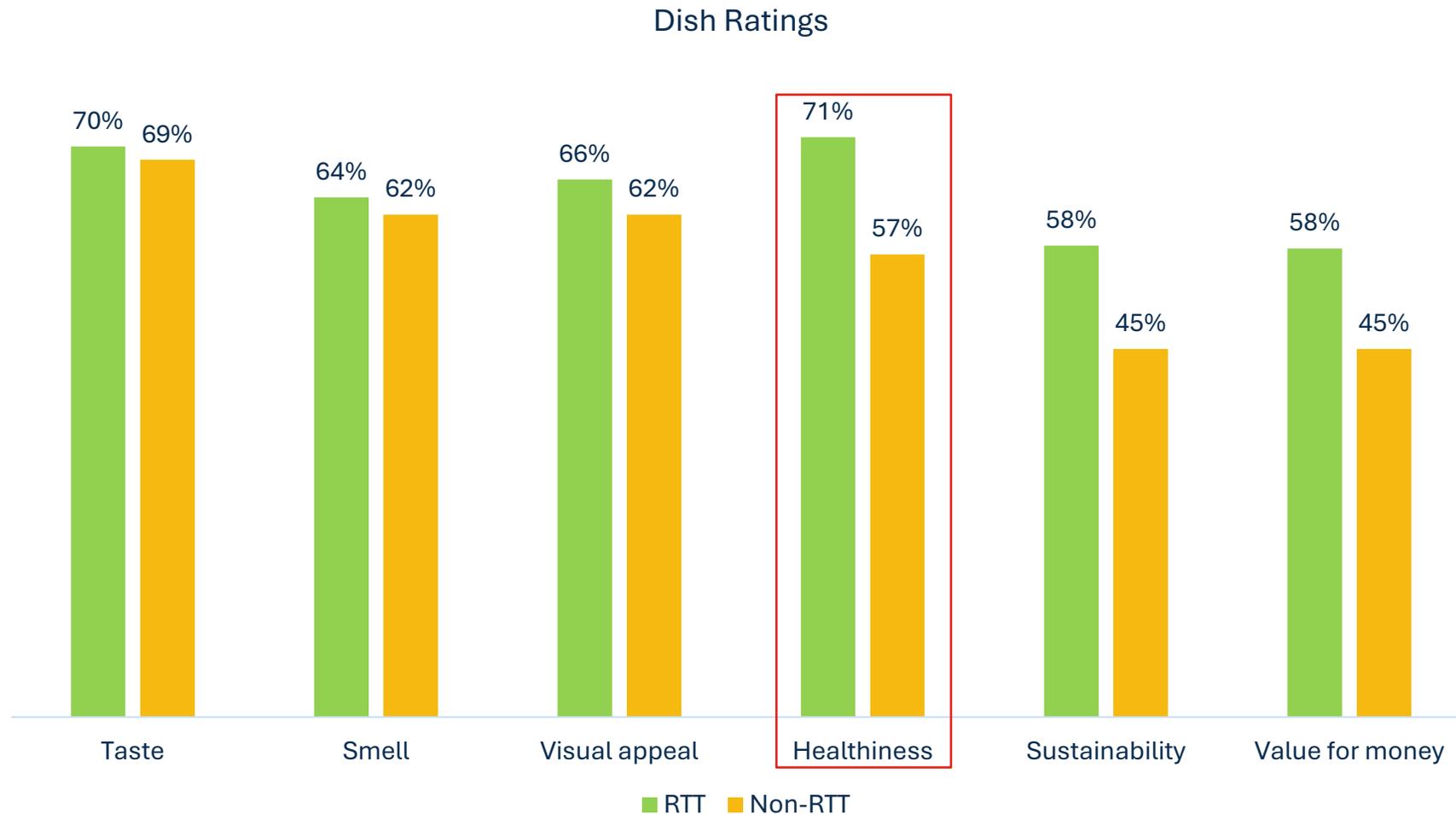


**3.6kg**  
extra fibre  
eaten

\*sales weighted average

Source: Analysis based on King's Food electronic point of sales data (43 days of sales: 28<sup>th</sup> April – 27<sup>th</sup> June 2025)

# Root-to-Tip dishes seen as significantly healthier



Source: King's Food Consumer Survey – Root-to-Tip dishes vs other daily menu items (N=433)

\* Includes responses of 5/5 and 4/5 to 'How would you rate your food today for the following factor?'

# Key barriers & enablers to consumers eating 'root-to-tip'

## Barriers



Personal habits & preferences



Safety & edibility concerns



Cultural differences

## Enablers



Modelling by peers



Increasing knowledge on preparation and safety



Good taste!

# Future research priorities



- **Identify unintended consequences / risk assessment**
  - Parts of plants that are safe or harmful to eat
  - Preparation may be important – e.g., extra washing, cooking etc



- **Test nutritional content of fruit and vegetable preparation waste**
  - Fibre
  - Other nutrients and non-nutrient compounds (e.g., polyphenols)



- **Further research in consumer acceptability** (+ outside university setting)



- **Understand the barriers and enablers to caterers (and home cooks) for adopting Root-to-Tip principles**



- **Understand farm to fork impact of Root-to-Tip catering**
-



# Next stages

Dr Rachel Gibson

Senior Lecturer Nutritional Sciences, Research Lead Root-to-Tip



# The ultimate ambition

If we can demonstrate from this project that we can **reduce food waste** in a way that **improves fibre intake** and is **acceptable...**

King's Food



Public sector /  
contract catering

In the home

In retail



Increase fibre in UK  
population (& health)  
  
Reduce plant-food  
wasted in the UK



# Panel Q&A



**KING'S**  
*College*  
**LONDON**



**Rachel Gibson**  
Senior Lecturer  
Nutritional Sciences



**Balazs Bajka**  
Lecturer  
Nutritional Sciences



**Fiona Lavelle**  
Lecturer  
Nutritional Sciences



**Lisa Connellan**  
Head of Business Services &  
Development  
King's Catering & Events



**Fatima Wang**  
Senior Lecturer  
Marketing (Sustainability)