

## PhD Project Advertisement

**Project title:** *Exploring the sensory and appetite-regulating potential of edible insects in adults with obesity*

**Project No:** FBS25-70-Ozen-rs

**Lead supervisor:** Dr Ezgi Ozen, Department of Food and Nutritional Sciences, University of Reading

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**Co-supervisors:**

Dr Ralph Manders, Nutrition, Exercise, Chronobiology & Sleep, University of Surrey, University of Surrey

Professor Lisa Methven, Department of Food and Nutritional Sciences, University of Reading

Dr Geoff Knott, The UK Insect Company Ltd t/a edibl®

**Project description:** In 2023, 64% of adults in the UK were classified as overweight or obese, reflecting a rising trend in obesity rates. This places a significant strain on the NHS, which spends an estimated £19 billion annually on obesity-related health issues. Managing obesity often involves cutting calories, but this approach can unintentionally lead to unwanted muscle loss along with body fat. Research suggests that higher protein diets, particularly those with animal-derived proteins, can help prevent muscle loss. However, with a growing global population, there is increasing pressure to find sustainable protein sources that support food security, reduce environmental impact, and promote healthier diets.



One promising solution is insect-based protein, which is both environmentally friendly and nutritionally complete, offering a rich amino acid profile. However, its potential to support obesity management and its effects on appetite, especially compared to traditional livestock-derived proteins, remain largely unexplored. Additionally, consumer acceptance, heavily influenced by taste and texture, is a key barrier that requires further investigation.

This PhD project aims to develop insect-based protein recipes that are tailored to meet the needs of people with obesity. These recipes will be tested to understand their effects on appetite and satiety while addressing consumer preferences.

The main activities will include:

- Work with participants to co-create insect-enriched recipes, identifying what drives or hinders their acceptance.
- Analyse the sensory properties of these foods and how they affect expected satiety and consumer acceptance.
- Conduct a human trial to test the impact of insect protein on satiety, appetite, and calorie intake.
- Analyse biological samples to understand appetite and digestion-related responses.

This research aims to unlock the potential of insect protein as a sustainable, healthy alternative for managing obesity. By addressing both the nutritional and sensory challenges of insect-based foods, the project will pave the way for their wider acceptance in diets, ultimately benefiting both people's health and the planet and guiding food production towards lowering the food industry's carbon footprint, minimizing food waste.

This is a Case PhD studentship in partnership with edibl who will provide technical expertise to the project. The project is hosted at the University of Reading in the Department of Food and Nutritional Sciences with access to the Sensory Science Centre, Hugh Sinclair Unit of Human Nutrition and the Chemical Analysis Facility. The project is co-hosted by the University of Surrey where the project will benefit from expertise in protein metabolism and nutrition research.

**Training opportunities:** This project offers comprehensive training in human intervention studies and related research. You will be trained in project development, ethics applications, subject recruitment and performing the interventions.

You will receive training from the supervisory team and their wider research groups in all aspects of the project. You will be skilled in both sensory and clinical research techniques such as consumer participatory research and measuring appetite responses. You will also be encouraged to attend relevant training and present papers at national and international conferences. Both the University of Reading and University of Surrey offer extensive training in all academic and life skills. Additionally, you will undertake a 3-month placement with edibl/HOP®, an industry partner, to contribute to their ongoing research activities. You will also have the opportunity to explore business opportunities including getting involved in edibl/HOP's marketing, sales, and developing further research streams. Find out more about edibl at [www.edibl.co.uk](http://www.edibl.co.uk) and [www.hopbar.co.uk](http://www.hopbar.co.uk)

**Project supervision style:** Lead supervisor will be primary point of contact for research guidance and will meet with the student weekly to discuss progress and address challenges. Wider supervisory team will include specialists for specific aspects of the project. In the first three months the co-supervisors will be invited to the weekly meetings to ensure the full team agree on project direction, timelines and training from their disciplines. This will reduce to monthly team meetings, except where the student needs more specific input from any co-supervisor during different tasks. The student will be encouraged to arrange additional meetings with supervisors for support when required. There will also be monthly group meetings within UoR Nutrition and Food Research groups to share insights and foster collaboration among peers. Feedback expectations: Initial feedback given within one week for early drafts and proposals, and ongoing feedback given within two weeks to ensure timely support for student development.

**Student profile:** This project will be of interest to students with a background in food science, nutrition & dietetics or a closely related subject

#### **Stipend (Salary):**

FoodBioSystems DTP students receive an annual tax free stipend (salary) that is paid in instalments throughout the year. For 2024/25 this is £19,237 (£21,237 at Brunel University) and it will increase slightly each year at rate set by UKRI.

#### **Equity Diversity and Inclusion:**

The FoodBioSystems DTP is committed to equity, diversity and inclusion (EDI), to building a doctoral researcher(DR) and staff body that reflects the diversity of society, and to encourage applications from under-represented and disadvantaged groups. Our actions to promote diversity and inclusion are detailed on the [FoodBioSystems DTP website](#) and include:

- Offering reasonable adjustments at interview for shortlisted candidates who have disclosed a disability or specific learning difference.
- [Guaranteed interview](#) and [applicant mentoring](#) schemes for applicants, with UK home fees status, from eligible under-represented ethnic groups.

These are opt-in processes.

Our studentships are offered on a part time basis in addition to full time registration. The minimum registration is 50% FT and the studentship end date will be extended to reflect the part-time registration.

**For up to date information on funding eligibility, studentship rates and part time registration, please visit the [FoodBioSystems website](#).**