



# GROWING KENT & MEDWAY

A world-class research, innovation and enterprise cluster

## Strengthening the link between academia and the food & drink industries

Sophie Packer, Innovation Growth Manager



# What is Growing Kent & Medway?

Funded by the **Strength in Places**, a UKRI flagship programme that helps UK regions to build on existing strengths in research and innovation to deliver benefits for their local economy.

It aims to:

- support innovation-led regional growth
- enhance local collaborations involving research and innovation.

"These grants for horticulture, food production & related technology businesses will help drive inclusive, sustainable economic growth that will benefit local people across Kent & Medway & help them move towards a sustainable, net zero future."

David Sweeney, Executive Chair of Research England



# What is Growing Kent & Medway?



Growing Kent & Medway is a world-class research, innovation and enterprise cluster supporting growth in:

- technology-driven horticulture,
- fresh produce packaging,
- food and drink processing and its supply chains.
- enabling technologies



# GROWING KENT & MEDWAY

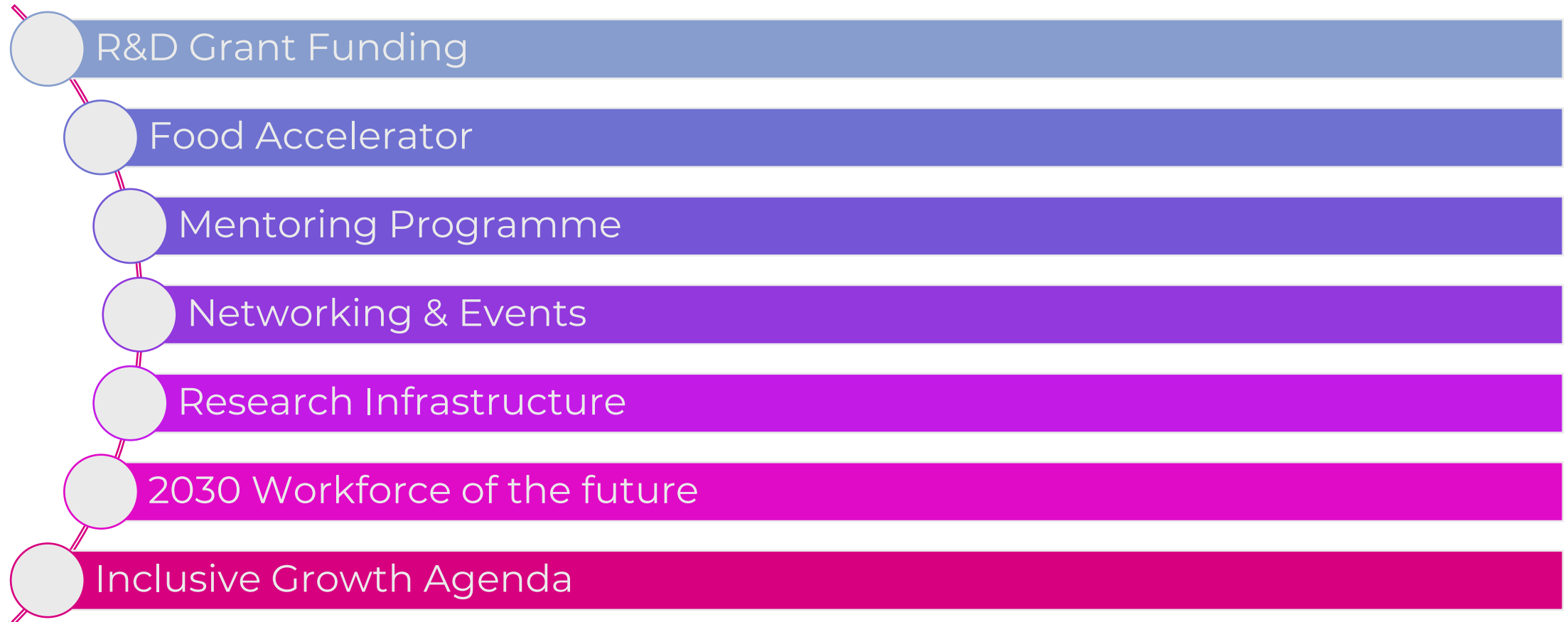


GUSBOURNE



Government funding provided through UK Research and Innovation's flagship Strength in Places Fund

# GKM Business Support Activities



# Some of our partners at the University of Kent:



# Example projects

- Marker assisted breeding to generate powdery mildew resistant hop cultivars
- Investigating the impact of novel punnet to remove a plastic soaker pad whilst maintaining the quality and shelf life of fruit
- Investigating the biochemical profiles in Nashi Gold pear hybrids for potential health benefits



# Example projects

- Upcycled Foods: Getting the goodness out of Kent cherries
- The role of biochar in increasing crop land productivity and the removal of atmospheric greenhouse gases
- Production of insect protein feed through valorisation of 'organic waste' from UK farms





## Case study: Investigating the biochemical profiles in Nashi Gold pear hybrids for potential health benefits

The existing UK fruit juice market is enjoying faster sales growth than any other food and drink sector, but most European pear producers in the UK believe growing purely for the juice market is unviable. The Asian pear, however, has different characteristics and is better for juicing as it is juicy and not pulpy and the juice itself is pleasing to drink. The full health benefits of this unique product are not yet known, and there is a vast untapped market for this type of product.

This project aims to identify the bioactive and nutrient compounds in Nashi pear (Asian pear) grown by L.J. Baxter & Son, which will allow the identification of new markets, allowing for increased productivity and increased sales.

This is a Growing Kent & Medway Business Innovation Voucher funded collaboration.

Academics involved: Dr Andrew Simkin and Dr Lori Fisher | Business partner: L.J. Baxter & Son



A close-up photograph of several bright red cherries with green stems, filling the left side of the slide. The cherries are glossy and appear fresh.

## Case study: Upcycled Foods: Getting the goodness out of Kent cherries

Worldwide, cherry based products are popular health foods due to their high content of natural compounds called anthocyanins. In this project the University of Kent team are working together with Kent cherry grower, Rent a Cherry Tree, to determine the health benefits of a variety of Kent cherry products.

This will provide Rent a Cherry Tree and other local growers with strong scientific knowledge on their products. A growing consumer demand for healthy and sustainable products that also reduce waste provides a major opportunity for these growers to expand by targeting a wider customer-base. This will create jobs, promote economic growth and reduce agricultural waste in Kent.

This is a DEFRA Farming Innovation Programme funded R&D Collaboration.

Academics involved: Dr Marina Ezcurra and Dr Jennifer Tullet |

Business partner: Rent A Cherry Tree

## Case study: The role of biochar in increasing crop land productivity and the removal of atmospheric greenhouse gases

Biochar is an ancient technology that this project is looking to bring into the 21st Century. Instead of burning farm waste, such as hedge clippings or tree prunings, we can turn this into biochar. The biochar is a pure form of carbon that can be applied to the land and improve soil health.


This project will investigate how a modern biochar production facility can play its part in the reversal of climate change and increasing productivity of soils on local farms in the Kent and Medway region. By working with an innovative plasma biochar retort and the University of Kent the project will demonstrate efficient on farm biochar production, demonstrate how much CO<sub>2</sub> can be removed from the atmosphere and locked into soils and how biochar can increase soil fertility and productivity.

This is a Growing Kent & Medway funded R&D Collaboration.

Academics involved: Dr Robert Barker & Dr Anastasios Tsaousis |

Business partner: Re-Generation Earth





## Case study: Production of insect protein feed through valorisation of ‘organic waste’ from UK farms

Every year the UK imports 2M tonnes of soymeal for animal feed. Fluctuating prices, transport and deforestation mean this is economically and environmentally unsustainable. Food wasted in the UK across the food supply chain post amounted to 9.5M tonnes in 2018, contributing to 6-7% of greenhouse gas emissions in the UK.

We are using Black Soldier Fly Larvae to tackle these challenges by creating a more complete system for farms. By feeding excess and spoilt fruit and veg to the larvae, producers cut their waste directly, the larvae get to work upcycling the waste into a more valuable source of protein that can be used as low carbon feed for animals while the waste from this process can be used as biostimulant for crops. Through this research we are optimising the process, allowing producers to reduce their waste at the same time as reducing their costs and environmental impact

This is an Innovate UK Farming Innovation Pathways funded R&D collaboration.

Academics involved: Dr Robert Barker | Business partner: Inspro Lt

## Case Study: Marker assisted breeding to generate powdery mildew resistant hop cultivars

Powdery mildew is one of the most important diseases threatening UK hop production. An untreated epidemic of hop powdery mildew leads to significant yield loss and cone spoilage.

This project, with Wye Hops, aims to develop markers which tag the R2 powdery mildew resistance loci, identify the powdery mildew resistance gene, and validate resistance markers to confirm the development of a functional marker. There is a huge potential for growth in the UK hop breeding market particularly where the industry is empowered by advanced genetic techniques and research.

This project will enhance UK hop grower productivity through preventing disease induced yield loss and crop wastage.

This is a Growing Kent & Medway Business Innovation Voucher funded collaboration.

Academics involved: Dr Helen Cockerton | Business partner: Wye Hops



## Case study: Investigating the impact of novel punnet to remove a plastic soaker pad whilst maintaining the quality and shelf life of fruit

The project will determine the effectiveness of a recyclable novel punnet, created by Sharpak Aylesham Ltd, to maintain and extend the quality of fruit over the shelf-life period after standard transit periods compared to punnets containing the standard and alternative pads on the market for retailers.

If the product is successful, it will offer a viable alternative to retailers looking to meet their Plastic Pact UK pledges, and ultimately improve resource use and support UN Sustainability goals by reducing greenhouse gas emissions by improving the plastics circular economy and simultaneously reducing food waste. The replacement of this product with the standard pad currently use would save 3.6million square meters of plastic a year.

This is a Growing Kent & Medway Business Innovation Voucher funded collaboration.

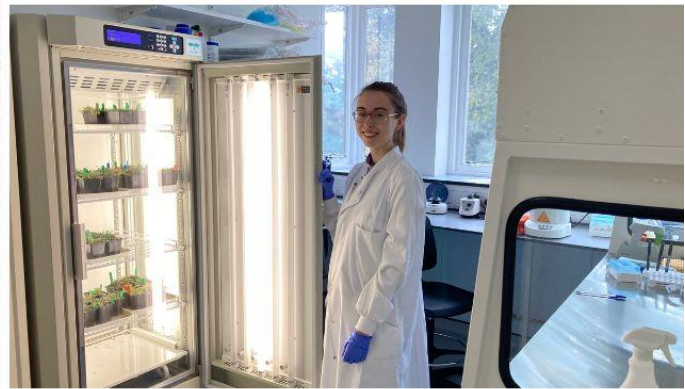
Academics involved: Dr Lori Fisher | Business partner: Sharpak Aylesham



**Doug Wanstall**  
Re-generation Earth



**MICHAEL DALLAWAY**  
Cherry farmer



**Dr JENNY TULLET**  
School of Biosciences, University of Kent









# Future focus of Growing Kent & Medway (at the University of Kent)

- Food waste valorisation and upcycling waste
  - Focusing on extracting nutrition from food waste
- Alternative protein sources
  - Including protein recovery from by products
  - And conversion to edible filamentous fungi
- Regenerative farming practices
  - Nutrient rich produce, soil microbiome, and reducing chemical residues
  - Economics and policy of regenerative farming





# Our focus on Food Security in the region:

- **Crop production and resilience:** Research focuses on developing crop varieties that are resilient to climate change, pests, and diseases.
- **Sustainable farming systems:** Studies investigate sustainable farming practices that minimize environmental impact while maximizing yields. This includes research on organic farming, regenerative agriculture
- **Post-harvest management:** Research focuses on improving post-harvest handling, storage, and processing techniques to reduce food losses and waste. This includes innovations in packaging



# Our focus on Food Security in the region:

- **Nutrition and food quality:** Research explores ways to enhance the nutritional content and quality of food. This includes breeding crops with higher nutrient level
- **Policy and governance:** Research analyzes the policies, institutions, and governance structures related to food security.
- **Food access and affordability:** Research examines factors influencing food access, affordability, and distribution. This includes studying food supply chains, market dynamics, and consumer behavior.





# Thank you

Any questions?

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