

Title: Fruit Logistica, Berlin. Annual Fresh Produce Trade Show [www.fruitlogistica.com/en](http://www.fruitlogistica.com/en)

Date of Travel: 3rd – 7th February 2025

Name of GCRI Travel Grant Recipient: Kennedy Dellicott, Supplier Technical Manager, Barfoots of Botley

### Headline bullet points

- To feed the growing human population, 70% more food needs to be produced by 2050.
- Vertical farming and hydroponics are potential opportunities to bridge the yield and nutritional gap in future farming systems.
- Careful selection of greenhouse growing structures can help increase crop health and minimise water wastage.

These bullet points (between 1-5 as guidance) should be written to flag up key grower-relevant highlights that will encourage a reader to continue exploring the report. The bullet points should succinctly answer the question: “As a result of this travel grant, what could the UK Protected Crops and Outdoor Ornamentals sector look out for?”

### Background

Fruit Logistica, held at the Messe, Berlin, spanned across 26 halls, hosting 2,629 exhibitors and opening its doors to over 91,000 industry specialists over the three days (5<sup>th</sup> – 7<sup>th</sup> February 2025). Fruit Logistica had halls dedicated to each continent as well as halls dedicated to logistics and machinery and technology including a hall solely dedicated to greenhouse technology, smart agriculture and cultivation equipment. The vast size of Fruit Logistica and the impressive nature of the exhibitors stands within the halls shows the pride they have and importance of Fruit Logistica to their businesses. Barfoots of Botley sent a team from procurement, commercial and technical to meet with long-standing and new prospective suppliers to continue to form relationships to strengthen Barfoot of Botley’s supply chain. Many members of the team had back-to-back meetings throughout the main two days of the show (5<sup>th</sup> and 6<sup>th</sup> February) which shows the importance of Fruit Logistica bringing suppliers together from across the globe to discuss the industry and the current and future supply base. Visiting Fruit Logistica put into perspective the importance and vast size of the fresh produce industry from soft fruit to root vegetables and from open field cultivation to innovative growing systems such as vertical farming.



Figure 1. Left to right. North entrance of Fruit Logistica with the flags of exhibiting countries. Eiffel Tower of vegetables displayed in the French section of the European hall. Fresh berry selection at one of the soft fruit exhibitors stands.

## Travel Findings

In 2018, The World Government Summit released a report called, 'Agriculture 4.0 – The Future of Farming Technology' which addressed the four main development areas which pressure agriculture to meet future demands; demographics, scarcity of natural resources, climate change and food waste.

To feed the growing human population, 70% more food needs to be produced by 2050. However, if the sector continues to grow at its current rate, then 8% of the world's population (650 million) would be under-nourished by 2030. The report attributes this to the lack of innovation within the industry in recent years. Opportunities to bridge this gap include the development of technologies such as robotics and automation, environmental control and sensing systems, and advanced crop developments (Figure 1). These developments will support farms to be safer, as well as more profitable and efficient, capable of meeting the growing demand for food, without damaging the environment.

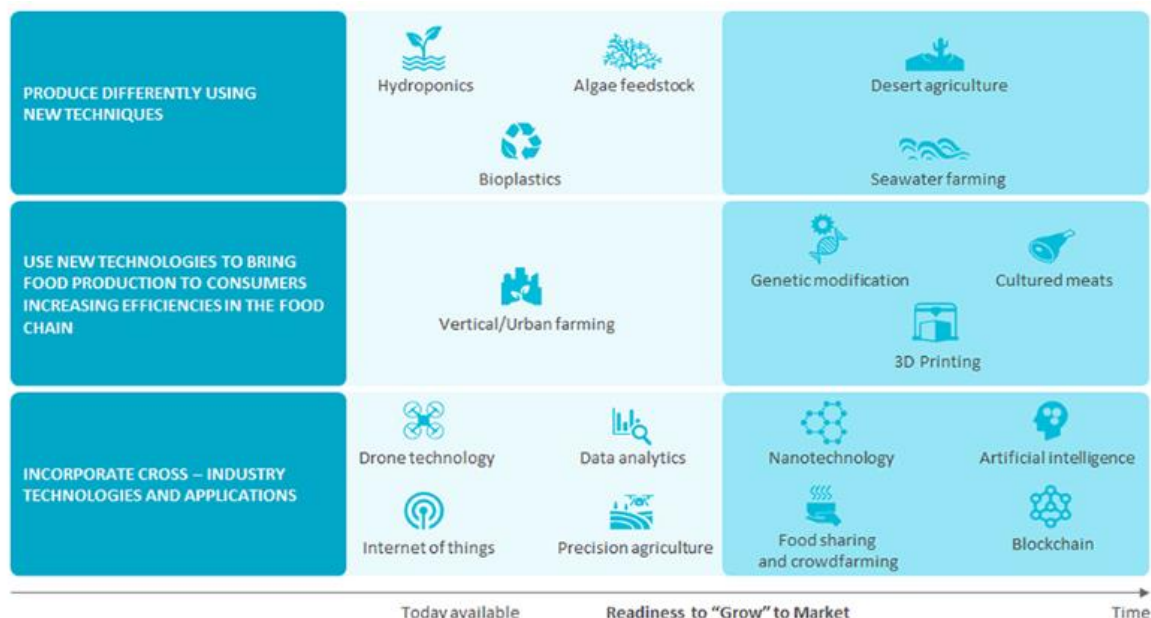


Figure 2. Map of technological advancement through time (Agriculture 4.0)

### Vertical Farming and Aeroponics

Vertical farming and hydroponics are potential opportunities to bridge the yield and nutritional gap in future farming systems. Aeroponics (both vertical and tower production systems) have many advantages compared to soil farming, such as, faster growth, healthier plants and higher yields, all whilst using fewer resources. Plants are able to grow in soilless media, such as rockwool or coir. Water usage can be significantly reduced in aeroponic production (using up to 98% less water than soil-based systems). Although these figures are given as guidelines from companies marketing these solutions, they have not been tested in all systems and it is important to understand these metrics to support improved water security in protected cropping with both our UK and global suppliers.

Fischer Farms CEO, Tristan Fischer, spoke at a Fruit Logistica on Safeguarding Fresh Produce Supply. Developing their knowledge from the renewable energy sector Tristan Fischer created Fischer Farms a state-of-the-art vertical farming production unit. Fischer Farms is currently developing their business entering a journey of three phases on both the production unit and the crops they wish

to produce. Currently at phase one Fischer farms produces 20 tonnes a week of leafy greens in their second production unit of 25,000m<sup>2</sup>. Phase two will look at growing fruiting crops and mushrooms and phase three is to grow plant-based carbs and protein.

Fischer Farms created their vertical farming system as there is an increase in demand for local, healthy, high quality fresh produce and the decrease in good farming land, stating 40% of land globally has degraded, worsening the effects of climate change. Tristan also spoke about the decrease in water availability due to groundwater depletion and changes in precipitation patterns.

Fischer Farms have created a vertical farming system that can produce the same number of leafy greens in their four-acre site as a 1,000-acre open field farm. They use 1/8 of the amount of fertiliser to a conventional farm with no nitrogen or phosphate discharge due to the close looped system. Additionally, Fischer Farms uses 5% of the water a traditional farm would use, harnessing flood irrigation technology, flooding the root systems of the troughs before periods of time before draining the water before recycling the water cleaning it through a system of filters and dosing it with the required nutrients before the next irrigation cycle.

Tristan Fischer mentioned vertical farming will become more viable and significantly improve as the below key areas are developed:

- Capital costs – For example, lighting costs decreases and efficiency of the lights increases.
- Operating costs – For example, price of electricity or renewable energy and battery storage becomes more affordable and labour/automation develop
- Automation – For example, artificial technology, will develop and soon running a humanoid robot will be cheaper than running a small car for a year.

It was concluded that vertical farming can be viable as technology is developed and with the support from customers who are onboard with the product and the environmental benefits.



*Figure 3. Inside Fischer Farms leafy green production (left), Aerial view of Fischer Farms second farm site (right).*

### Greenhouse Growing Structures

In addition to investigating novel systems, there were a number of exhibitors at fruit Logistica who provide solutions to improve greenhouse production. For example, there are greenhouse growing gutters (Figure 3 and 4) which are designed to optimise growth of the plants within them and increase sustainability; providing precise irrigation and drainage for a healthier plant, with increased yields and shelf life. Greenhouse gutters come in many different sizes and shapes dependant on the crop and substrate used, allowing recirculation of excess drainage fertigation water. This will therefore significantly reduce water usage/wastage and also reduce the overall quantity of fertiliser used. Furthermore, greenhouse growing gutters are more hygienic, reducing

the risk of disease spread; increasing air circulation of the crop root creating an overall drier climate. These products could be beneficial in our protected cropping structures within UK horticulture to minimise disease in the crop and reduce water, pesticide and fertiliser wastage where possible.



Figure 4. Growing gutters.



Figure 5. Growing gutters in use in a greenhouse.

## Personal Statement

The visit to Fruit Logistica was particularly important to me as it allowed me to experience the vast size of the fresh produce industry. Until you partake in an event of this magnitude it is hard to appreciate the amount of people involved in the industry from growing and producing the raw material to packing and selling the produce as well as the industry experts developing new products and equipment to help the industry grow and thrive. Visiting Fruit Logistica gave me the opportunity to discuss with industry experts the challenges we will see in the close future to feed the ever-growing population and the hard work and dedication industry experts are doing to ensure innovation is at the forefront of the fresh produce industry to help tackle the ever growing demand on fresh produce production and what we can do in the UK horticulture industry to develop our production areas to maximise yields whilst maintaining quality produce.

## Contact details

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## Acknowledgements

I would like to thank the GCRI for funding my trip to Fruit Logistica, giving me the opportunity to network with suppliers and agri-businesses from all over the globe. In addition, this trip has allowed me to widen my knowledge on the innovation in the industry leading to more sustainably grown products within the protected cropping sector. This trip has facilitated invaluable networking opportunities to widen my knowledge to pass onto other suppliers and drive innovation within the UK horticulture sector.