

Farmers across the globe are searching for sustainable, tech-savvy alternatives as climate change increasingly impacts agriculture's profitability.

[LettUs Grow](#), a Bristol-based aeroponics tech company that provides technology to farms in the U.K., thinks it may have a solution.

The vertical farming tech provider gave us a glimpse into the future of aeroponics and an overview of its innovation.

Overcoming challenges in vertical farming

"There's a perception about vertical farms - not everyone is sold on it initially," LettUs Grow's India Langley told FreshFruitPortal.com.

The company's greatest challenge has been public perception. Oftentimes people imagine that their produce comes from local, small scale farms. However, the reality is that most farms are industrial entities - at least in the U.K. - explained Langley.

Thankfully, the image of vertical farming is changing rapidly. Nowadays, aeroponic technology "is recognized more as a business plan rather than a pipe dream," said Langley. Indoor farming [has also been getting loads more attention](#).

So, the task aeroponics tech companies face is "educating people that the food is just as nutritious".

As vertical farming becomes more mainstream, companies like LettUs Grow have seen more demand for their products.

What, then, does the technology do and what will the future of vertical farming look like?

LettUs Grow walked us through its technology's evolution and the benefits it provides to today's agriculture industry.

The idea for LettUs Grow arose when three Masters students at the University of Bristol - Ben Crowther, Jack Farmer and Charlie Guy - developed a table-top aeroponics system. This in-home model worked so well that the group decided to scale it up.

"We started out solely making hardware, so the physical grow beds," Langley said. The company then began crafting software it calls Ostara - which reduces energy costs up to 15%.

Founders saw that traditional aeroponics - which use high pressure - were inefficient. Old methods, which involved firing liquid through a nozzle to create aerosols, lead to clogging and system failures. In order to reduce waste, LettUs Grow sought alternatives.

To do this, it got rid of nozzles entirely. It also developed a new way of making aerosols. These innovations allowed the platform to be scaled up.



Photo: LettUs Grow, Jack Wiseall

"What the three founders thought was that if they were seeing this increase in growth rate in these home-kits and their main goal was to reduce waste, they would do much better taking this technology and applying it to farm-scale applications."

The result was an aeroponics system that reduces food miles, increases food freshness and "helps farmers keep farming".

According to Langley, there is big problem in the U.K. with farmers needing to diversify. Climate change has posed a risk to farmers' income and vertical farming provides a solution, she said.

She specified that "one of the things that indoor growing does is that it protects the crop" and ensures that farmers profit regardless of weather conditions.

Benefits of aeroponics and LettUs Grow's advice

When asked about the benefits of aeroponics versus other indoor farming methods, Langley said "aeroponics has been an improvement" on hydroponics. This is because it gives the plants better access to "free gas exchange".

In short, it provides the "ideal environment" to grow, claimed Langley. Aeroponics "holds

plant roots out of water" and sprays plants with an aerosol. Plants in aeroponics grow 70% faster than in hydroponics, she stated.

She went on to explain the strategic benefits and challenges faced by farmers.

"The main thing that holds you back is whether or not there's a business case for it," said Langley.

"We always advise people who are working with us to think really carefully about what they grow."

LettUs Grow suggests farmers plant crops like micro greens, quick growing crops, and tender crops that struggle to be transported. While the company has tested "dozens" of different plants at its two farms, it encourages farmers to plant profitable crops like basil.

Looking forward, the future of the company

LettUs Grow continues growing as demand for its technology increases. While farms all around the world have requested the company's products, it says plans for expansion into Europe - and eventually worldwide - are in the works for upcoming years.

Currently, it only provides technology to farms in the U.K.

It sees a lot of demand from countries that face resource issues. Places that contact LettUs Grow tend to be dry regions like the [Middle East](#) or regions with less sunlight. Additionally, it is gaining popularity in "places where there's not as much land" in more developed countries like the U.S.

Other urban farming schemes like startup [Bowery](#), Gotham Green and Fifth Season [have been gaining steam in U.S. cities](#).

To meet the needs of diverse farms that request its technology, LettUs Grow plans to continue expanding its product line.

In the past, its implementation of Ostara farm management software allowed it to offer a platform that collects data on plants, oversees irrigation and traces crop history.

Most recently, it has partnered with [Octopus Energy](#) to create "vertical power software". The new technology platform reduces energy costs for farmers, making operations more efficient.

It does this by changing the price of energy throughout the day and minimizing costs during peak hours. This both saves customers money and incentivizes farmers to have more sustainable operations, detailed Langley.

Headline photo: LettUs Grow, Jack Wiseall