

Vertical Future successfully completes Innovate UK funded research aimed at cutting agrichemical use

Vertical Future has successfully completed research to develop a new way to deliver sustainable fresh produce with zero agrichemical inputs.

LONDON , ENGLAND , November 21, 2022 /EINPresswire.com/ -- Vertical Future - the fastest-growing UK-based next-generation vertical farming technology business, has successfully completed research to develop a new way to deliver sustainable fresh produce with zero agrichemical inputs.

The Controlled Environment Agriculture (CEA) Heirloom Optimisation & Pathogen Control for Seeds (CHOPS) was led by Vertical Future alongside NIAB and Zayndu Ltd. The research was funded by Innovate UK.



The project focused on reducing the pathogen contamination of seeds used in CEA and optimising the resulting yields. Successful completion of the research ensures that crops become more affordable and better quality through increased efficiencies and decreased losses, as well as boosting exports of UK-made CEA equipment.

Conventional and organic agriculture are dependent on various agrochemicals to ensure they are free from disease and satisfy production volume needs. CEA has moved crop growing away from fields and the disease pressures that come from the open air and soils, in doing so the need for agrichemicals has been reduced.

The outer shell of seeds is the main source of diseases in CEA facilities. While agrochemicals

could be used to remove the causes of disease, it is better for consumers and the environment to remove the need for this process altogether. The Vertical Future-led project has refined a seed pre-treatment method that uses only air and electricity to enhance growth of the germinating plant and to kill any fungi or bacteria on the surface of the seed. When applied at scale, this pretreatment will remove the most significant sources of disease within CEA facilities, whilst improving yields and producing more nutritious and flavourful foods.

Seeds have been developed for broadacre farming for generations. Many of these optimisations have been designed to reduce disease – key when growing crops in unpredictable outdoor environments. This has shifted focus from taste and nutrient density. By removing the need to focus on breeding disease resistance, seeds for CEA environments can be targeted at improving taste and nutrition. The technology also allows older 'heirloom' varieties of seeds to be used in CEA – allowing forgotten flavours to be grown again.

Using heirloom varieties, the CHOPS project has seen yield increases of more than 6x compared to varieties used in the field today.

Jamie Burrows, Founder and CEO of Vertical Future, said: "As a result of the project, we have already grown crops, such as spinach, with much better flavours than their conventional alternatives. By using DNA sequencing, we can take our learnings to other crops by pinpointing genetic markers that positively impact taste and nutrition. The lessons from this project are even more meaningful, if diseases can be removed from seeds before they are planted without the need for chemicals. We could be looking at a new era of agriculture. This technology has the potential to end the need for excessive chemicals in crop production and usher in a healthier future for farming.

"The seed treatment has also proven to be a biostimulant, providing enhanced germination and yield, illustrating the wider benefits of the technology by increasing production. NIAB worked with us to specify a high-health seed protocol. This support means the CEA sector has a better framework for seed testing and certification that provides for healthier, higher-yielding crops. We have already planned a follow-up to this project with NIAB, looking at soft fruit seed material and are evaluating the next phase of our R&D work with Zayndu."

Dr Tom Wood, NIAB, Research Program Leader – Plant Pathology, said: "Application of cuttingedge indoor farming technologies to heirloom varieties, many of which have amazing flavour and nutritional properties offers a route back to the mainstream market for these pre-existing varieties. The natural combination of NIAB's expertise in seed health with Zayndu's cold plasma sterilisation technology and Vertical Future's indoor farming techniques is perfect for bringing these varieties back to people's plates in a sustainable way.

"Providing access to assured high-health status seed will help to improve grower's confidence that they are not introducing potentially harmful organisms into their CEA systems, and this will help to prevent disease outbreaks" Ralph Weir, Zayndu CEO, said: "We're standing plant breeding on its head. Instead of focusing on disease resistance, breeders can get back to thinking about flavour. Fusing Zayndu's technology with Vertical Future's ability to grow in pathogen-free CEA environments, along with NIAB's seed and plant health expertise will put more flavour on the consumer's plate - at a lower cost. An actual game-changer!"

-ENDS-

Notes to editors

About Vertical Future

Founded in 2016, Vertical Future is a London-based vertical farming technology and R&D company, with global reach. The Vertical Future team design, manufacture, and build a range of proprietary hardware and software technologies, including an integrated vertical farming system – fully-automated from seed through to harvest. Powered by its proprietary "DIANA" SaaS system that tracks, analyses, and improves the entirety of the growing process and underlying crop science, Vertical Future is building a global network of data-enriched, smart farms.

Vertical Future's partners, customers, and farms can be found across the UK and as far as Singapore. Growing in a Vertical Future farm means greater efficiency, higher quality crops, less land use, and enhanced water and fertiliser conservation compared to broadacre and glasshouse production methods.

Vertical Future – Pioneering technology, inspiring smarter crop production.

Alex Crean Yellow Jersey PR 2030049512 ext. email us here

This press release can be viewed online at: https://www.einpresswire.com/article/601585583

EIN Presswire's priority is source transparency. We do not allow opaque clients, and our editors try to be careful about weeding out false and misleading content. As a user, if you see something we have missed, please do bring it to our attention. Your help is welcome. EIN Presswire, Everyone's Internet News Presswire[™], tries to define some of the boundaries that are reasonable in today's world. Please see our Editorial Guidelines for more information. © 1995-2022 Newsmatics Inc. All Right Reserved.