



# CIRCULAR SOURCES OF NUTRITIOUS FOOD CASE STUDIES

Good nutrition plays an important role in the optimal growth, development, health, and well-being of individuals in all stages of life. However, our current food production and consumption habits are unsustainable.

The below businesses received funding and support through the Mid Wales Challenge Led Launchpad programme to develop innovative products and solutions that will help improve access to nutritious food and build resilience in food systems.

## DR JAI LAD, ARCITEKBIO LIMITED

### What is ARCITEKBio's product or solution?

At ARCITEKBio we are looking to commercialise our low-cost, sustainable biomanufacturing process for producing the natural sweetener, Xylitol, from multiple by-product/waste streams. Xylitol is one of the worlds healthiest sweeteners with significant health benefits in terms of dental, dietary, and diabetic applications.

As part of the Launchpad programme, we investigated the feasibility of developing a new formulation of Xylitol from agricultural derived waste, in particular locally produced wheat straw. We were successful in achieving desired formulation prototypes for end-user testing and integrating it within our existing process flow.



### Why is this development important?

There is an increasing emphasis on sugar reduction and the negative impacts it has on society – both from a health and social perspective. It is therefore important that healthier alternative solutions to sugars and sweeteners are developed to help enhance the health and wellbeing of the Welsh and wider global population.

Xylitol has significant health benefits when compared to sugars and other sweeteners – it contains 40% lower calories, does not raise blood sugar levels and it helps fight bacteria that can lead to poor dental health. As a cleantech company focussed on process commercialisation, the ability to offer different product formulations will facilitate wider uptake of our greener Xylitol within different consumer applications in a variety of markets.

### How have you benefited from the Mid Wales Launchpad programme?

Our business has benefitted significantly from being part of the Mid Wales Launchpad programme. We found it particularly beneficial working with Luke from Innovation Strategy each week. His mentorship was brilliant as he tailored everything to our business and during the programme, he really helped us grow our stakeholder network for the future.

We also really benefitted from the Skills Builder student joining our team. It was helpful to have someone who understood our vision and contributed fresh perspectives in multiple disciplines. Although initially a short period of training was required, their determination and willingness to learn ensured smooth knowledge transfer.



# DR WILL STILES, VERTIKIT LTD

## What is Vertikit's product or solution?

The service that we developed during the Launchpad programme was Farmbuildr, a web-based platform that aims to support individuals and businesses on their journey to developing a controlled environment farm.

It helps them take an idea of a crop that they want to grow indoors, under artificial lighting and controlled environments, and turn it into a reality before committing any time or financial investment. As part of this process, insight into the potential return on investment can be gained, subject to the crops that are likely to be grown.



## Why is this development important?

Controlled Environment Agriculture (CEA) is an essential future component of food production in Wales if we are to reduce the environmental impact of food production, but also maintain food security.

However, at this moment in time, the typical approach to building a controlled environment farm is to either buy a container unit which is fully fitted with a vertical farming system on the inside, or to commission the design of a bespoke CEA system. Both approaches require sizeable investment: as an example, the investment cost for the container unit scenario is around £100,000. This makes the return-on-investment potential for something of that size and scale extremely limited, so this is not a cost-effective solution.

This presents a major barrier for the uptake and development of CEA technologies and approaches in Wales, that is limiting the rate that businesses are integrating this technology into their production systems. And that is a problem in terms of food security because we need to be developing CEA technology much faster in order to ensure continued crop production in the context of environmental change.

Vertikit was therefore established to accelerate industry development by offering access to the relevant CEA technologies, with sufficient information and guidance for application, to offer businesses a more cost-effective alternative. Farmbuildr is an essential tool to support growers in this process, offering a simple system for determining the right technology options, depending on crop, grow-environment, and budget, to help growers continue growing in every sense.

## How have you benefited from the Mid Wales Challenge Led Launchpad series?

Vertikit is still a very new, very small company with just four members of staff. So, the £30,000 of grant that we received as part of the programme really helped us accelerate the development of Farmbuildr.

In addition to the funding, we had lots of support from Luke Player from Innovation Strategy in terms of business development guidance and support, and discussions around where to look for the next round of funding, which was extremely helpful.

I would 100% recommend other businesses get involved in the Launchpad programme – it's really beneficial for a business, particularly at our level. The commitments that you have to offer to the programme are nominal in comparison to the benefits derived from it.

