

80% of harvested broccoli goes unused, meet upp, the agri-robotics startup changing the game

As part of our quick fire questions series – or QFQs – we spoke to David Whitewood, CEO and founder of upp (upcycled plant power) about wastage in broccoli farming, harvest automation and their recent pre-seed investment from Elbow Beach Capital.

I was standing in a field with a broccoli farmer in 2019 discussing how he needed to automate his harvesting, “It’s the 21st century and we still have men with knives walking around and cutting the heads off broccoli!” he said. I asked him what he did with the rest of the plant, “nothing!” he answered.

This was the year of Gregg’s Vegan Sausage roll – the entrepreneur in me remembered the old adage, ‘where there’s muck there’s money.’

A weekend search on Google confirmed that many had looked to exploit the nutritionally rich crop “sidestream” i.e. the 80% of broccoli that currently goes unused, but that the cost of getting it off the field was prohibitive.

Tell me more about the business – what do you do in a nutshell, what do you hope to achieve, and how will you reach customers/end-users

upp has solved the broccoli harvest automation problem for the farmer, and in doing so for the first time has made available a valuable commodity of sustainable plant protein and ingredients.

We will work with farmers to solve their harvest automation challenge under a Harvesting as a Service business model. The farmer still gets fresh broccoli for market but also gains incremental revenue for the crop sidestream that we 'upcycle' into proteins and ingredients.

We are already working with three major brands R&D teams and expect to supply via specialist ingredients businesses. With end-users increasingly more socially and environmentally conscious, we expect a positive reaction to a product which is four times less carbon intensive to produce than pea protein and avoids the ecological issues associated with soya farming.

How has the business evolved since its launch?

upp is a spin-out from agri-robotics business, Earth Rover. We won two Innovate UK grants to develop our prototype. We needed focussed investment to take it to the next level, so we secured seed funding from Elbow Beach Capital to support the next stage of our growth.

Tell us about the working culture at upp

Our small team of 7 1/2, consists of mechanical engineers, mechatronics specialists and our latest recruit – an innovation specialist from the food industry.

Unlike say a software business, we are obviously more cyclical; we are driven by the agricultural season, so just like farmers we have periods of intense activity, so building the right team has been crucial. We believe in ownership and self-starting, no one clock watches, and everyone digs in to get to the next milestone with some fun on the way. I think it's crucial to work with people you not only respect, but who you enjoy spending your time with.

How are you funded? Are you seeking further funding?

upp has a mixture of grant funding and venture backing; we recently won a £1M grant funded project and more recently, we've received £500K in institutional pre-seed investment from early-stage impact investor, [Elbow Beach Capital](#). We are expecting to raise a further £2M or so this year, led by Elbow Beach.

Read also

[Broccoli protein, waste-cardboard manufacturing and accessible home-owning – all in this week's Maddy money](#)

What has been your biggest challenge so far and how have you overcome this?

Finding talent. The market is incredibly tight. We worked hard to recruit our core team and have since partnered with the James Hutton Institute (think the MIT of plant science) to insource a money can't buy, ready to go, science team.

How does upp answer an unmet need?

Broccoli growers the world over need to automate their harvest to solve an ever-decreasing supply of harvest labour or they will simply stop growing it. But this is relatively small beer compared to the demand for truly sustainable plant-based proteins and ingredients. upp is about meeting this need with what we already grow. In simple terms we deliver smarter harvesting and cleaner, healthier proteins.

What's in store for the future?

Right now the team's motto is 'Let's get broccoli done'. We want to have the first upp ingredients in menus for 2024/2025. We're piloting our harvesting and 'upplying' technology this year, we're very much looking forward to

sharing the results of these pilots.

What one piece of advice would you give other founders or future founder?

Believe in the idea. There are always going to be setbacks, but if you've got a strong idea and a dedicated team, you can make great things happen.

And finally, a more personal question! What's your daily routine and what rules are you living by at the moment?

I work mostly remotely from my home office in Devon. It can be pretty intense, so I take time to re-energise walking the dogs, a swim, cycle or maybe just lunch or breakfast at one of my favourite spots. I really enjoy face-to-face meetings and use the train to avoid hours wasted driving.

David Whitewood is CEO and founder of [upp](#).

Article by DAVID WHITEWOOD