

Insect-based tech for farmers, food producers and supermarkets, meet Flybox

As part of our quick founder questions series – or QFQs – we spoke to Larry Kotch, cofounder of Flybox about the looming global shortage of protein, SDGs and modular insect farming.

Temps de lecture : minute

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The reason we exist is, to put it simply, to feed the world. The chance of that happening without alternative farming methods, is slim. A particular problem is the “protein crunch”. We have noticed that over time, there is an increased demand for protein to match growing populations. We currently get most of our protein from soy or fish meal which are traditional proteins. The vast majority of this soy is produced in Brazil; in fact, one of the biggest drivers of deforestation in the Amazon is soy. Not only is this hugely impacting our planet's health, but there simply is not enough supply; the world is predicted to experience a shortage of 60 million tonnes of protein/year by 2030.

In seeing this imminent and palpable need for both our climate and our food chain, we decided to create an efficient way for the food system to transition away from unsustainable animal feed and fertiliser, by helping farmers create their own insect protein factories. We’ve had previous experience in this industry and realised there was no solution for the smaller end / SMB scale, so we aim to be the leader in insect farming tech for that end of the market.

Tell me about the business - what it is, what it aims to achieve, who you work with, how you reach customers and so on?

Our goal is to unlock insect farming for every food producer, retailer, and farmer on the planet, so that through increases in efficiency, profitability, and a huge reduction in environmental impact, they can successfully transition to sustainable agriculture, and feed the world: confidently providing abundant, sustainable, and nutritious food to all.

Achieving this will give the world a real shot at achieving the UN's SDG 2 goal of creating a world free of hunger by 2030. We provide modular insect farms, combining three different elements. The three core technology products - the Flybox Breed, Hatch and Grow - can be configured into multiple layouts to build insect farms of any size or orientation for customers in a variety of industries.

The modules have software climate control programmes making them easy to operate for customers. Once in place, the modules can be loaded with organic waste, which is then recycled into protein, fat and other products using the insects. The insect the Flybox uses is the Black Soldier Fly as it's by far the most common and accepted one.

We work mainly with livestock farmers looking to generate their own sustainable protein on-site, organic waste producers, and food processing companies. And, of course, long-term work with the entire food chain from supermarkets down, locating our Flybox farms where they have the most impact and best economics.



How has the business evolved since its launch?

Flybox was founded in 2021 by Andrea Jagodic (CEO), Larry Kotch (COO), Thomas Stringer (CFO), and Mike Walker (CTO), and we operate out of London and Nairobi.

We began in the early days with a small Flybox in Stepney City Farm where we were given free rent and license to do our R&D in exchange for insect products to feed their animals and soil. We used this as an early demo of our tech to raise significant grant and private funding. For the latter half of 2022 we raised over £2.5m in pre-seed capital, which has gone into R&D maturing from the Flybox V1 to the Flybox V3 and establishing our team of 16, who are now split across Kenya and the UK. We now have two early demo sites in Kenya and two in the UK, with multiple commercial sites planned for 2024.

Tell us about the working culture at Flybox

We are a diverse team spread across the world. We accept the Kenyan way of doing things and the British way of doing things and try to learn the best from both cultures. Everyone is very hard-working and gets things done. To thrive at Flybox you must have internal motivation as big things get asked of you and often, because of the team locations, you're doing it alone. When we are together, though, we make sure to spend quality time doing wholesome activities like paintball or bowling.

Unlike a lot of biotech companies, we have a strong emphasis on unit economics with people in the team having strong business backgrounds. We try to bake into every decision rigorous unit economic considerations, constantly putting ourselves into the shoes of our customers and working out what measures they use to evaluate success instead of our own, which are based on sales alone. That makes us a very questioning bunch and the team is constantly encouraged to never let an issue slide until the economics make sense in the most pessimistic of cases.

We are here to make this industry happen, to move it out of the science lecture hall and into real working supply chains, fully justifying itself as a new commercial option for protein production and waste management.

How are you funded?

We have an ambitious R&D roadmap and completed our initial seed round of £2.5 million. We have partnered with fantastic organisations, including Innovate UK, HSBC, and the EU Horizons 2020 Programme.

What has been your biggest challenge so far

and how have you overcome this?

Perhaps the biggest challenge, not just for us but for others in this sector, is legislation. The UK government remains hugely behind on legislation that allows the use of insect products in certain parts of the food system, or even the use of particular waste feedstocks as part of the insect rearing process.

Europe has already adopted such legislation, but it remains to be seen in the UK. While some applications already exist in the UK, by adopting similar legislation the UK could see some serious economic value.

Another huge challenge we encountered, within the actual operation, was air circulation. We had to make sure that each individual insect is in a happy climate and not rely purely on a sensor to inform us of conditions. We had to innovate quite a bit to ensure that the air moves around efficiently in the Flybox® Grow, which is what our patent covers.

How does Flybox answer an unmet need?

Our technology is targeted towards smaller scale farms. Fundamentally, we help food businesses to enter this space and to build their own insect farm.

If you have a lot of waste, consume a lot of protein as part of your livestock farm, or have a lot of food processing, building a system that can sustainably deal with that can be challenging. It has to be bespoke, requires consultants, and has a big price tag – certainly in the Global North.

We provide the right people with the right tools to overcome these challenges. Our flagship model, the Flybox Grow, gives people an on-farm or on-site solution to dealing with their organic waste, reducing the need

for external processing, and cutting waste disposal costs. It is all about lowering the barrier to entry into insect farming and de-risking it for new entrants by providing them with a ready-to-go ecosystem of support.



What's in store for the future?

Our aim is to be the largest vendor of this kind of technology by the end of 2025. Our focus is on customer experience and qualifying customers to make sure they can benefit fully from insect farming. We currently have an insect farm up and running in Aylesbury and wish to expand this further to become a global company with a footprint in as many countries as possible. Specifically, the UK, EU, USA, Asia, Middle East, and Africa are high priority.

Going forward it is likely that we will specialise in a section of the market. Similar companies to ours are already addressing large-scale farms and plants. Due to their enormous size and access to capital, they take 30% of the market.

However, the other 70% aligns much more with our technology, amounting to £1.23B. We are targeting to capture as much of this market as possible.

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

Focusing on the impact of what you are doing and the value you want to create in the world is a healthier frame of mind. Business has its ups and downs, innovation is hard, but your mind doesn't need to go up and down into periods of ecstasy and sorrow. Keeping perspective of one's own small place in the universe and focusing on maximising the good you could do takes a lot of the stress of running a company away.

In a weird paradox the less you make it about you and what you want, the more you find an internal and mindful vocation which becomes its own reward, one that is greater than any you could find out there in the world of things and places.

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

It's hard to define an exact routine as it depends if I'm in Kenya or the UK or travelling. Each day I try to make time to look after my health and body with exercise - I try to combine walking with internal calls to get more steps in - and I try to spend as much time with my family and loved ones in the evening or call them if I'm not near. I also meditate often and try to concentrate on my various limitations and how I can be a better person to myself and everyone around me, even if just a little bit.

I don't burn the candles at both ends, I pick one end, the impact end, and

light there and only there. I've been accused of being reclusive when it comes to nighttime entertainment but come the daytime, I'm happy to explore nature and eat copiously with friends.

Larry Kotch is the cofounder of insect farm-tech company *Flybox*

Article by Larry Kotch