Beta Bugs

Case study

AGRIEPICENTRE
Engineering • Precision • Innovation

> "Agri-EPI Centre gave us the opportunity to grow – with space for the team and for the bugs! Being based here and having access to the support and the network has been a huge factor in our growth."
>
> – **Thomas Farrugia**, Founder, Beta Bugs

- **Agri-EPI Centre supported growth for a sustainable and carbon neutral agri-tech business**
- **Membership offered high level networking and exposure for Beta Bugs**
- **Friendly and supportive environment for innovation**

Background

Beta Bugs uses genetics to boost the output of the established insect farming industry and, in doing so, generates a sustainable alternative protein source that can be used in aquaculture, pork, and poultry feed.

Black Soldier Fly and its larvae have been farmed commercially for about 10 years but the Beta Bugs mission is to double output by genetically improving the insect for large scale production. The company does not produce the protein itself – instead, it focuses on genetics to produce superior larvae with which the producers can increase yield and quality.

The protein feed created through insect farming is sustainable and cost effective, and provides a green and locally-produced alternative to the environmentally damaging production of soy meal and fishmeal, which are prime causes of deforestation, biodiversity loss, and overfishing. As the insects can also be reared on waste, including agricultural and food waste, producing feed in this way is carbon negative and helps reduce the waste being sent to landfill.

The increased yields will mean Black Soldier Fly protein can be competitive on price against existing but less environmentally-friendly feed ingredients.

Beta Bugs use selective breeding techniques to produce heavier larvae and adult flies which lay more eggs.

About Beta Bugs

Dr Thomas Farrugia, originally from Malta, completed his PhD in chemistry at the University of Bristol. He had an already established interest in insect protein as a food source but identified that the fledgling insect farming industry was struggling to upscale enough to make the product cost-effective.

His solution was genetics, and Beta Bugs was founded in 2017 to use genetic science to help the insect farming industry boost production without the need for further capital investment.

Thomas and his team set about using genetic selection to create larvae which would produce heavier adult insects as well as adults which laid more eggs. He said this could allow insect farmers to produce up to 50 per cent more without having to physically expand their operations.

Beta Bugs was launched with an initial £50,000 of funding from Deep Science Ventures, with additional investment totalling £1.5million from Innovate UK, the UK's innovation funding agency, the H2020 EIC Accelerator, the EU's flagship funding programme for SMEs, and the Scottish Government's Unlocking Ambition programme.

In 2019 the company relocated to the Roslin Institute near Edinburgh, then during lockdown expanded into the co-located Agri-EPI Centre.

Beta Bugs now has a team of 12.

How Agri-EPI has made a difference

Agri-Epi Centres – Agricultural Engineering, Precision and Innovation – are part of the UK Government's Agri-Tech Strategy and aim to bridge the gap between industry and academia across the agri-food sector in the UK and globally. A membership organisation, the Agri-EPI Centre offers a host of benefits to businesses including access to cutting edge facilities, support for funding bids and investor finance and exclusive industry events.

Beta Bugs founder Thomas Farrugia said being a member of the Agri-EPI had been a huge factor in the growth of the company.

He said: "It's great to be able to work with a team that's so motivated to enable agriculture to innovate further and develop, and to be able to leverage that.

"They are operating at a higher level, and we are able to slot into the spaces that they create. The team is really supportive of what we do – they get our business and our sector and that really helps.

"What I really like about Agri-EPI is the physical space, being able to build connections into the agri-food supply chain, and the Innovate UK relationships there. The profile the Agri-EPI Centre can give us with key stakeholders, from DEFRA, has been really important too.

"We've had assistance with grant funding and managing building projects, as well as engineering support in terms of kit. Importantly, they've helped us expand and helped the company to grow and create jobs."

Thomas said the company was launched in London with funding from Deep Science Ventures then moved to Hertfordshire before relocating to the University of Edinburgh's Roslin Institute, a world leader in animal genetics, in 2019.

The Agri-EPI Centre on the same site helped Beta Bugs secure EU and Innovate UK funding to expand – and then was able to offer offices and space for a breeding programme.

He said: "Agri-EPI provided us with a great office and space for us to be able to grow, both the team and also the space for the bugs.

"It's helpful to be on site with other agri-tech businesses because it's good to be able to build up connections, share peer-to-peer learning and there are collaboration opportunities between us.

"Some of the grant funding came through Agri-EPI. Without Agri-EPI we would also have been challenged to deploy that funding – it was for the expansion project- and we would have had a backlog on our projects and would not have been able to deliver on time."

Membership of the Agri-EPI Centre has also afforded Beta Bugs publicity for their brand and promotional opportunities within their target market.

Beta Bugs Ltd.

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