HORIZON 2020

A circular fungi-based high-protein feed solution for aquaculture

Results in Brief

Fungus fish food turns out to be good enough for humans

Originally positioned as an aquaculture feedstock, Mycorena's novel mushroom-based protein is sprouting up in the lucrative alternative protein market.

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The global appetite for meat is growing 1.4 % every year and this demand is being met in part by rapid increases in aquaculture. Mycorena's fungus-based fish food offered higher levels of protein than made from typical ingredients such as fishmeal, soybeans or brewer's yeast, and is more sustainable.

However, the company is now looking at a more direct route to feeding the world. "We're replacing farming with fermentation," says Paulo Teixeira, Promyc project coordinator and lead product manager at Mycorena. "The vegan market is saturated with the same sources of protein – soy, pea – which have problems when it comes to the right texture, flavours. There are also issues relating to sustainability when it comes to water use and the amount of land needed."

Promyc's decisive market development was supported by funding from the EU. "This helped us a lot, it came as this side project became the main direction, and we needed to do a lot of prototyping," adds Teixeira. "The SME instrument brought a lot of validation, and when it comes to the food industry, credibility is very important."

Mycoprotein

Mycorena uses proprietary filamentous fungi to create vegan protein that has a fraction of the ecological footprint of other meat alternatives. “When it comes to mycoprotein, there is one big player in the market, Quorn, which has been doing this for a long time,” notes Teixeira.

“Our mycoprotein is created with a different species, which is food-accepted in the EU, and we focus our business on helping other companies create their own foods with Promyc. We want Promyc to be not just a food brand, but an ingredient used worldwide by many people.”

Typically vegan proteins are pulped and extruded for texture, whereas Mycorena’s product is naturally fibrous and has a neutral taste. This makes it a useful base from which to develop new food products, from meat alternatives to vegan fish and snacks.

Feed or food?

“We kept hearing, ‘Why are you not doing food?’,” says Teixeira. “We thought the regulations and market entry would be too hard. But actually, there was a lot more interest and acceptance out there than we initially thought.”

He says selling the product for human use also made it easier to justify the premium cost of a novel product, as many companies are actively searching for the next big vegan protein.

Mycorena’s product also has the potential to be produced in a circular way, where unused food can be recycled as a growth medium for the fungi. The company is now in the process of building an industrial plant to scale up production and run initial trials.

Swedish meatballs

The company plans to position itself in the B2B space, selling the mycoprotein as an ingredient for others to create final products. However, being a new ingredient with a different function, the company has been compelled to prototype several final products to showcase its mycoprotein’s capabilities.

“We recently released a meatball analogue, just so we could show people and customers the potential of our product,” explains Teixeira. “It’s quite a versatile ingredient. Because it has no strong flavour, you can always have it added to products one way or the other. Sweet or savoury, you can use it in almost anything.”

Keywords

Promyc, Mycorena, fungus, mushroom, protein, alternative, vegan, food, fish, meat

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