

## EIT Food Fight Podcast - S3 E11B - MarineFeed\_V2.mp3

**Lukxmi Balathasan** [00:00:06] Welcome to this bonus episode of The Food Fight podcast from EIT Food.

**Matt Eastland** [00:00:10] In these episodes, we want to shine a light on new projects and agrifood start ups and hear about their efforts to fight for a better food future. This week, we're handing over to Fredrik Noren to tell us about Marine Feed, a start up creating sustainable products made from something called a sea squirt.

**Fredrik Noren** [00:00:36] Hi, my name is Fredrik Noren, and I'm the founder and CEO of Marine Feed and Marine Taste in Sweden. We are part of EIT Food rising food stars and we are fighting for the future of food because we have a brilliant idea with a low carbon footprint food source and a well tasting umami fond broth.

[00:01:02] I'm an entrepreneur, but I'm a marine biologist. I know that there's a huge amount of a novel invertebrate in the sea that is not just gross, like a weed in the scene in the Swedish sea. So my idea, my innovation was to use this fast growing invertebrate for producing alternative proteins for a fish feed and later on also for food. And while we did that we also found that when we were boiling these sea squirts, that's what we are culturing in harvest. We found that it smelled very tasty in the production facility. It tasted like crabs or lobsters or shrimp. And that was the start of our food taste enhancer production. So we cultivate and harvest and process a completely new aquaculture species. So we have developed this method in large scale. That's what we do. And we have done it for three years now.

[00:02:20] First of all, we use a very similar system as blue mussel culturist use and in Sweden, blue mussel culturist, they go out and put out new ropes, new culturing bands in the water every spring. But if we are a few weeks earlier, then the sea squirts are spawning. So we put out not brand new, but clean ropes at least, where upon the sea squirts can settle on and start to grow. So we do that in May and now in August, after three months, we see that there has been a huge growth. They are already four or five centimetres long. So now in August, September, that's when the harvest season starts. We have the harvest season from September to the end of April, beginning of May. And the harvest is very simple. We go out with the harvesting boat, a standard aquaculture boat, fishing boat, whatever so and we pick the ropes up. And if I dive down, it's a marvellous view. A standard working week for us is that we harvest two times a week and we harvest approximately one tonne every day. And we transport the harvested sea squirts to the production facility in a nearby city. We're transported by the sea. So it's wonderful work with a lot of the shipping and then being on the sea, it's great. In the production facility we boil the sea squirts. We have a really huge boiler. And from the boiling water we produce the liquid broth and the remaining solid sea squirts the boiled sea squirts, they are dried and then we grind. We grind them and mill them to a meal, a protein rich meal. That's what we do. So we have two products from the same harvest.

[00:04:27] Marine feed has 10 sustainability benefits that we are proud of because we doing this for a healthy sea that is our key driver. We have exceptionally low carbon footprint, only zero point eight kg of carbon dioxide, equivalent per kilogram protein. That is the lowest carbon footprint per protein, as we know of. And most, very much, depending on that, we have a zero waste production system. There's no waste in our production system. We also harvest nutrients. Since the sea squirts are capturing nutrients in their proteins, we remove nutrients from the sea. And that is very important in the Swedish and

Nordic Sea, in the Baltic Sea, where we have too much nutrients. We do not use any land or we don't compete with arable land, we don't use any fertilisers, we don't use any pesticides, and we don't use any fresh water in the culturing. We use seawater. We have a very high biodiversity in the culture units and we also have a very high production of biomass yield. We have seven times higher biomass production per hectare compared to soybeans. So the marine system are very efficient of producing proteins and transforming sunlight and carbon dioxide and nutrients into phytoplankton that which is captured and eaten by these sea squirts. So it's a very high, efficient system that we harvest from.

[00:06:21] We have been an EIT Food rising food star for a year now, I would say the network are the most important for us that are new in the food business. It's really helpful to be a part of the food ecosystem, to get contacts with the food companies and to learn to know the food market better. That is the main benefit for us to be a EIT Food rising food star.

[00:06:56] We will substantially be a part of the protein industry and production because there are so huge, enormously potential in the sea. We're very humble because we are a part of it. But marine production can produce a lot of food. The second thing for us, which we might be even more proud of, is that we are producing a taste enhancer, super organic umami flavour without any additives at all, etc. that will grow and we will have given the world a new taste. That is something that's not happening every day at all.

[00:07:42] We have a very productive sea that we have been overfishing for the last time, but now we are presenting a new, completely sustainable fishery. That we use a very productive sea, European sea, and that is something that we want the food industry to really think about, it could be a profit for everyone.

**Lukxmi Balathasan** [00:08:20] Thanks for listening to this bonus episode of The Food Fight podcast

**Matt Eastland** [00:08:24] to find out more and to learn how you can get involved in the fight for a better food future, head over to [eitfood.eu/podcast](http://eitfood.eu/podcast) EIT Food and join the conversation via #EITFoodFight on our Twitter channel @EITFood. For more information on Marine Feed, head over to [marinefeed.com](http://marinefeed.com).