EIT Food Fight Podcast - S3 E10B - DryGro V1.mp3

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

Matt Eastland [00:00:11] 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 future. This week, we're handing over to pieces to Sean Peters to tell us about DryGro, a start-up who've created a new sustainable way to grow animal feed in desert environments.

Sean Peters [00:00:35] Hi, my name is Sean Peters, I'm the CEO at DryGro. We're part of EIT Food Rising Food Stars. And we're fighting for the future of food because I think one of the biggest challenges of the next two decades is how we will feed a growing population. It's a really important problem, and we're really excited to be involved in the solution.

[00:00:57] So DryGro is an agriculture technology company working on a plant based alternative protein, specifically working on a crop called Lemna or water lentils, sometimes called duckweed. You'll probably recognise this crop from the canals in London if you live in London or literally any major city or countryside all over the world. And it happens to have a very high protein content, protein content that is comparable with soy, which is the global world standard in protein for human and animal consumption. So since 2015, we've been doing research on this crop, working on ways to build industrial scale production facilities, facilities that could really matter for producing protein for humans and animals, we are growing this crop in large enclosed raceways, use a really sophisticated data management system to understand how to manage that internal environment. And we work with universities across Europe to improve the genetics of the crop that we have within our growing system. Nothing like GMO, just standard, you know, crossbreeding, things like that. We're really interested in the future of protein and we think that this crop is one of the most important crops to fill that expanding market. The crop itself is a tiny green floating microphyte, very, very small. You could fit, you know, maybe five of them, maybe ten of them on your fingerprint. But they happen to have a very high protein content, again, comparable with soy. There's been a few attempts to commercialise this crop in the past, but nothing that's really hit the kind of industrial scale that would matter and each of the previous attempts has, you know, different issues that would prevent that. So when we were starting out, we looked at what had happened before and we worked with pretty incredible engineering and plant science team to build a system that we think had really impact this this global market demand.

[00:02:50] The inspiration for DryGro came from looking at really the future of food, we were looking at what the world of 2050 looks like and how we're adding two billion extra people to the planet and how per capita those people are eating more calories and specifically more protein per person. So we started to look at the crops that could tangibly make an impact here. If we look at the crop that's going to expand the most in land use of any other crop, that crop is soy, surprisingly. And that's because soy is the number one protein ingredient for animal feed. And as people are going to be eating more animals than they are going to need more soy. So we started to look at alternative protein crops that could not only be used as an alternative for soy in animal feed, but also could be used in some of the really exciting alternative meat products that were starting to emerge onto the market. Things like, you know, impossible foods and beyond meat, those kind of alternative meat products still use either soy protein isolate or protein isolate or other kinds of protein isolate ingredients. But of those isolate ingredients, there's all kinds of challenges. Sometimes these ingredients have allergen risks. Some of them aren't very

functional, many of them lack emulsification properties. But the protein coming off of water lentils is really wonderful on all of these fronts. It has very low allergen risk. It's a great emulsifier, very high in B12, which for many plant based diets is a challenge to get and for the future of plant based meat companies or human consumption protein products we need a variety of protein ingredients in order to meet all kinds of different needs that are evolving in the market. And so this is a great addition to what's already there, supplementing, you know, pea protein isolate and even things like potato protein isolate as an alternative that fits very nicely in expanding out the range of final products that can then be produced.

[00:04:48] We have a product that is whole plant, we use all of the plant, many of the other protein ingredients you have to crush and then separate and you only part of the plant for this this kind of thing. The second benefit is that we can produce on otherwise arid land. We build our production raceways on places that have, you know, a decent weather profile. But we don't need terrestrial arable land in the same way that many of the other terrestrial crops that are used in this industry do. And then finally, we use very little water comparatively to traditional terrestrial crops. So that again opens up new land. So with the changes that are coming over the next two decades, we need to adapt to climate change. And I think this kind of production system is a great way to lead the charge in that adaption. But it's also more resilient to climate change than traditional terrestrial crops. We are able to produce in these kind of enclosed manufacturing environments and also change the parameters of those environments. And because of that, we're able to weather some of the changes that might come on a daily, monthly or yearly basis that terrestrial crops are, you know, some are really struggling with. And we don't know exactly what the future holds on that front. So there's a major advantage from a climate resilience perspective as well.

[00:06:08] So we are EIT Food rising food stars, and we've been really lucky to be a part of that programme. It's been really fantastic to receive the support that we have from EIT Food team. I would recommend any company that is in the food space who is interested in bridging relationships with larger corporates, who are finding investors or just really building up their network amongst researchers to pursue the Rising Food Stars programme. One of the major challenges I think, of building these kind of fairly complex food companies is that it requires so many different types of expertise. You can't just have a plant scientist. You need often a plant scientist plus an engineer, plus a food chemist plus a process engineer - it all adds up - and you might know one or two of those folks, but really this kind of entrepreneurship even more than other kinds of entrepreneurship. It's a team sport. EIT Food Rising Food Stars programme really helps you find those other team-mates and build that community that will help you succeed.

[00:07:13] So it's been really exciting to see this growth and interest in plant based meats and other alternative proteins in Western markets. I think the real challenge, though, will be to see the same kind of increase in demand from emerging markets. I feel like we are at the tip of the iceberg starting a journey that is going to be very long over the next few decades. But that also leaves a ton of space for new companies entering these markets. And I think there's never been a better time to join EIT Food.

[00:07:45] If I can send one message to the wider food production industry, I would say to question how you define yourself today and whether that will fit into the future. I've had some really great conversations recently with traditional meat production companies who are now starting to get into the alt meat space. And you would think that those are very different industries, but they see that as a future market that is going to grow and

potentially encroach on their market share. And so now is the time to start investing in some of these alternatives that are entering these and growing. I think the market of the future will be very different than it exists today. So I challenge every company to be forward thinking and imagine the world of 2050 and how their company fits into it.

Lukxmi Balathasan [00:08:36] Thanks for listening to this bonus episode of The Food Fight podcast

Matt Eastland [00:08:39] to find out more and learn how you can get involved in the fight for a better food future, head over to eitfood/podcast and join the conversation via #EITFoodFight on our Twitter channel @EITFood. For more information on DryGro, head over to drygro.com