27 Spotlight - Urban Crop Solutions on vertical farming.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 startups – and hear about their efforts to fight for a better food future. This week, we're handing over to Maarten Vandecruys to tell us about his startup Urban Crop Solutions, who are pioneering technologies for state-of-the art indoor farming systems.

Maarten Vandecruys [00:00:36] I'm Maarten Vandecruys. I'm the founder of Urban Crop Solutions. I'm also CTO of the company. And I'm in charge of the R&D developments, as well as the business development. We're fighting for the future of foods by bringing production and consumption closer together and shorting the supply chain, offering higher quality produce to the end consumer.

[00:00:57] Urban Crop Solutions delivers total solutions in the indoor vertical farming industry. That means hardware, software, and plant growth recipes. Basically imagine a warehouse with crisp white walls and plants growing in there under LED lighting, with climate control. In these environments, we create the optimal parameters for our plants to grow without using any pesticides or herbicides – and by optimising the plants on nutritional level. Combined with that, our clients, they have access to an entire software suite, linked to a database of crop-growth recipes, which are developed by our plant biologists. So for each and every crop they look at the most optimal parameters, to grow that – like temperature, humidity, CO2 and so on – and the operators (our clients) they just have to press the button of the crop they want to grow, and from there on, everything happens automatically. Full transparency from seed to harvest.

[00:01:56] It's an evolution of certain aspects of farming, which is actually following technological developments that happened over the last decades. It will have an added value to the existing farming industry, for example, a farmer who can use this technology to do his own propagation- but can also be used aside that - for example, in areas where you don't have arable land, where you don't have the possibility to put greenhouses (imagine Nordic regions and imagine desert areas).

[00:02:22] Basically our plants, inside our plant factories, they have every day as a summer day without a single cloud in the sky.

[00:02:31] Well, I think there are several reasons why the implementation of indoor vertical farming is of high importance. Maybe one of the most important ones is the quality of the produce – that this can be completely controlled. Basically, that we're getting back to nutrients that the plants had originally decades ago. And what happens? Plants have been bred for disease resistance for yields. But nobody looked at the quality anymore and we're missing that – that there's a huge discrepancy in that. A second very important element, is the water consumption that agriculture is doing right now – the impact on the water levels. For example, we are based in West Flanders in Belgium, and over the last 10 years, the ground, the soil water levels, went down 100 metres because of agriculture and industry. And this is a bit (for most people) a bit far from their beds... But is a very crucial element that nobody is paying enough attention to.

[00:03:26] One of my favourite examples of how our technology is being used today is actually Belgian company called Puratos Group, who was actually a bakery supplier. So

they make sourdoughs and bread, et cetera. And they exist for 100 years this year. What are they doing right now? They're looking ahead in the future, like how will we produce bread 100 years from now? And what is their answer to that? Well, how will it produce breads when we live on the planet Mars? So we've built them completely hermetically sealed system, in which we [can] produce our plants.... in which people can live... we regulated the oxygen, the CO2 and the nitrogen levels in the air... and where you have this complete symbiosis. And they're right now growing wheat inside this system, and they also have a bakery department where they make their breads. It's an incredible innovation by this company and is also amazing to see how we have such large corporates grouped together with, let's say, growing companies like ours trying to actually realise those innovations.

[00:04:23] We always start from the plant. We don't start from the technology. We look at what are the needs of the plant, at which stage of growth. And once we've identified that, then we build the most optimal solution around that. As we were going along, we noticed that there's still so much that we don't know yet, regarding how plants react to certain elements, to certain parameters and how much there really is to discover. And I think that's really the exciting thing - we're only at the beginning of something that will be a huge industry in the future.

[00:04:55] Basically, we have two main departments inside our company, which is our team of plant scientists (so the plant research developing these growth recipes for our clients) and then the engineering and the project management department. Those are the two main elements. And that actually describes what our company does. We are actually at the crossroads of plant biology and factory engineering. And by bringing those two fields together, we can deliver total solutions to our clients.

[00:05:23] The nature... or let's say, how our company was founded... was basically to focus on people and on planet, by bring more nutritional plants by using less natural resources. So there we have a very circular approach. And I think that's really how we should approach the industry and this business by being as holistic as possible. And that's where the real added value will lie. We're seeing a huge awareness improvement, regarding the quality of our produce, the origin... And basically the transparency throughout the entire chain. When I look here also at the other companies, which are a member of EIT Food, most of them are focussed on exactly that. And I see that as a huge added value, not only for us, but also for future generations. And that really excites me.

Lukxmi Balathasan [00:06:11] Thanks for listening to this bonus episode of The Food Fight podcast.

Matt Eastland [00:06:15] To find out more and to learn how you can get involved in the fight for better food future, head over to eitfood.eu/podcast.