Is the Future of Alternative Proteins Dependent on Taste?

Matt Eastland:
Hi everyone, I'm Matt Eastland. Welcome to one of our special docu-episodes. In these explorative deep dives, we tackle the big questions within the food system, uncovering fascinating stories of innovation and change. Time to further explore the groundbreaking ideas and incredible people driving the future of food.

Connor Morrin:
When you think about your favourite meal, What makes it your favourite?

Peter Klosse:
I have such a passion for food. There are so many foods that makes it very difficult for me to choose one.

Connor Morrin:
Is it the nostalgia? Maybe the ceremony of the dish? For most people, it all comes down to one thing. Taste.

Peter Klosse:
When food enters my mouth I think I will be extremely curious.

Connor Morrin:
Right now the food industry is undergoing a revolution. The rise of alternative proteins. But one major obstacle still remains. Taste and texture. As supermarket shelves fill with everything from pea-based chicken substitutes to algae-derived seafood alternatives, the question is how can these products replicate the complex flavours, juiciness and mouthfeel of their traditional counterparts? Cracking the code on these challenges is crucial for the alternative protein industry to win over consumers.

Peter Klosse:
If they have a good alternative in having delicious foods, then they won't object to having those as foods because, well, nobody objects to eating something delicious, I think.

Connor Morrin:
As the sector evolves, solving taste and texture issues is more important than ever for innovation and success. Hey, it's Connor here for EIT Food. You just heard from Peter Klosse, also known as the Taste Professor.

Peter Klosse:

Hello, my name is Peter Klosse. I'm from the Netherlands. I was born in a restaurant, so I have taste and culinary education and love for food, passion for food very close at my heart. And in taking over the restaurant that my father founded with a Michelin star and all that, I started to be intrigued by taste. And I did a lot of work and a lot of study, a lot of research on taste, which culminated in a PhD on taste classification and a very different view on taste.

Connor Morrin:
Today, Peter will share his insights on the alternative protein market and whether cracking the code on taste is the key to driving its wider adoption.

Peter Klosse:
You imagine being born in a restaurant and this restaurant, as a Michelin star, as a kid of, let's say, four or five, I was already roaming around the restaurant and smelling all these wonderful foods in the kitchen. And then, of course, it's also good to know that the restaurant is specialized in game. We are right in the midst of the Royal Forest. It's the hunting grounds of the Dutch royal family. I've grown very accustomed to eating all kinds of natural meats that come right from the forest, like deer and roebuck and wild boar and things like that. So I'm very, let's say, spoiled by having had all these beautiful foods in my early years, where other people discover the greatness of food when they are older and are able to spend money on it. I was born in such an environment. Well, to start with taste, the traditional view on taste, that there is some kind of a configuration of sweet, sour, bitter, acidity and umami. And then there is also texture. And then taste and texture with odors together would be flavor. I think that taste and texture can easily be integrated together in the concept of mouthfeel. And this is because salt and acidity and sugar all have mouthfeels as well. And apparently, clearly, proteins and carbohydrates in some sort of form are also rich in mouthfeel. So mouthfeel is, I think, the connecting value, the connecting concept. that is connecting the gustatory side, so the sweet-sour-bitter side, and the macronutrient side. And the macronutrient side is the fat-protein-carbohydrate-water side. So together they make up mouthfeel. And then what I developed is a kind of a model for mouthfeel, having dimensions in mouthfeel that really help understanding how these dimensions work and how does that work in food. Meat is not required to have a delicious dish. Neither is dairy, neither is egg, neither is whatever. The essence of a delicious dish is that it looks nice, it smells nice, that it has the differences in mouthfeel, that umami is present and things like that. So if you look at your food or the new dishes a little bit more abstractly and see it as a design process and then have, let's say, rules for design and know where you have to go and know how to prepare things, how to get those desired textures, then you're alright. Because texture is really, mouthfeel is really what is the essence of taste. For me, mouthfeel is taste. The main problem that alternative proteins face now is mimicking, in a much better way, the mouthfeel of meat. And the mouthfeel of meat is

mostly, very often, a combination of drying, because it's a drying substance, which you can clearly see if you overcook it a little bit, and then it also has moisture. So it is the interesting mix of retaining moisture, keeping moisture in, in a drying texture. So that is, I believe, the biggest challenge in developing meat alternatives, because then you need the dryness, but mostly if it's dry, it has no water retaining capacity, so the water runs out. So what you call this clay texture is, I think, very needed to keep the water in, the juiciness, to give it some kind of a juiciness. So what needs to be figured out in that section is figuring out how do we get this interesting or intriguing or, well, fascinating mixture of dryness and moisture, which is very, very elementary to meat. The future of the alternative meat market is made dependable on taste or on flavor or on the whole thing. But there are other problems as well that make this future doubtful. Even if we solve the taste part, then still we cut down rainforest, then still we are having this monoculture of soy, then still we have a loss, a huge loss of biodiversity. So even though taste could be figured out, then still we are on a path that is not a solution. It doesn't lead to a solution. In any case, I believe that maybe the lab-grown meats have more future, because that could... There are still many challenges to solve as well, and it requires a lot of energy. Maybe at the moment it's not the most sustainable solution, but nevertheless, that is at least real protein, and it is an innovative solution. And I also believe there is a future for different types of alternative proteins that, for instance, come from bacterial or yeast or fermentation types of processes. So there are some futures, but if the future is turning soy or peas into meat or meat-like things, I'm not very fond of that solution. There are so many other good solutions. So not using meat in dishes where meat is not needed. And then again the tasty question is around the corner because then we need to explain to people how vegetarian dishes or how vegan dishes can be very delicious and tasteful. I call that the CAT approach, and the CAT approach is the C is for convenient, and the A is for affordable, and the T is of course for tasty. So what we have seen is that in the last, let's say, 20, 25 years, the food industry has become hugely important and dominant in our food choices. So the big question that we face and the big challenge that we face is how do we get the better foods for the world to be just as convenient, just as affordable and just as tasty as the ones that we, well, have found out that are not good for the world and require people or ask people or suggest to people to give that up. So if you say to people, hey, stop eating this, we face the challenge that people like it and they can afford it and they understand it. And if you come with a solution that's either one or less convenient or less affordable or less tasty, it will never work. So the big challenge that we have is to include the food choice of the consumer, seen through the lens of this cat approach, and then figure out what these new foods look like and how can we seduce the consumer to choose for these options. And the other People that really could be helpful in this transition are both chefs and I would believe in their wake also retail organizations. And chefs because they hold keys of deliciousness. Chefs know about culinary traditions. They know about culinary techniques. They really could help reaching out

to consumers. and help them with making different choices and helping them with, hey, this is the way you prepare this or, hey, listen to this. This is the easy way to do that. They could really be very instrumental in helping people with making different choices. And together there is also, let's say, big retail. They are one of the most important people that do advertising. They have their own magazines. They have the opportunity to do in-shop demonstrations. So they really have a good opportunity to connect to the consumer. So I really believe that big retail together with chefs, but chefs first because they are the people and you can love chefs, you can like these people, you can go to them, you can touch them. So that's nice. I think the chefs first, they could be the true active change agents and then retail, farmers markets and many other things could be reorganized and regrouped. to help the consumer to make the better choices. And I call that concept the concept of vital gastronomy. So let gastronomy be a way to solve our food and health crisis. My message to you would be take food seriously and reinstate food as the primary source of vitality, which is good for the planet, which is good for the people. And in this, it's very good to know that you can talk about this very globally and very abstract and very big, but everything starts small. Every person, every individual, by making different choices, is a part of the food system and will create the new food system, the food system that we like. Because currently all the food decisions of now are the food system of now. So changing our food choices is very fundamental in creating this new food system that we need and start with that today.

Matt Eastland:
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