

10/30/2019

The Future of Plant Protein: An Interview with Henk Hoogenkamp

The renowned food technologist shares his insights on the pitfalls of explosive growth and what's next for alternative "meat".

It was 1990 and Henk Hoogenkamp had a decision to make: whether to continue working with animal protein or to accept a job offer to work with plant protein. At the time, the world of plant protein was basically limited to the use of soy protein as a substitute for meat in developing countries. This was a far cry from the upscale animal protein applications he was accustomed to working with.

When he decided to make the jump, his surprised friends and colleagues thought he was crazy.

"People didn't think making meat out of plants was a smart thing to do," he recalls.

But for Henk, it was a no brainer. And time proved him right. According to the investment firm UBS, the plant-based protein market was valued at \$4.6 billion in 2018 and is projected to hit \$85 billion by 2030.

"A lot of people tell me I have a talent for predicting the future," he says. "But for me, it's just logical thinking. If you look at the beef value chain, it's just not sustainable over the long-term. By 2050, the world population is projected to hit 9.8 billion people. There will be a great need to produce more using less. It just makes sense that we would be developing certain components of meat with elements that are readily available in plants."

Since that fateful decision, Henk has become a world-renowned plant-protein technology expert and a prolific writer on the subject, having authored 18 books and chapters, and more than 500 articles. Additionally, he sits on the boards of various public companies and serves as a trusted advisor to the leading food ingredient and equipment companies.

Soon after the Anuga food fair, GPC reached Henk by telephone and spoke with him about the boom in plant-based protein and what it means for the future of the global pulse industry.



A sample of the plant-based food products exhibited at Anuga this year.

GPC: Could you tell us a bit about your background and how you got involved with plant protein?

Henk: I grew up on a farm in the Netherlands, right on the border with Germany. It was a mixed farm, with cows, pigs, chickens and a lot of land for growing vegetables that we would barter with neighboring farmers and people in the community. You could say farming is in my blood. My mother tells me that I could milk a cow before I could properly walk!

In terms of my professional career, I've been involved with plant-based protein since 1990. But I started out in the animal protein business. My first job out of college was in meat processing. That was in the early '70s. From there I transferred to Friesland Campina, a farmer-owned Dutch dairy company, which was very natural for me. My grandmother made her own cheese, so I grew up knowing quite a bit about dairy.

Then in the '80s I got this urge to go abroad and I resigned from the company to pursue this dream. The company, though, asked me to stay on and allowed me to relocate to the country of my choice. I picked the U.S. That's where I did my work on sport and infant nutrition, and emulsifying meat products.

Then I got a call from DuPont Bioscience and they offered me a job that was too good to ignore. A lot of people thought I was crazy for taking it because it meant changing from the upscale sort of applications I was doing with animal protein to working with mainly soy protein, which at that time was only being used as a meat substitute in developing countries.

But while others saw it as a step backwards, I saw the potential for plant protein in other applications. Looking back at the past 20 to 25 years, a lot of that has come to pass. But I was ahead of the curve. I did a lot of development for McDonald's in Indonesia and the Philippines on products that have become world bestsellers.

I stayed with Dupont for nearly 18 years. After that, I sort of retired. I felt I was burning the candle on both ends and needed to slow down. Now I dedicate myself to writing and publishing, and to traveling to events I'm invited to all over the world. I frequently visit biotechnology companies in Silicon Valley, but I'm also going back to the basics. For instance, I'm advising a couple of farmers in Alberta, Canada, who want to start making organic pea protein.

GPC: What trends are you seeing today in plant-based foods?

Henk: I'm actually getting a little nervous because so much is going on in the plant-based world. There's plant-based beverages, milk and meat, and I worry that it's all growing too fast, that we may be seeing a bubble. I hope that is not the case, but I just came back from the Anuga Food Show in Cologne, Germany, and there were maybe 50 to 80 different companies all trying to become the next Beyond Meat type company.

My advice to the pulse industry is to remain humble, keep a low-profile and don't make any health claims. When industries start to make health claims about food, they are on the wrong track in my book.

GPC: Could you elaborate on that? What is the danger there?

Henk: Well, look at what happened to the soy industry. Soybeans have oil, protein, fiber and carbohydrates. You can take out the oil and the carbohydrates, and you are left with very good protein. But when we started working with soy protein, the applications were relatively low-end, like I mentioned.

Now, having said that, soy protein also has isoflavones, like genistein. Genistein has very low estrogen effects. So, the industry figured that if the isoflavone could be isolated, they could position it as a pseudo-pharmaceutical product to alleviate PMS and menopausal symptoms. That would create a higher value for soy protein.

Well, that's what they did and a couple of years later millions of women were eating these isoflavone pills like they were popcorn. Later, it came out that the scientific studies were based on flawed information, and some were outright fake studies. The whole thing backfired bigtime in the press and on TV. Women felt betrayed, and a sort of boycott set in in the U.S., Canada, New Zealand and Australia. Even now, 15 years later, the soy industry has not really recovered from that blackeye. And that's just one small part of a much bigger story.

In any event, the downfall of the popularity of soy protein opened the door for pea protein.

GPC: How do you see the future for pea protein?

Henk: There are quite a few moving parts to this whole story. With pea protein becoming so popular, I am a bit afraid that perhaps overcapacity is going to be built, especially in Canada. Though at the same time, because of climate change, Canada will become a major pea protein producer moving forward. I predict that by 2025, Canada will have about 30% of the pea protein market.

But what is not being recognized right now is that China is not sitting still. They are converting mothballed soy protein plants for pea protein production. So, there is going to be quite a lot of pea protein made there, not just with peas grown in China, but also with peas imported from elsewhere.

On top of that, new types of pulses will come to the market. Some of that is already happening. I myself am very much involved in isolating protein from chickpeas, mung beans and fava beans. That will be a welcome opportunity for farmers.

GPC: That's interesting. It brings to mind what Beyond Meat CEO Ethan Brown said about pea protein not being all that special.

Henk: That's right. Pea protein is a great product, but when you make a blend, or put a couple of different types of protein profiles together, you have a better product than if you stick with just one.

But speaking of Beyond Meat and similar companies, like Impossible Foods, keep in mind that when you talk about plant-based meat, 52% of all the beef produced in the world ends up as a hamburger. So, it doesn't take a rocket scientist to figure out that the plant-based food

industry's first target should be a product that simulates a beef burger. There are of course many other types of meat alternatives, like plant-based chicken, fish and pork that are starting to come on the market.

So, there are opportunities for phenomenal growth across the board for pulses. The big increase for the moment will be in pea protein, and if the momentum keeps going, especially in plant-based meat and plant-based beverages, like milk alternatives, the market will probably see double-digit growth for the next couple of years.