NextGenProteins Newsletter

Overcoming consumer's concerns related to novel ingredients

Interview with Kyösti Pennanen, consumer scientist from VTT Technical Research Centre of Finland. His role in the NextGenProteins project is to provide consumers an avenue to express their views on NextGenProteins and influence the product development and commercialization of the products.

Why are you trying to gain a European view on consumers' attitude towards alternative protein sources and processes as well as food/feed containing alternative proteins?

Kyösti Pennanen

Alternative proteins have lots of potential in tackling the global grand challenges related to climate change, feeding the growing population, just to mention few. To my mind, consumers have a key role in enabling this potential through their consumption choices, but this is not straightforward. Consumers, including me, are used to certain foods, raw materials in food production, ingredients, taste experiences and prices of food products. Accepting and eventually replacing something in our diet with something that is perhaps unfamiliar is demanding. Therefore, to make the products with alternative proteins attractive to consumers, we must first understand how consumers feel about the ideas we have in the project; what are the shortcomings and what are the features that add most value. This understanding provides us the first tools to think the meaningful ways to introduce the products to consumers in an acceptable manner. In addition, I don’t think that there exists

standard ‘European consumer’ when it comes to food. Europe holds lots of variety in terms of national or even local food cultures. That is why it is of utmost importance to take European view on the matter. Solution that works in Finland might not work in Italy. To make significant impact on tackling the global grand challenges we must understand these cultural differences and adapt the products and communication around them accordingly.

How are you doing it?

In NextGenProteins project, we conduct two independent but interlinked studies with consumers. The first study, which we are currently finalizing, had the aim of understanding what type of beliefs and meanings consumers associate with the novel ingredient processing technologies. In addition, we wanted to understand how consumers think about the idea of incorporating novel ingredients with food products in different product categories. The study was qualitative by nature. In total, we carried out 24 focus group discussions in Finland, Germany, Iceland and Italy (six focus groups per country) with consumers who avoid or have reduced their meat consumption and with meat consumers. The second study, which we are planning now, will be quantitative by nature. The aim is to develop general understanding on consumers’ attitudes and intentions towards the novel ingredients and food products incorporated with the ingredients. We will also take a wider view on European consumers than in focus group study

through involvement of consumers from 6-8 European countries with the study.

What did you find out so far?

In general, the focus group study results indicate that consumers are familiar with the global grand challenges and the need for solutions to increase the environmental sustainability of food production and consumption. From that viewpoint, the participants had positive attitudes towards the NextGenProteins. On the other hand, the results also indicate that there were some reservations among consumers related to NextGenProteins. It was evident that single cell proteins were not so well known by many of our study participants, which caused some suspicions. Insects were more familiar but perceived slightly unpleasant part of the diet. Perhaps the most accepted ingredient was microalgae, but some reservations were made in relation to sensory aspects of products with microalgae. However, as always with the focus groups, the above mentioned concerns did not apply to all participants. There were also very positive views on insects and their potential to reduce the environmental burden of food production and consumption as well as open-minded attitudes towards single cell proteins.

One thing what we learned from focus groups was the importance of clear and understandable communication of the novel ingredients and technological processes behind them. Food is very sensitive issue to many consumers and they do not want to take any unnecessary risks with it. In our study, we provided the

participants information about the technology and processes behind the NextGenProteins. This caused some suspicions about the naturalness and safety of the ingredients. On the other hand, the participants also emphasized the need for a transparent and trustworthy information about the processes and technologies. Thus, there is a thin line between providing ‘scary’ information and too little information.

Finally, perhaps the most important message from consumers was the need for proper sensory properties of the products with NextGenProteins accompanied with reasonable price. Naturally, this is something what consumers emphasize in all studies concerning food, but it is also something what is extremely important to take into account, especially in terms of completely new products. It is possible to overcome consumers’ concerns related to novel ingredients and win their trust by introducing them with tasty, sustainable and affordable foods.

Grinded Larvae

First steps in development of Food products containing NextGenProteins

In a joint work of Grimur Kokkur, Fazer, Harryda Karlsson, Biozoon, Matis, RISE and TTZ, the first lab scale trials of food products containing microalgae, insects and single cell proteins were conducted.

For this purpose, the first batches of NextGenProteins proteins produced were used. The main purpose was to observe the effects of the proteins on sensory properties (appearance, odour, flavour and texture) of the different foods. The results will be used for modifications of food product recipes and production processes as well as providing input for adaptation of proteins for food applications.

First NextGenProteins Feed for Broilers and Fishes

In a joint work of Amadori, Naturalleva, UNIBO and TTZ, the first batch of feed including Microalgae, insects and Single Cell Proteins as the main source of protein were produced.

Taking the nutritional needs of the broilers and fishes as well as the nutritional and physical characteristics of Microalgae, insects and Single Cell Proteins into account, feeds containing the alternative proteins were formulated and produced at pilot plant level using pelleting and extrusion technology.

Before starting Dose-response and field trials the feeds are currently analysed for proximate composition, density, floating rate, expansion, texture, durability, oil leaking, pore dimension, starch gelatinization rate and water stability.

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