Press release

Oils and fats: Nutriswiss draws on molecular biology findings

Advanced sensory research informs product and process development

Lyss/Switzerland, June 2024 - Sensory perception plays a decisive role in the evaluation and acceptance of foods. As a leading Swiss specialist in the sourcing and processing of high-quality oils and fats, Nutriswiss AG is incorporating latest findings from sensory research into its development processes in order to offer the market lipids with optimal sensory, functional and physiological properties.

Whether oils and fats are perceived as tasty and pleasant depends on a variety of sensory stimuli. Smell and taste, combined with other sensations, are the most important. Taste is often reduced to the papillae of the tongue and the five basic tastes. However, numerous studies show that at the molecular biological level, various receptors and inhibitors on cell surfaces also have a direct effect on the human metabolism and influence perceptions of fats and oils. Nutriswiss takes these new findings into account when developing products and processes.

One example is the G protein-coupled receptor GPR120, which plays an important role in the regulation of energy metabolism, insulin sensitivity and inflammatory responses. The newly characterized receptor binds to fatty acids of different lengths, which trigger its activation. Fatty acids are cleaved from triglycerides during lipolysis in the mouth, but they can also be found freely in edible fats and oils. By interacting with the receptor, they directly influence vital metabolic processes and the sensory properties of food. Nutriswiss uses highly developed refining processes to influence the lipid composition and the concentration of fatty acids. In this way, short-chain fatty acids can be selectively removed so that fats taste more neutral and the fatty acid composition can be optimized. The interaction of fat and bitter receptors is another interesting area. The latter are recognized by T2R proteins and the perception of bitter and fat tastes interact. In addition to receptors, inhibitors are

important in the regulation of sensory perception. They can inhibit the activity of sensory receptors and thus modulate taste and smell.

The number of taste buds and receptors on the human tongue is variable and differs from person to person. It therefore has a major influence on nutritional physiology and can affect taste preferences as well as the tendency to become overweight. The receptors react differently depending on the fatty acid composition. Nutriswiss strives to remove unwanted fatty substances and to optimize the lipid composition through state-of-the-art analytics and optimized processes in order to offer first-class products in terms of sensory and nutritional physiology.

Martin Mäder, Head of Industry Sales at Nutriswiss, sees basic research in sensory perception as an important building block for future product development: "This is an exciting area of research that we are following closely in order to better understand the complex world of sensory perception of oils and fats and to continuously optimize our processes and products. The findings may also contribute to the development of new flavors and fragrances in the future."

About Nutriswiss

Nutriswiss AG specializes in the refinement of high-quality, customized edible fats and is the Swiss market leader for specialty and organic products. For more information on the company's sustainable mission statement "We recycle sensibly", visit: https://nutriswiss.uk/en/company/sustainability

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