

Less salt, sugar and fat, same pleasure

August 19 2013, by Jean-François Haït



Credit: Etringita

Researchers strive to drastically reduce the proportion of salt, sugar and fat, considered as factors of health risk in food. But keeping sensory and nutritional properties of foods intact is not so easy.

The scientific community now widely recognises that salt, sugar and fat in excess in food lead to [health issues](#). Among these are obesity, hypertension and cardiovascular diseases. As well as illnesses related at various degrees to nutrition like diabetes. However, despite warnings, their consumption remains much too high, particularly in developed countries. As an example, the World Health Organisation estimated back in 2007 the daily salt intake in Europe to be to ten grams per person. Lowering this figure to five grams could save an estimated 850,000 lives.

That is why the European Union has funded research programmes in order to find solutions to reduce the quantity of salt, sugar and fat in [processed food](#). A research project called [Terifiq](#) aims at binary reductions of both sodium and fat, as well as fat and sugar in cheese, bakery products, [meat products](#) and [ready meals](#). Another EU-funded project called [PLEASURE](#).

The task ahead of project scientists is rather complex. "The challenge is to find solutions which combine reduction objectives as defined by WHO, technological feasibility at an industrial scale, and preservation of sensory and nutritional properties of the products," explains Christian Salles, of the [Center for taste and feeding behaviour](#) at the French National Institute for Agricultural Research (INRA) in Dijon, France, and Terifiq coordinator. Indeed, salt acts as a taste enhancer, fat gives a smooth feeling in mouth and enhances flavours, and sugar provides an immediate sensation of pleasure.

Experts recognised the benefits of this approach, with a caveat. "The objectives of Terifiq are relevant, but it can only be effective if consumers change their habits in terms of alimentary choices and intake," warns Jean-Michel Lecerf, head of the Nutrition department at the Pasteur Institute in Lille, France. He also tells youris.com: "Such programmes must be carried out alongside prevention policies of nutrition-related diseases"

The scientists involved in the project are now exploring different ways of reaching these objectives. As an example, reducing salt in cheese reveals tricky, because unwanted micro-organisms may thrive if the concentration is too low. In dried-cured ham, common salt, known as sodium chloride, can be partly replaced by a substance called potassium chloride.

Another possibility is to cheat our senses. In crisps, for example, the

solution is to spray a very thin powder of salt as uniformly as possible on the surface. In mouth, the feeling remains the same, but the amount of salt used is lower. For fat, [a technique called] cryocrystallisation, [which involves] spraying of frozen fat in the aliment to have an evenly distribution of it whilst using a lower quantity, has been explored. "So far, it hasn't work. After a while, the [fat](#) comes out the product," Christian Salles tells youris.com. Besides, "this technology is very expensive," he adds. As for sugar, several solutions will be assessed, like Stevia, a plant whose leaves contain a natural substitute to sugar.

The trouble is that these technologies are not quite fully evolved yet. "Replacement can lead to undesirable flavours, requesting the use of masking chemical agents to hide them," explains José Manuel Barat Baviera, head of the Food technology department at the Polytechnic university of Valencia in Spain. More specifically, "as salt interacts with aromas, replacement modifies the sensory perception of the product. So, it is very difficult to keep the original taste of the product unchanged," he tells youris.com.

From 2015, the small food manufacturers partners in the project will start testing these new approaches, in the hope that they will eventually implement some of them in their products.

Provided by Youris.com

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