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Chefs and scientists prepare food of the future at Cooking Lab

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More and more high technology will move from the lab to the everyday kitchen, say researchers at Liège University



The Cooking Lab isn't the kind of laboratory where you have to be careful and not touch anything because risky chemical experiments are being carried out all around you. On the contrary: visitors are invited to experiment with the newest innovations in gastronomy. Not just top chefs, but anyone with a bright idea for a tasty dish.

The lab, in Gembloux at the Agro-Bio Tech campus of Liège University (ULg), is a co-creation workspace installed as part of the wider [Smart Gastronomy Lab](#) (SGL) project. The SGL was started in January 2015, after a call from the Walloon government's Creative Wallonia programme, with the ambition of spicing up the region's gastronomic culture. It was founded by ULg researchers Dorothee Goffin and Eric Haubruge.

Among the partners are Generation W, a collective of Walloon chefs, and the Namur co-creation lab Trakk. It is also supported by the Economic Agency for the Province of Namur and the non-profit KIKK, which bridges art, technology, business and culture through live events and educational projects.

Until April, the project was managed from Trakk, but now it has a temporary base on the Gembloux campus. The construction of a larger building on the campus has already begun and should be finished by the end of 2017.

The current facilities include a professional kitchen and a place for workshops. The Cooking Lab holds regular workshops on the newest trends in food culture, such as the use of algae. There are purely informative workshops, and entrepreneurs can also set up workshops to test the reactions to their developed products. Every Friday afternoon, the lab opens its doors to all visitors, who can freely use the facilities to carry out their own experiments.

Tech in your kitchen

These facilities go way beyond your everyday kitchen appliances like mixers – think more high-tech equipment like an ultrasonic probe, normally used in chemistry labs to break down cells and bacteria. "You can also use this device to extract the flavours of ingredients in a few seconds without having to touch them, which is more efficient," says Gaëtan Richard, scientific manager of the SGL. "It can boost the variety, quality and popularity of flavoured water, for example."

While the ultrasonic probe costs about €5,000 and is too expensive for general use in kitchens, other scientific equipment has become more affordable since its introduction. "Take the immersion circulator, which used to be an expensive tool only used for chemistry experiments and now costs about €200," says Richard. "More and more high technology will move from the lab to the kitchen."

An important focus of the SGL is the most Belgian of all food products – chocolate. But not chocolate as you know it. Here, it can be shaped into the most fantastic forms using 3D printing technology. This project is the brainchild of Richard, who is qualified as both a chemist and a chef. "3D printing of chocolate has already been done, but not in the way we do it, with the highest attention to the quality of the chocolate," he says. With other experts, he modified a 3D printer for plastics so that it could be used for chocolate.

The Cooking Lab will soon launch a startup to commercialise the production of 3D-printed chocolate products, for products such as company logos, under the name My Choco Factory. If business is good, profits may be used to found another enterprise, which will sell user-friendly 3D chocolate printers.

The SGL also focuses on lacto-fermentation, a technique that allows food to be preserved for months and enriched, by putting it into a mixture of salt and water. The process is based on the fact that bacteria that could be harmful to us can't tolerate much salt, while there are healthy bacteria that can. It's not just an easy method, but is also economical and sustainable as you don't have to store your food in the freezer.

With Lacto Research, a ULg spin-off, the SGL will develop user-friendly kits for people to carry out lacto-fermentation efficiently. In the Cooking Lab, there also workshops organised on the method.

Food to prevent disease

A third project started up by the SGL is that of hippocratonomy. Don't feel bad if you haven't heard the word before, it's a new term coined by chef Arabelle Meirlaen from Namur and ULg professor Vincent Castronovo. It's a contraction of Hippocrates and gastronomy and is a research domain based on the properties of food that can prevent and even cure certain diseases.

"To give an example, eating several brazil nuts a day can significantly decrease the risk of developing prostate cancer," says Richard. "Of course, you need a balanced diet for your general health, but you can also battle a specific condition by adapting your diet to it." This project is still in the start-up phase but should lead to a website, book, workshops and conferences on the topic.

While the SGL is already active, its scope will expand considerably when its new building is ready, by the end of next year. Its new headquarters are also in Gembloux, just 500m from the current location. This new Cooking Lab will be about four times bigger. The extra space will be used to set up a restaurant with about 40 places, whose menu will feature the experimental dishes developed by professional and amateur chefs in the workshop. Visitors will also be able to buy the innovative food products.

"We will ask visitors about their preferences concerning the categorising of food products in a shop environment," says Richard. "These insights will help food shops to promote their goods more efficiently."

The building will also include space for an incubator, where start-up companies in the culinary sector can steadily grow and profit from the multidisciplinary expertise served up at the Cooking Lab.

www.smartgastronomy.be

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