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The telegraph 30/03/2018 Henry Samuel

## French cheesed off as 'revolutionary' lab technique ripens fromage in days

France's top food body has unveiled a "revolutionary" laboratory process to create a range of cheeses that look and smell like the real thing in "days rather than months".

But purists warn the move could spell "the death of true cheese".

Researchers at the [French](#) National Institute for Agricultural Research, INRA, say they have cracked a way of massively accelerating the ripening process normally so essential to creating a cheese with the required texture and smelliness.

What nature takes three weeks, three months or three years to do we can do in two to three days using a process that is far faster and less costly," INRA cheese expert Romain Jeantet told the Telegraph. Brie and Camembert take roughly a month to ripen, while a mature Comté can take up to three years.

The secret to the process, which researchers have coined From'Innov, is to split the production of the cheese and its aroma in the laboratory and mix them later to create the desired product "à la carte". "With the same material, we can thus make a cream cheese on Monday, a Camembert on Tuesday and a hard cheese on Wednesday," said colleague Gilles Garric, who said INRA was in talks with three dairy giants over the technique.

The result was very similar to traditionally-made cheese, the researchers insisted. "We can recreate a cheese that has roughly the same texture as Camembert, then we can isolate bacteria that create the typical Camembert taste. We mix the two together. In the end it will have the same shape, the same taste and same texture as Camembert" – if a little more "homogenous", he said. To make the end product more nutritious, experts can mix in probiotics – live bacteria and yeasts. He added: "If you want to put such cheese in salads or sandwiches you will find something that tastes exactly the same but costs far less and is far faster to make."

But purists are appalled at what they see as the latest attempt to kill of a great French exception – smelly cheese lovingly made with raw milk and on a human scale. "This isn't cheese at all, it's totally synthetic," sniffed Véronique Richez-Lerouge, who runs the traditional cheese defence group Association Fromages de Terroirs and recently wrote a book called *La Vache Qui Pleure* (Crying Cow). "Industrial dairy groups have long dreamed of making cheese with as little milk as possible in as little time as possible so it costs as little as possible, with a consensual taste to appeal to the masses. INRA has made their dream come true," she said. "Next they'll be adding banana or raspberry aroma."

She added: "This is yet another step towards creating dead food rather than letting nature run its course. Cheese is alive and needs to be ripened and matured over a long period, preferably with live raw milk. You cannot create this natural complexity in the laboratory. Humans are made to eat live food with diverse bacteria, not dead food, which causes all sorts of problems such as allergies."

French chef Arnaud Daguin said: "As a cook for 40 years and someone who is carefully about food quality there is one thing that we cannot do without: transcendence. There is no point trying to play God and outdo the natural world when we haven't even understood a tenth of its potential."

Mr Jeantet hit back that he was a "cheese lover" with no desire to "kill off traditional cheese" but said that times had changed. "Traditional cheese has its place as a dish in its own right, generally at the end of a meal. But that use has dropped from 70 per cent in the 1970s to 50 per cent today," he said. The rest, he said, was used for cooking, and there was a huge market for cheaper, multi-purpose cheese to rival the wildly successful mozzarella. The new technique was the best way to offer cheese tailor-made to "local tastes and requirements" in countries like China, where demand for dairy products is exploding. It also travelled well, as the cheese can be sent in powder form and the aroma separately, and mixed in situ. He insisted that the entire cheese-making process used only the normal, natural ingredients found in regular cheese. The technique will be on display at the world Cheese Symposium, which will take place in Rennes starting on Sunday. INRA will also show off a special anti-mould bacteria for fresh cream and an experimental Emmental with anti-inflammatory properties.