

Strong cheese? It's a 'cultured' experience

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(PhysOrg.com) -- An international research team led by Newcastle University has identified a new line of bacteria they believe add flavour to some of the world's most exclusive cheeses. It's an age-old tradition that dates back at least 8,000 years but it seems we still have much to learn about the bacteria responsible for turning milk into cheese.

The team used DNA fingerprinting techniques to identify eight previously undiscovered microbes on the French cheese Reblochon.

One of France's great mountain cheeses, Reblochon is a 'smear-ripened' cheese where the surface of the cheese is washed with a salt solution containing bacteria. This process helps to spread the bacteria across the surface of the cheese, ripening it from the outside in.

Other popular smear-ripened cheeses on the Christmas cheeseboard include Port de Salut, Livarot, Taleggio, Limburger and the Irish cheese Gubbeen.

The team have named the microbes *Mycetocola reblochoni* after the cheese they were first discovered in.

Project lead Professor Michael Goodfellow of Newcastle University said: "It has always been thought the bacteria cheese makers were putting in at the start of the process gave Reblochon its distinctive flavour.

"What our research actually showed was this new group of bacteria - the

reblochoni –were responsible for the ripening process, influencing the taste, texture and smell of the cheese.”

Reblochon – a soft, creamy, brie-like cheese – is made in the Savoy mountain region of France.

Using samples from three different farmhouses, the team carried out a series of modern molecular techniques to classify the bacteria.

Traditionally, smear-ripened cheeses such as Reblochon are exposed to a starter culture, a live mixture containing the microbe *Brevibacterium linens*, to ripen the cheese.

Now the research has shown that a new group of bacterial strains are involved in the later stage of ripening, out-competing the *Brevibacterium* and providing the flavour.

The reblochoni microbes are part of a large group of bacteria known as the Actinomycetes, many of which are already used in the production of antibiotics to treat diseases such as tuberculosis and diphtheria.

Professor Goodfellow says the next step will be to study the potential benefits of these new microbes.

“The next stage is to see how these new microbes might be used. Bacteria get a bad name because they are associated with causing disease but many are extremely beneficial and our reblochoni group may well prove to have important uses.”

Academic paper: *Mycetocola reblochoni* sp. Nov., isolated from the surface microbial flora of Reblochon cheese. M Goodfellow et al.

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Provided by Newcastle University

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