

# New process for the ripening of cheese

Helena Stoffers, Remo Schmidt, Hans-Peter Bachmann\*

Agroscope, Research Unit « Food Microbial Systems », CH-3003 Bern

\*Presenting author

## Process internationally protected

The European Patent Office has granted Agroscope the patent for a new cheese ripening process in 2023. It works as follows: After brining, the cheeses are wrapped in a biodegradable fabric. The microflora of the cheese surface subsequently grows on the fabric. At the end of the ripening process, the fabric can simply be removed. A small part of the microflora remains on the cheese, which gives it its typical orange-brown rind.

Agroscope researchers are currently testing a similar process to produce vegan foods. A European patent application in this field has already been filed.



Fig.1: From top to bottom: Freshly packaged cheeses, and cheeses ripened for up to three months using the new process (Photo Agroscope)

## The cheese ripening process

About half of Swiss cheeses are smear-ripened. These include traditional types such as Appenzeller®, Tilsiter or Raclette, but also many local and regional specialties. They are cured with a mixture of water, salt and sometimes also added microbial cultures. A characteristic feature is the orange-brown rind, which consists of a microflora, the smear. This microflora breaks down the lactic acid in the cheese and thus contributes to the typical flavour.

## Successful co-creation of research and practice

In order to implement the new process in practice, Agroscope is working with 13 smaller and larger cheese dairies, two textile companies and a mechanical engineering company. The trials to date were carried out with a large variety of different hard and semi-hard cheeses. During these trials, it became evident that with the deep knowledge and long experience of the cheesemakers, it will be possible to introduce the process in all participating dairies successfully.

For the first trials, the cheeses were still packaged by hand. It is conceivable that small cheese dairies, such as alpine cheese dairies, will continue to do this in the future. Larger dairies, however, must be able to package the cheeses by machine. That is why we are working with a company from the machine industry to design a prototype for a packaging machine.

The new ripening process developed by Agroscope has several other interesting advantages. The effort required for ripening is much smaller compared to conventional maturation. The cheeses lose less water during ripening, which speeds up the process and results in a thinner rind, a more intense aroma and a softer texture. In addition, cheeses ripened with the new process do not show any unpleasant odours or stickiness of the rind in the pre-packaging.

**The new process is available exclusively to the 13 implementation partners from the Swiss cheese sector until the end of 2025.** A business model for marketing is currently being developed.



Fig.2: Unwrapping a Raclette cheese from its biodegradable envelope (Photo Agroscope)