Penicillium camemberti: a history of domestication on cheese

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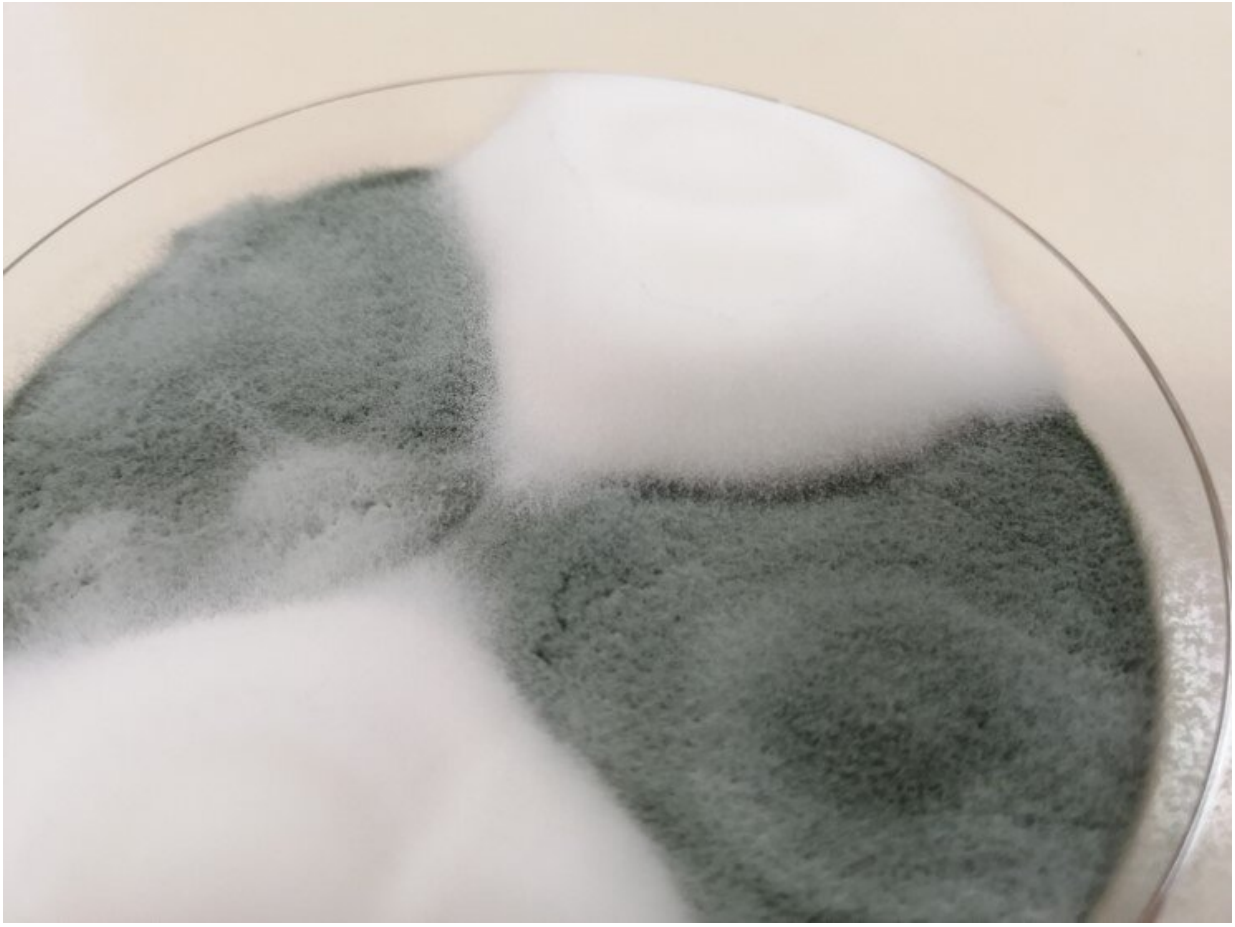

Cultures of Penicillium camemberti (white and fluffy) and Penicillium biforme (grey-green) in a Petri dish. Credit: © Tatiana Giraud, CNRS researcher at the Ecology, Systematics and Evolution Laboratory (CNRS/Université Paris-Saclay/AgroParisTech), CNRS Silver Medal 2015

The white, fluffy layer that covers Camembert is made of a mold resulting from human selection, similar to the way dogs were domesticated from wolves. A collaboration involving French scientists from the CNRS has shown, through genomic analyses and laboratory experiments, that the mold Penicillium camemberti is the result of a domestication process that took place in several stages.

According to their work, a first domestication event resulted in the blue-green mold P. biforme, which is used, for example, for making fresh goat's cheese.

A second, more recent domestication event resulted in the white and fluffy P. camemberti.

Both domesticated species show advantageous characteristics for maturing cheese compared to the wild, closely related species: they are whiter and grow faster in cheese-ripening cellar conditions.

In addition, they do not produce, or only in very small quantities, a toxin that is potentially dangerous to humans; they also prevent the proliferation of undesirable molds.

This research, published on 24th September in *Current Biology*, may have an impact on cheese production, by steering the selection of molds according to the desired characteristics.

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