

Scientists in Finland release recipe for lab-grown coffee

12 December 2023 | News

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The just published scientific article details the process of creating lab-grown coffee and shows proof of concept for the method. The research group was able to brew coffee from cells grown in a laboratory for the first time in 2021. Now, the process has been fully documented and released to the public, including the establishment of the cell cultures.

Two years after the scientists in Finland successfully made coffee in a laboratory, the VTT Technical Research Centre of Finland has released detailed information on the process. Published in the Journal of Agriculture and Food Chemistry, the scientific paper describes the exact process the scientists used to produce coffee starting from the original coffee plant itself, and establishing cell cultures to alter its aroma in the roasting process, caffeine content, flavour analysis, and sensory profiling by a panel of tasters.

While demand for coffee is rising, the production of coffee beans faces multiple sustainability challenges, concerning land and water use, labourers' rights, and climate change. According to the Centre for the Promotion of Imports, Europe, the highest consumer of coffee in the world, imported over 3,602 thousand tonnes (3.6 million tonnes) of green coffee in 2021, with an estimated average of 5 kg of coffee consumed per person each year.

Cellular agriculture provides a potential avenue for solving the main issues in coffee production in a sustainable way, also allowing for more regional self-sufficiency in areas with climates that are not suitable for coffee bean farming. In addition, lab-grown coffee has the potential to speed up coffee production significantly. Traditionally farmed coffee provides 1-2 harvests per year, whereas a new batch of lab-grown coffee can be made in a month due to the controlled process and the infinitely renewable nature of coffee plant cells that removes the need to grow new coffee plants from seeds.