## Can I get a coffee – but hold the coffee, please

Compound Foods has raised \$4.5M in seed funding, giving it \$5.3M in total funding to-date, for its synthetic biology-based technology that makes coffee without coffee beans.

Temps de lecture : minute

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Backers of the firm include <u>Lowercarbon Capital, Petri Bio and Maple VC</u>. We've seen the rise of meatless <u>meat</u> products, and fishless <u>fish</u> – but what about beanless coffee? Compound Food's novel approach aims to recreate the molecular structure of traditionally produced coffee, however with fewer resources and less environmental impacts.

We've <u>previously</u> pointed out the climate change and its impacts, such as lower rainfall, are causing short-term disruptions to regional coffee production, and having a knock-on effect on global supply. In the face of climate-driven decreasing crop yields, efforts to create a synthetic replica could foreshadow the future of coffee in the long-term.

## Climate concerns

Coffee sits among the most climate-vulnerable crops, being susceptible to <u>extreme</u> weather conditions such as drought and frost, as well as rising temperatures. Other climate-related impacts such as pollinator loss from collapses in bee and butterfly populations are also <u>undermining</u> global coffee production, and affecting other major crops including soybean, cashews and strawberries. Limited supplies are also hiking up the <u>costs</u> of

the crop, with prices reaching an almost seven year-high earlier this year.

It's worth noting around 60% of wild coffee varieties are under threat of extinction from climate change, deforestation, pests and the spread of fungal pathogens, as a recent <u>study</u> found. Arabica – the world's most popular coffee strain – has also entered the IUCN Red List as an endangered species. Given wild species are crucial for the <u>development</u> of future coffee crops, this could risk the longevity of global coffee production.

## Grounds for success

The eco-conscious start-up boasts strong environmental credentials for its production method, which *generates* one-tenth of the carbon emissions of traditional methods, and requires a tenth of water used conventionally (roughly 140 litres across the production chain for a single cup). Coffee is the fifth-highest *polluting* crop, and large-scale conventional plantations are often linked to habitat destruction, deforestation and pesticide overuse.

## How does it work?

The novel approach relies on <u>fermentation technology</u>, a method quickly gaining traction in the alternative protein sector. Using sustainably grown microbes, the firm mimics conventional processes used at a coffee farm, including roasting and brewing. Compound Foods is working to develop a variety of flavours and aromas, as well as different caffeine levels.

The adoption of similar molecular-based food technology is gaining traction. Seattle-based <u>Atomo Coffee</u>, for example, is developing a "coffeeless coffee" from upcycled ingredients such as watermelon seeds and seed husks, while German company QOA is utilising precision fermentation to create a chocolate <u>alternative</u> without using cocoa.

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