

## Could food of the future come from ‘microbial protein factories’ instead of plants and animals?

Could a suite of microscopic microbial protein factories (yeast, bacteria, fungi, algae) give plants and animals a run for their money?

It's early days, says the Good Food Institute (GFI), but microbial fermentation is rapidly emerging as the “third pillar in the alternative protein industry [alongside cell-cultured and plant-based],” attracting \$435m in investment capital in 2020 alone.

Right now, producing protein – whether from peas and soybeans or cows and chickens – is resource-intensive and time-consuming, requiring large amounts of land, energy and water, says the GFI, which has just released a 72-page report on fermentation in the alternative protein industry, arguing that its “potential is still largely untapped.”

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Put another way, it takes years to grow animals, and months or years to grow plants, while microbes can double their biomass in a matter of hours, as Nature's Fynd CEO Thomas Jonas recently observed: “Microbes are pretty damn efficient. They make great protein and they do it really fast.”

Many microorganisms also [are] innately high [in] protein content (over 50% by dry weight) coupled with “extraordinarily fast and self-sufficient growth, requiring only simple and inexpensive nutrient feedstocks,” noted the GFI.

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