

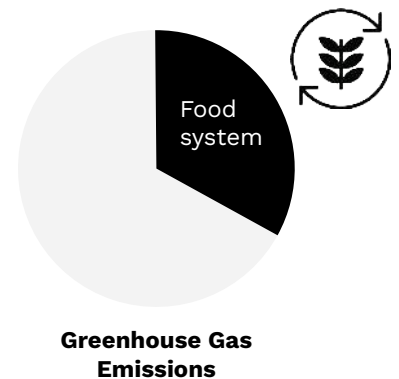


PRECISION FERMENTATION
AND THE FUTURE OF
SUSTAINABILITY

PRECISION FERMENTATION AS PART OF A GLOBAL SOLUTION TO CLIMATE CRISIS



According to a recent report from the United Nations, about a third of greenhouse gas emissions are linked to our food system, with emissions from animal agriculture amount to 16.5% of all greenhouse gases.^{1 2}



Addressing the global crisis will require a multi-pronged, collaborative approach, and many new forms of agriculture have begun to make progress in the mainstream, like regenerative agriculture and vertical farming. Precision

fermentation offers an untapped dimension to reducing the impact of traditional agricultural production, because creating nature-equivalent ingredients without animals allows us to reducing the impact of industrialized animal agriculture on the planet.



An ISO-compliant Life Cycle Analysis from PFA member Perfect Day found that whey made from precision fermentation uses **up to 99% less blue water consumption, up to 97% less greenhouse emissions, and up to 60% less nonrenewable energy** compared to its conventional counterpart. By requiring significantly fewer resources to produce ingredients and foods, precision fermentation is a powerful method of sustainable production. And when we spare water, energy, and other natural resources, we can make room for other sustainable, regenerative approaches to farming and food.

According to Jonathon Porritt, eminent writer and campaigner on sustainable development, **“The potential for precision fermentation is huge. And it’s now critical that this pretension is fulfilled just as soon as possible. Today’s model of providing predominantly animal-based protein is already the single most destructive force on Planet Earth – from multiple perspectives. The idea of that model being advanced as the best way of meeting additional demand for providing protein, as both population and aspiration grow, is horrendous – representing a genuinely existential threat to the future of humankind. Which makes precision fermentation a make-or-break story for a future sustainable food system.”**

Jonathon Porritt, co-founder, Forum for the Future; author of Hope in Hell, 2020



**up to 99% less
blue water consumption**



**up to 97% less
greenhouse emissions**



**up to 60% less
nonrenewable energy use**
compared to its conventional counterpart ([Perfect Day](#)).⁵

PFA members hold themselves accountable

The Precision Fermentation Alliance works with all its members to develop and report sustainability standards and metrics, like ISO (International Organization for Standardization)-conforming Life Cycle Analyses. In addition, we work with members to develop standards and best practices around responsible resource use on an ongoing basis. By organizing into this alliance, we aim to create a gold standard for mission-led technology and elevate tech-led solutions to climate change in food categories.

¹ United Nations. (n.d.). *Food and Climate Change: Healthy diets for a healthier planet* | United Nations. <https://www.un.org/en/climatechange/science/climate-issues/food>

² Twine, R. (2021) *Emissions from animal agriculture-16.5% is the new minimum figure*, MDPI. Available at: <https://www.mdpi.com/2071-1050/13/11/6276>

