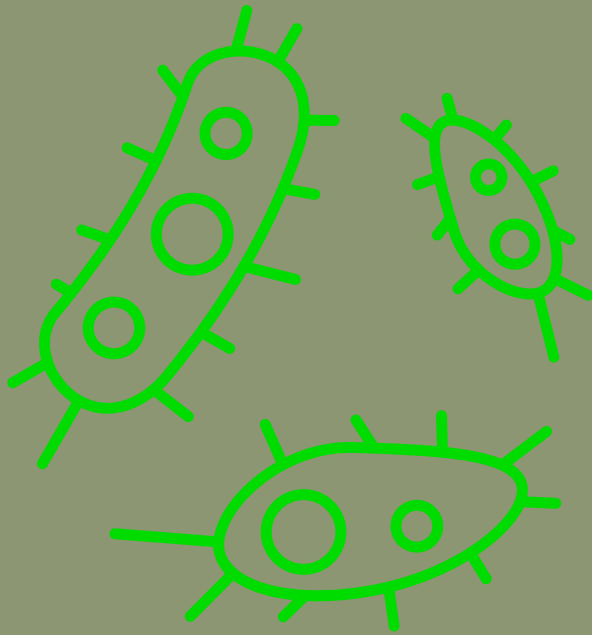


Microbial Protein



 like-a-pro.eu

 [project-like-a-pro](#)

LIKE-A-PRO is a EU-funded project aiming to facilitate sustainable and healthy diets by mainstreaming alternative proteins and products, making them more available, accessible and acceptable.

Microbial Protein Benefits

Microbial protein, also referred to as single-cell protein is obtained from the cultivation of microorganisms such as bacteria, yeasts, fungi and algae. The resulting protein is commonly obtained from the whole microbial biomass itself, by protein extraction or by pure or mixed microbial cultures, offering a versatile and scalable protein source.

Microbial protein offers high potential for food industry applications due to its high protein content and quality (50-83% protein content) providing a complete amino acid profile. Additionally, microbial protein offers sustainable production and circularity potential due to minimal land use, up to 95% less water usage than meat production and 97% lower GHG emissions than beef production.

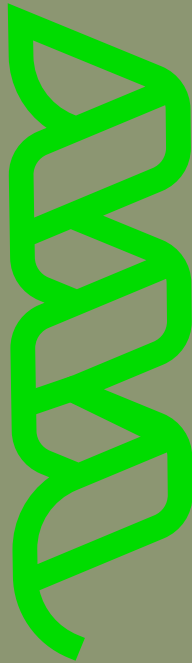


Extraction Challenges

However, alternative proteins must meet strict purity, quality, and safety standards, withstand industrial food processing conditions, and retain nutritional functionality during human or animal intake. These requirements lead to **technical challenges** related to product consistency, protein recovery efficiency, and the removal of unwanted compounds, such as excess nucleotides or cell debris, which can affect product's quality and safety.



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Optimised Extraction Process

CALIDRIS BIO produces microbial protein through a demonstrated process with a fermentation capacity of 10,000L. This process is highly sustainable as it uses bacteria able to grow on a renewable carbon source, achieving >70% protein content with essential amino acids. A renewable substrate is used, contributing to the process **circularity**. As part of LIKE-A-PRO, CALIDRIS BIO maximised their fermentation productivity and yield while enhanced microbial protein quality by reducing nucleotides (antinutritional factors).

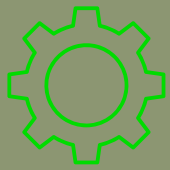


Therefore, as a result of LIKE-A-PRO, CALIDRIS BIO obtained a high quality protein powder ingredient with the key following advantages:



High nutritional quality

A protein content of >70% with a **balanced amino acid profile**, **good digestibility** and **minimal antinutritional factors**, complying with FAO and WHO standards.



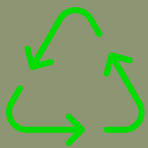
Versatile functional performance

Enabling the formulation of a wide range of **clean-label foods**, as emulsified products, meat analogues, hybrid meat applications and direct use as an ingredient.



Safe product

Non-GMO, obtained from a naturally occurring bacterial strain that will comply with Novel Food EFSA and GRAS FDA regulatory frameworks.



Carbon-neutral, circular production

Using a renewable substrate derived from **recycled CO2**.

Consequently, LIKE-A-PRO results demonstrated CALIDRIS BIO pioneer role in the development and upscaling of a food-grade ingredient derived from microbial sources, with major gains in yield, productivity and improved downstream processing while confirming further nucleotide reduction.

Next steps for commercialisation will be focused on **bringing costs down** by improving process yields and energy efficiency, since energy is the main cost driver. At the same time, efforts aim to **maximise environmental performance** by using renewable and circular inputs and adopting closed-loop resource strategies. Finally, **building market confidence** is essential, through strict quality controls, robust data and analytics, regulatory approval (e.g. Novel Food EFSA), and clear, science-based communication.

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