

07.03.2025

Bioreactors.net

Bringing Bio-Based Innovation to Life: The ZEST Project Experience

Mg.sc.ing. Artūrs Šuleiko

R&D Process Engineer, Bioreactors.net SIA



ZEST

Fungi Fermentation
supported by Digital Modeling



**Circular
Bio-based
Europe**

Joint Undertaking

The project is supported by the Circular Bio-based Europe Joint Undertaking (CBE JU) and its members.



Co-funded by
the European Union



Bio-based Industries
Consortium



ZEST

Valorization of Agro-Industrial Waste through Fungi Fermentation supported by Digital Modeling

- Call Topic: **HORIZON-ju-cbe-2023-IA-03**
- Project starting date: **1 June 2024**
- Project duration: **48 months**
- Consortium: **12 partners**
- Grant amount: **5 931 246.25 EURO**
- Grant Number: **101157382**



The Mission

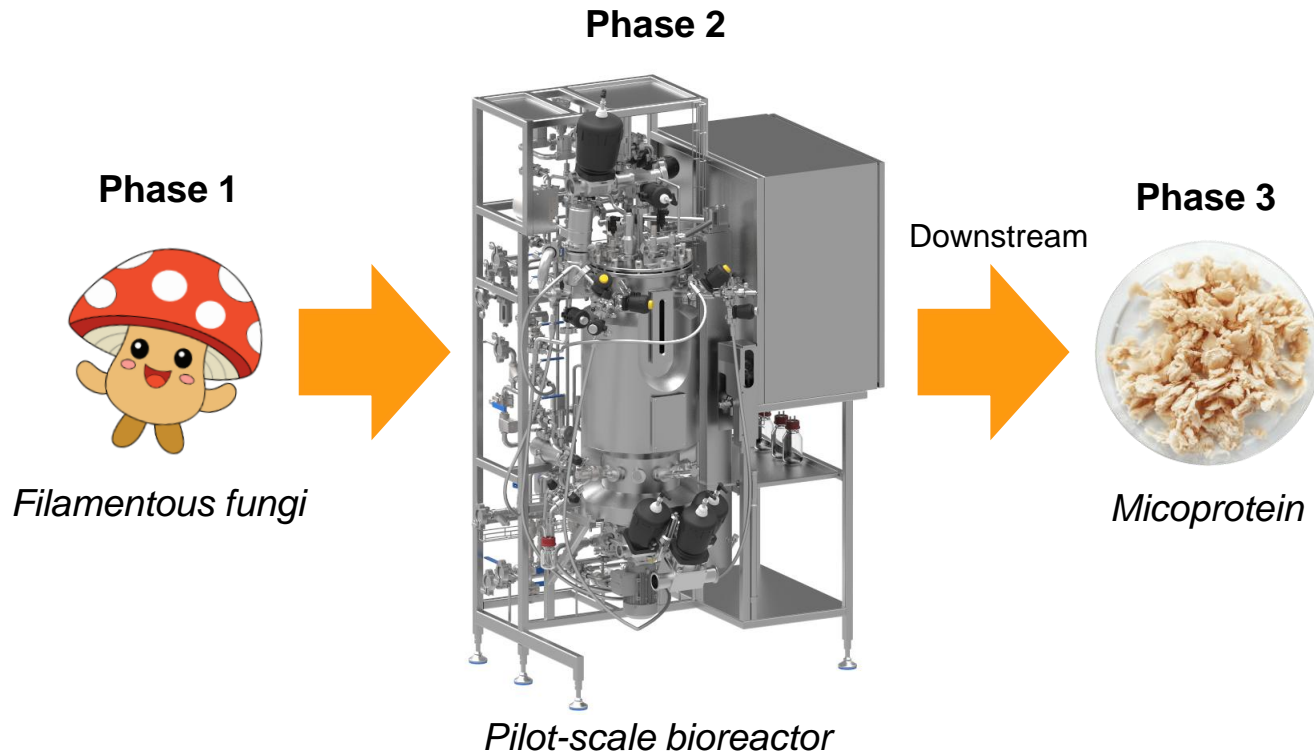
The world's ever-growing population demands an increasing amount of protein, which cannot be sustainably met through traditional sources. Innovative approaches are key to procure high-quality protein both efficiently and sustainably.



The Plan

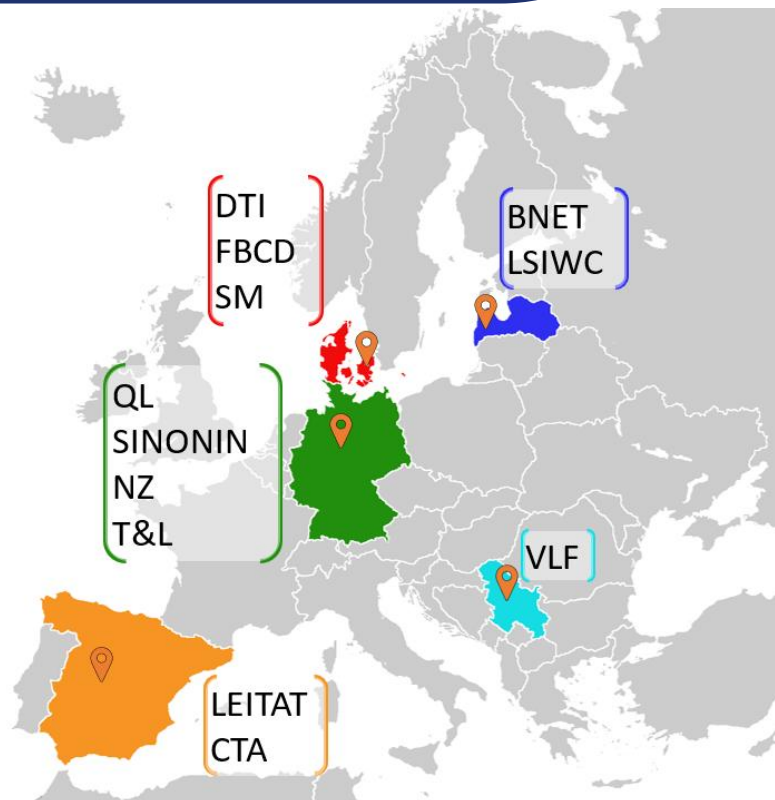
ZEST's strategy focuses on devising an enhanced, scale-flexible, and AI-controlled fermentation production system capable of generating a diverse array of protein products for the food and pet-food industries, as well as byproducts for the cosmetic industry.

Main Objectives



1. Identify optimal fungi strain (protein yield) & develop cultivation strategy at lab scale.
2. Scale-up from lab to 200 L production volume.
3. Develop downstream techniques to process the biomass.

The Team





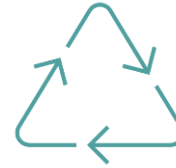
Expected impact

By embracing innovation, collaboration, and conscious choices, we can pave the way for a planet that thrives environmentally, economically, and socially.





Establish new industrial biotechnology pathways.



Enhance competitiveness of European biorefineries.



Improve mycelium productivity and resource efficiency.



Strengthen food security and increase social acceptance of circular bio-based solutions.



Expand the range of bio-based products meeting market demands.

Bi●reactors.net

We are an innovative Latvian company, designs and manufactures laboratory, pilot, and industrial-scale bioreactors that meet up-to-date requirements and include cutting-edge solutions such as model-based control of fed-batch fermentation, a novel magnetic drive, and full factory production line development from seed fermenter to production fermenter.



20+

Years of
Experience



100+

Projects



25+

Countries
Reached



Cooperation



What we offer?

- Customized bioreactors for various biotechnological needs;
- Expertise in biotechnology, fermentation, and related fields;
- Solutions for both small-scale research and large industrial processes.

Our Areas of Interest

- Collaboration on various fermentation projects (lab, pilot, industrial scale);
- Driving innovation in biotech alongside researchers;
- Creating new ideas and solutions for the biotech field.





Follow us!

<https://zest-project.eu/>



<https://bioreactors.net/>

My DM: arturs.suleiko@bioreactors.net

The project is supported by the Circular Bio-based Europe Joint Undertaking (CBE JU) and its members.



Co-funded by the European Union under Grant Agreement No. 101157382. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CBE JU. Neither the European Union nor the CBE JU can be held responsible for them.

