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## CONTEXT



There is a growing demand for new, plant-based, healthy/functional, sustainable, safe, tasty and attractive foods [1]

**Fermentation** improves the nutritional value and organoleptic properties of foods, and has a positive impact on gastrointestinal, cardiovascular and mental health [2,3].

Many of fermented foods are obtained from soybeans fermentation (e.g., miso and tempeh) or from rice, like as amazake and sake [3].

## OBJECTIVES



**Development of innovative fermented foods and beverages** production of innovative, healthier, diverse and attractive fermented foods from traditional Portuguese crops using Eastern fermentation processes (under controlled conditions).



Replacement of soybeans and rice by traditional Portuguese crops

Innovative and functional



## WORK PLAN



An integrated approach combining microbiology, biochemistry and rheology with molecular gastronomy methodologies will be used (Figure 1-3).

The potential of fermented food as healthy and nutritional products will be evaluated (Figure 3).

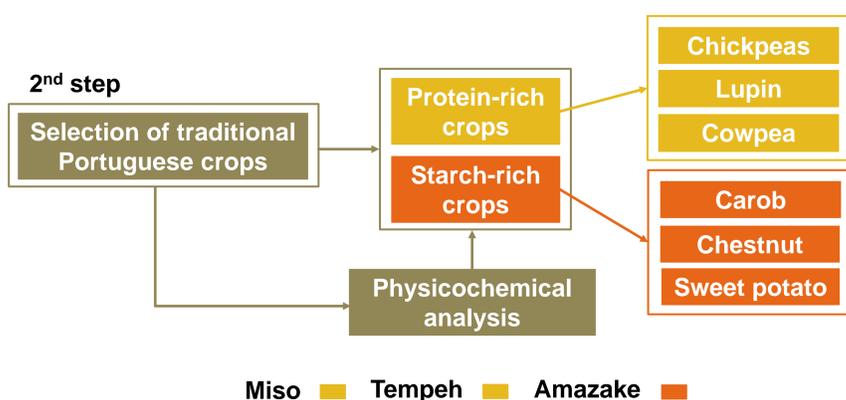


Figure 2: Description of the second step of the work plan

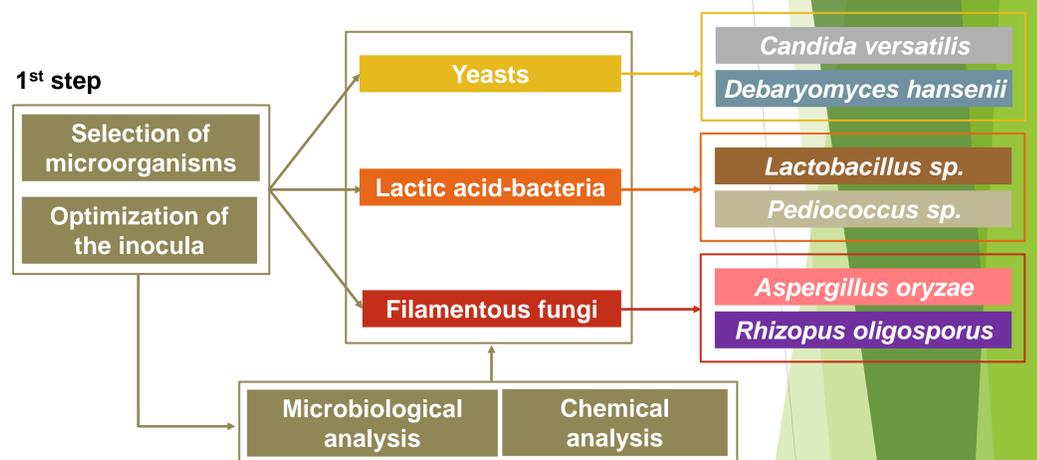


Figure 1: Description of the second step of the work plan

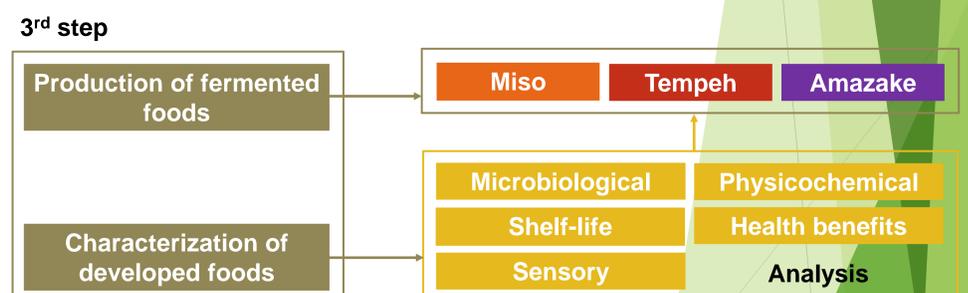


Figure 3: Description of the third step of the work plan

## FINAL GOALS



- Development of high quality, healthy, appealing, diverse and innovative fermented food formulations by Eastern methodologies, based on Portuguese pulses and neglected crops.
- Diversification of healthier and more nutritional diets, aligned with Mediterranean diet and Portuguese gastronomic/cultural traditions, adding value to low-cost Portuguese traditional raw-materials and promoting more sustainable patterns of consumption.
- Positive impact on the production and sustainable preservation of specific Portuguese crop varieties adapted to Portuguese environment conditions is also expected.

## References:

- [1] Santeramo, F. G., Carlucci, D., De Devitiis, B., Seccia, A., Stasi, A., Viscecchia, R., & Nardone, G. (2018). Emerging trends in European food, diets and food industry. *Food Research International*, 104, 39-47. doi: [10.1016/j.foodres.2017.10.039](https://doi.org/10.1016/j.foodres.2017.10.039)
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- [3] Dimidi, E., Cox, S. R., Rossi, M., & Whelan, K. (2019). Fermented Foods: Definitions and characteristics, impact on the gut microbiota and effects on gastrointestinal health and disease. *Nutrients*, 11(8), 1806. doi: [10.3390/nu11081806](https://doi.org/10.3390/nu11081806)

Images were obtained by google search engine

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