Understanding fungal and yeast fermentations of plant-based substrates

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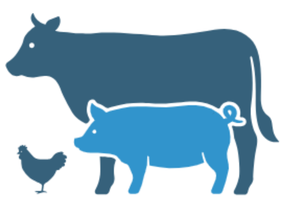
Challenge



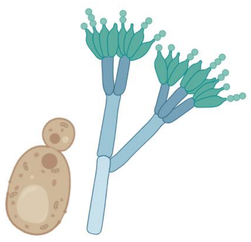
1/3 Total global greenhouse **emissions** [1]

Protein transition

Plant-based products are rich in

Anti-nutrients **Off-flavors**

Biodegradation

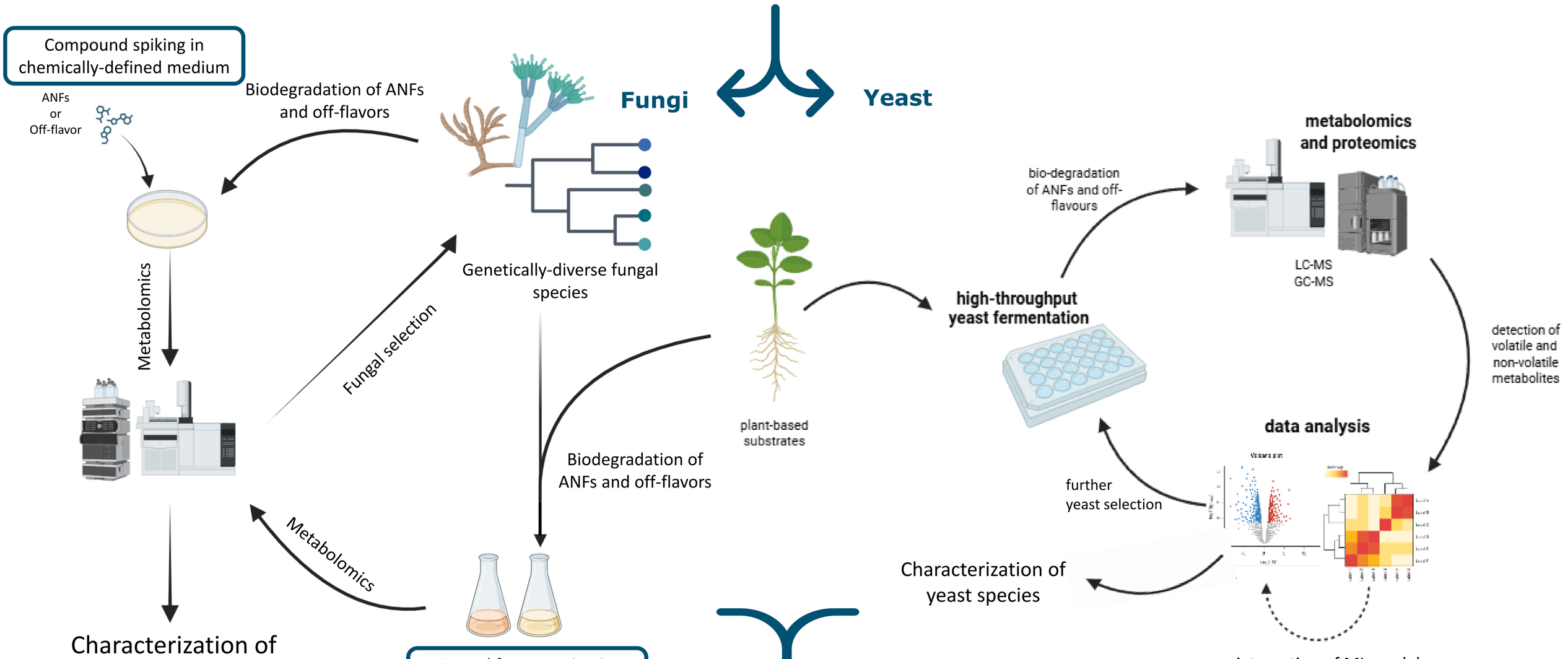


Yeast & fungal fermentation

Objectives

- Expand understanding of the role of enzymatic processes and metabolic pathways of selected fungal and yeast species.
- Explore their capabilities to degrade off-flavours and antinutritional factors (ANFs) in plant-derived raw food materials.
- Deliver rational design principles for fungal and yeast fermentations of different plant-based substrates.

Mechanistic approaches



Data integration

Rationalization of microbial cultures for plant-based fermentation

Conclusions

- Combining high-tech analytical methods with artificial intelligence to predict and validate the currently unknown functions.
- Rational design of optimal fermentations to make more tasty, healthy, and sustainable plant-based foods.

Reference

1. Crippa, M., Solazzo, E., Guizzardi, D., Monforti-Ferrario, F., Tubiello, F. N., & Leip, A. (2021). Food systems are responsible for a third of global anthropogenic GHG emissions. Nature Food, 2(3), 198–209.

Acknowledgements

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