DOMINO

Funded by the European Union

UKRI

# EIP-AGRI Practice Abstracts

## D.6.2 - Practice abstracts – batch 1

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DOMINO

# Practice abstracts – batch 1

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# Table of contents

# Executive summary

The EIP-AGRI project database features innovative projects across Europe, focusing on boosting agricultural knowledge exchange and innovation. The DOMINO project, part of this initiative, aims to enhance the sustainability and health benefits of fermented foods by leveraging microbial diversity. Through practice abstracts, DOMINO disseminates practical, concise findings to stakeholders, supporting healthier diets, sustainable food systems and fostering innovation in the food sector through the development of novel fermented foods and an Open Access Database of fermented food microbiome data.

# 1. EIP-AGRI Practice Abstracts

The EIP-AGRI (The Agricultural European Innovation Partnership) project database is hosted by the EU CAP Network, a network that aims to optimise the flow of information about agriculture and rural policy within the EU. The EIP-AGRI Project Database features projects from across Europe that boost innovation and knowledge exchange for agriculture, forestry and rural areas. This includes Horizon multi-actor projects, such as DOMINO, which involve the people who will benefit from the project results from the very start.

To help innovative and practice-oriented projects share their knowledge in a concise, harmonised and practice-oriented way, the 'EIP-AGRI common format' was developed. This enables projects to share their intermediate and final results through practice abstracts in a common format. The purpose of the EIP-AGRI practice abstracts is to facilitate efficient knowledge exchange by enabling stakeholders and interested parties to learn about the outcomes of research and innovation projects.

# 2. DOMINO Practice Abstracts

The resulting innovative knowledge from DOMINO will feed into the EIP-AGRI website for broad dissemination to practitioners. Falling under Task 6.2, EUFIC, with the support and the content provided by WP leaders and the DOMINO Excecutive Committee, will be responsible for the production of at least 7 Practice Abstracts in total by the end of the project. The project details submitted to the platform are also available in this first deliverable submission (Table 1).

# 3. DOMINO EIP-AGRI Profile

The following table contains the project details submitted to the EIP-AGRI platform.

Table 1: DOMINO EIP-AGRI Profile

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| Objective | DOMINO aims to leverage food microbial diversity, propose healthy diet recommendations based on fermented foods, and improve the sustainability of fermented food products. The main objectives include:<br>1. Determining if diverse food microbes can make food production more environmentally friendly and sustainable.<br>2. Developing new methods for better assessing the risks and benefits of both traditional and new fermented foods.<br>3. Demonstrating that eating fermented foods can improve human health and support a healthy balance of microbes in the body. |

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| | 4. Understanding the impact of switching from animal-based to plant-based fermented foods on nutritional outcomes for human health. |
| Description of the activities | The activities of DOMINO include:<br>• Connecting data on food and the gut microbiome (i.e., diversity, functional properties) with data on human health (i.e., physiology and metabolism) to improve the identification of biomarkers related to the health effects of fermented foods.<br>• Using lab models for quick and standardised testing of the health benefits and risks of fermented foods.<br>• Creating custom blends of beneficial microbes from diverse dietary sources, rather than relying only on traditional probiotic strains.<br>• Developing plant-based fermented products that meet consumer demand and support healthier diets, sustainable food systems, and economic growth for small European companies.<br>• Sharing open data and tools to make the most of microbial functional biodiversity in food design.<br>• Advancing food microbiology with innovative, multidisciplinary approaches.<br>• Using computer models to drive new insights and knowledge. |
| Description of the context of the project | European consumers are expressing a clear demand for healthier and more sustainable food. Fermented foods (FFs) have the potential to meet these expectations. Food fermentation is a several-thousand-year-old practice and was born as a preservation method. Compared to the raw materials from which they are made, fermented foods have many advantages, including improved sensory properties, safety, stability and nutritional profile. Recent scientific hypotheses suggest that a diet enriched with fermented food could have a beneficial effect on health thanks to a succession of interrelated effects (i.e. the DOMINO effect). The current challenge is to scientifically prove the health effects of fermented foods and to develop innovative solutions for their production that consider both sustainability and nutritional aspects. Additionally, existing and innovative plant-based fermented foods can be of major importance in the transition from an animal-to more plant-based diet, and in so doing to provide associated health and sustainability benefits. |
| Project contribution to CAP specific objectives (chosen from a predefined list) | • Increasing competitiveness<br>• Environmental care<br>• Protecting food and health quality<br>• Fostering knowledge and innovation |

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| Project contribution to EU Strategies (chosen from a predefined list) | • Achieving climate neutrality<br>• Improving management of natural resources used by agriculture, such as water, soil and air |
| Project keywords (chosen from a predefined list) | • Competitiveness/new business models<br>• Farm diversification<br>• Supply chain, marketing and consumption<br>• Food security, safety, quality, processing and nutrition<br>• Biodiversity and nature<br>• Circular economy, incl. waste, by-products and residues<br>• Genetic resources<br>• AKIS, incl. advice, training, on-farm demo, interactive innovation projects<br>• Social innovation |

# 4. DOMINO Practice Abstract #1

The following text was submitted as the first DOMINO practice abstract. The purpose of the first practice abstract is to deliver an outline of the project, summarising the objectives that each Work Package aims to achieve. The rest of the practice abstracts delivered throughout the duration of the project will contain detailed information about DOMINO's 6 case studies.

## General Overview of DOMINO

The European population is ageing, leading to an increase in metabolic and degenerative diseases, partly due to poor diets. Current European food products are not designed with sustainability or health in mind, hence are not equipped to meet modern dietary needs. Meanwhile, there is insufficient evidence about the health benefits of fermented foods, limiting dietary recommendations that could have potentially positive health outcomes. To add to these barriers, stakeholders and key actors who would be able to promote the development of healthy and sustainable foods and diets are not well connected, and this impairs short-term innovation potential and long-term EU food sovereignty.

To address these issues, the DOMINO project aims to better understand what the concept of a healthy gut microbiome might be and how different fermented foods affect it. We will study how fermented foods impact individual health and use this knowledge to inform dietary strategies, which will help enhance the functionality of fermented foods. We will also improve our understanding of microbial processes in fermented foods to make them healthier and more sustainable. This will unlock innovation potentials for SMEs and support the food sector to reach key objectives along the whole food production system, such as input reduction and biowaste recycling, while also preventing hazards and spoilage by promoting environmental sustainability. Additionally, we will compile existing food-related microbial data and compare current and future food production methods for efficiency. Overall, DOMINO aims to promote higher levels of fermented food consumption in Western Society and improve awareness of the beneficial roles of microbiomes in health and sustainability along the food chain.

DOMINO will create an Open Access Database of fermented food microbiome data. This open-access research will develop a workflow for designing functional healthy foods, enhancing biowaste valorisation, and ensuring process sustainability in both animal- and plant-based food

production. The project will establish a decision framework for assessing the health benefits and risks of fermented foods to guide the food industry and policy makers. By uniting stakeholders through collaborative Living Lab approaches, we will address challenges in fermented food processes and meet local ecosystem needs. The benefits of this project include improved public health through better diets, increased sustainability in food production, enhanced innovation in the food sector, and greater trust and acceptance of fermented foods among consumers.

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