

**RESEARCH
& INNOVATION**
Center

Twinning project HortiFoodTrends



Funded by
the European Union

HortiFoodTrends project: a collaboration following living-lab approach

UNIVERSITY OF
COPENHAGEN



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Institut LYFE - Lyon for Excellence, Education, Expérience, Exploration

Formerly Institut Paul Bocuse

Institut Lyfe is a non-profit higher education institution recognized by the French Ministry of Higher Education and Research, specialized in hospitality and restaurant management.

Commitment to Sustainable Food Transition

- Promote the transition to **healthy** and **sustainable** food.
- Work on projects supporting **public health, environmental sustainability,** and **social justice.**

Research and Innovation Center

- Collaboration of Science and Gastronomy.
- Focuses on **producing new knowledge, supporting doctoral training,** and **reimagining food and restaurant practices** to address contemporary challenges in the food industry.

Multidisciplinary Approach

- Experts from **social, cognitive,** and **nutritional sciences.**
- It emphasizes **collaboration** between scientists, hospitality professionals, and students.
- Using facilities like the Experimental Restaurant Living Lab and training restaurants to conduct real-world studies.



Since 1990

1200 students (Bachelor & Master) - 70 nationalities
5 restaurants & 2 hotels



Since 2008 **RESEARCH & INNOVATION CENTER**

35 members (incl. 15 PhD students)

InHort Institute: The Polish National Institute Of Horticultural Research



InHort is a governmental R&D organization supervised by the Ministry of Agriculture and Rural Development.

RESEARCH ACTIVITIES - 10 Research Divisions:

Horticultural Crop Breeding

Applied Biology (in vitro)

Plant Cultivation and Fertilisation

Cultivar Testing, Nursery and Gene Bank Resources

Plant Protection

Microbiology and Rysosphere

Agroengineering

Storage and Processing of Fruit & Vegetable

Food Safety

Apiculture Science



InHort
INSTYTUT OGRODNICTWA



Project context and objective

The project focuses on berries cultivated in Poland, particularly aronia and haskap berries, which are increasingly available but underutilized due to their peculiar astringency and lingering aftertaste.

They contains very high content of anthocyanins and antioxidants so are rich of health promoting assets.

To enhance their appeal and widespread use, the project leverages **culinary innovation, sensory evaluation tools, and consumer research conducted in real-consumption situation.**

In this way, the project wants to create proper **communication** between the **consumer, the fruit producer, the processing sector and science** using the Living-Lab approach.

Aronia and haskap berries



Example of project content

1. Qualitative research aiming to co-create food concepts

During this focus group, the InHort processed ingredients were presented to consumers. The objective was to imagine possible pairing with other ingredients in some recipes, leading to a co-creation of food concepts, including chokeberry and haskap berry.

Ideas of recipes, ingredients association and flavors combination

From individual ideas to group discussion

2. Food concept development by chefs

As a result of the discussion between consumers, 8 initial concepts were developed. Innovation team with Chefs of LYFE Institute are the culinary experts involved in the project: they selected 4 promising food concepts and fine-tuned the recipes, including chokeberry and haskap berry.

Savory – Concept 1	Savory – Concept 2	Sweet – Concept 3	Sweet – Concept 4
Mushroom velouté, mushrooms in pieces, haskap berry, cream siphon, fresh chives, parmesan crumble topping	Empanadas of fermented cabbage and caramelized onions with a creamy smoked tofu-chokeberry sauce with chickpeas purée	A creamy, lightly caramelized Basque cheesecake with a chokeberry puree lemon coulis and apple chips topping	A chou pastry with craquelin filled with a mouseline cream made from Haskap berry purée, haskap coulis heart and crunchy caramelized hazelnuts
Dry mushrooms Haskap berry puree	Fermented cabbage Chokeberry puree	Chokeberry puree Red apple chips	Haskap berry puree

3. Consumers' feedback on food concept developed

Qualitative research in sensory focus group was run to collect strengths and weaknesses of each recipe; sensory attributes measurement and improvement leads identified.

Selection of the best food concept: **“Basque cheesecake made with chokeberry and fresh cheese, served with chokeberry lemon coulis and crispy apple chips”**.

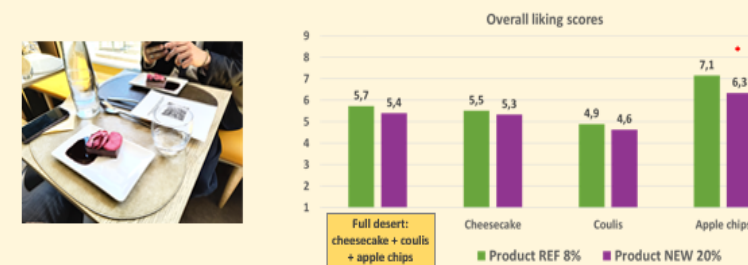
The main improvement identified was to intensify the chokeberry taste by increasing the berry content from 8% (Product REF) to 20% (Product NEW) in the cheesecake.

Attribute	Product REF 8%		Product NEW 20%	
	Mean	SD	Mean	SD
Overall liking	5.7	0.8	5.4	0.7
Texture	5.5	0.9	5.3	0.8
Taste	4.9	1.0	4.6	0.9
Appearance	7.1	0.5	6.3	0.6

4. Quantitative research on the selected food concept

A monadic pure hedonic quantitative test on 2 versions of the cheesecake recipe in real meal situations was run at LYFE Institute restaurant, collecting feedback from 70 consumers over 2 weeks. The objective was to validate the sensory improvements implemented by the chefs on the recipe and check the overall appreciation of the dessert by French consumers.

Results demonstrated that the chokeberry increase in cheesecake didn't impact the overall liking score, despite a slightly too acidic/lack of sweetness sensory profile. Crispy apple chips were really liked.



Work Packages Organization

HORTIFOODTRENDS SCOPE

Phase I

Training (sensory&consumer research methodology; Living-Lab study visits at Partners; Management &Administration skills)

Phase II

Common experience gathering (knowledge upgrading and building networking practice; exchange good practices & knowledge; formulating road maps, results' publications)

Life RESEARCH & INNOVATION

Training

Common experience

Strategy building

esqa



Phase III

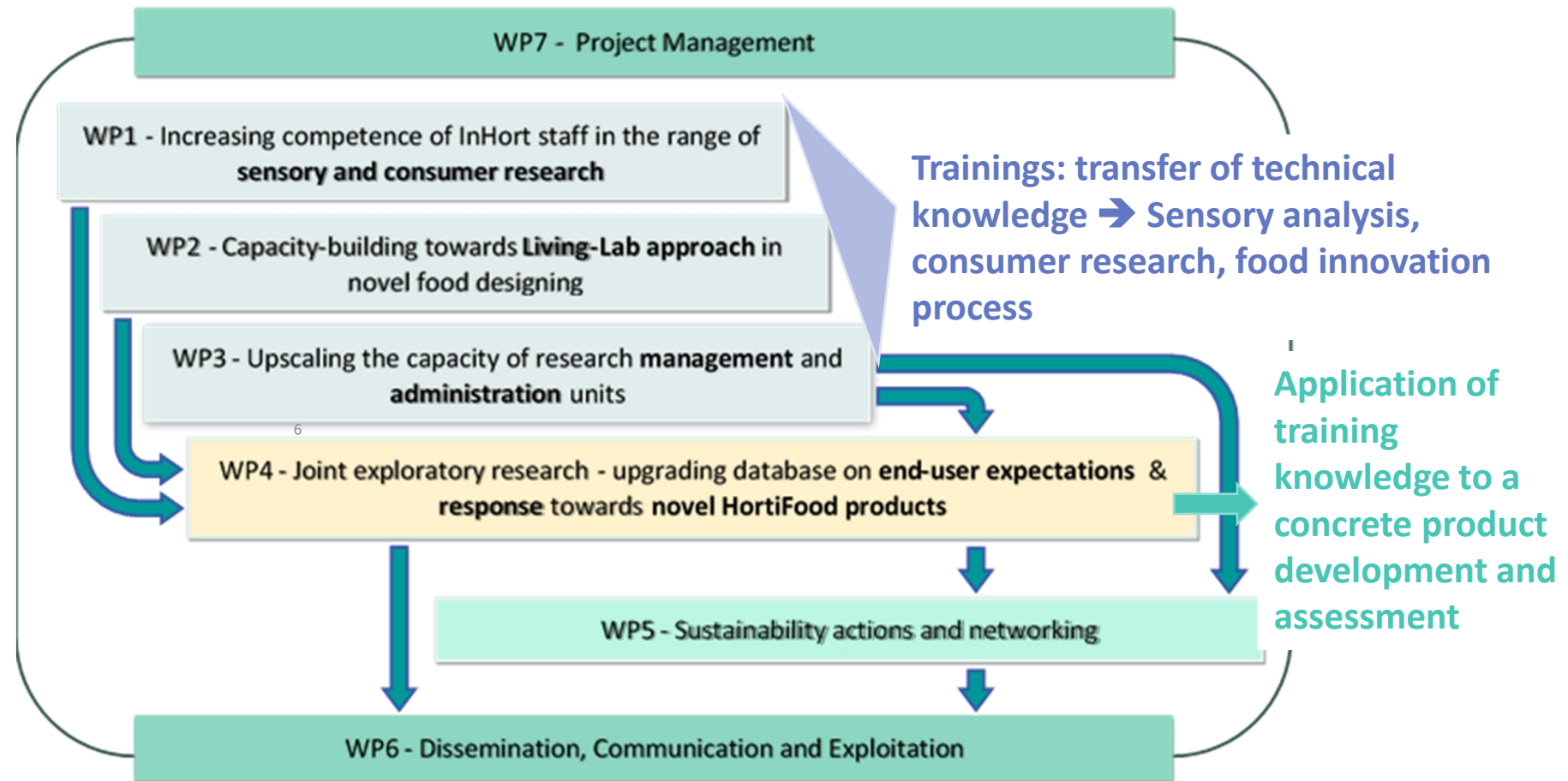
Establishing strategy & implementation (exploitation of the Common Research within Round Table; strategy for development end-user oriented novel HortiFood products with potential to increase F&V consumption; dissemination & communication)

2024-2026

Building strategy for novel HortiFood products development using the Living Lab approach

HORTIFOODTRENDS project work plan has been divided into

7 different Work Packages (WPs)



What are our benefits in participating in this project?

Visibility and valorization

...of the **structure**, of our **expertise** and of our **facilities**: Research and Innovation Center, living lab with real-meal situation consumption, culinary innovation by chefs, consumer research training, food innovation process training...

Research content and data production

Knowledge production on various berries, **consumer perceptions** and **attitudes** toward berries and **benefits** in general for France, Denmark and Poland...
Scientific **articles** on various WP are planned to be published.

International and scientific dissemination

Participation to **international congresses** and **conferences** of food science, sensory and consumer research, agriculture and food safety **summits**, and **publication** in prestigious reviews and journal...

PhD student expertise development

Team members and PhD students' **skills development**.
They can participate to **'summer schools'** or **trainings** integrated in the project, i.e. to learn how to write a scientific article

Thank you



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