

PIESTA HACKATHON

SUSTAINABLE USE OF APPLE POMACE

CALL CLOSES
28 March, 2025

KICK-OFF
15 April, 2025

HACKATHON DAYS
15-16 May,
2025



Co-funded by
the European Union

CIRCULAR ECONOMY
BioBoosters



At PIESTA Hackathon, we are looking for sustainable and innovative solutions to effectively valorize apple pomace through advanced technologies, equipment, or concepts, with opportunities for research collaborations and business partnerships.

Apple pomace, a by-product of apple processing, consists of a mix of peels, pulp, and seeds, with each component offering unique potential. Apple seeds contain oils and bioactive compounds that could be extracted for nutraceuticals or cosmetics, while the remaining biomass is rich in dietary fiber, sugars, and bioactive compounds ideal for food, feed, or bioenergy applications. Separating these components could unlock even greater value, but requires financially viable and scalable solutions.

The Challenge

Piesta Kuusikaru, an Estonian award-winning producer of premium apple products, is seeking innovative ways to extract value from apple pomace – a by-product of their production process. Currently pomace is transported to a waste management company for composting, but rising transportation costs are making this solution financially unsustainable. The company is committed to reducing waste, cutting costs, and creating value from residues, not just for itself but potentially for or **in collaboration with other similar producers in the region.**

We invite you to design innovative approaches that:

- **Enable on-site processing** to separate and valorize seeds and other apple pomace components effectively.
- **Leverage off-site solutions**, ensuring transportation costs are offset by the value of the products created from residues.
- Explore the possibility of integrating approaches designed for a single producer into **collaborative models that involve other local producers** to maximize efficiency and impact.

At PIESTA Hackathon we are interested in solution providers who can offer innovative concepts, technologies, and equipment to effectively utilize the specified residues. The company's interest ranges from discovering new business opportunities to potentially establishing partnerships in research projects. [Read more here.](#)

Criteria for Evaluation

The PIESTA Hackathon aims to explore innovative ways to extract value from apple processing biomass by developing local solutions and identifying potential markets. Proposals must account for the seasonal availability and the variability in the quality and quantity of the pomace, amounting to over 20 tons per season per company.

In evaluating the proposed ideas/solutions, the following aspects will be considered:

- 1. Innovation and Creativity** - does it introduce new approaches, technologies, or ideas to valorize apple pomace; does it address key challenges (e.g. transportation costs, separation efficiency) in an innovative and scalable manner?
- 2. Practical Feasibility and Scalability** - can the proposed solution be realistically implemented using current or near-term technologies; does it align with the scale and capabilities of Piesta and similar small producers?
- 3. Financial Viability and Sustainability** - is the solution financially sustainable for Piesta and other regional producers; does the business model demonstrate a clear path to cost reduction, revenue generation, or both?
- 4. Collaborative Potential** - does the solution encourage regional collaboration among similar producers; are there mechanisms or strategies for pooling resources and maximizing impact?
- 5. Compliance with the regulatory requirements in Estonia.**

Offer for the teams

The hackathon is free of charge and open to all innovators, including individuals, entrepreneurs, student start-ups and academic/scientific/research entities. Depending on the level of development of the proposed ideas/solutions, participants in the PIESTA Hackathon will have the chance for either business cooperation or the initiation of joint projects or pilots to test their presented concepts.

[Read about the rules of participation here.](#)

Timetable

February 26, 2025, 14.00 EET: Publication of the Hackathon call in a public webinar.

March 28, 2025, 17.00 EET: Deadline for submitting an application by teams. The application includes preliminary idea proposal and a short description of the expertise in the team.

April 1, 2025, 17.00 EET: Selection of teams to be published.

April 15, 2025, 11.00-13.00 EET: Kick-off event of the PIESTAHackathon. Organized as an online event, where participating teams will meet each other and representatives of PIESTA Kuusikaru to hear more about the challenge and expectations. Teams will present their preliminary ideas and get feedback for further development.

May 15-16, 2025: Hackathon Days in Pärnu. The program includes:

- consultations about the idea/solution with all mentors (5–10 experts and practitioners)
- preparation of the final version of the presented idea/solution
- presentation of the idea/solution by teams/individual innovators.

PIESTAHackathon will be organized by Pärnu County Development Centre in its Business Incubator (Ringi 35, Pärnu, Estonia). The program will start on 15/05 with mentoring for the participant teams and networking in the evening. On 16/05, there will be a pitching session with presentations on teams' solution proposals to PIESTA Kuusikaru and the Jury. After Jury's deliberation, winner(s) are announced. If teams are not able to travel onsite, online participation is also possible.

Contact Persons

Contact person from the organizing team:

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Client Information

Piesta Kuusikaru - the producer of artisanal apple products in Estonia, is a family-owned farm located in Estonia's scenic Soomaa region, combining rich cultural heritage with modern apple product innovation. The farm produces a variety of artisanal apple-based products, including pure apple juice, spiced apple drink, shrub syrup, slowly fermented apple cider vinegar, and award-winning apple stroop. Beyond production, Piesta Kuusikaru Farm is dedicated to sustainable practices and the principles of circular bioeconomy. Recognizing the potential of apple residues like pomace, seeds, and peels, the farm actively seeks innovative ways to valorize these by-products into high-value applications. This aligns with their vision of minimizing waste and unlocking new opportunities for environmental and economic sustainability.

Piesta Kuusikaru Farm is eager to collaborate with other similar producers in the region to address shared challenges and explore innovative solutions. By pooling resources, knowledge, and ideas, they aim to foster a stronger network of sustainable producers that collectively advance the circular bioeconomy and create meaningful impacts within the industry.

Hackathon Co-Organisers

Pärnu County Development Centre, steers the development of Pärnu County and is part of the nationwide network of county development centres all over Estonia. The regional Innovation Hub, which connects the various business development and educational competencies of Pärnu County and is implemented based on the triple helix innovation model, is a future-oriented development accelerator for the whole region of Western Estonia, with focus on facilitating green transition and sustainable development, including circular bioeconomy and renewable energy. We are based in Pärnu, Estonia, but connected worldwide.

Centre of Bioeconomy at the Estonian University of Life Sciences (BioMAK), focuses on interdisciplinary collaboration and initiatives within university's structural units and between other universities and research institutions, as well as companies and organisations in Estonia and abroad.

JAMK, Jyväskylä University of Applied Science has long experience in organizing hackathons. BioBoosters by JAMK is a Bioeconomy Business Accelerator that aims to create new businesses and globally significant solutions to combat climate change in the international bioeconomy environment. BioBoosters by JAMK's key tasks are to develop business within bioeconomy and create sustainable business based on new innovations, utilizing new technologies and digitalization, developing abilities and know-how, and building business networks and ecosystems.

Keywords

Circular bioeconomy, fruit residues, pomace, byproducts, biomass valorisation, bioconversion, enzyme-assisted extraction, dietary fibre extraction, biotransformation, biostimulants, bioplastics, bioactive compounds, nutricosmetics, nutraceuticals, nutritional supplements, biomass treatment, extrusion, extraction, fermentation, fibre processing, natural pigments, fertilizers, food and feed, apple seed oil.

APPLY HERE

PIESTA Hackathon is implemented and supported as part of the Interreg BSR project "BioBoosters – boosting the circular transition". The aim of this international project is to increase the level of innovation of entrepreneurs in the scope of bioeconomy and circular economy. Project Partners coming from 7 countries representing the Baltic Sea Region (Finland, Sweden, Germany, Estonia, Latvia, Lithuania and Poland) will carry out a total of 18 hackathons dedicated to the bioeconomy sector. The BioBoosters project is co-financed by the Interreg – Baltic Sea Region 2021-2027 program.

All current information about the PIESTA Hackathon is also available at:

<https://arenduskeskus.eu/piesta/>

<https://www.linkedin.com/company/BioBoosters>

<https://interreg-baltic.eu/project/bioboosters/>



PÄRNU COUNTY
DEVELOPMENT CENTRE



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