

Total budget: EUR 1 500 013

European Regional Development Fund: EUR 1 254 563

Project aim: Developing the fruit growing potential in the Baltic Sea Region to secure the availability of healthy, high quality fruit and fruit products through research driven innovations, thereby increasing the competitiveness and sustainability of the fruit chain in Latvia, Lithuania, Poland and Sweden.

Project activities are the following:

- Development of a conceptual framework for the establishment of demofarms;
- Development of a demonstration base at scientific institutions and SMEs;
- Creation of an open demofarm network in selected BSR countries;
- Development of recommendations for the sectoral policy makers.

Lead partner: [Institute of Horticulture](#), Latvia University of Agriculture.

Project partners: [Institute of Horticulture](#), [Lithuanian Research Centre for Agriculture and Forestry](#), [Research Institute of Horticulture](#) (Poland), [Latvia University of Agriculture](#), [Latvian Fruit Growers association](#), „Berry plus” Ltd. (Latvia), „La-Sad” Ltd. (Poland) and [Swedish Pomological Science Centre](#).

See also: www.interreg-baltic.eu/projects

Project implementation progress until 28th February, 2017:

Work Package 1: Project management and administration



Kick-off meeting of Project partners



Signing the partnership agreement before starting the Project

Work Package 2: *Development of a conceptual framework for the establishment of demo-farms*

Carried out data and information analysis and obtained general socio-economic characteristics of fruit-growing sector in Latvia (participating also [Latvian Fruit Growers' association](#)), Lithuania and Poland in terms of its role in the national economy, structure of farms and businesses, production capacity, workforce, cooperation and innovative capacity. The report also provides a comparative overview of the main similarities and differences in the fruit-growing sector in these three countries and identifies common grounds for innovation and demonstration. This analysis is expected to feed into the subsequent sectoral SWOT analysis, trend analysis and comprehensive assessment of the role and potential of demonstration farms in the involved Baltic Sea Region countries.

Provided inventory of the practices of knowledge and innovation transfer in the fruit sector pursued by national sectoral research organisations of Latvia, Lithuania and Poland in relation to individual farmers and SMEs. The key reportable items included the essence of the given knowledge transfer case, specific knowledge transfer activities, profile of participants, main forms and methods of interaction, practical outcomes, facilitating and hindering factors, and the main lessons learnt. The data were provided based on desk research and organisational self-assessments, including documented and non-documented information regarding the existing knowledge and innovation transfer practices of the given research organisations undertaken over the last five years.

Work Package 3: *Development of the demonstration base in scientific institutions and SMEs*

Work Package 3.1: *Development of demonstration objects in orchards*

[Institute of Horticulture](#) ensured the maintenance of demonstration objects, incl. collection of samples for organization of exhibitions, cultivation management of objects - pruning canopies according to features of cultivars and growing system; evaluating the effect of wood-chip mulch and drip irrigation on sour cherry yield formation; evaluating sweet cherry growth and productivity in raised-bed system; maintaining demonstration objects of *Chaenomeles japonica*, apple, pears, plums, berries; providing fertilization and protection of demo objects against pests. Appropriate equipment and materials have been purchased.

[Lithuanian Research Centre for Agriculture and Forestry](#) established espalier system in the orchard in order to demonstrate a new prototype of apple orchard which is needed to support high trees. Mechanical tree crown cutter has been purchased to ensure innovative management of orchards. To provide protection of demonstration objects in innovative way (reducing environmental pollution) a new type of sensor sprayer has been purchased – equipped with sensors which adjust activity of sprayer fixing target objects (trees, distance between them and tree height). To reach target objects (pests) effectively and to demonstrate sustainable and innovative plant protection system iMetos station has been obtained - equipped with new models of fruit disease and pest prediction system.

[Swedish Pomological Science Center](#) has established demo plots by adding cultivars of honeysuckle (*Lonicera caerulea*), highbush blueberries, Saskatoon berries (*Amelanchier alnifolia*) and wood strawberries, and ensured management of demo objects.

[Latvia University of Agriculture](#) has ensured maintenance of highbush and lowbush blueberry cultivars' collection and evaluated the phenological development of the highbush and lowbush blueberry in autumn period.

At [Research Institute of Horticulture](#) in Skierniewice, Poland, the pilot objects (DemoPlot Network) include presently nine field experiments: the effect of new rootstocks with resistance to plum pox virus on the growth and yielding of young plum trees; influence of different rootstocks on the growth, productivity and fruit quality of sweet cherry trees; the effect of new bioproducts on the growth and yielding of apple and sour cherry trees; performance of blackberry and raspberry cultivars; evaluation of pomological and qualitative traits in *Amelanchier* cultivars and clones



Sweet cherry in raised-bed system



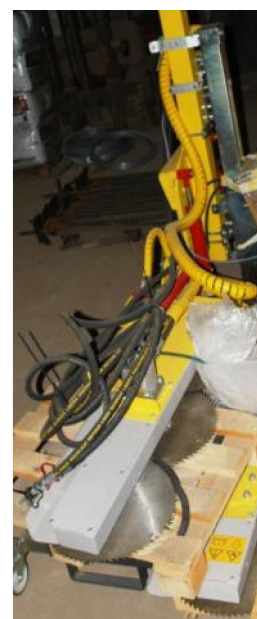
Instruments – electrical scissors and motor-driven hacksaw, hedge trimmer with extension of high tree formation



Support system for high apple trees



Sprayer with sensors to reduce pollution



Mechanical tool to manage tree canopy

Work Package 3.2: Improvement and expansion of the Technology Transfer Centre webpage

The collection and update of information has been carried out for creation of data bases to ensure improvement of new web page, incl. update of information on field research, collection and analysis of data. The archive of images was edited, additional images of new cultivars collected. Discussions about virtual catalogue of different fruit plants as well as availability of journal for professional horticulturists on new website version were held.

Work Package 3.3: Products development and demonstration

„Berry Plus” Ltd. has hosted Michelin start chefs - experts for evaluation and consulting of a new product line.



Michelin star chefs from Belgium in Gaujiena, Latvia in September, 2017 tasting new product samples during visit at [Berry Plus Ltd.](#)

Work Package 3.4: Development of tools for innovation transfer

[Institute of Horticulture](#) ensured collection of information and materials for further apps for smart devices, booklets and leaflets. Possible functional solutions of apps have been identified.

[Swedish Pomological Science Centre](#) has purchased the camera to be used to document demo plots (incl. growth of plants and harvest of berries) and materials for poster production and field labels as well as for information brochures.

Work Package 3.5: Development of demonstration and pilot objects for processing

[Institute of Horticulture](#) has purchased and validated the equipment and tools to ensure development of innovative and healthy products of fruit processing (freezer (-80 °C) for raw material and product sample storage, dried fruit grinder with different sieves, ball mills for grinding of samples very finely, steam jacketed kettle (60 L volume) for heating and preparation of products) as well as has adjusted premises and started to equip them to ensure quality evaluation of fruits and berries, incl. use of organoleptic methods, and demonstrations of processing ensuring knowledge transfer activities. Practical work of fruit plant processing was carried out with steam jacket kettle – adapted jam cooking technologies, evaluated importance of temperature on jam quality properties, adapted for work with different temperature conditions, checked in different temperature regime for testing several fruit products, as well as with dried fruit grinder - adapted for milling of different products, powdering of dried fruit and berry products using different sieves. Obtained product samples were used for analyzing raw materials and demonstrating their qualities.

[Berry Plus Ltd.](#) has announced procurement and signed supply agreement of manufacturing devices to ensure creation of innovative product processing line.



Freezer -80° C for raw material and product samples



Dried fruit product grinder



Ball mill grinder for product samples



Steam jacketed kettle for creation of product prototypes and samples

Work Package 3.6: Development of pilot and demonstration objects to enhance research capacity in horticulture

Institute of Horticulture (Latvia) has purchased equipment kit for soil moisture simultaneous measuring in different soil layers sequentially performing that in several places and demonstrating changes of moisture affected by various technological solutions in orchards. The equipment has been set up in demo object in the spring of 2017. Demonstration object for storage of plant material with adjustable temperature control has been established and managed accordingly adjusting the premises in order to demonstrate options of hibernation risk mitigation. Activities with an aim to improve methods for development of storage capacity and different pre-harvest conditions also were carried out. Collected information has been used in knowledge transfer of harvest maturity suitability of different apple cultivars. Harvesting of pears was started with observations and analysis on storage properties to provide basis for further practical consultations and recommendations for farmers.



Equipment for soil moisture measuring system



Adjusted and equipped premises with cooling system to store planting material at safe conditions

Work Package 4: *Creation of the open demo-farm network in selected BSR countries*

Work Package 4.1: *Organization of study visits and communicative events*

[Institute of Horticulture](#) in Latvia and [Lithuanian Research Centre for Agriculture and Forestry](#) in Lithuania has provided consultations (139 unique recipients – small and medium enterprises) about innovative technological solutions for fruit and berry growing. Institute in Latvia provided consultations about technological solutions for berries with high nutrition value, production of extracts on the bases of untraditional raw plant material, suitability of various cultivars of rowanberries for processing and production of dried candied fruit, technological processes and types of equipment needed for dried fruit production, juice sterilization and filling, innovative fruit storage and pre-treatment techniques as well as determination of parameters which help predict suitable harvest time.

Several communicative events have been organized in Latvia - Autumn Field day and Apple Day with an aim to introduce visitors with various apple and pear cultivars. Project members also participated in different events with lectures and presentations - Agricultural Exhibition in Rāmava, Latvia; Exhibition of Grapes at the Museum of Nature, Latvia.

Scientific conference "Development of innovations in horticulture" in Babtai, Lithuania (08.12.2016) organized by [Lithuanian Research Centre for Agriculture and Forestry](#) etc.

There was also Project partners' meeting in [Research Institute of Horticulture](#) in Skierniewice, Poland (31.01.2017. – 01.02.2017) and in fruit-growers cooperative „La-Sad” Ltd. where also Project partners from Latvia and Lithuania increasing their innovative capacity got acquainted with innovations in fruit-growing sector which refer to research, recommendations for fruit-growing sector and processing process, new scab-resistant apple varieties (perspective and reality of innovative apple growing), innovative orchard models of sour and sweet cherry, innovative microbiological bio-based products for organic fruit growing, competitiveness of Polish fruit-growers, knowledge transfer to fruit-growers in Poland, innovations in group of fruit producers, innovative fruit storage technologies, trends in fruit processing. Visitors also got acquainted with [Research Institute of Horticulture](#) laboratories of fruit storage and processing as well as with functioning of rhizosphere and using of microorganisms. During the visit exhibition in Warsaw was visited where it was possible to see and get to know the latest technologies and solutions in fruit-growing sector as well as tools and methods of knowledge transfer.



Consultations for entrepreneurs to create innovative products, testing of samples



*Fruit-growers during the Field Day in [Institute of Horticulture](#) (Latvia) getting acquainted with demo-object of *Chaenomeles japonica**



Presentation by Dr. Dorota Konopacka during 3rd international scientific conference „Sustainable Fruit Growing: From Plant to Product”, Riga - Dobeles, 17–19 August, 2016



Participants of Project partner meeting during conference in Riga.



Presentation of InnoFruit Project during the conference "Development of innovations in horticulture" at [Lithuanian Research Centre for Agriculture and Forestry](#) (08.12.2016)



Participants of Project partner meeting at storage premises of "[La-Sad](#)" Ltd. in Poland



Project members at [Research Institute of Horticulture](#), Skierniewice, Poland getting acquainted with innovations of Institute in the fruit-growing sector



MTAS (International Fair of Fruit Farming Technology) in Warsaw, Poland visited to increase knowledge and experience of innovative knowledge transfer of Project partners staff