ECPGR Activity Grant Scheme
Proposal Form

Third Call – Phase XI (2024–2028)

Activity Proposal

Activity	
Full title	Collaborative action for developing trait descriptors for berry genetic resources in Europe
Acronym (or short title)	BerryTraits
Duration of Activity (in months)	24
Start date – End date *Please indicate start date not earlier than 3 months after deadline of Call*	01.05.2026 – 30.04.2028

Applying Working Group(s)

	Working Group	Indicate name and surname of Working Group Chair
1.	Berries	Monika Hoefer
2.		
3.		
4.		

Activity Coordinator

Activity Coordinator	
Name and Surname	Tuuli Haikonen
Working Group	Berries
Nationality	FIN
Current position	Senior Scientist
Institute	Natural Resources Institute Finland (Luke)
Country	Finland
Telephone	+358 50 364 9695
Email	tuuli.haikonen@luke.fi

Activity Partners (ECPGR-funded)

Please note that each partner needs to be a member of an ECPGR Working Group to be eligible for funding. For self-funded partners please use the separate box below.

Partner ID No.	Name and Surname	Institute	Country
1	Tuuli Haikonen	Natural Resources Institute Finland (Luke)	Finland
2	Stefanie Reim and Monika Hoefer	Julius Kühn Institute	Germany
3	Erik Schulte	Federal Plant Variety Office, Testing Station Wurzen	Germany
4	Hedi Kaldmäe	Estonian University of Life Sciences, Polli Horticultural Research Centre	Estonia
5	Claudio Niggli	ProSpecieRara	Switzerland
6	Monica Sturzeanu	Research Institute for Fruit Growing Pitesti (ICDP)	Romania
7	Tina Ternjak	University of Maribor, Faculty of Agriculture and Life Sciences	Slovenia
8	Valda Laugale and Ieva Kalnina	Institute of Horticulture (LatHort)	Latvia
9	Jiří Sedlák and Boris Krška	Research and Breeding Institute of Pomology, Holovousy Ltd	Czech Republic
10	Pedro Brás de Oliveira	Instituto Nacional de Investigação Agária e Veterinária (INIAV)	Portugal

11	Michal Koniarski and Stanislaw Pluta	National Institute of Horticultural Research (InHort) in Skierniewice	Poland
12	Kimmo Rumpulainen	Swedish University of Agricultural Sciences	Sweden
13	Bruno Mezzetti, Franco Capocasa	Università Politecnica delle Marche	Italy
14	Rytis Rugienius and Audrius Sasnauskas	Lithuanian Research Centre for Agriculture and Forestry	Lithuania
15	Justine Perrotte	INVENIO	France
16	José Federico Sánchez Sevilla and Carmen Soria Navarro	Andalusian Institute for Agricultural, Fishing, Food and Ecological Production Research and Training (IFAPA)	Spain
17	Dag Røen	Njøs Fruit and Berry Centre AS	Norway
18	Nika Cvelbar Weber	Agricultural Institute of Slovenia	Slovenia
19	Fred Walter Uhlig	Burgmattgut	Switzerland
20	Torben Toldam-Andersen	The University of Copenhagen; Faculty of Life Sciences, Dept of Agricultural Sciences - Crop science	Denmark

Self-funded partners

Partner No.	Name and Surname	Institute	Country
1	Ave Kikas	Estonian University of Life Sciences, Polli Horticultural Research Centre	Estonia
2	Liv Gilpin	Njøs Fruit and Berry Centre AS	Norway

Description of Activity (suggested max. 1,000 words)

Please address the following aspects:

– ***Background:*** Explain the context behind the choice of this Activity, e.g. why this has been prioritized or selected. If this is the continuation of a preceding Activity, please indicate how and why the new Activity will build on previous results/experiences.

"Berries" is one of the youngest of the ECPGR Working Groups (WG:s): it was established in 2019, and its first project, *Collaborative action for updating the documenting about berry genetic resources in Europe (EUROPE.BERRIES)* took place in 2021-2023.[1] This first Action was funded on Phase X and had the following objectives: (1) Record the varieties/cultivars of berry genetic resources in the respective participating countries, and provide data harmonization, qualitative evaluation and availability for inclusion to the respective National Focal Points for EURISCO; (2) Elaborate a first draft of crop specific technical guidelines for gene bank management (Manuals) of berry genetic resources.

The inventories compiled during the EUROPE.BERRIES project totaled 4,061 accessions of genetic resources from 18 partners and 16 countries.[2] The inventoried accessions pertained to multiple GRIN taxonomic categories across four main genera: *Fragaria* (37 % of all inventoried accessions, belonging to nine species-level taxonomies), *Rubus* (14 % of accessions in 12 taxonomies), *Ribes* (33 % of accessions in 10 taxonomies), *Vaccinium* (6 % of accessions in 10 taxonomies). The main crop species were garden strawberry, black currant, red currant, gooseberry, raspberry, and high-bush blueberry. Accessions in additional 11 other genera consisted 10 % of all inventories, totaling 25 species taxonomies. Due to longevity of many cultivars in these perennial clonally propagated crops, many historical cultivars were present across several collections. For these shared cultivars, their most original accessions were identified as candidates for flagging them as AEGIS accessions.

The project also summarized the information on the type of germplasm storage applied by the European institutes, important for preparation of standard guidelines for the maintenance of collections. The *ex situ* collections of berries genetic resources were mainly, even almost exclusively, maintained as active collections of clonally propagated living plants. Methods such as *in vitro* and cryo preservation were applied for safety duplication in some of the institutes, while the number of seed preserved accessions were found to be negligible for most of the genera. Finally, after the project, technical guidelines for crop-specific field gene bank management were finalized and approved in the 2nd WG meeting on June 2025.[3]

[1] Höfer M. (2021) Coordination of gene bank activities between different national collections of berry genetic resources in Europe in the frame of ECPGR. Acta Hortic DOI 10.17660/ActaHortic.2021.1309.27

[2] https://www.ecpgr.cgiar.org/resources/ecpgr-publications/publication/europeberries-final-activity-report-2023

[3] https://www.ecpgr.org/fileadmin/templates/ecpgr.org/upload/AEGIS/crop-specific_documents/Berries_crop_specific_field_genebank_standards_Final_WG_Kaunas.pdf

– ***Justification:*** Explain why this Activity is justified in terms of making progress towards achieving the ECPGR priority activities and the targets of the *Plant Genetic Resources Strategy for Europe*.

The first project of the WG *Berries* successfully concretized the wide extent of European berry genetic resources for the very first time and confirmed that the accessions of these clonally propagated PGRs are maintained as field collections where they are available for characterization, evaluation and distribution. The upload of accession passport data to EURISCO were supported by the project.

The identification of unique and true-to-type accessions is the next important challenge for berry germplasm collections: Cultivars of clonally propagated perennial crops may have a long cultivation and adaptation history across different regions. Widely distributed cultivars may have acquired local names. Cultivars may have lost their original morphology through clonal variability – or in the other hand may have, through inadvertent seed propagation, lost their original genotype. The resulting multitude of synonymies and homonymies also has strong historical relevance and, thus, value for cross-disciplinary research. The ECPGR working groups of other clonally propagated crops (*Pyrus*/*Malus*, *Prunus*, *Vitis*, *Allium*) have recently addressed these difficulties of true-to-typeness confirmation and preservation of representative diversity by developing harmonized descriptors and DNA-based true-to-typeness tests. Both steps will be necessary for developing the European genetic resource management of *Berries*, too.

For confirmation of true-to-typeness of accessions of old and traditional berry varieties, pomological characteristics will be in the key role while genotypic data is at a secondary role due to incomplete information on pedigrees. Thus, as the next activity, the Berries WG in their 2nd WG meeting in June 2025[4] agreed that developing and communicating protocols for harmonized recording of phenotypic traits across collections should be the next Activity of the WG.

Harmonizing berry descriptors is important to fully use existing characterization & evaluation (C&E) data and to support C&E data compatibility across gene banks. Developing harmonized descriptors will support confirmation of true-to-type unique accessions (for AEGIS) and the determination of duplicate status even for accessions of different origins but similar morphology.

Harmonized berry descriptors directly support European strategies for the coordinated conservation and use of plant genetic resources, including ECPGR and AEGIS, by enabling transparent comparison of accessions across collections and countries. Descriptor harmonization improves cost-effectiveness by reducing redundant characterization and facilitating the sharing and reuse of evaluation data among gene banks. Standardized descriptors also enhance the usability of data for pre-breeding, breeders and researchers, thereby strengthening the link between conservation and sustainable use. In addition, harmonized descriptors improve data quality, interoperability and compliance with FAIR data principles, enabling integration into European and global information systems.

The already-existing international standards for berry crops include, e.g., the IPGRI Strawberry descriptors from 1986 and the preliminary descriptors from the COST Action 863 for strawberry as well as some of the descriptors applied in Horizon pre-breeding research projects GoodBerry and BreedingValue. For currants and gooseberry, descriptors applied in the RIBESCO project can be a good starting point. For strawberry, the starting point could be the descriptors elaborated during the GENBERRY project. For blueberry, *Vaccinium* C&E records in the USDA-ARS GRIN database include six morphological and three phenological characteristics as well as few other evaluation traits. UPOV guidelines for all main berry crops do exist, and while their primary purpose is distinctness rather than variety description, they will be considered.

[4] https://www.ecpgr.org/fileadmin/bioversity/publications/pdfs/Berries_WG_2nd_meeting_report_final.pdf

[5] https://www.ars.usda.gov/pacific-west-area/corvallis-or/national-clonal-germplasm-repository/docs/ncgr-corvallis-vaccinium-germplasm/

– ***Rationale for the choice of partners:*** Explain why the selected partners are the most suitable to carry out the proposed Activity and briefly describe their respective roles in the Activity.

Different from many of the other ECPGR WG:s, the WG Berry concerns a diverse group of crop species distributed to multiple different botanical families, representing a range of adapted biodiversity targeting production systems from annual to biennial and perennial. The development of high-quality C&E descriptors thus requires experts with long-term experience in gene bank curation and/or variety evaluation. Thus, all in-depth work related to C&E data and descriptors will be done in crop-specific sub-teams.

The expert team leaders and team members were preliminarily selected during the 2nd WG meeting in June 2025, in preparation for the proposed activity. Thus, the selected experts have the trust of the WG and represent the highest levels of expertise for their crops, strong commitment, and ensure a wide geoclimatic coverage across European biodiversity. All already-nominated partners per each berry crop have already been involved in previous collaborations and have extensive knowledge of the respective genera of the genetic resources. Furthermore, team composition supports multi-actor approach with representation across different roles: gene banks, DUS authorities, public research institutes, institutional breeders, and breeders from private breeding companies. Specific efforts were done to include countries known to have the necessary expertise but not part of the previous EUROPE.BERRIES project or not present in the most recent WG meeting: Poland, Norway, Sweden, and Portugal.

The crop teams experts are x eligible members of the Berries WG from 16 European countries:

Strawberry: S. Reim and M. Höfer (DE), R. Rugienius (LT), J. Sánchez Sevilla (ES), E. Shulte (DE), J. Perrotte (FR), F. Capocasa (IT), L. Ansebo (SE) (a team leader + 7 WG members)

***Rubus* spp., raspberry and blackberry:** E. Schulte (DE), J. Sedlák, D. Røen (NO), V. Laugale (LV), T. Ternjak (SI), B. Mezzetti (IT), P.B. Oliveira (PT) (a team leader + 6 WG members)

Black currant: H. Kaldmäe (ES), E. Schulte (DE), S. Pluta (PL), R. Rugienius (LT), K. Rumpunen (SW) (a team leader + 4 WG members)

Red currant: C. Niggli (CH), E. Schulte (DE), J. Sedlák (CZ) (team leader + 2 WG members)

Highbush blueberry and other *Vaccinium* blueberry species: M. Sturzeanu (RO), T. Haikonen (FI), B. Krška (CZ), M. Koniarski (PO), P.B. Oliveira (PT) (a team leader + 4 WG members)

The activity coordinator Dr Tuuli Haikonen is a senior scientist at Natural Resources Institute Finland (Luke), Finland. She is responsible for fruit and berry collections at the Finnish National Genetic Resources Programme. In addition, she leads the breeding program for berries and fruits in the same institute. She is the vice chair of the Berries WG and has contributed to the finalization of the crop-specific field gene bank management. She will take over the position of Chair from Dr. Monika Höfer in September 2026. Dr. Haikonen represents Finland's national program in the Nordic Network for Vegetatively Propagated Plants of the Nordic Genebank (NordGen). In the last 10 years, she has acted as a work package and a team leader in several international pre-breeding projects working on fruit and berry characterization and evaluation. She has also coordinated the collection of Officially recognized descriptions of 136 fruit and berry varieties commercialised in Finland before 30.9.2012 for registration in the Finnish National list of plant varieties and for EU Fruit Reproductive Material Information System.

Crop team leaders:

The team leader for Rubus spp., Erik Schulte is working as the Head of Fruit Section and as the head or the fruit testing station Wurzen at the Federal Office of Plant Varieties (Bundessortenamt) in Germany. He is responsible for the DUS testing for and granting of plant breeders' rights for varieties of all kind of fruit species. He is one for the founding members of the German fruit gene bank network, and here he is responsible as a coordinator for germplasm networks of varieties of various berry fruit species. On European level he contributes to the core collection of Northern European gene pool of Ribes (former RIBESCO project 2007-2011) and contributed to activities on evaluating strawberry varieties (COST Action 836 and 863). He is also a long-lasting member, and former chairperson, of the Technical Working Party for Fruit crops of the International Union for the Protection of New Varieties of Plants (UPOV), which, among other tasks, publishes test guidelines (i.e. descriptors for the purpose of examining distinctness, uniformity and stability of new plant varieties).

The team leader for Strawberry, Stefanie Reim: Dr. Stefanie Reim is senior scientist at the Julius Kühn-Institute (JKI), Institute for Breeding Research on Fruit Crops, Germany. In 2026, she will take on the role of network coordinator for the German Fruit Gene Bank at the JKI. She has extensive experience in the conservation of wild fruit species in Germany and has participated in and led several national projects in this field. Her work has focused primarily on the evaluation of fruit genetic resources using both morphological and molecular approaches. In recent years, she has been intensively working on the development and application of digital phenotyping methods for the characterisation and evaluation of genetic resources. Dr. **Monika Höfer** is the chair of the ECPGR WG Berries. She has extensive experience in the characterisation and evaluation of genetic resources in strawberries. She has been a partner in various projects, including EU projects GENBERRY and BreedingValue.

The team leader for black currant, Hedi Kaldmäe: Dr Hedi Kaldmäe is working as Head of Analysis Unit at Polli Horticultural Research Centre of Estonian University of Life Sciences. Although her current work is more focused on biochemical characterization of berry genetic resources she is and has been involved in characterization of genetic resources using morphological and molecular markers. She has been involved in national genetic resources programme since 2005. On European level she contributed to the core collection of Northern European gene pool of Ribes (RIBESCO project 2007-2011) and has participated in a number of ECPGR projects including those focused on documentation and developing descriptors for fruit crops (EU.CHERRY-Collaborative action for

updating, documenting and communicating the cherry patrimonial richness in EU 2016-2017, EUROPE.BERRIES 2021-2023 FRUITTREEDATA)

The team leader for red currant, M.Sc. Claudio Niggli is working as a project leader for the small fruit projects at ProSpecieRara foundation and as a project holder for the Swiss National Action Plan NAP-PGREL since 2014. He also acts as a plant data base manager for ProSpecieRara since 2018. His main focus besides coordination of berry PGR conservation lies on morphological characterisation of small fruit accessions according to the UPOV guidelines and evaluation of genetical analysis combined with historical pomology. The emphasis among cultures is on Ribes cultivar classification. He is co-author of the monography "Stachelbeeren" about gooseberry pomology published in 2019. He is in a cooperation with USDA Corvallis regarding Ribes PGR for comparison of genotypes and pomological classification.

The team leader for blueberry, Monica Sturzeanu: Dr. Monica Sturzeanu is a senior scientist at Research Institute for Fruit Growing Pitesti (ICDP), Romania coordination of research and development activity with a focus on small fruit breeding and genetic diversity. She is the curator germplasm for Fragaria, Vaccinium, Rubus, Ribes, and a member of the ECPGR Berries Working Group. She is actively involved in national and international projects, and she has experience in the management of six national research projects. She is responsible for organizing the mother plantations of berries according to EU rules and certification of propagation and planting material.

In addition to the participating WG members, the following experts will join the project as staff members or after application of membership to WG. They have sent or have been included in respective Expression of Interest Letters with one exception.

- strawberry: SLU (SW) includes the curator of fruit collections Lena Ansebo from The Swedish National Gene Bank for Vegetatively Propagated Horticultural Crops
- strawberry: Njøs Fruit and Berry Centre AS includes strawberry breeder Liv Gilpin.
- raspberry: LatHort (LV) includes raspberry breeder Ieva Kalnina
- black currant: LAMMC (LT) includes currant breeder Ingrida Mažeikienė
- red and black currant: the coordinator of Estonian national genetic resources project, Ave Kikas, will pilot descriptors as in-kind contribution of Estonian University of Life Sciences, Polli Horticultural Research Centre.
- red currant: Fred Uhlig (CH) will later join the project as a new project holder for Swiss national gene bank.

– ***Methodology or Approach:*** Explain how the partners will operate. Clearly explain who is expected to do what. Also explain the rationale for meeting (or not) as part of the Activity. Include a Gantt Chart, to illustrate the work breakdown structure of the project.

The partners will implement a **Coordinated Multi-Team Editorial Workflow** to ensure consistency, keeping of timeline, and quality across all outputs.

The Activity will rely on three-level organization:

1) All activity members, each positioned in crop-specific teams. They will also pilot (test) the descriptor guidelines in practice in their own chosen crop(s) before the descriptor sets are introduced more widely.
2) Five crop-specific teams, each led by a Team Leader. Team leaders will be responsible for inviting the team meetings, ensuring progress, interaction of team members and the preparation of intermediary drafts and pre-final documents. Each team is responsible for

compiling and adapting non-template guidelines into a draft descriptor document using a shared template.

3) Team leaders' group, formed by the Team Leaders and the Activity Coordinator. The task of this group will be to coordinate and synchronize, provide support and ensure equal progress and standards across the crops.

This approach combines clear role allocation, standardized templates, and structured collaboration to deliver high-quality, consistent outputs within the agreed timeline.

The project will commence with a kick-off meeting where project goals are set and motivated. During the first year, crop teams will identify existing C&E datasets and existing protocols. They will prioritize traits according to their relevance for true-to-typeness evaluation and prepare draft descriptors for the traits of primary importance for each species. A summary of existing datasets will be produced.

During the second year, the primary descriptors will be pilot tested by characterizing sets of accessions at the living collections of the project partners. The feedback will be collected, and descriptors will be finalized in crop teams. This will ensure the communicability and accessibility of the descriptors and produce user feedback even outside the immediate crop team. Uploads of the obtained C&E data to EURISCO will be supported by providing templates for data entry.

– ***Description of genetic material:*** If your Activity is focusing on genetic material, please describe in detail, as far as possible, who is providing this genetic material, its status and the number of accessions under investigation (for example: *This Activity aims at molecularly analysing / safety-duplicating / evaluating / collecting XY accessions (listed) of "Genus species", provided by genebank Z/ farmers in country W /to be collected in country P…, etc.*).

An important part of descriptor development is the pilot testing of the draft descriptors during the project. The piloting will focus on 10-15 accessions per partner, using at least 3 plants per a clonal accession, which is a typical minimum replication in a clonal gene bank collection. The genetic material for piloting will be chosen based on the EUROPE.BERRIES project, which identified overlapping cultivars across gene banks. The phenotypic information will support the selection of true-to-type AEGIS accessions within the candidate accessions chosen in the EUROPE.BERRIES project.

– ***Expected impact.*** Clearly specify the expected impact from this Activity for the respective ECPGR priority activity, compared to the current state of progress of the respective *Plant Genetic Resources Strategy for Europe* target. Explain how the impact will be obtained.

The project will

- co-develop descriptor sets specific for five main berry species
- pilot descriptor sets in operational settings at actual gene bank living collections, verifying their quality and accessibility
- review, summarize and support the upload of old characterization & evaluation data to EURISCO
- produce new characterization data by piloting descriptors for upload to EURISCO

Four deliverables are planned:

D1: Updated summary of pre-existing and newly acquire C&E data.

D2: Filled-in templates are provided to support uploads of C&E data to EURISCO

D3: Descriptor sets for five berry crops are submitted to ECPGR office and to WG "Berries"

D4: Public presentation of descriptor sets to participatory users.

The project provides the very necessary early step towards fully reaching four strategic goals as listed in table "Expected products and related ECPGR Priority activity".

The activity will also produce new characterization data for each of the main berry crop species (raspberry/blackberry, garden strawberry, black currant, red currant, and high-bush blueberry).

After the completion of the activity "BerryTraits", the WG will apply for funding from the ECPGR Meeting's budget for a Descriptor Workshop and field training to be held in Wurzen, Germany, by Bundessortenamt. The workshop is meant to ensure efficient distribution and accessibility of the developed protocols and promote their use by berry gene banks and collections. The workshop will be made open for stakeholders outside the WG and thus it will also support the foreseen establishment of Evaluation Network (EVA) for berry crops (https://www.ecpgr.org/eva/eva-networks/perennials).

– ***Links with other non-ECPGR projects or individuals*:** If applicable, clearly explain the objectives of the linked projects and the reasons for complementarity with the ECPGR Activity.

In addition to national gene banks or their national projects, the following on-going projects have relevant expertise and materials to Berry Trait activity:

- "Development of berry germplasm", 2024-2026, led by Dag Røen and funded by The Nordic Public-Private Partnership for Pre-Breeding in Plants (Nordic PPP). This project aims to develop genetically and phenotypically well-defined strawberry and raspberry germplasm to significantly widen the gene pool available for Nordic and Baltic breeding programs. As part of the project, raspberry descriptors for pre-breeding have been agreed (NO, SE, DK, FI, EE, LV) and will be taken into consideration in this project.
- "Long-Term Development Concept of the Research Organization for the Period 2023–2027", grant No. RO1525, and Czech Republic National Programme on Conservation and Utilization of Plant Genetic Resources and Agrobiodiversity, No.: MZE-62216/2022-13113/6.2.4, both funded by the Czech Ministry of Agriculture: Recent publication on

blueberry descriptors: Pavliuk, L.; Marklová, M.; Krška, B.; Sedlák, J. Evaluation of Pomological and Phenological Traits of Blueberries for Breeding and Cultivation Practices. Appl. Sci. 2025, 15, 11158. https://doi.org/10.3390/app152011158

- Collaborative Rubus breeding program (raspberry and blackberry) developed by INIAV, I.P. with two different private companies.
- Collaborative Blueberry variety trials developed by INIAV, I.P. with a private company exclusively with southern highbush cultivars located at the INIAV's Research farm in the Portuguese southwest coast under protected cultivation.

Previous EU projects have conducted characterization and evaluation and surveys of collections of berries genetic resources in Europe: COST Actions 836 and 863, European AIR project, EU GENBERRY, RIBESCO, EUBerry, GoodBerry, or BreedingValue. However, there is an urgent need to confirm protocols and promote them for harmonized characterisations/ evaluation data entries for EURISCO, both regarding the existing trait data and any future national and international efforts.

Examples of previous projects or gene bank evaluations and their C&E datasets are:

Strawberry:

- European AIR project: In 1992/93 24 institutes from 16 European countries collaborated in order to set up a general inventory of 900 strawberry cultivars. In addition, a descriptive catalogue which includes the primary passport and secondary characters of the cultivars were elaborated.
- COST Action 836: In 1998 the European COST action 836 'Integrated research in berries' was started to coordinate the scientific activities in strawberry genetic resources in 22 partner countries. For characterization of accessions a catalogue of 34 traits were elaborated. https://www.actahort.org/books/649/ (Convener: B. Mezzetti, IT)
- COST Action 863 (2009-2010): The evaluation protocols from the previous COST Action were applied to evaluate trials with 23 strawberry cultivars in 14 locations across Europe. https://ishs.org/ishs-article/926_18/

Strawberry and raspberry:

- GENBERRY: The GENBERRY project, partly funded by the European Community, has been designed to ensure that agricultural biodiversity of small berries is preserved, characterized and used to improve varieties adapted to local European regions. The project was focused mainly on strawberry (Fragaria x ananassa), the largest cultivated berry in Europe, and also on raspberry (Rubus ideaus). In general, this project helps for the improvement of the conservation of the small berries genetic resources through the construction of core collections, the development of a passport data list, the selection and definition of appropriate primary and secondary descriptors, the characterization of genotypes using molecular markers, the identification of health nutritional compounds and diseases evaluation for a large subset of the collections and the establishment of the European small berries database sustained by a continuous long term network. https://ishs.org/ishs-article/926_2/

Currants and raspberry:

- RIBESCO (071 AGRI GEN RES 870/2004; 2007-2010)): on-line resource http://www.ribes-rubus.gf.vu.lt/ The *Ribes* database contains 2551 records of *Ribes* accessions held in 11 countries. Part of accessions were evaluated during Ribesco (Core collection of northern European gene pool of *Ribes*) project and data of evaluation and photos were included into data base as additional fields. The *Rubus* database contains 665 records of *Rubus* accessions held in 6 countries.

Currants:

- The descriptors of Ribes agreed in Ribesco project have been applied in the following characterization and evaluation projects in Latvia: **Studies on Ribes plants, *Cecidophyopsis* mites and Blackcurrant Reversion virus for sustainable resistance breeding and cultivation of *Ribes*.** European Regional Development Fund (ERDF) Project No. 1.1.1.1/18/A/026 (2019-2022). https://www.darzkopibasinstituts.lv/en/projects/studies-on-ribes-plants-cecidophyopsis-mites-and-blackcurrant-reversion-virus-for In this project, 68 *Ribes* accessions in LatHort collections were evaluated and phenotyped by using descriptors developed in the RIBESCO project, and the virus free *Ribes* plant Core collection was developed. The consolidated and updated list of Latvian *Ribes* genetic resources was submitted to the national focal point for the renewing data in Nordic-Baltic genetic resource data basis (https://nordic-baltic-genebanks.org/gringlobal/search.aspx). The description of genotypes by EURISCO descriptors was performed, and the passport data was submitted to the national Genetic Resource Centre, which entered the information in the EURISCO database (https://eurisco.ipk-gatersleben.de/apex/eurisco_ws/r/eurisco/). Three publications are related to this project: 1) Laugale V., Krasnova I., Lepse L. (2022). Characterisation of Latvian gooseberry genetic resources // Proceedings of the Latvian Academy of Sciences. Section B. Natural, Exact and Applied Sciences. - Vol. 76(4), 555.-558.lpp. - ISSN 2255-890X. https://web.archive.org/web/20221025195728id_/https://sciendo.com/pdf/10.2478/prolas-2022-0086; 2) Laugale V., Krasnova I., Strautiņa S., Lepse L., Moročko-Bičevska I. 2025. Blackcurrant genetic resources for breeding and sustainable production. Rural Sustainability Research 54(349), 52-59. DOI: 10.2478/plua-2025-0017 . https://reference-global.com/article/10.2478/plua-2025-0017 3) Strautiņa, S., Lācis, G. and Kampuss, K. (2020). Phenotypical variability and diversity within *Ribes* genetic resources collection of Latvia. Acta Hortic. 1277, 81-88. DOI: 10.17660/ActaHortic.2020.1277.11

Several berry crops:

- BreedingValue Pre-breeding strategies for obtaining new resilient and added value berries (Horizon-EU, 2021-2025) uploaded strawberry, raspberry and blueberry evaluation datasets of the project for trait visualization in Germinate https://germinate.hutton.ac.uk/breedingvalue/#/home
- Swiss National Action Plan on the Conservation and Sustainable Use of Plant Genetic Resources for Food and Agriculture, which aims to preserve and use PGR, but also functions as an expert sub-committee for certain cultivar groups. It has a large dataset of morphological and genetical description of PGR-accessions.

Expected products and related ECPGR Priority activity

List concrete products and results that are obtained by the Activity and the corresponding number(s) of the ECPGR Outcome(s) and/or Output(s) and/or Activities to which each product/result will contribute.

	Expected products/results	Corresponding contribution to *Plant Genetic Resources Strategy for Europe* target
1	**D1:** Updated summary of pre-existing and newly acquired C&E data. **D2:** Filled-in templates to support uploads of pre-existing C&E data to EURISCO **D3:** Descriptor sets for five berry crops Transfer of C&E data to EURISCO is made possible by supporting data upload by templates of deliverable 2 (D2). Deliverables D1 and D3 will result in the improvement of sharing and reuse of evaluation data among gene banks. D2 and D3 will ensure interoperability and compliance with FAIR data principles	**4.3 • P1 - Compilation and transfer of existing C&E data to EURISCO** **(documentation)**
2	**D3:** Descriptor sets for five berry crops Harmonized protocols (D3) for trait evaluation & characterization support the identification of unique accessions and the cultivation history of heritage cultivars. They will be important for evaluation of true-to-typeness of accessions for AEGIS.	**3.3 • P1 - Support to countries to identify and include material into AEGIS, including regeneration and safety-duplication.** **(ex situ)**
3	**D3:** Descriptor sets for five berry crops **D4:** Public presentation of descriptor sets to participatory users. The berry crops include a wide diversity of species of which many are underutilized and suited for low-input cultivation. By piloting the descriptors and collecting feedback, the project ensures user-friendly, clear and accessible descriptor protocols (D3). The project will also advertise and attract commercial and participatory breeders, *in situ* collections and other users in the public presentation of the descriptor protocols (D4).	**5.3 • P2 - Promote participatory use and evaluation of PGR, especially climate-resilient and low-input, underutilized crops.** **(use)**
4	**D3:** Descriptor sets for five berry crops	**5.1 • P1 - Support for the creation of other crops' public–private partnerships, including attention to the possibility to adapt the EVA**

	D4: Public presentation of descriptor sets to participatory users. The preparation of EVA network for berries is actual and the protocols (D3) will enhance the usability of EVA C&E data for pre-breeding, breeders and researchers. Reaching to participatory users along with commercial berry breeders interested in genetic resources (D4) will support the creation of EVA networks.	**concept to perennial plants such as fruit trees.** **(use)**

Workplan for the proposed period of the Activity

Brief description of meetings and/or main actions of the Activity.

	Type of Action *(indicate if "meeting" or "other action")*
1	**Other action: All activity members.** The Activity begins with a joint kick-off meeting (on-line) with confirmation of responsibilities and roles and for task motivation (Year 1)
2	**Other action: Crop teams.** Co-development of initial drafts of descriptor documents will be done in crop-specific sub-teams consisting of crop experts. The teams will identify any already existing evaluation and characterization datasets and explore their compatibility with the descriptors being formalized. Protocols of characterization descriptors for traits of priority (primary importance) to gene banks are chosen for piloting, (Year 1)
3	**Other action: Team leaders**. Once initial drafts of descriptor sets, team leaders will conduct an alignment review to harmonize structure, terminology, and formatting across all documents. The drafts will be shared to all Activity members for piloting and the progress communicated to ECPGR. Summary of existing C&E data will be produced. (Year 1)
4	**Other action: All activity members.** The descriptor sets are piloted by using them in real operation, for evaluation of accessions, focusing on confirming true-to-typeness of AEGIS candidate accessions. Following piloting, all participants will engage in a feedback meeting to provide consolidated input. Feedback will be documented and distributed to the respective crop teams, who will incorporate revisions into their drafts. (Year 2, in-kind contribution of all partners)
5	**Other action: Crop teams.** Protocols of characterization and evaluation descriptors for additional traits will be developed. Trait priorities will be finalized. (Year 2)
6	**Other action: Team leaders:** After piloting and revisions, team leaders will perform a final alignment to ensure coherence and completeness before submission. The finalized descriptor sets will then be forwarded for formal approval outside the project, to ECPGR and to WG Berries. They will be presented in a public on-line seminar. (Year 2)

Additional remarks

Indicate any additional remark(s) that is/are important for the evaluation/implementation of the proposed Activity

Remarks:
All partners agreed to pilot descriptors as an in-kind contribution to the project. Ten of the partners were able to estimate the cost of their in-kind work at the proposal stage. The estimable in-kind contribution of the partners is 40600 EUR.

Please send the completed form together with the budget table to the Chair of the submitting Working Group for submission of the Activity proposal.