



ECPGR

ECPGR Berries Working Group



**LITHUANIAN
RESEARCH CENTRE
FOR AGRICULTURE
AND FORESTRY**

Strawberry (*Fragaria*) inventory

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The 2nd meeting of the Berries Working Group Kaunas, Lithuania 17-19 June 2025

Objective

- **To provide passport and phenotypic information of actively conserved European *Fragaria* diversity ex situ through the EURISCO catalogue.** With the implementation of the project, the berries genetic resources should be recorded in the respective countries. The data should be improved qualitatively in a uniform manner (including taxonomic data, FAO / Biodiversity passport descriptors) and make them available for inclusion to the respective National Focal Points for EURISCO.
- **To efficiently conserve and provide access to unique germplasm in Europe through AEGIS and the European Collection.** In addition to the existing *Fragaria* genetic resources, the project survey the forms of preservation and existing tests for trueness-to-type. Crop specific technical guidelines for genebank management (Manuals) will then be developed on this basis. It is possible to select eligible accessions in order to propose them as AEGIS accessions through further verification.

DESCRIPTION OF TASKS CARRIED OUT (Preparation of inventory of berries genetic resources)

- ① 1. Delivery of the inventories of berries genetic resources by the WG Chair
- ② 2. Requests from partners regarding missing lists and **all data** (including the columns type of germplasm storage, virus state and variety check)
- ③ 3. Preparation of a common list per genus
- ④ 4. Revision of the list concerning taxonomy (species according GRIN taxonomy, checking the same spelling) and variety names (adjustments of cultivar names)
- ⑤ 5. Integration of passport data
- ⑥ 6. Send the final summary lists to JKI

European Institutions provided data of Fragaria collections.

Partner ID	Country	INSTCODE	Institute name
1.	Lithuania	LTU006	Lithuanian Research Centre for Agriculture and Forestry
2.	Germany	DEU610	Federal Plant Variety Office - Testing Station Wurzen
3.	Finland	FIN039	Natural Resources Institute Finland (Luke)
5.	Greece	GRC044	Institute of Plant Breeding and Genetic Resources – HAO Demeter
6.	Germany	DEU451	Julius Kühn Institute, Institute for Breeding Research on Fruit Crops
7.	Czech Republic	CZE031	Research and Breeding Institute of Pomology Holovousy Ltd.
8.	Estonia	EST012	Estonian University of Life Science
10.	France	FRA207	INVENIO
11.	Italy	ITA380	CREA Research Centre for Olive, Fruit and Citrus Crops
12.	Latvia	LVA015	Institute of Horticulture LATHORT
13.	Norway	NOR053	Njøs Fruit and Berry Centre
14.	Romania	ROM009	Research Institute for Fruit Growing
15.	Sweden	SWE089	SLU/ Swedish National Genebank
16.	Switzerland	CHE063	Federal Office for Agriculture
18.	Turkey	TUR028	University of Çukurova

14 countries 15 organizations

Storage forms of strawberry accessions in different collections.

Partner ID	Country	INSTCODE	Accessions in total	Accessions under different storage form			
				Field	In vitro	Cryo	Other
1.	Lithuania	LTU006	29 (42)	29 (39)	18	5	
2.	Germany	DEU610	223	223			
3.	Finland	FIN039	55	55	9	5	9
5.	Greece	GRC044	4				4
6.	Germany	DEU451	441			137	304
7.	Czech Republic	CZE031	79	79			
8.	Estonia	EST012	27	27			
10.	France	FRA207	150	150			
11.	Italy	ITA380	172		172		
12.	Latvia	LVA015	39	39			
13.	Norway	NOR053	4				4
14.	Romania	ROM009	73	73			
15.	Sweden	SWE089	34	34			
16.	Switzerland	CHE063	166	166			
18.	Turkey	TUR028	36	36			
Total			1532	888	181	142	321
%				58.0	11.8	9.3	20.9

Strawberry virus status and variety check in different collections

Partner ID	Country	INSTCODE	Virus status			Variety check			
			virus free certified	virus tested	unknown	pomological	molecular	pomological + molecular	not checked
1.	Lithuania	LTU006		17	12	9	1	7	12
2.	Germany	DEU610			223	23	12	8	180
3.	Finland	FIN039			55				55
5.	Greece	GRC044			4			4	
6.	Germany	DEU451		441		40	182	177	42
7.	Czech Republic	CZE031			79	79			
8.	Estonia	EST012			27				27
10.	France	FRA207	12	11	127	7	11	12	120
11.	Italy	ITA380			172	136			36
12.	Latvia	LVA015			39	33			6
13.	Norway	NOR053			4				4
14.	Romania	ROM009			73				73
15.	Sweden	SWE089	21		13	34			
16.	Switzerland	CHE063			166	19	78	29	40
18.	Turkey	TUR028			36	36			
Total			33	469	1030	416	284	237	595
%			2.2	30.6	67.2	27.2	18.5	15.5	38.8

In general, 42.6% of accessions were pomologically tested, 34,0% tested by molecular methods.

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	NICODE	PUID	INSTCODE	ACCENUMB	COLLNUM	COLLCOD	COLLNAME	COLLINST	COLLMIS	GENUS	SPECIES	SPAUTHO	SUBTAXA	SUBTAUT	CROPNAME	ACCENAME	known Synonyms
1	DEU		DEU610	DEU610.BO.1480						Fragaria	x ananassa	Duchesne ex Rozier			Strawberry	4.3	
2	TUR		TUR028	TUR0281077						Fragaria	x ananassa	Duchesne ex Rozier			Strawberry	35	
3	TUR		TUR028	TUR0281078						Fragaria	x ananassa	Duchesne ex Rozier			Strawberry	39	
4	TUR		TUR028	TUR0281079						Fragaria	x ananassa	Duchesne ex Rozier			Strawberry	42	
5	DEU		DEU610	DEU610.BO.1481						Fragaria	x ananassa	Duchesne ex Rozier			Strawberry	59.2	
6	LVA		LVA015	LVA2892						Fragaria	x ananassa	Duchesne ex Rozier			Strawberry	18-3	
7	LVA		LVA015	LVA2893						Fragaria	x ananassa	Duchesne ex Rozier			Strawberry	38-3	
8	LVA		LVA015	LVA2894						Fragaria	x ananassa	Duchesne ex Rozier			Strawberry	39-1	
9	FIN		FIN016	FIN118						Fragaria	x ananassa	Duchesne ex Rozier			Strawberry	Abundance	
10	SWE		SWE089	SWE 115						Fragaria	x ananassa	Duchesne ex Rozier			Strawberry	Abundance	
11	CZE		CZE031	10F4600001						Fragaria	x ananassa	Duchesne ex Rozier			Strawberry	Addie	
12	FRA		FRA207	5001						Fragaria	x ananassa	Duchesne ex Rozier			Strawberry	Addie	
13	ITA		ITA380	1						Fragaria	x ananassa	Duchesne ex Rozier			Strawberry	Addie	
14	ROU		ROM009	FRA_ICDP_0001		ROM009				Fragaria	x ananassa	Duchesne ex Rozier			Strawberry	Addie	
15	ITA		ITA380	112						Fragaria	x ananassa	Duchesne ex Rozier			Strawberry	Adria	
16	ROU		ROM009	FRA_ICDP_0002		ROM009				Fragaria	x ananassa	Duchesne ex Rozier			Strawberry	Adria	
17	DEU		DEU610	DEU610.0685BO43						Fragaria	x ananassa	Duchesne ex Rozier			Strawberry	Agana	
18	ITA		ITA380	113						Fragaria	x ananassa	Duchesne ex Rozier			Strawberry	Aguedilla	
19	DEU		DEU451	ERB0002c						Fragaria	x ananassa	Duchesne ex Rozier			Strawberry	Aiko	
20	ITA		ITA380	2						Fragaria	x ananassa	Duchesne ex Rozier			Strawberry	Aiko	
21	FRA		FRA207	5003						Fragaria	x ananassa	Duchesne ex Rozier			Strawberry	Alba	
22	LVA		LVA015	LVA2896						Fragaria	x ananassa	Duchesne ex Rozier			Strawberry	Alba	
23	DEU		DEU610	DEU610.BO.1304						Fragaria	x ananassa	Duchesne ex Rozier			Strawberry	Alba	(NF311)
24	ITA		ITA380	3						Fragaria	x ananassa	Duchesne ex Rozier			Strawberry	Alba	Alba NF 311
25	ITA		ITA380	4						Fragaria	x ananassa	Duchesne ex Rozier			Strawberry	Albion	
26	ITA		ITA380	114						Fragaria	x ananassa	Duchesne ex Rozier			Strawberry	Alice	
27	ITA		ITA380	197						Fragaria	x ananassa	Duchesne ex Rozier			Strawberry	Alinta	
28	DEU		DEU610	DEU610.0686BO43						Fragaria	x ananassa	Duchesne ex Rozier			Strawberry	Aliso	
29	FRA		FRA207	5004						Fragaria	x ananassa	Duchesne ex Rozier			Strawberry	Allstar	
30	CHE		CHE063	A-BE-000230	BE-230					Fragaria	x ananassa	Duchesne ex Rozier			Strawberry	Amazona	
31	DEU		DEU451	ERB0005						Fragaria	x ananassa	Duchesne ex Rozier			Strawberry	Amazona	Amazonka;Laxton von G
32	DEU		DEU451	ERB0005c						Fragaria	x ananassa	Duchesne ex Rozier			Strawberry	Amazona	Amazonka;Laxton von G
33	DEU		DEU451	ERB0005v						Fragaria	x ananassa	Duchesne ex Rozier			Strawberry	Amazona	Amazonka;Laxton von G
34	ITA		ITA380	5						Fragaria	x ananassa	Duchesne ex Rozier			Strawberry	Amazona	
35	CHE		CHE063	A-BE-000910	BE-910					Fragaria	x ananassa	Duchesne ex Rozier			Strawberry	Amazona	Amazona, (BE-910 von D

Fragaria lists received from participating institutions are checked, revised and updated.

Final summary list and updated lists of each participant with integrated passport data was prepared and sent to Project coordinator.

Updates

- ACCENAME Accession name
- ACQDATE Acquisition date
- ORIGCTY Country of origin
- BREDCODE Breeding institute code
- SAMPSTAT Biological status of accession (Advanced or improved cultivar/Traditional cultivar/landrace)
- DONORCODE Donor institute code
- DONORNAME Donor institute name
- ANCEST Ancestral data
- STORAGE Type of germplasm storage
- Virus state
- Variety check

Adjustments of cultivar names

- Ciloe, Ciloé, Cilole
- Docteur Morère , Docteur Morere
- Saint-Antoine de Padoue, Saint Antoine Di Padua
- Granda, Grande
- Hummi Gento, Hummy Gento
- Krimskaja remontantnaja, Krimskaya Remontantnaya
- Madame Lefebvre, Madame Lefevre
- Wunder von Koethen, Wunder von Köthen
- Queen Elisa, Königin Luise, Königin Louise
- Frel (Pink Panda)
- Madeleine, Madeleine®Civmad
- Marmolada Marmolada®, Onebor

It was decided by consensus that the true name is the one given by the variety authors in the original language.

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Strawberry (*Fragaria*) inventory

- 92 % *F. x ananassa*;
- 5% *F. moschata*
- 2% *F. vesca*
- 0.5% (5-6) *F. vescana*, *F. chiloensis* and *F. virginiana*

Strawberry (Fragaria) inventory

Biological status of accessions SAMPSTAT

- 76,5% Advanced or improved cultivars,
- 21,8% Traditional cultivar/landrace
- 1,6% Breeding/research material

Frequency of cultivars in Fragaria inventories

Accession recurrence, times	Cultivar number	Cultivar
1 (unique accession)	541	
2	98	
3	71	
4	28	
5	14	
6	11	
8	1	Surprise de Halles
10	1	Honeoye
15	1	Senga Sengana

The common list contained a total of 766 different *F. ananassa* genotypes. Among them 541 were unique accessions, stored in only one of the collections. Some cultivars (Honeoye, Senga Sengana) are held in almost all collections.

Suggestions for common cultivars

- Senga Sengana maintained by 12 partners
- Honeoye maintained by 10 partners
- Gorella maintained by 10 partners
- Redgauntlet maintained by 10 partners
- Korona maintained by 8 partners
- Elsanta maintained by 7 partners
- Dukat maintained by 6 partners
- Pegasus maintained by 6 partners
- Surprise des Halles maintained by 5 partners
- Zefyr maintained by 5 partners
- Cambridge Favourite maintained by 4 partners (alternate)

Conclusions

- Fragaria lists received from participating institutions are checked, revised and updated.
- Final summary list and updated lists of each participant with integrated passport data was prepared and sent to Project coordinator.
- Accessions of strawberry genetic resources for planning further joint projects were selected.
- Discussion with project partners concerning improvement Fragaria collections and elaboration of a first draft of crop-specific technical guidelines for gene bank management (Manuals) of berry genetic resources together with project Leader continues.

Thoughts for the future regarding strawberry collections

- Collection data must be constantly updated and missing data filled in, especially if the collection is supplemented with new genotypes
- Molecular studies can show the genetic identity and potential variability of cultivars, it is necessary to develop the most accurate cultivar passports for maintaining and propagating healthy planting material.
- It is necessary to expand virus testing and de-virusing
- Collections need to be duplicated on a European scale.
- Cryopreservation needs to be used more widely

Thank you for your attention!

