



The Finnish Programme for Plant Genetic Resources - Berries

Saila Karhu

Elina Kiviharju

Jaana Laamanen &

Merja Hartikainen

Natural Resources Institute Finland (Luke)

Finnish National Plant Genetic Resources Programme



- Established **2003** (MMM 12/2001)
- Renewed 2018 (MMM 11a/2018): The Finnish National Programme for Genetic Resources of Agriculture, Forestry and Fishery
- Coordinated by Luke
- Supervised by **Advisory board on genetic resources**, nominated by the Ministry of Food and Agriculture
- National working group for fruit and berries



Activities on plant genetic resources

- Making surveys and calls for landraces (project-based funding only)
- **Maintaining** and **evaluating** collections
- Enhancing **sustainable use** and **research** (project-based funding only)
- **Data management** (project-based funding partly)
- **Training, teaching** (project-based funding mainly)
- **Information sharing**
- Participating to **preparation** of the national and international **agreements** and **legislation**, surveys etc.
- **International co-operation**
 - NordGen, ECPGR, FAO

Implements FAO's 2nd GPA-PGRFA (2011) and IT-PGRFA (2004)

Vegetatively propagated long term preserved PGR 's are maintained nationally in field collections

Number of berry accessions in the Finnish national clonal archives in year 2019			
	Accepted	Pending/ Temporary	In Total
<i>Fragaria x ananassa</i>	17	2	19
<i>Fragaria moschata</i>	0	35	35
<i>Hippophaë rhamnoides</i>	5	58	63
<i>Ribes nigrum</i>	24	9	33
<i>Ribes Rubrum Group</i>	18	4	22
<i>Ribes spicatum (North Finland)</i>	12	0	12
<i>Ribes Uva-crispa Group</i>	14	3	17
<i>Rubus arcticus + hybrids</i>	6	0	6
<i>Rubus idaeus + hybrids</i>	18	0	18
<i>Vaccinium corymbosum, V. angustifolium + hybrids</i>	9	4	13
<i>Some others</i>			
<i>In total</i>	123	115	238

Conservation is partly secured *in cryo* or *in vitro*



Cryo-facilities in
Luke Haapastensyrjä
(Photos J. Laamanen)

Currants,
raspberries,
strawberries

PGR accessions in cryo preservation at Luke

		Numer of accessions
puutarhamansikka	Fragaria x ananassa	13
tarhaomenapuu	Malus domestica	50
mustaherukka	Ribes nigrum	22
viherherukka	Ribes nigrum, green	4
punaherukka	Ribes Rubrum group	1
vadelma	Rubus idaeus	39
	Rubus nessensis	1
mesivadelma	Rubus x binatus	1
pensashanhikki	Dasiphora fruticosa	2
mesimarja	Rubus arcticus	2
jalomaarain	Rubus arcticus ssp. stellarcticus	2
YHTEENSÄ	In Total	137

In addition, material of different species frozen as dormant buds, but control material not regenerated yet

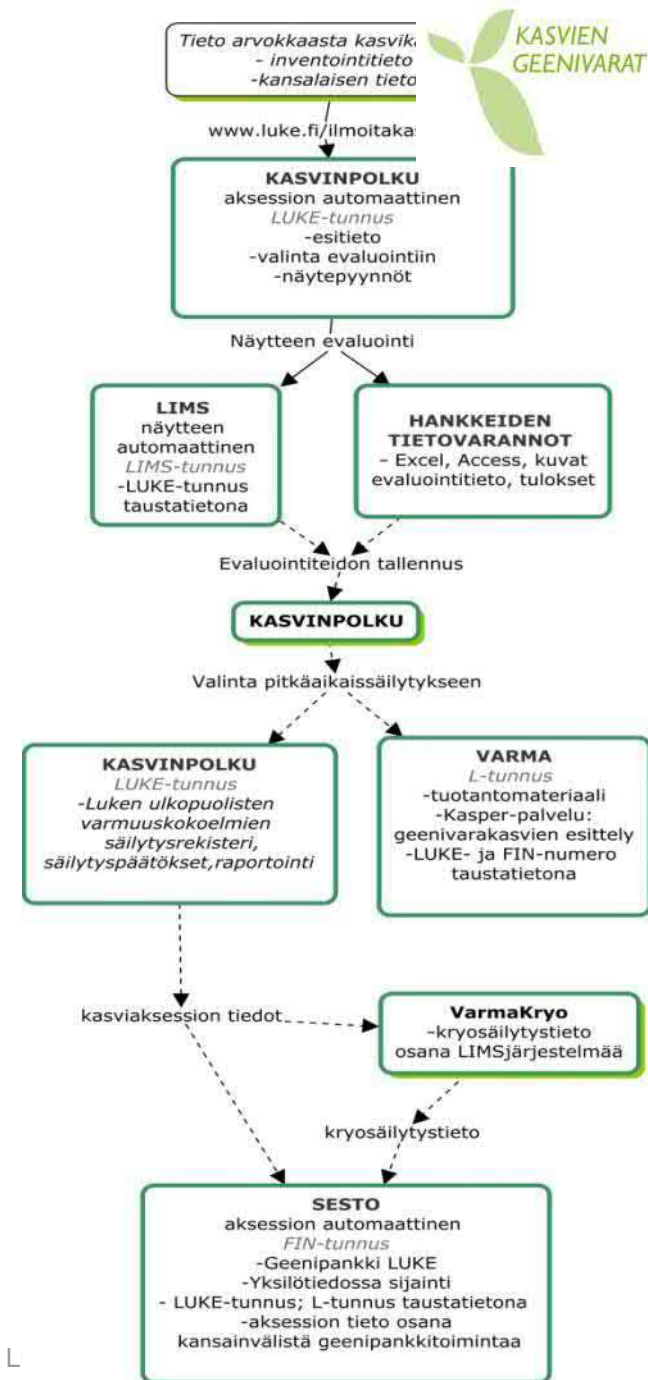
PGR data management

- Clonal accessions are updated to the (SESTO) GRIN genebank data management system (passport data)
- Platform ('Kasvinpolku') for announcements developed (in progress)
- Data management for cryo preservation in progress

NordGen
Nordic Genetic Resource Center

SESTO Trait (C&E) References Utilities User Manual Links Checkout order [NordGen Home]

Genus	Taxons	Cultivars	Accessions	Dataset	[Search]
Taxon	Scientific Name	Authority	Family	English name	IT-PGR Annex I
	Avena sativa	L.	Poaceae	Oat	TRUE
	Danish havre	Finnish knura	Icelandic skurhafri	Norwegian havre	Swedish havre
Taxon details	Accessions	Cultivars	Collecting sites	Images	
Accessions	O S A Q U B C D E F G H I J K L M N O P R S T U V W Y Z				
Accession	Accession name	Origin	Cul	Mandate	[select] [check]
NGB6330	ENGELBREKT SVALOF	SWE	CV	TEM	[select] [check]
NGB8647	ERO	SWE	CV	ACC	[select] [check]
NGB4487	ESA	FIN	CV	ACC	[select] [check]
NGB4727	ETAMPS	I	I	TEM	[select] [check]
NGB9793	EXPOIRE DE GEMBLOUX	I	I	TEM	[select] [check]
NGB5122	EXPRESS	NLD	I	TEM	[select] [check]
NGB9760	FAVORIT GOEFER	I	I	TEM	[select] [check]
NGB25030	FEMIA	DNK	CV	ACC	[select] [check]
NGB6978	FEMIA	I	I	TEM	[select] [check]
NGB4908	FIX	SWE	CV	TEM	[select] [check]
NGB7716	FIX	SWE	CV	ACC	[select] [check]
NGB8725	FLAMINGSGOLD	I	I	TEM	[select] [check]
NGB8726	FLAMINGSKOST	I	I	TEM	[select] [check]
NGB9737	FLAMINGSTREUE	DEU	I	TEM	[select] [check]
NGB9736	FLANDRISCHER	I	I	TEM	[select] [check]
NGB4737	FOLD	SWE	CV	TEM	[select] [check]
NGB6979	FOLD	SWE	CV	TEM	[select] [check]
NGB6980	FORTUNA	SWE	CV	ACC	[select] [check]
NGB9806	FORWARD	GBR	I	TEM	[select] [check]
NGB13909	FREDDY	DEU	CV	TEM	[select] [check]
NGB13586	FREJA	SWE	CV	ACC	[select] [check]
NGB8653	FRIGG	SWE	CV	ACC	[select] [check]
NGB9796	FULGHUM	AUS	I	TEM	[select] [check]
NGB9819	FULGHUM SEL 699-2011	USA	I	TEM	[select] [check]



MTA:s for PGR accessions in the Nationally conserved clonal collections

- Long term PGR collections in Luke are public, but not really open yet
- Accessibility
 - Healthy and genuine through FinE- pathway
 - Luke has sold FinE (Finnish Elite) trademark to Nursery association Taimistoviljelijät ry -> its use continues
- MTA:s for accessibility directly from collections
 - SMTA, Luke-MTA, Hobby-MTA



Needs of development

- DNA-marker based methods for identification, diversity studies, pre-breeding use
 - ⇒ to assess diversity, rationalizing collections, enhancing use - identification tools utilized for red and black currant and gooseberry collections)
- Database development for characterization data
- Cryopreservation methods
 - ⇒ economic and secure conservation,
 - species like strawberries, currants, raspberries
- Virus detection and eradication (Small-RNA profiling etc.)
- Safety duplications (private / non prof sector)
- Re-organization (cut of research sites) of Luke
 - ⇒ re-organization of field collections challenging
- Development through projects challenging



Expectations from ECPGR Working Group Berries, to develop

- Cooperation in methodological progress
- Common projects
- Open characterization data
- Access to collections (for research, breeding)
- Others.....



Thank you!