



**Valstybinė  
miškų tarnyba**



**Botanikos  
sodas**

---

# **Plant Genetic Resources Conservation System in Lithuania**

---

**Gitana Štukėnienė  
State Forest Service,  
Vilnius University Botanical Garden  
Lithuania,  
stukeniene@gmail.lt**

**Tbilisi, 2024.**

# **In Lithuania:**

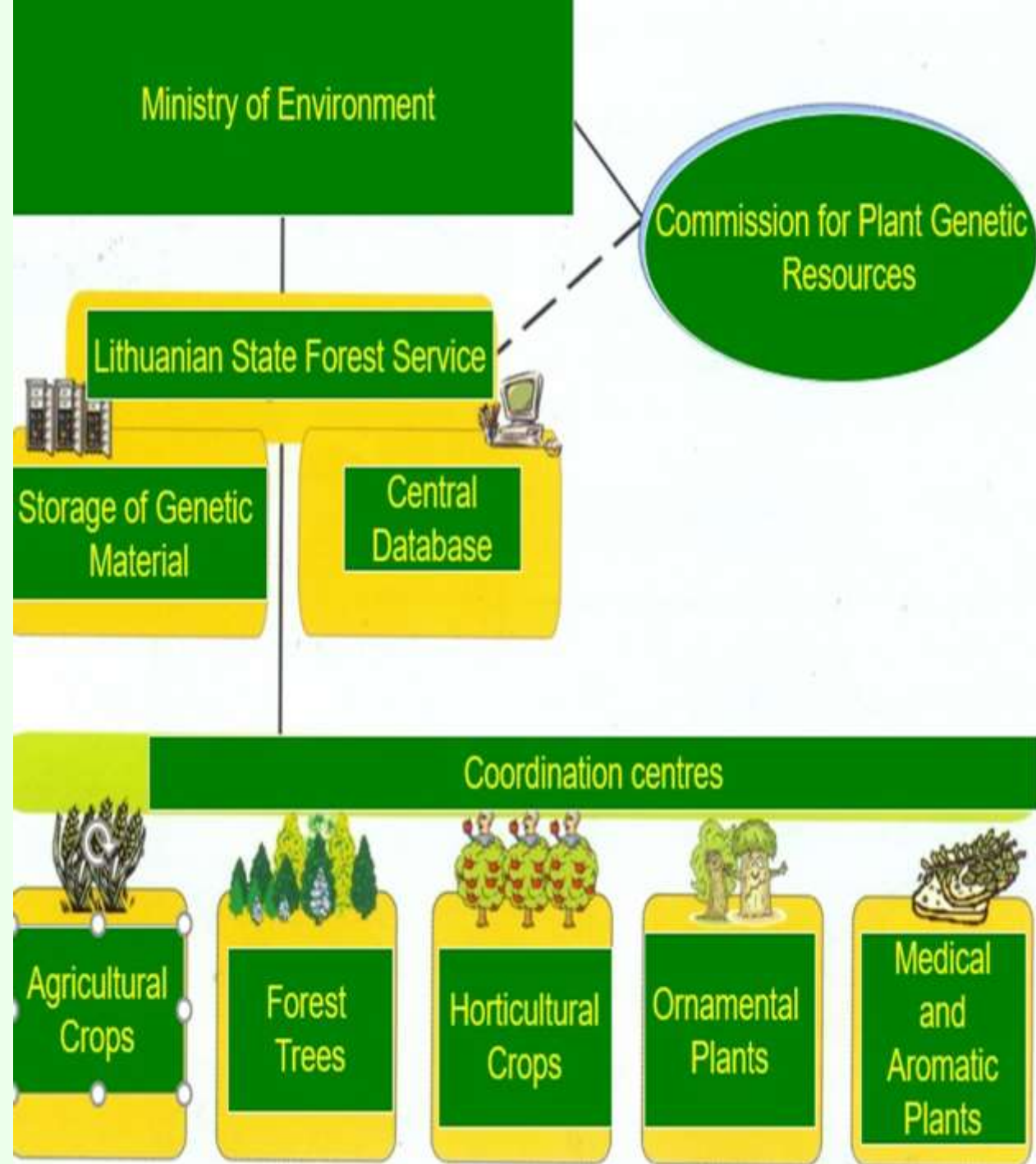
**Breeding of agricultural plants in Lithuania was started in 1922, selection of forest trees started at 1960**

**Since 1994 programs of plant genetic resources scientific research are financed by State**

**In year 2001 the law of national genetic resources has been passed in our country**

**In 2004 Plant Gene Bank with coordination centers of plant groups has been established**

Conservation of plant genetic resources (PGR) in Lithuania has a long tradition. Since 1994, efforts have been concentrated on PGR within the National Programme on Plant Genetic Resources. The programme encompassed conservation and research of PGR of agricultural and horticultural crops, medicinal and ornamental plants, forest trees. According to this law, PGR are selected and included into the central database of national PGR, e. g. plant populations or their parts, single plants or their groups, re-productual parts of plants. The Plant Gene Bank with coordination centres of different plant groups has been established. Later the Government of Lithuania adopted its resolution to reorganize the Plant Gene Bank and to incorporate it into the Lithuanian State Forest Service.



# COORDINATION CENTRES OF NATIONAL PLANT GENETIC RESOURCES

- Coordination Centre of Agricultural Crops is located at the Institute of Agriculture, Lithuanian Research Centre for Agriculture and Forestry (LRCAF) and coordinates the collection, research, conservation and use of plant genetic resources of cereal and grain legume crops, forage grasses and legumes, pulses, and industrial crops (potato, flax, fodder swede);
- Coordination Centre of Horticultural Crops is located at the LRCAF Institute of Horticulture and coordinates the collection, research, conservation and use of plant genetic resources of fruits and vegetables;
- Coordination Centre of Medicinal and Aromatic Plants is located at the Institute of Botany of the Nature Research Centre and coordinates the collection, research, conservation and use of plant genetic resources of medicinal and aromatic plants;
- Coordination Centre of Ornamental Plants is located at Vilnius University Botanical Garden and coordinates the collection, research, conservation and use of plant genetic resources of ornamental plants;
- Coordination Centre of Forest Trees is located at the LRCAF Institute of Forestry and coordinates the collection, research, conservation and use of forest genetic resources. In collaboration with Coordination Centre of Ornamental Plants, the Institute of Forestry coordinates the collection and conservation of solitary trees and tree groups.

## **Main tasks of the coordination centers:**

- To coordinate and organize research, preservation, restoration, multiplication and use of national genetic resources by corresponding plant groups;
- To coordinate and organize genetic material sampling and transfer to the keeper;
- To take part in projects and programs with other Lithuanian and foreign institutions. To offer conferment of national status to the plant genetic resources;
- To prepare selection criteria, organize national genetic resources searches and preservation and information, to administrate a database;
- To organize seminars on vegetative national genetic resources preservation;
- To prepare the unified forms of documents and reports.
-

## Plant varieties, lines and forms included in the List of National Plant Genetic Resources

## Number of plant genetic resources distributed in different groups

No	Genus	Number of accessions	No.	Genus	Number of accessions
1.	<i>Festuca</i>	339	13.	<i>Oxycoccum</i>	54
2.	<i>Hordeum</i>	281	14.	<i>Medicago</i>	53
3.	<i>Lolium</i>	237	15.	<i>Poa</i>	36
4.	<i>Trifolium</i>	198	16.	<i>Pisum</i>	37
5.	<i>Triticum</i>	167	17.	<i>Prunus</i>	34
6.	<i>Pyrus</i>	144	18.	<i>Pinus</i>	512
7.	<i>Linum</i>	101	19.	<i>Picea</i>	452
8.	<i>Vicia</i>	108	20.	<i>Quercus</i>	304
9.	<i>Malus</i>	86	21.	<i>Alnus</i>	208
10.	<i>Avena</i>	61	22.	<i>Tilia</i>	203
11.	<i>Allum</i>	58	23.	<i>Betula</i>	162
12.	<i>Ribes</i>	54	24.	<i>Fraxinus</i>	137
				Other	1888

No.	Group of plant genetic resources	Number of accessions
1.	Forage	1219
2.	Cereals	648
3.	Horticultural plants	491
4.	Vegetables	110
5.	Ornamental plants	329
6.	Medicinal and aromatic plants	232
7.	Technical plants	133
8.	Trees	2120
9.	Groups of trees	362
10.	Field collections	94
11.	Reserves of forest trees	131

The existing system of conservation of plants includes *ex situ* and *in situ* methods.

The seeds of plants genetic resources are stored in a long-term storage in the State Forest Service. Seed samples are cleaned of weed seeds, pests and diseases. A dehumidified drying chamber is used for seed drying. Seeds are dried for two–three months at temperature 15-20C° and relative air humidity of 10–15%. Seeds moisture content after drying reduces to 3–5%, they are packed in airtight aluminium foil bags and stored at -18C°. Long-term storage conditions guarantee the seed survival for decades as only very limited metabolism can occur there.

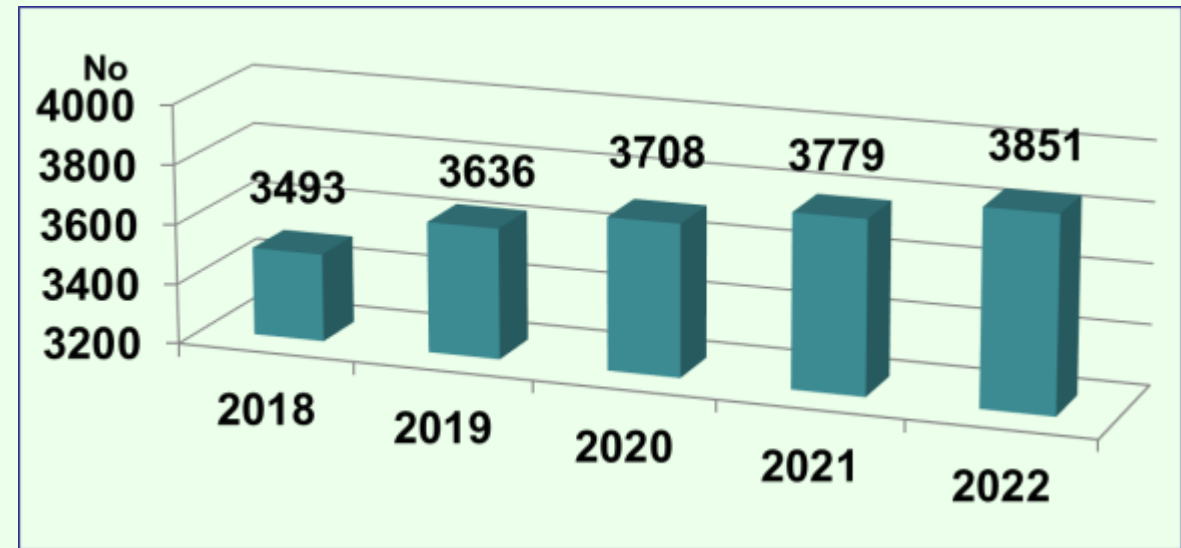
At the end of 2023, there were more than 6000 accessions on the List of National Plant Genetic Resources in Lithuania. In 2022, the State Forest Service signed an agreement with the Nordic Genetic Resource Centre (NordGen). According to this agreement, NordGen will store the seeds of 123 accessions of Lithuanian PGR in the Svalbard Global Seed Vault.



## Samples of plant genetic resources seeds stored in the plant gene bank storage

No.	Genus	Number of accessions	No.	Genus	Number of accessions
1.	<i>Festuca</i>	431	7.	<i>Poa</i>	164
2.	<i>Hordeum</i>	253	8.	<i>Vicia</i>	110
3.	<i>Lolium</i>	239	9.	<i>Betula</i>	162
4.	<i>Dactylis</i>	221	10.	<i>Picea</i>	131
5.	<i>Trifolium</i>	220	11.	<i>Fraxinus</i>	131
6.	<i>Triticum</i>	168	12.	<i>Pinus</i>	121
				Other	1600

## Number of seed accessions in long-term storage





# Wheat collection in the The Lithuanian Research Centre for Agriculture and Forestry



# Pine genetic reserve, Kazlų Rūda



# The Department of Floriculture, Vilnius University Botanical Garden



# There are four botanical gardens in Lithuania

1. Vilnius University Botanical Garden, VILNIUS
2. Vytautas Magnus University Botanical Garden, KAUNAS
3. Botanical Garden of Klaipėda University, KLAIPEDA
4. Vilnius University Šiauliai Academy Botanical Garden, ŠIAULIAI





**Vytautas Magnus  
University  
Botanical Garden  
in Kaunas  
(62,5 ha)**



**Botanical Garden of  
Klaipėda University  
Klaipėda  
(9,3 ha)**



**Vilnius University Šiauliai Academy  
Botanical Garden Šiauliai (6,54 ha)**

# The list of species and cultivars Ornamental Herbaceous Plants of National Plant Genetic Resources

Genus	Species and cultivars
<i>Dahlia</i>	‘Juozas Miltinis’, ‘Lietuvos knygnešiams’, ‘Oginskis’, ‘Provincinis’, ‘Rambynas’, ‘Sabonis’, ‘Tumas Vaižgantas’, ‘Vitalija’.
<i>Gladiolus</i>	‘Aksakal’, ‘Cherry Giant’, ‘Darius ir Girėnas’, ‘Fėja’, ‘Kovo 11-oji’, ‘Paparčio Žiedas’, ‘Plaštakė’, ‘Purple King’, ‘Rugsėjo Pasaka’, ‘Saulės Takas’, ‘Skudurinė Onutė’, ‘Solveiga’, ‘Šešupė’, ‘Norma’, ‘Vinetu’.
<i>Iris</i>	‘Stanislava’, ‘Juozapas’, ‘Algirdas’, ‘Ūkas’, ‘Senolis’, ‘Radynys’, ‘Švelnutis’, ‘Sveikuolis’, ‘Jonas Biliūnas’, ‘Drakonas’, ‘Jovaras’, ‘Kerūžis’, ‘Krikštolinis’, ‘Progresas’, ‘Saulėtekis’, ‘Sietynas’, ‘Sūduvis’, ‘Šaltinio Versmė’, ‘Šventaragis’, ‘Žydrius’, ‘Danutė’, ‘Į Laisvę’, ‘Raudonbarzdis’, ‘Afrikietė’, ‘Feliksas’, ‘Ritos brolis’, ‘Rudenėlis’, ‘Vaiva’, ‘Aivarėlis’, ‘Snaigė’, ‘Karalienė Ayshwaria’, ‘Žiemos Rytas I’, ‘Rožytė’, ‘Nauja Era’, ‘Viliokė’, ‘Juodis’, ‘Tėčio meilė’, ‘Daluzė’.
<i>Paeonia</i>	‘Virgilijus’, ‘Garbė Motinai’, ‘Profesorius Grybauskas’, ‘Maironis’, ‘Freda’, ‘Darius-Girėnas’, ‘Skeivienės Vėlyvasis’, ‘Žilvinas’, ‘Elena’, ‘Rytas’, ‘Kastytis’, ‘Ona’, ‘Jadvyga’, ‘Ramunis’, ‘Vakaris’, ‘Danutė’, ‘Jonas’, ‘Tadas’, ‘Regina’, ‘Elf’, ‘Odetė’, ‘Otkrovenije’, ‘Žizel’, ‘Meilutis’, ‘Jaunuolis’, ‘Kaunietis’, ‘Senolis’, ‘Kvieslys’, ‘Labutis’, ‘Skaistis’, ‘Vilnietis’, ‘Kaukutis’, ‘Aistis’, ‘Dainius’, ‘Našutis’, ‘Klajūnas’, ‘Laimikis’, ‘Žynys’, ‘Lakūnas’, ‘Keleivis’, ‘Gražuolis’, ‘Stipruolis’, ‘Veikėjas’, ‘Žygūnas’, ‘Kėdainietis’, ‘Švyturys’, ‘Šaunuolis’, ‘Svečias’.
<i>Primula</i>	‘Aušrutė’, ‘Bekotė’, ‘Brangutė’, ‘Dvispalvė’, ‘Jadvyga’, ‘Jaunystė’, ‘Juodukė’, ‘Lietuvaitė’, ‘Linkėjimai Latvijai’, ‘Mažutė’, ‘Mėlynukė’, ‘Nuostabė’, ‘Pirmūnė’, ‘Raudonukė’, ‘Rausvuolė’, ‘Retukė’, ‘Šaunuolė’, ‘Viliokė’, ‘Žydrė’.
Others	<i>Salvia pratensis</i> f. <i>rubicunda</i> , <i>Trollius europaeus</i> L, <i>Lathyrus maritimus</i> (L.) Bigelow., <i>Helianthemum nummularium</i> (L.) Mill. ssp. <i>tomentosum</i> Schinz et Thell, <i>Tulipa bifloriformis</i> Vved.



Collection of *Dahlia*  
on Vilnius University Botanical Garden





Collection of *Gladiolus* on Vilnius University Botanical Garden





*Primula* “Juodukė“ (aut. J. Tarvidas)



*Primula* “Mažytė“ (aut. J. Tarvidas)



*Primula* 'Pirmūnē' (aut. J. Tarvidas)



*Primula* 'Mēlynukē' (aut. J. Tarvidas)



*Iris* "Lietuvos Karys" (aut. P. Puidokas)



*Iris* "Signataras" (aut. P. Puidokas)



*Iris* “Nidos Gintaras“ (aut. P. Puidokas)



*Iris* “Purpurinė Banga“ (aut. P. Puidokas)





**“Kastytis“**



**“Maironis“**



**“Rytas“**



**“Ona“**



**“Regina“**



**“Jadvyga“**



**“Ramunis“**



**“Keleivis”**



**“Laimikis”**



**“Stipruolis”**



**“Veikėjas”**



**“Švyturys”**



**“Žynys”**





**300 “Snieguolė”**  
(aut. P.Ciplijauskas)



**461 “Paparčio Žiedas”**  
(aut. P. Ciplijauskas)



**385 “Merkurijus”**  
(aut. A.Lukoševičius)

## Collection of *Lilium*





**“Janina“**

aut. J. Prosevičius



**“Ramutė“**

aut.P. Balčikonis



**“Olimpija“**

aut. J. Prosevičius



**“Saulius“**

aut. J. Prosevičius

‘Draugè‘



‘Sausio 13-oji‘



## “Islandija Pirmoji“







*Hordeum L. mutants*



Below are the labels for the plants on the table, arranged from left to right:

- 1. *Phragmites australis*
- 2. *Phragmites australis*
- 3. *Phragmites australis*
- 4. *Phragmites australis*
- 5. *Phragmites australis*
- 6. *Phragmites australis*
- 7. *Phragmites australis*
- 8. *Phragmites australis*
- 9. *Phragmites australis*
- 10. *Phragmites australis*
- 11. *Phragmites australis*
- 12. *Phragmites australis*
- 13. *Phragmites australis*
- 14. *Phragmites australis*
- 15. *Phragmites australis*





*tw2Lh13* mutant



*tw2Lh22* mutant



*tw2Dwh14* mutant



*tw2Mf13* mutant

# The Department of Pomology



- The main collections:  
Ribes L. - 493, Vitis L. - 113, Lonicera L. - 72, Vaccinium L. - 47, Sorbus L. - 56 taxa.

# “RAUDĒ”



# “Raudė – 2”



## Cultivars of *Dahlia*

‘Prometėjas’



‘Kaprizas’



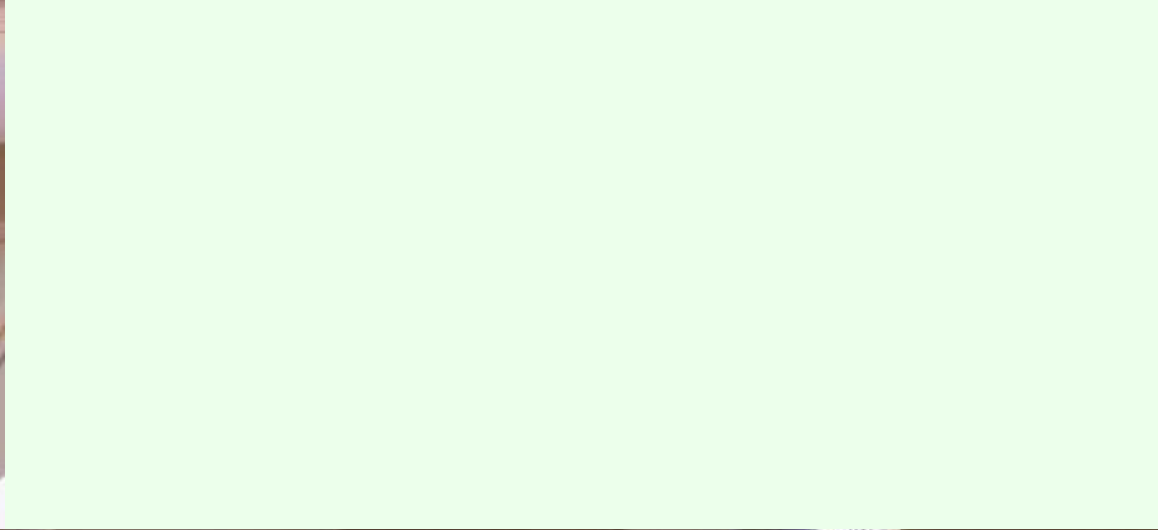
‘Teatras’



‘Gedimino Pilis’









Three large, star-shaped fireworks are exploding in a dark night sky. Each firework has a bright yellow and white outer ring with a blue center. The background is black, and the fireworks are the only source of light.

**Thank You for Your attention.**



- Vilnius University Botanical Garden is the largest botanical garden in Lithuania (total area 199 ha) housing more than 10,126 different plant species and cultivars; most numerous collections include those of rhododendrons, lilacs, lianas, peonies, dahlias and bulbous plants. 468 species of indigenous Lithuanian flora are found in the Garden, as well as over 120 native vertebrate species, a quarter of them being birds. Moreover, Botanical Garden is a site of cultural heritage with burial grounds dating back to 4th – 5th century, 19th century Estate buildings, landscape garden and ponds. Buildings and the garden are used as venue for various events, performances and art exhibitions. In addition, visitors are offered a variety of attractions including horse riding facilities and horse-drawn carriage rides.