



Univerza v Ljubljani
Biotehniška fakulteta



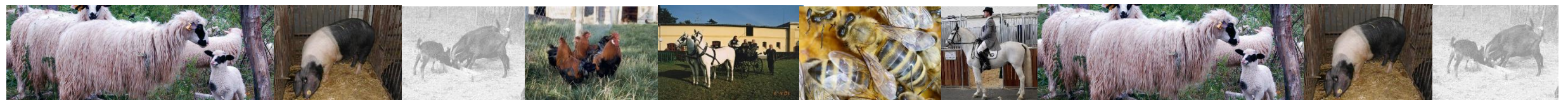
Session 2: Strategies of national gene banks for AnGR in Europe for long term conservation purposes and to support in situ conservation of endangered breeds

Strategies of national gene banks for AnGR for long term in Slovenia

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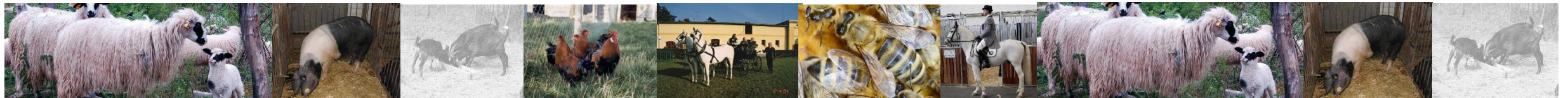
History

- Activities relating to the AnGR conservation have been systematically carried out for more than two decades (Slovenia)
- First conservation program financed by the Ministry of Agriculture, Forestry and Food started in the year 1991
- Many historical documents shown how protected breeds were protected in the past:
 - **1580** - Lipizzan horses (435 years ago)
 - **1868** - Livestock breeding act in Slovenia (year 1868) = 147 year ago
 - **1981** - The law for protection of honeybee *Apis mellifera carnica* (1921)



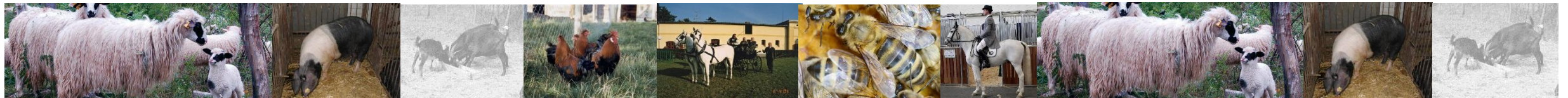
Legislation

- 2002 - Livestock breeding act regulates Conservation of Genetic Variability and Genetic Reserves of AnGR
- 2004 - Rules on the Conservation of Livestock Biodiversity defines
 - The scope of the conservation of native and other breeds in gene banks
 - Program for AnGR conservation in Livestock Sector
 - Based on the rules detailed obligations for the conservation program were regulated



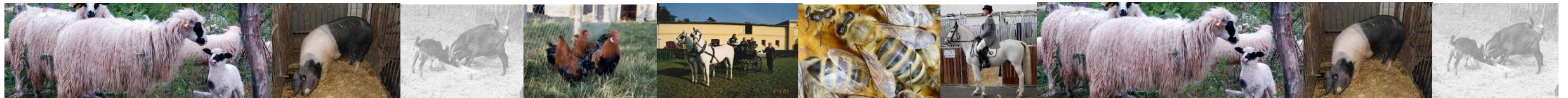
Legislation – Public service

- Established in Biotechnical Faculty in 2010 - concession contract
- Main tasks:
 - monitoring of breeds
 - risk status of breeds
 - *in situ* conservation
 - *ex situ* conservation
 - genetic and phenotypic characterization
 - awareness arising and promotion
 - international collaboration.



Legislation - *ex situ* gene bank

- Gene bank (*ex situ* conservation) *in vivo* (farms outside the original environment, especially in the protected areas and national parks, school and research farms) are established for specific indigenous and other breeds.
- Gene bank (*ex situ* conservation) *in vitro* are established for specific indigenous and other breeds classified as critical or endangered.



Ex situ in vitro conservation

- Collection of genetic material divided by two parts (locations):
 - Depository of tissues
 - Semen collection

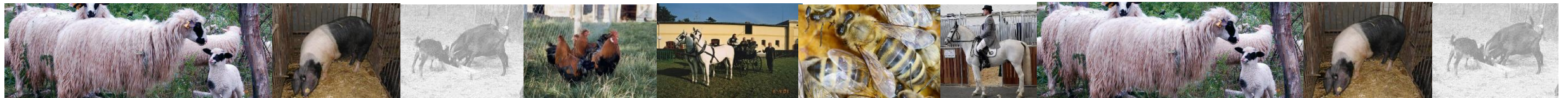


Depository of tissues

Samples are permanently stored in a deep freezer at $-80\text{ }^{\circ}\text{C}$:

- whole blood,
- hair roots,
- different tissues and
- DNA isolates

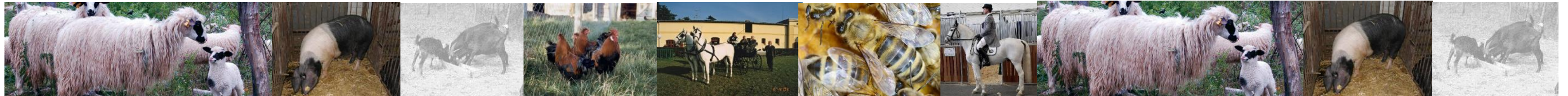
All together = 9.927 samples.



Semen collection of endangered breeds

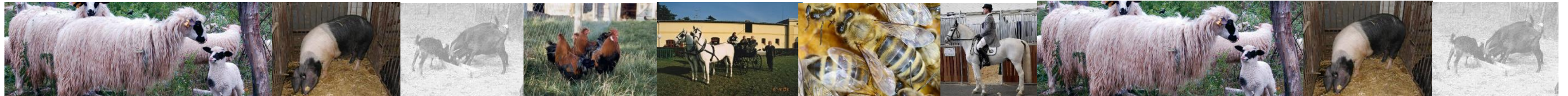
Stored in containers with liquid nitrogen:

- horses
- cattle
- sheep
- goats



Semen collection of endangered breeds

- Public service - contract with AI centre for the storage of sire semen
- Core collection contains 3,248 semen straws from 36 Cika sires (only indigenous cattle breed)
- Collection of 29,204 semen straws of 693 sires of two local cattle breeds

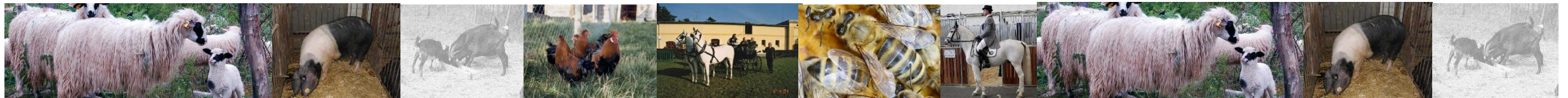


Semen collection of endangered breeds

Public service - contract with Veterinary Faculty for the storage of semen:

- 9 stallions - 270 semen doses
- 65 rams - 2,059 semen doses
- 7 bucks - 21 semen doses

Semen has been experimentally taken from some breeding animals declared by Public Service



Conclusion

- Rich researches on the breeds history
- Adopted legislation on the AnGR
- MYPOW 2010-2016 (follow 2017-2023)
- Established CORE collection of semen and tissues
- Genetic and phenotypic characterizations



THANK YOU!

