# Information concerning the Biobank in Poland

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# Historical background

- The first attempts to freeze semen were made in Poland in the 1960s at the National Research Institute of Animal Production.
- Artificial insemination stations were established in Poland.
- The Central Semen Bank was created in 1968 at the National Research Institute of Animal Production.
- The second Semen Bank of the Central Animal Breeding Station was established in Poland in 1988

# Historical background

- Over 20 years (1968 – 1988) almost 10 million semen doses were accepted for storage. By 1996 the bank stored about 1300 doses of imported semen.

- In the 1990s the establishment of a genetic reserve for threatened species and breeds of farm animals was begun.

- During this period about 41 000 semen doses Polish Red bulls and 1742 embryos of this breed was collected.

# Historical background

Additionally it was collected :

- 680 semen doses from Świniarka rams
- 3535 semen doses from Olkuska rams
- 710 semen doses from Mountain Sheep
- 520 semen doses from Wrzosówka sheep.

# Historical background

The bank also provided services through cooperation with foreign companies such as:

Rinderproduktion Niedersachsen GmbH,

Genes Diffusion,

American Breeders Service

# Historical background

In 2004 The National Focal Point for Animal Genetic Resources of The National Research Institute of Animal Production undertook to perform activities aimed at *in situ* and *ex situ* conservation of several animal breeds enrolled in the bioidiversity conservation programme.

As a result of these activities The National Biobank is being established.

# Goals of the national cryopreservation programme

The main goal of the *ex situ* conservation programme is to create a repository of biological material in the form of semen, embryos and DNA from endangered breeds and from other breeds maintained in Poland for the purpose of biodiversity conservation.

# Goals of the national cryopreservation programme

The collected material which should be added will be used:

- to maintain an *in situ* conserved population by safeguarding the living population against possible genetic problems (e.g. loss of allele diversity)
- inbreeding, emergence of harmful genetic combinations by increasing the effective size of small populations and by reducing genetic drift
- to restore a breed in case it is becoming extinct or depopulated
- to create new lines/breeds
- to modify a breed rapidly
- for research purposes

# Goals of the national cryopreservation programme

*Legal regulations*

Current regulations provide no definition of genetic material while regulations on sanitary protection of genetic material concern farm animal (cattle, pig, goat, sheep and horse) semen, oocytes and embryos that are officially approved and authorized for marketing.

# Goals of the national cryopreservation programme

In accordance with current regulations genetic material only can be processed, conserved and stored in the collection and storage centres approved and inspected by Veterinary Inspection.

# Goals of the national cryopreservation programme

The principles under which the genetic material collection and storage centres are specified by national regulations in the form of laws and decrees or by international regulations in the form of directives.

# Goals of the national cryopreservation programme

- National regulations have been conformed to European Union regulations since 1 May 2004.

- Polish legislation includes 17 legal acts that refer to the conditions and principles of collecting, production and torage of genetic material.

# Participation of institutions in the cryopreservation programme

In organizational terms The National Biobank should be an integral part of the Nationwide Programme for Animal Genetic Resources Conservation.

# Participation of institutions in the cryopreservation programme

This programme has been carried out and coordinated by:

- The National Research Institute of Animal Production
- The government of the Republic of Poland
- NGOs :
  - Polish Federation of Cattle Breeders and Dairy Farmers
  - Polish Association of Beef Cattle Breeders and Producers
  - breeders associations (Sheep Breeders Association, Horse Breeders Association)
- private entities (e.g.: Animal Breeding and Insemination Centres)
- firms using biobank services
- research institutions (agricultural schools, universities).

The present collection of genetic material stored at Bank of Genetic Material of The National Research Institute of Animal Production is shown below

# Cattle

| Breed of cows | 2006 | 2009 | 2010 |
|---|---|---|---|
| **Polish Red cattle** | | | |
| - No. of semen doses issued | 1490 | 1500 | 143 |
| - No. of semen doses (no. of bulls) | 40000 | 38985 | 39712 |
| - No. of embryos (no. of bulls) | (102) | (114) | (121) |
| | 1916(47) | 1916(47) | 1916(47) |
| **White-backed** | | | |
| - No. of semen doses (no. of bulls) | 600(3) | 600(3) | 600(3) |
| **Red-and-White** | | | |
| - No. of semen doses issued | | 938(3) | 1007(4) |
| - No. of semen doses (no. of bulls) | | 1289(4) | 4061(10) |
| **Black-and-White** | | | |
| - No. of semen doses issued | | 2112(10) | 2112(10) |
| - No. of semen doses (no. of bulls) | | No data available | No data available |

## Sheep

| Breed of sheep | 2010 |
|---|---|
| | No. of semen doses/No. of donors |
| Świniarka | 680/6 |
| Olkuska | 3650/21 |
| Mountain | 710/3 |
| Romanov | 640/6 |
| Wrzosówka | 1217/12 |
| TOTAL | 6897/48 |

# Storage and documentation

The documentation is still only available in paper form.

We have no electronic version.

Electronic collection management system will be launched after development of The Biobank.

The documentation will be stored in two versions: a secure electronic version (original and copy) operated within a closed network and a paper version.

Data and documentation management – only authorized persons will have access to the documentation. Two to four data access levels will be introduced after the bank has been expanded.

# Sanitary conditions

- The purpose of sanitary protection is to ensure epizootic safety, minimize human health risk, to appropriate quality of the stored material and to enable the collected material to be properly used.
- The highest level of sanitary security will be established for processing and conservation laboratories, material quarantine, storage, packaging and dispatch facilities and for equipment cleaning and disinfection facilities.
- It is absolutely essential to observe the rule that genetic materials not to cross each other or to be returned on a way from a depository to a laboratory.

Thank You for Your Attention