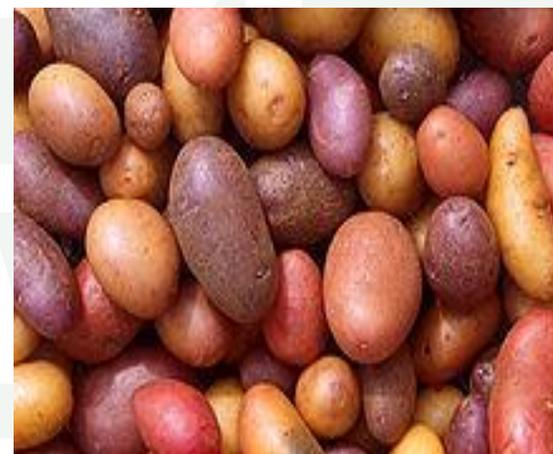


The Potato Gene Bank in Poland

Dorota Michałowska, Krzysztof Treder

Plant Breeding and Acclimatization Institute – NRI
Division in Bonin
76-009 Bonin 3, Poland



Over the last 100 years, approximately 75% of valuable plant cultivars have become extinct worldwide.

New cultivars replace old due to:

- greater efficiency,
- durability and
- more appetizing appearance.

But we have lost:

- wealth of flavors and scents
- genotypes created over hundreds of years of human cultivation.

The preservation of old plant varieties and farm animal breeds is not just a nostalgic sentiment. It is a forward-thinking approach!



News

About us

Databases



National Centre for Plant Genetic Resources: Polish Genebank



About us

- > Coordination
- > What we do

Databases

- > European Databases
- > EGISET database

Order seed samples

- > Search instructions
- > Standard Material Transfer Agreement

Education

- > Educational trail
- > Old cultivars
- > Organic farming

Polish Genbank primarily preserves genetic resources from Poland:

- ecotypes,
- local varieties,
- national cultivated forms,
- registered cultivars
- valuable breeding materials



The primary goal of the gene bank is to collect and preserve local crop varieties and related species.

These resources can be used as plant material to reintroduce old varieties into cultivation.



-  Management
-  Branch Divisions and Departments
-  Experimental Stations



The Potato Gene Bank in Poland – Division in Bonin



The Potato Gene Bank

The oldest genotype

- Early Rose - 1861 (Amerykany)

The oldest Polish cultivars:

- Marius – 1893
- Świteź - 1902
- Warszawa - 1906



Long-term storage of potato cultivars as in vitro plants

slow-growth conditions:

- low culture temperature (8-10 °C)
- reducing light intensity (approx. 500lux)
- media with a specific composition
- growth inhibitors (abscisic acid)
- osmotic compounds (mannitol)



Greenhouse and field collection

- The surveillance of cultivar purity
- 300-400 cultivars tested in the field each year
- each variety is valorized every five years.



Identified traits:

- aboveground plant shape,
- number and thickness of stems,
- stem color, including anthocyanin discoloration,
- occurrence and size of wings,
- leaves and their shape, size, color, shine, and veining.



During the flowering period:

- Color of flowers, crown shape, bracts,
- inflorescence type, and flowering abundance.

During harvest:

- The size of the tubers, the regularity of their outline, the color of the skin, the depth of the eyes, the color of the flesh, and the yield



Utilization of genetic resources of potatoes.

- keeping the pathogen-free material
- propagation of a large number of plants from one mother plant in a relatively short time, regardless of the season
1 → 10 → 100 → 1000 → 100000 → 1000000
- healthy material for
- creative and conservation breeding
- seed production
- reactivating old varieties, e.g. for organic farms
- for research units



Thank you!

