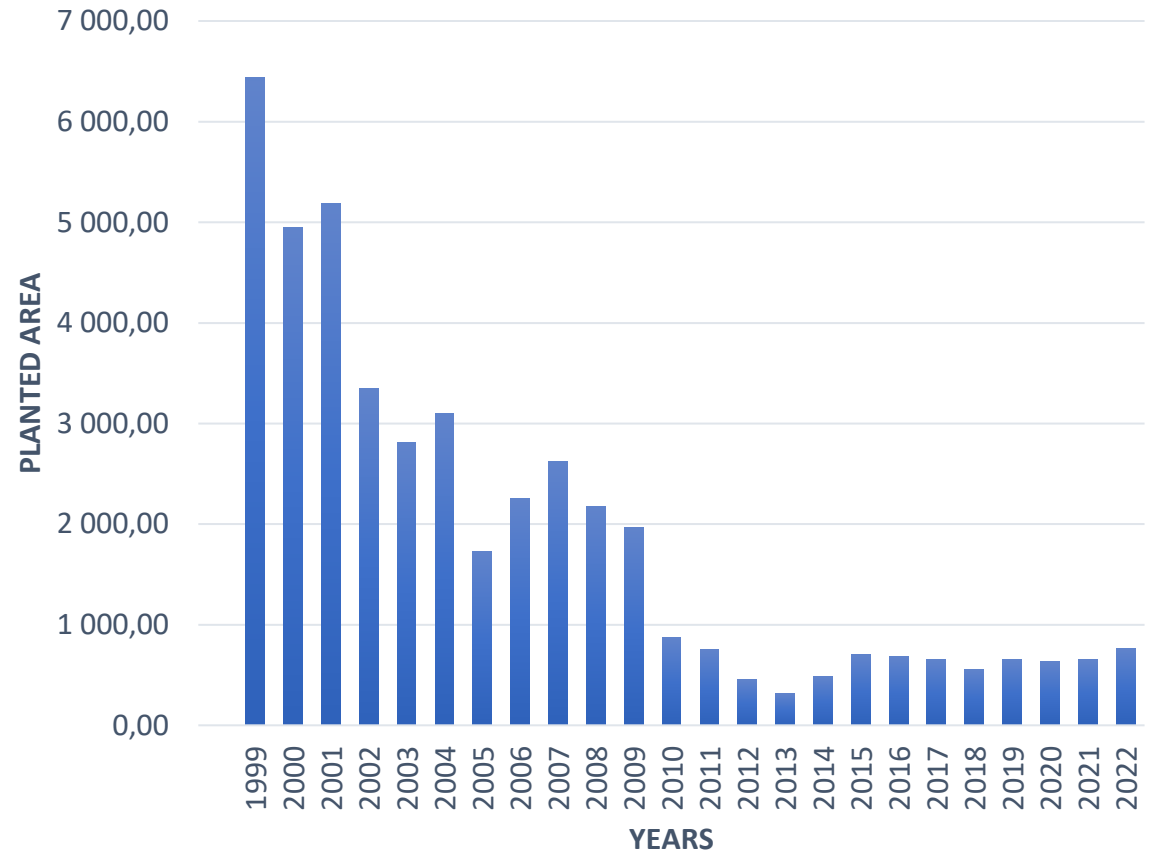


Status of the Romanian Potato Germplasm

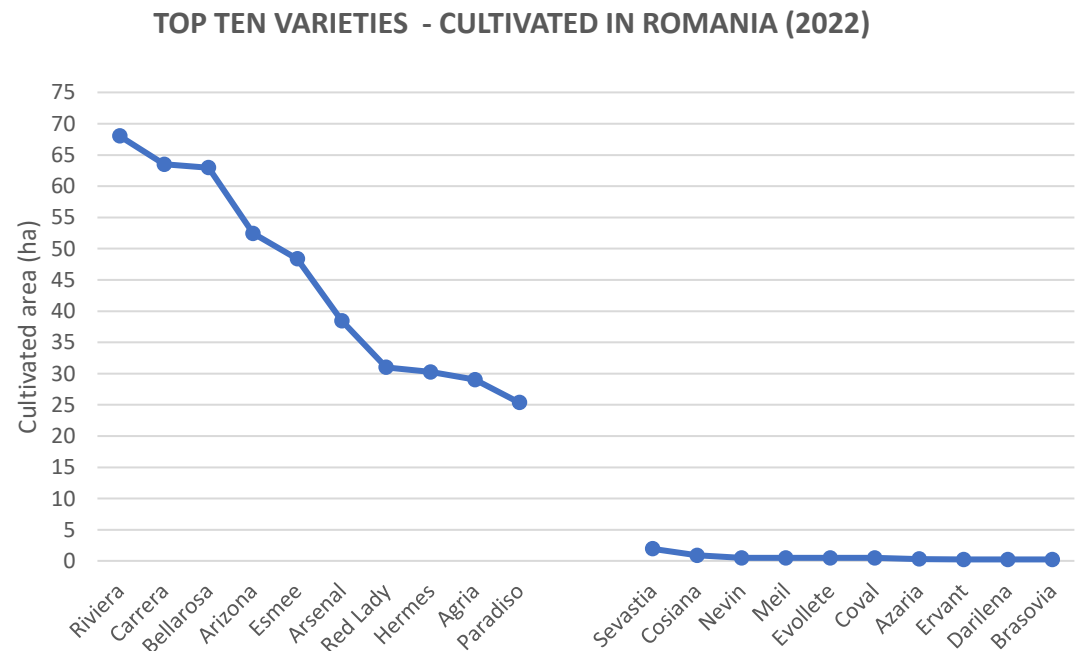
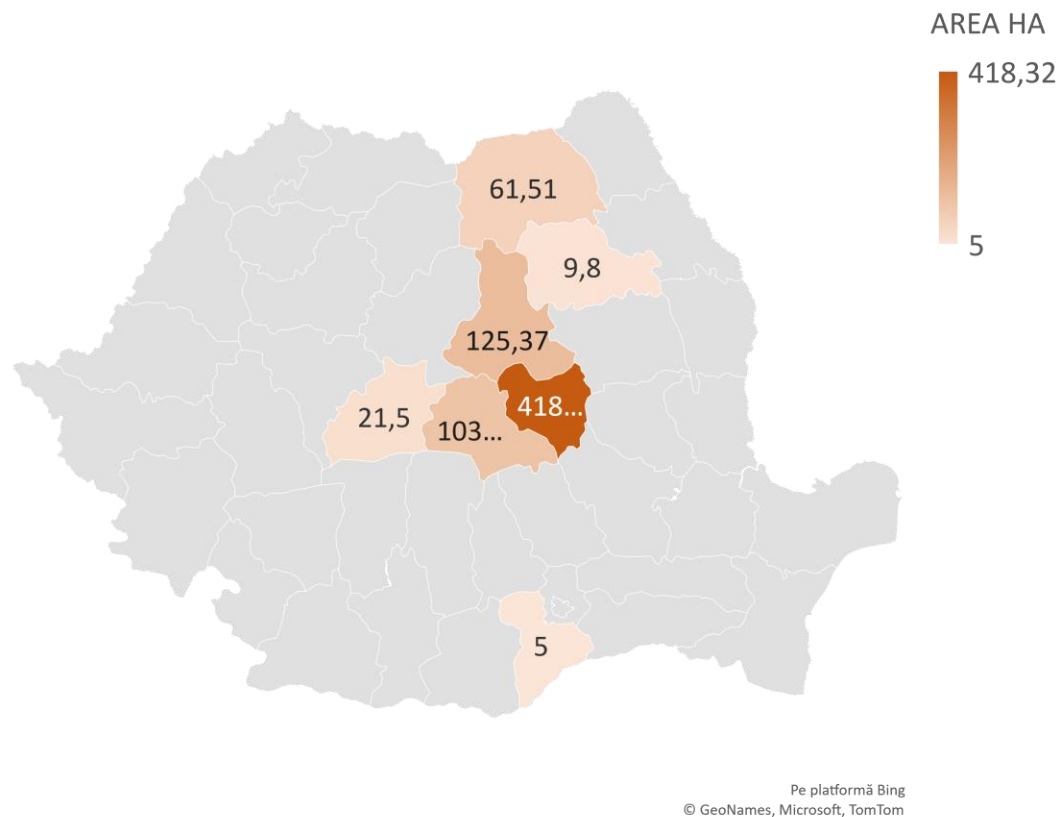
C.V. Hatnean, M. Cioloca, M. Stefan, A. Baci, D Constantinovici

Evolution of potato tuber seed production areas in Romania

- The area occupied by tuber seed potatoes has decreased in the course of 23 years (1999-2022) by approximately 6000 ha (88%).



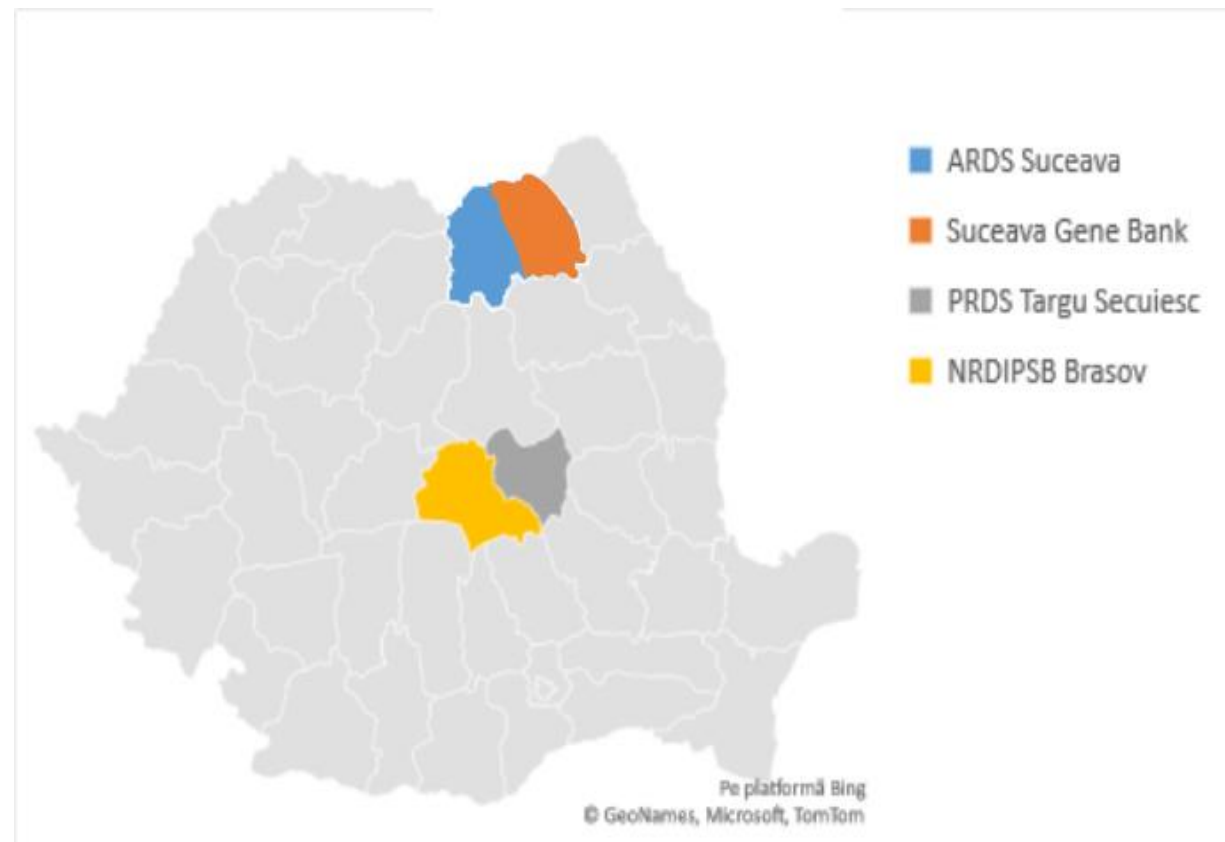
POTATO TUBER SEED National Multiplication Program (2022)



The multiplication program took place in 7 counties (Suceava, Neamt, Harghita, Covasna, Brasov, Sibiu and Giurgiu).

Romanian holding institutes of the national potato collection

- NATIONAL RESEARCH-DEVELOPMENT INSTITUTE FOR POTATO AND SUGAR BEET FROM BRASOV
- TARGU SECUIESC POTATO RESEARCH – DEVELOPMENT STATION
- SUCEAVA AGRICULTURAL DEVELOPMENT RESEARCH STATION
- SUCEAVA GENE BANK

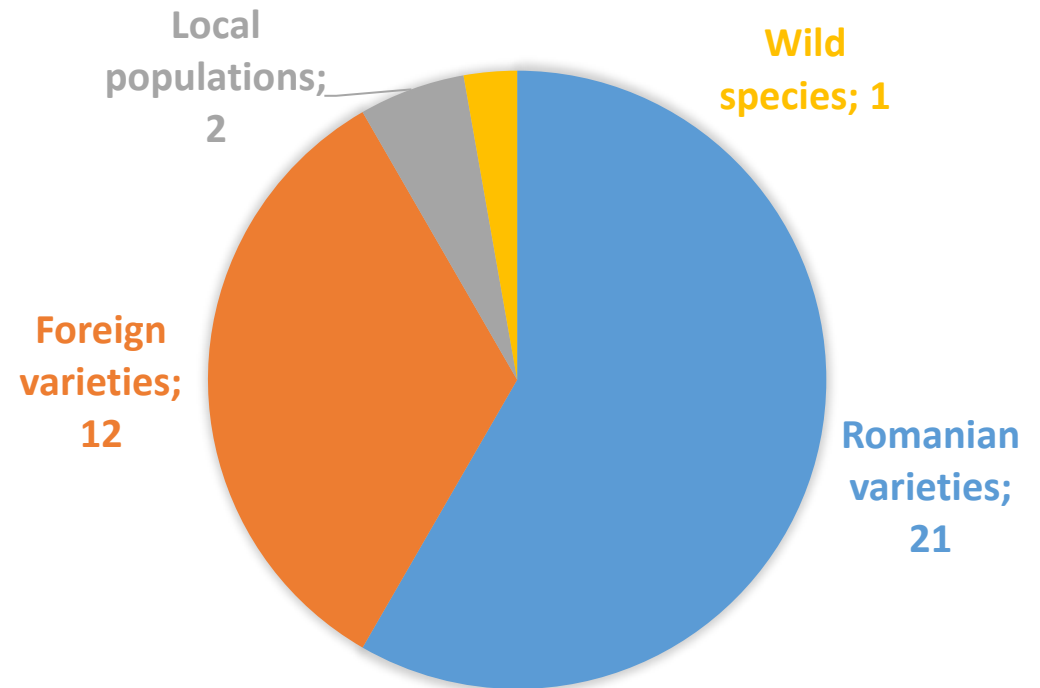


NATIONAL RESEARCH-DEVELOPMENT INSTITUTE FOR POTATO AND SUGAR BEET FROM BRASOV

"in vitro" Preservation methods

- Medium-term preservation of healthy material using single-nodal explants
- *In vitro* conservation of germplasm:
 - Hypoxia chambers
 - slowing growth (mannitol 15 g/l)

"in vitro" Potato germplasm collection

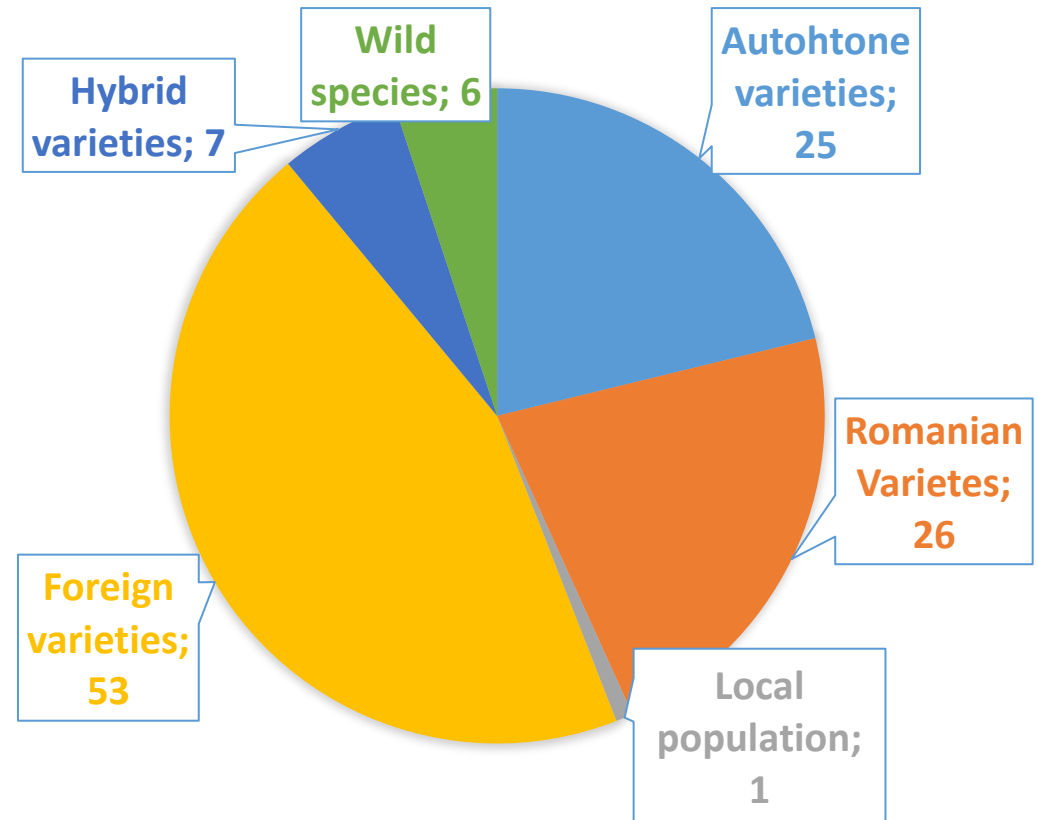


NATIONAL RESEARCH-DEVELOPMENT
INSTITUTE FOR POTATO AND SUGAR BEET FROM BRASOV

“in vivo” Preservation

- The Genetic Breeding and Plant Selection Laboratory owns a collection of 118 potato cultivars (Romanian and foreign) maintained in field conditions.

“in vivo” Potato germplasm collection

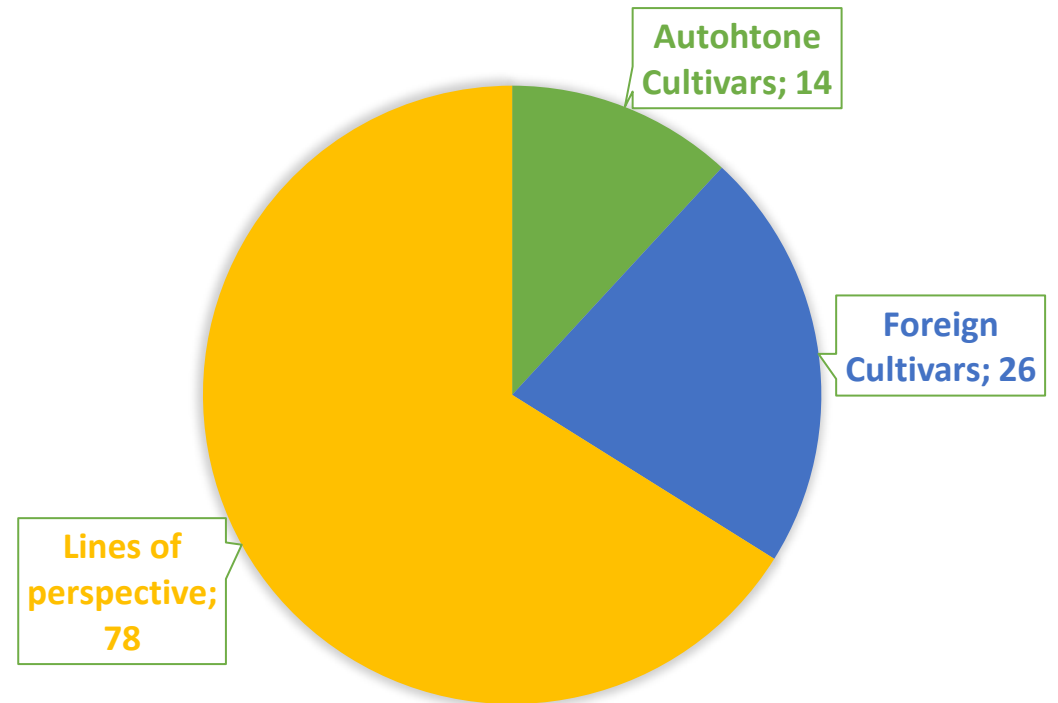


TARGU SECUIESC POTATO RESEARCH – DEVELOPMENT STATION

“in vivo” Preservation

- Genetic Breeding Laboratory held a collection of 40 potato varieties (Romanian and foreign) maintained in the field conditions, in which resulted 78 line of perspective.

“in vivo” Potato germplasm collection

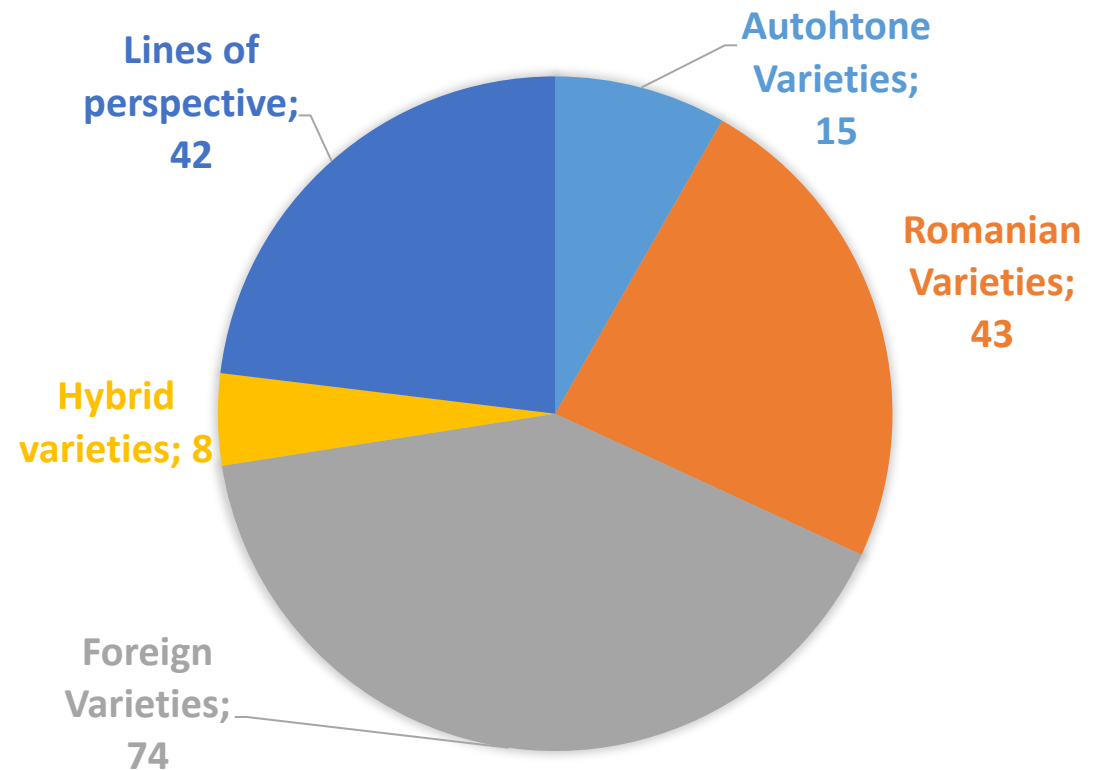


SUCEAVA AGRICULTURAL DEVELOPMENT RESEARCH STATION

Preservation “in vivo”

- Currently, in the potato breeding laboratory, there is a collection of 140 Romanian and foreign varieties, and 42 lines of perspective.

“in vivo” potato germplasm collection

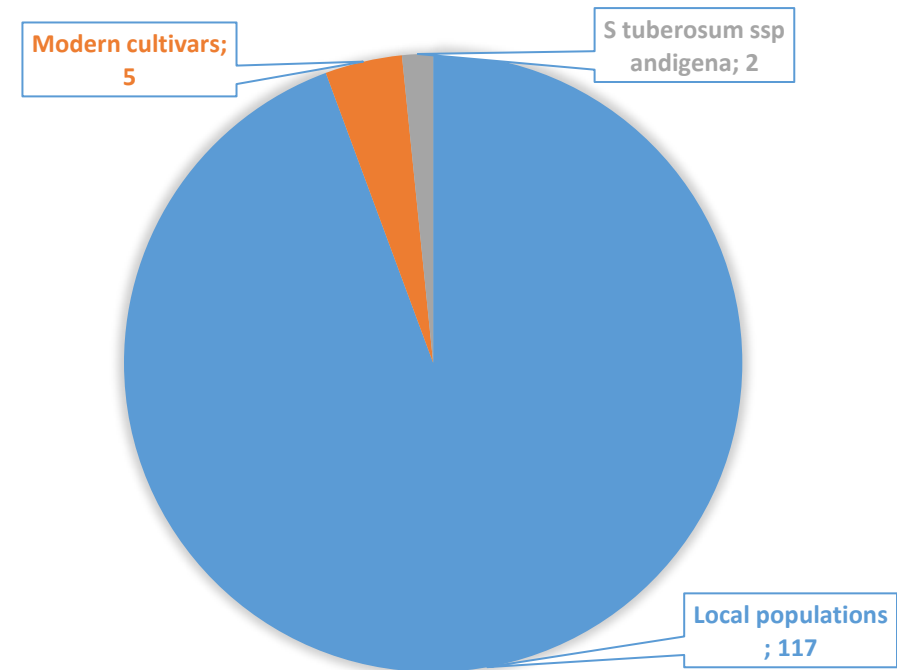


Suceava Gene Bank - Potato Collection

Potato collection maintained “in vitro” under slow growth conditions

- The potato collection consists of 124 genotypes, of which 117 are local populations (from Romania, the Republic of Moldova and Hungary), 3 varieties come from China, one from Estonia ,1 variety from ARDS of Suceava, Romania and 2 new varieties from the Tápiószze Gene Bank, Hungary.

“in vitro” potato germplasm collection

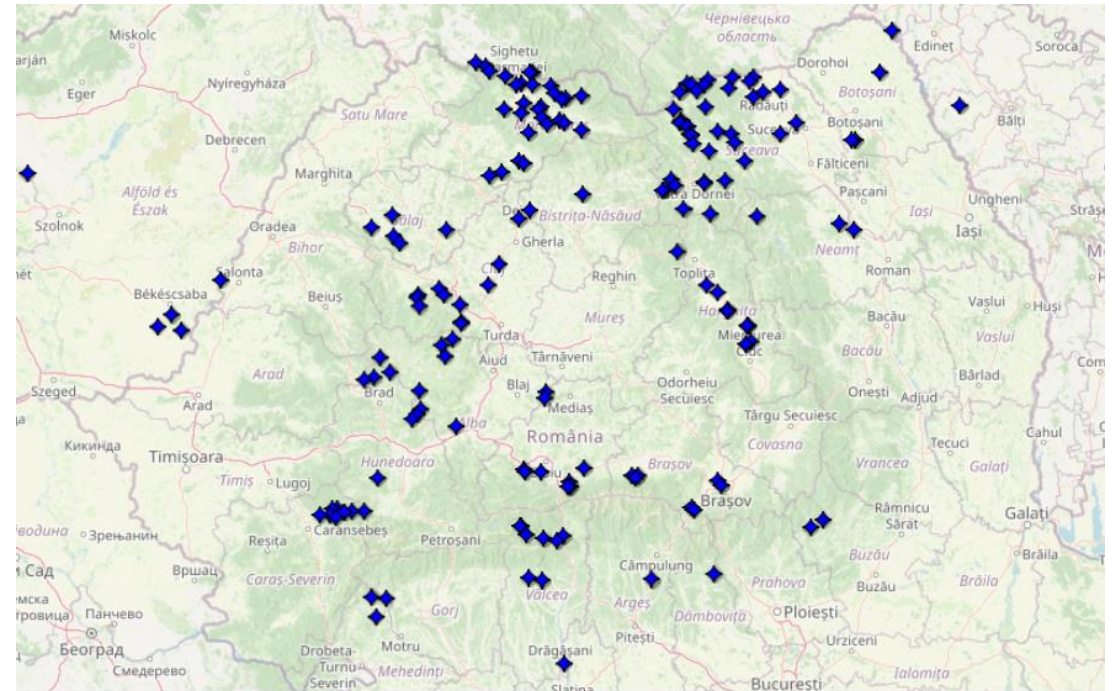


Suceava Gene Bank – Potato Collection

Potato field collection

- In the field collection there are registered 161 potato varieties originating from Romania and abroad.

Potato genotypes collected from Romania



Future Goals of the Romanian Potato Breeders

- Creating new advanced cultivars with the following traits:
 - high productivity, quality, precocity of tuberization and resistance to current biotic and abiotic factors;
- The development and implementation of sustainable technologies for the production of potatoes;
- Creating resilient potato varieties using conventional and modern methods based on the use of molecular markers (DNA fingerprinting);
- Maintenance and enrichment of the potato germplasm collection (in vivo).
- The production of biological material from higher links in an "insect-proof" protected space using methods based on plant biotechnologies;
- Maintaining and supplementing the potato germplasm collection with new varieties (in vitro);

Conclusions

- There is a need for investments and subvention to restart the national tuber seed multiplication program.
- There is a high variability of potato cultivars in the Romanian National Collection but always available to renew the data base.
- The Romanian National Research Institutes provide interest to continue the Potato breeding program, followed by constant results in obtaining new patented potato cultivars.
- High interest in preserving vegetatively propagated potato varieties for genetic resources, in vitro culture technologies, ensure the rescue of various genotypes that have resistance characteristics to many unfavorable biotic and abiotic factors.

Thank you for your attention!

NRDIPSB Brasov



Suceava Gene Bank



PRDS Targu Secuiesc



ARDS Suceava

