Project ADER 3.1.4.: Regeneration, multiplication & characterization of unique local vegetable varieties

- Contracted within the Sectoral Plan for research and development of the Ministry of Agriculture and Rural Development for the years 2015-2018, "Agriculture and Rural Development - ADER 2020".

- Project Coordinator (CO): Suceava Genebank (SVGB)

- Contract no. 314/1.10.2015
- Beginning year - 2015
- Completion year - 2018

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## PROJECT PARTNERS

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General and specific objectives:

The overall objective of the project is to increase the degree of safety, knowledge and use of a unique vegetable genetic material, having Romania as country of origin.

The specific objectives of the project were targeted on:

- Establishing a national network for regeneration / multiplication and characterization / evaluation.
- Standardization of regeneration / multiplication and characterization / evaluation methods.
- Increasing the number of samples of Romania's strategic collection, preserved ex situ.
- Securing the national genetic fund by duplicating it.
- Creating a national database of passport, characterization and evaluation descriptors (www.svgenebank.ro).
- Strengthening the use of genetic resources by identifying and introducing valuable forms in breeding programmes.
- Facilitating the reintroduction into culture of certain traditional plant genetic resources held in ex situ collections, by distributing material to small users and promoting on farm conservation.
Proposed activities and partners' contribution:

- Regenerating / multiplying over 2,400 accessions (2016 - 2017), in line with internationally accepted methodologies, adapted, technically, to the local situation:

  - **P1** - ICDLF Vidra - 209 genotypes of: Capsicum annuum L., Cucurbita pepo L., Solanum lycopersicum L.;
  - **P5** - SCDA Secuieni - 590 accessions of Phaseolus vulgaris L.
Proposed activities and partners' contribution:

- **characterization / evaluation of 600 accessions (2018)**, in accordance with the methodologies and descriptors set by the working team, based on the Bioversity International lists:
  - CO - Genebank "Mihai Cristea" in Suceava: 250 accessions of the species *Phaseolus vulgaris* L., *Allium sativum* L. and *Solanum melongena* L.
  - P1 - ICDLF Vidra: 50 accessions of the species *Solanum lycopersicum* L. and *Capsicum annuum* L.;
  - P2 - SCDL Bacau: 50 accessions of the species *Capsicum annuum* L. and *Solanum lycopersicum* L.;
  - P3 - SCDL Buzau: 50 accessions of the species *Solanum lycopersicum* L.;
  - P5 - SCDA Secuieni: 150 accessions of the species *Phaseolus vulgaris* L.

- dissemination of project results through specific means (scientific papers, communications at scientific meetings, posting on the Ministry of Agriculture and Genebank sites, etc.).
Contact and information exchange between partners

Communication between partners was facilitated by the creation of a link on the Suceava Genebank website (www.svgenebank.ro), which, based on a username and password, allowed the viewing of the files with biological material under study, their downloading, as well as the introduction of the research results, descriptor codes and scientific reports.

The ability to send messages, to receive an answer in this way, has ensured rapid communication between the persons with responsibilities in the project.
Creating a database of standard descriptors for characterization and evaluation

The characterization data, provided by the project partners, is available on the website of the Gene Bank Suceava www.svegenebank.ro, under “INFORMATION” box.

Data selection with characterization descriptors for the species Solanum melongena L.
Editing a National Catalogue of Vegetable Genetic Resources, including general information on place of origin, geographical coordinates and other passport descriptors (CO, P1, P2, P3, P4, P5).

The Catalogue of Vegetable Species has been edited, taking into account the current scientific denominations for vegetable species held by Suceava Genebank and those partners who have provided information on their collections. The drafting was done by the project coordinator, PhD biologist Silvia Strajeru.

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<tr>
<th>INSTCODE</th>
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Data selection from the Vegetable Catalogue.
Editing a National Catalogue of Vegetable Genetic Resources, including general information on place of origin, geographical coordinates and other passport descriptors (CO, P1, P2, P3, P4, P5) - ctd.

Areas of origin for the samples of *Phaseolus vulgaris* L., included in the Vegetable Catalogue
Editing a National Catalogue of Vegetable Genetic Resources, including general information on place of origin, geographical coordinates and other passport descriptors (CO, P1, P2, P3, P4, P5) - ctd.

Illustrative material for *Solanum lycopersicum* L. - tomato - included in the Vegetable Catalogue
Editing a National Catalogue of Vegetable Genetic Resources, including general information on place of origin, geographical coordinates and other passport descriptors (CO, P1, P2, P3, P4, P5) - ctd.

**Illustrative material for Phaseolus vulgaris L. - common beans - included in the Vegetable Catalog**

Local variety of *Phaseolus vulgaris* L., Maru, CS (SVGB-18084)

Local variety of *Phaseolus vulgaris* L., Bivolarie, SV (SVGB-14564)

Local variety of *Phaseolus vulgaris* L., Iasi, IS (SVGB-2096)

Local variety of *Phaseolus vulgaris* L., Paltinoasa, SV (SVGB-12071)
Dissemination of project results through specific means (CO, P1, P2, P3, P4, P5)

Editing a Catalogue of Vegetable Genetic Resources

This paper complies, structurally, with the specific elements of an inventory, aiming at the dissemination of the information on the vegetable germplasm fund in the Romanian collections, as a support measure for intensifying the use of the most valuable genotypes in the breeding field or directly in culture. Non-confidential data provided by the Vegetable Genebank "Mihai Cristea" Suceava, Vegetable Research and Development Station Bacau and Research and Development Station for Plant Growing on Sandy Soils Dabuleni were published.

The Catalogue of Vegetable Species contains three distinct parts, the first one, which is small, indicates the significance of passport descriptors, FAO codes for the countries and institutes, from where the varieties originate or have been provided, followed by a brief presentation of the agronomic category of vegetables, regarding definition issues, classification criteria and genetic resources in collections.

The central component, the most consistent, lists the 97 taxa of the Dicotiledonatae and Monocotiledonatae classes, alphabetically ordered and accompanied by specific information in line with Gene Bank standards.

The last segment of the publication is to illustrate, through 17 maps and 147 photos, the origins of the main local populations, namely the fruit/seed of the cultivars included in the Catalogue.
Dissemination of project results through specific means (CO, P1, P2, P3, P4, P5) - ctd.

PAPERS PUBLISHED IN THE COUNTRY

Creola BREZEANU, Silvica AMBĂRUŞ, Petre Marian BREZEANU, 2018, Study of kidney beans (Phaseolus coccineus) biodiversity in order to develop new genotypes, ed. ALMA MATER, BACAU, ISSN: 1224-919 X

PAPERS PUBLISHED ABROAD


SCIENTIFIC COMMUNICATIONS ABROAD

Silvica AMBARUS¹, Petre Marian BREZEANU¹, Creola BREZEANU¹*, Tina Oana CRISTEA¹, Maria CALIN¹, 2018, Grain Legumes Sustainable Management and Utilization for Food, Nutrition and Environmental Security, XXX. INTERNATIONAL HORTICULTURAL CONGRESS, ISTANBUL - TURKEY.

Silvica AMBARUS¹, Petre Marian BREZEANU¹, Creola BREZEANU¹*, Tina Oana CRISTEA¹, Maria CALIN¹, 2018, Biological control of pepper pests in organic agriculture, XXX. INTERNATIONAL HORTICULTURAL CONGRESS, ISTANBUL - TURKEY.
Dissemination of project results through specific means (CO, P1, P2, P3, P4, P5) - ctd.
Dissemination of project results through specific means (CO, P1, P2, P3, P4, P5) – ctd.

STUDIES ON THE CONSERVATION OF BIODIVERSITY OF THE TRADITIONAL YELLOW MELON GENETIC RESOURCES

Authors: Reta DRĂGHICI, Aurelia DIACONU, Silvia STRĂJERU, Iulian DRĂGHICI, Mihaela CROITORU, Alina Nicoleta PARASCHIV, Milica DIMA

Presentation of scientific work at THE SCIENTIFIC INTERNATIONAL CONFERENCE MUSEUM AND SCIENTIFIC RESEARCH, Craiova, 20 – 22 September 2018

1. Studies on the conservation of biodiversity of the traditional yellow melon resources / Studii asupra conservării biodiversității la resursele vegetale tradiționale de pepene galben

Authors: Reta DRĂGHICI, Aurelia DIACONU, Silvia STRĂJERU, Iulian DRĂGHICI, Mihaela CROITORU, Alina Nicoleta PARASCHIV, Milica DIMA
Results of the project ADER 3.1.4 "Regeneration, multiplication and characterization of unique local vegetable varieties"

Expected result 1:
- Establish a national network for regeneration and characterization.

Outcome 1:
- The national network, consisting of 6 project partners, located in different geographic areas, suitable for the biological requirements for regeneration and characterization for the 20 target species, was set up.

Expected result 2:
- Standardization of regeneration and characterization protocols.

Outcome 2:
Results of the project ADER 3.1.4 (ctd.)

Expected result 3:
- Creating a national database for characterization descriptors.

Outcome 3:
✓ It has been created on the Genebank’s website, www.svgenebank.ro, a link for characterization and evaluation descriptors. The biological material of interest for breeding, research or reintroduction into culture can be requested on-line.

Expected result 4:
- Increasing the number of samples from Romania's strategic collection, kept under controlled conditions, at temperature of -20°C.

Outcome 4:
✓ The material resulting from the regeneration / multiplication, over 2000 varieties, entered the national strategic collection, kept at the Suceava Genebank.

Expected result 5:
- Securing the National Genetic Fund by duplicating it and storing under standard conditions at the Svalbard Global Seed Vault, Norway.

Outcome 5:
✓ More than 2,000 vegetable varieties have been duplicated both at the project partners institutions and, also, by the inclusion of the studied material in the Svalbard Global Seed Vault, Norway (transfer and shipment procedures are underway);
Results of the project ADER 3.1.4 (ctd.)

Expected result 6:
- Increasing the use of genetic resources by their introducing into breeding programmes.

  Outcome 6:
  ✓ 600 varieties characterized / evaluated in 2018, are available to breeders to be introduced, in the future, in specific programmes.

Expected result 7:
- Facilitating the reintroduction into culture of traditional plant genetic resources held in ex situ collections by distributing material to small users and promoting on farm conservation.

  Outcome 7:
  ✓ During the years 2016-2018, over 60 varieties of tomatoes, peppers, beans, pumpkin, salad, cucumber, parsley and garlic have been distributed to over 5000 people from all Romanian counties.