 <p>Plant Genetic Resources Bank "Mihai Cristea"</p>	<p>COLLECTING PLANT GENETIC RESOURCES FROM CULTIVATED FLORA</p>	<p>Edition: 2</p> <p>Page 1 of 3</p>
--	--	---

SOP 01 - COLLECTING PLANT GENETIC RESOURCES FROM CULTIVATED FLORA

The document presents the procedure for collecting plant genetic resources (PGR) from cultivated flora, developed by the Plant Genetic Resources Bank (PGRB) "Mihai Cristea" in Suceava. Its aim is to introduce new sources of genetic material into BRGV collections in order to increase inter- and intraspecific diversity of conserved plant species. The document includes essential definitions and terms, collecting objectives, methods and steps needed to carry out collecting missions.

In the context of climate change, collecting genetic material is essential to prevent genetic erosion and biodiversity loss.

BRGV provides solutions for *ex situ* conservation, supporting research, reintroduction of traditional varieties and raising public awareness of the importance of preserving local forms in culture.

Main content of the document:

1. Aim and objectives:


- The aim is to increase genetic diversity by collecting genetic material from cultivated flora.
- The objectives include:
 - *Ex situ* conservation of plant germplasm.
 - Prevention of genetic erosion.
 - Identification and rescue of threatened species.
 - Creation of a diversified national collection of plant germplasm.

2. Application:

The procedure applies to designated BRGV Suceava staff involved in collection activities.

3. Definitions and abbreviations:

- Key definitions such as: sample, genetic erosion, local population, genetic diversity, genotype, phenotype, etc.
 - *Sample* - a seed sample representing a collected population or sample that is kept for conservation.
 - *Genetic erosion* - The loss over time of genetic diversity between and within populations or varieties of the same species or the reduction of the genetic base of a species due to human intervention or environmental change. In a narrow sense, it refers to the loss of an individual gene or gene complex from the existing germplasm in a given area, and in a broader sense to the loss of a variety, hybrid, local population.
 - *Local population* - a local, traditional crop plant variety, in perfect balance with the environment, empirically 'improved' from generation to generation by farmers,

 <p>Plant Genetic Resources Bank "Mihai Cristea"</p>	<p>COLLECTING PLANT GENETIC RESOURCES FROM CULTIVATED FLORA</p>	<p>Edition: 2</p> <p>Page 2 of 3</p>
--	--	---

which remains relatively stable over a long period of time, with a high capacity to tolerate harsh environmental conditions (biotic and abiotic stressors), with a constant yield and high nutritive value but average productivity.

- *Genetic diversity* - the variety of genetic traits that lead to different characteristics.
- *Intraspecific diversity* - the variability that exists in all taxonomic categories below the species.
- *Interspecific diversity* - the variability within species.
- *Genotype* - the genetic constitution of an individual plant or organism.
- *Phenotype* - the external appearance of a plant resulting from the interaction of the genotype with the environment.
- *On-farm descriptors* - a questionnaire of descriptors to collect information from the field on the genetic material collected, the way of conservation and utilization of PGR, the traditional farming system, some socio-cultural and economic information related to the rural communities explored.
- *On-farm conservation* - the sustainable management of the genetic diversity of traditional crop plant varieties, developed in the place where they were formed and developed using a traditional farming system.
- *Genetic material* - any material of plant origin that contains functional units of heredity and that can be transmitted from one generation to the next by germ cells.
 - Abbreviations used: RGV (Plant Genetic Resources), BRGV (Plant Genetic Resources Bank) etc.
- PGR - Plant Genetic Resources (any genetic material, including vegetative propagating material) of actual or potential value for food and agriculture, belonging to the following categories of plants: existing cultivars, old cultivars, wild species, especially wild relatives of crop plants, breeding material (improved lines or lines under improvement), special genetic stocks (mutant forms) and traditional varieties or local populations.
- BRGV - Plant Genetic Resources Bank "Mihai Cristea" Suceava.

4. Description of the procedure:


Collecting plant genetic resources:

- The collection activity is carried out in the framework of the BRGV annual research program.
- Collection missions target traditional varieties, local populations and old cultivars, prioritizing underutilized species, those subject to breeding/research programs/projects, under-represented in BRGV collections and those threatened by genetic erosion.

Selection of priority species:

- Identification of target species is done based on established criteria (e.g. Romanian native material, economic importance, relevant for research/breeding, etc.).

Planning of collecting expeditions:

 <p>Plant Genetic Resources Bank "Mihai Cristea"</p>	<p>COLLECTING PLANT GENETIC RESOURCES FROM CULTIVATED FLORA</p>	<p>Edition: 2</p> <p>Page 3 of 3</p>
--	--	---

- The collection team (specialists in biology and agronomy), the areas and duration of collection, the necessary equipment and the optimal collection period are determined.
- Expeditions are logistically and technically planned, including routes, approvals and authorizations.

Collecting methods:

- Collection shall be randomized, from several localities in the target geographical area and according to international standards.
- The collected samples shall be mature, visibly healthy, visibly uninfected seeds/fruits, packed in paper bags and labelled.

Types of collecting missions:

- National or international missions, depending on projects.
- Collection can be general (several species) or specific (1-3 species), depending on priorities.

Sources of collecting:

- Germplasm is collected from agricultural fields, gardens, local markets or fairs.

5. Key aspects of collecting:

- **Why do we collect?**
 - To diversify collections, monitor genetic erosion, save threatened species and promote traditional cultivation.
- **What do we collect?**
 - Traditional varieties, local forms, old varieties, accompanied by local knowledge.
 - Each sample collected is accompanied by the following collection data: scientific name of the species, popular name of the species, source of collection, date of collection, name of the collector, a collection number, locality, county, GPS location data (latitude, longitude, altitude), as well as some data on the frequency of occurrence of the target species in the collection area, some morphological data (size, shape, colour of seeds) and socio-economic data. *On-farm* descriptors are noted on the spread of local varieties/populations and on the local traditional methods used by peasants in the cultivation, conservation, maintenance and use of these plant genetic resources, etc. Plants are also photographed in the cultivated habitat or various aspects of the collection activity are captured (Annex 1).
- **How do we collect?**
 - Following scientific standards: randomized collection, representative, diversified samples.
- **When do we collect?**
 - According to the period of physiological maturity of the seed, considering seasonal and geographical variations.