



EVA
European Evaluation Network



ALBANIAN MAIZE GERMPLASM SELECTED FOR MALANIRS PROJECT

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EVA Maize – Malanirs Kickoff

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Short presentation of the institute/ organization

- The Institute of Plant Genetic Resources (IPGR), as a primary unit of Agricultural University of Tirana, is the national institution which coordinates the activities in the field of conservation and management of plant genetic resources (PGR). It is a relatively new institution which had been originally established as the *Genetic Resources Centre* to operate the National Gene Bank.
- **IPGR's overall aim** is to promote the conservation and sustainable use of plant genetic resources for food and agriculture (PGRFA) in Albania. To do so, the institute attempts to coordinate all efforts on PGRFA undertaken by the Agricultural University of Tirana and the Ministry of Agriculture and Food

Short presentation of the institute/ organization

- **Research Groups**
- Three Research Groups operates under the Institute of Plant Genetic Resources:
 - Field Research Group (Cereals, Forages, Industrial crops, Medicinal and Aromatic plants).
 - Horticulture Research Group (Vegetables, Fruit Trees, Grape, Subtropical, Olive and Citrus).
 - Documentation Research Group (Documentation, Database, Information and Publication).



Short presentation of the institute/ organization

- **Activities**

- **IPGR's activities include:**

- planning and undertaking of germplasm exploration and collection at national level;
- proper handling of all collected germplasm samples;
- long-term conservation of germplasm in the institute's *ex situ* facilities and its timely regeneration;
- research on characterization and evaluation on specific traits of germplasm;
- introduction and sustainable use of germplasm;
- exchange of germplasm and information at national and international levels;
- training, education and organization of technical meetings and workshops;
- coordination of PRFA research and development with central institutions and regional projects.

Projects on Maize

Supported by Global Diversity Trust (Crop Trust) during 2022-2024:

- About 700 Maize populations, stored in Albanian Genebank are regenerated during 2023-2024, multiplied, and safety duplicated in Svalbard Seed Vault in Norway
- All accessions of maize populations have been characterized and evaluated for several quantitative and qualitative traits
- This process has been carried out for the first time, after 25 years, since the establishment of the national genebank.
- From the observed data, it results that for all the accessions stored, the storage parameters in the national genebank have been good and the germination power of the regenerated seeds has been over 90%

Ways to continue, to consolidate, to implement the results, to link with other initiatives

- Since many maize populations are phenotypically similar, molecular analyses are necessary. (DNA Markers)
- This will make it possible to determine the exact number of unique maize populations, as well as eliminate unnecessary duplications in maize germplasm in storage, facilitating conservation capacities in the national genebank.
- These populations, identified by molecular methods, can serve as a good basis for pre-breeding and breeding programs.



Institute's maize collection

- Biological status of maize stored in Albanian Gene Bank

Biological status	No of accessions	No of accessions
	Base collection	Active collection
Traditional cultivars	404	200
Breeding research material	291	50
Total	695	250

Institute's maize collection

- Selected samples for genotyping and analyzed by NIRs
- 50 populations were selected
- Sent to AGB from Research experimental stations
- Populations were collected between years 1976-2009
- Altitude 7-1358m

Geographical distribution of selected Albanian local maize landraces



Institute's maize collection

- **Status of in situ/on farm conservation of maize landraces in your country**
 - Currently, there are no incentives to promote on-farm conservation of maize populations in Albania.
 - However, in the mountainous areas of the country, which are characterized by extensive agriculture (few chemical fertilizers, few pesticides, no mechanization), local maize populations continue to be cultivated.
 - According to data collected by agriculture field experts, approximately 30 maize populations are still cultivated in these remote areas, and a total of 60-70 ha arable land is cultivated .



Institute's maize collection

- The availability of phenotypic and genotypic data some of them are regenerated

Some quantitative traits have been recorded during the multiplication of maize bank accessions over the past two years. However, the data is still being processed and will be available soon.

- Seeds availability for sharing based on SMTA

Due to the lack of funding for seed multiplication, there is an insufficient quantity for exchange with homologous gene banks.

Expectations from EVA Maize/Malanirs

- Interest and capacity to be involved in NIRS evaluation (do you have a NIRS device and experience to do biochemical analysis on grains?)

There is interest, but we do not have the laboratory capacity nor the experience in our unit to do biochemical analysis on grains

- *Ways to cooperate/experience with PPP*

There are no private companies in Albania involved in plant breeding and seed production

