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*EUROPEPLAND– Implementing a trans-EUROpean
PEPper LANDrace collection for resilient agriculture*

30 October 2024, Almeria, Spain





AGRICULTURAL ACADEMY

INSTITUTE OF PLANT GENETIC RESOURCES “KONSTANTIN MALKOV” – SADOVO



Location – Central-Southern Bulgaria

Altitude – 158 m

North latitude – 41°90'

East longitude – 24°57'

Average annual rainfall – 548,0 mm

Relative humidity – 71,2 %

Average annual temperature – 12,3° C

OUR MISSION

**Preservation, management and sustainable use of plant genetic resources
in Bulgaria for present and future generations**

DEPARTMENT OF PLANT GENETIC RESOURCES

❖ Enrichment of collections

- collection missions by National and International projects



- international free exchange by SMTA
 - varieties and lines from the breeding programs

As a result of the complex evaluation core collections, which represent the genetic diversity have been created.

NATIONAL GENE BANK



The National Genebank is established in 1984 by FAO project.

The fund supports over **65,000** samples of **2,670** plant species.

Three collections are maintained:

- ❖ **Base collection** – long-term storage at -18°C
- ❖ **Work collection** – at $+6^{\circ}\text{C}$
- ❖ **Collection for free exchange**



SAFETY DUPLICATION OF BULGARIAN PGR COLLECTION

2,119 Bulgarian local accessions from:

- cereals
- legumes
- oil and industrial crops
- vegetables
- medicinal and aromatic species



Project activities on pepper

We have done a number of projects on peppers:

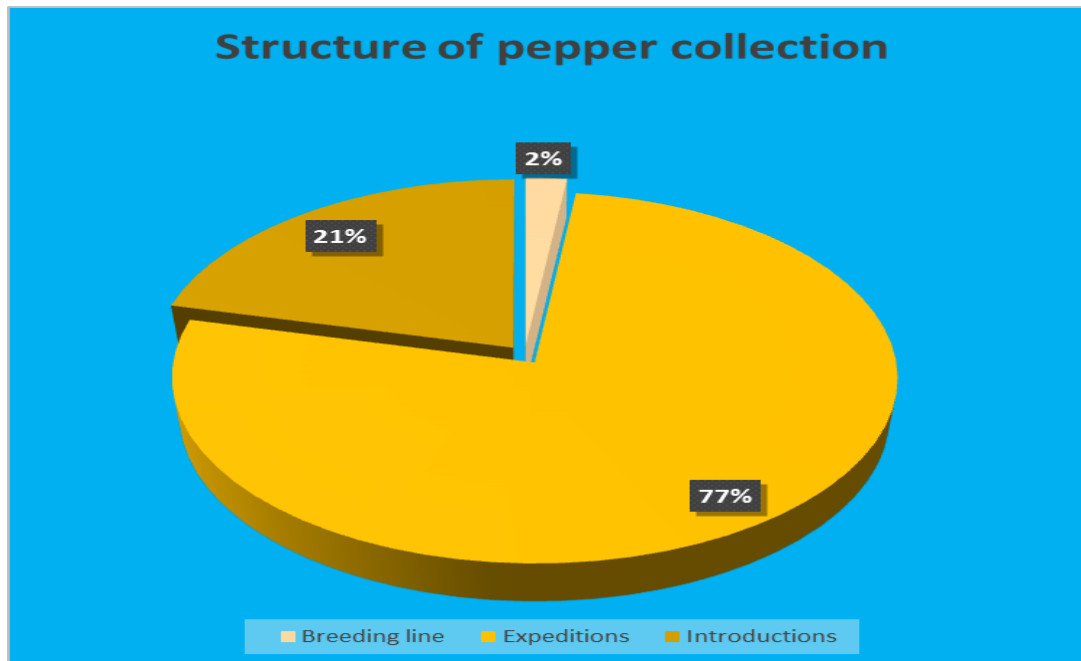
“Phenotyping and genotyping of pepper (*Capsicum annuum* L.) samples originating in the Balkans to create a core-collection“. During the implementation of the project biological, morphological, and biochemical properties of 80 accessions are studied.

“Conservation and use of the biodiversity of vegetable, medicinal and aromatic plants on the territory of Bulgaria and the Republic of North Macedonia“. The pepper collection is enriched with 36 local accessions

“Collection, research, reproduction and preservation of local plant geneplasm of vegetable, medicinal and aromatic species in Bulgaria and China“ The pepper collection is enriched with 117 accessions.

“Exploration of Balkan biodiversity of *Capsicum* spp. to extract biotic stress resistant germplasm“ SEE-ERA.NET PLUS. During the implementation of this project two main tasks are realised - collect, describe and explore the existing *Capsicum* biodiversity in the partner countries (Albania, Bulgaria, Republic of North Macedonia, Greece and Serbia) and to update knowledge about the most economically important and emerging pathogens on *Capsicum* in the Balkan region.

The Capsicum spp. Collection



Capsicum annum -99%

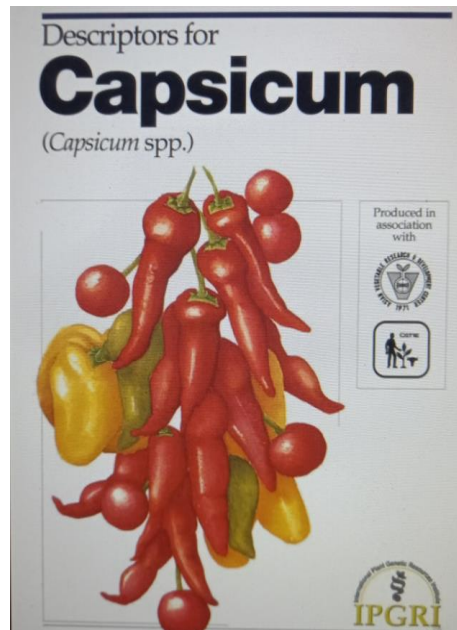
Capsicum frutescens, *Capsicum chinense* -1%

№	Country	Pepper accessions
1	Hungary	171
2	Germany	60
3	Russia	47
4	USA	29
5	Nederland	25
6	China	21
7	Japan	21
8	Greece	18
9	Serbia	17
10	France	14
11	Israel	13
12	Taiwan	8
13	Turkey	7
14	Span	7
15	Bolivia	6
16	Denmark	6
17	Poland	4
18	Great Britain	3
19	Italy	3
20	Chile	2
21	Czech Republic	2
22	Korean	2
23	Romania	2
24	Ukraine	2
25	Cuba	1
26	Peru	1
27	Jamaica	1



Pepper landraces collection diversity

The pepper collection of the Institute of Plant Genetic Resources Sadovo includes - introduced 460 accessions, Bulgarian landraces and local populations from expeditions - 1760 accessions and 47 breeding lines. Pepper is characterized, according to the Descriptors for Capsicum, (*Capsicum* spp., IPGRI 1995) of their biological, morphological, agronomic, biochemical properties.



Pepper landraces collection diversity

The collection encloses both sweet and hot types with different level of pungency. All type of size (small, medium, large) and shapes (elongate, almost round, triangular, campanulate, block), fruit colour at immature stage from white to dark green turning from yellow, orange and red at maturity are presented.



Pepper landraces collection diversity

