



Enhancing of legumes growing in Europe through sustainable cropping for protein supply for food and feed

FP7 Research Project N° 61378

Collaborative project

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Project acronym: EUROLEGUME

Project full title: „Enhancing of legumes growing in Europe through sustainable cropping for protein supply for food and feed”

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Project coordinator: Universidade de Trás-os-Montes e Alto Douro (UTAD); Portugal

Participant No 4 State Priekuli Plant Breeding Institute (SPPBI)

Leader: Dr. agr. Arta Kronberga

18 partners from 10 EU Member States.

Overall objective of the project:

The project is aimed at improving the sustainable production of leguminous crops and their multipurpose use in a changing climate, ensuring new varieties and new food and feed products, broadening the production area and thus turning EU more competitive and sustainable.

Long term S&T objective:

The project is aimed to sustainable use of Leguminous plants and soil resources in order to ensure European citizens with balanced and safe food, ensuring the high quality protein sources in their daily diet by increasing competitiveness and cultivation of legumes for food and feed.

Short-term S&T objectives:

1. Evaluation of pea, faba bean and cowpea/black-eye-bean local genetic resources for the development of new varieties for food and feed and further use in breeding;
2. Development of new food and feed products from available European varieties of pea, faba bean and cowpea;
3. Selection of appropriate rhizobium strains and arbuscular mycorrhizae fungi to support nitrogen fixation and development of new, commercial inoculants;
4. Evaluation of influence of leguminous plants on the soil properties in sustainable, regionally specific cropping systems.

Specific objectives:

1. Description of Biochemical and morphological features of the most valuable genotypes of pea (*Pisum sativum* L.), faba bean (*Vicia faba* L.) and cowpea/black-eye-bean (*Vigna unguiculata* (L.) Walp) local genetic resources for the development of new varieties for food and feed and further use in breeding; (WP2)
2. Development of new food and feed products with a comprehensive characterization of the nutritive value from available European varieties of pea, faba bean and cowpea; (WP4)
3. Selection from germplasm bank and native strains of most appropriate rhizobium and arbuscular mycorrhizae fungi to support nitrogen fixation and development of new, commercial inoculants; (WP3)
4. Introducing of leguminous (pea, faba bean and cowpea) in the production agricultural systems in order to enhance the sustainability (i.e. keeping a reduction on gas emissions) of these systems and improve the yield and the economical overall benefit of the farmers (WP5, WP6)
5. To give an added-value (as feeds) to products from legume grain production residues (WP6)

Activities:

WP1 Management and coordination;

WP2 Broadening of genetic diversity in breeding through evaluation of local genetic resources;

WP3 Selection of appropriate rhizobium strains to support nitrogen fixation and development of inoculants;

WP4 Nutritional value and innovative food and feed;

WP5 Legume supported cropping system in sustainable agriculture;

WP6 Management and valorization of the residual biomass;

WP7 Publicity and dissemination.

Project management and dissemination are performed in close partnership and in accordance to the objectives of EUROLEGUME project and particular Work Packages (WP).

All activities are organised in 7 work packages (WP). WPs are grouped in 3 blocks:

WP block No 1 - MGT - Management and coordination (WP1) - lead partner UTAD (Portugal), represented by Dr., Prof. Eduardo Augusto dos Santos Rosa.

WP block No 2 - RTD - Development of food and feed products:

- WP 2 - Broadening of genetic diversity in breeding through evaluation of local genetic resources – lead partner SPPBI (Latvia), represented by Dr. agr. Arta Kronberga;
- WP 3 - Selection of appropriate rhizobium strains to support nitrogen fixation and development of inoculants – lead partner UTAD (Portugal), represented by Dr., Prof. Guilhermina Marques;
- WP 4 - Nutritional value and innovative food and feed – lead partner LLU (Latvia), represented by Prof. Dr.; sc.ing. Ruta Galoburda;

- WP 5 - Legume supported cropping system in sustainable agriculture in different cropping systems – lead partner AUA (Greece), represented by Assoc.Prof. Dr. Dimitrios Savvas;
- WP 6 - Management and valorization of the residual biomass – lead partner UTAD (Portugal), Prof. Miguel Rodrigues

WP block No 3 - OTH - Communication and dissemination (WP7) – lead partner ECRI (Estonia), represented by Senior Researcher Dr. scient. Margit Olle.

SPPBI activities:

SPPBI is coordinator of the WP 2 Broadening of genetic diversity in breeding trough evaluation of local genetic resources

Lead researcher in charge of the WP coordination: Arta Kronberga, Dr.agr.

- Task 2.1 Sourcing and characterization of genetic diversity of local genetic resources of cowpea (*Vigna unguiculata* L.) – approx. 20 accessions, faba bean (*Vicia faba* L.) – approx. 50 accessions and pea (*Pisum sativum* L.) – approx. 50-100 accessions.
- Task 2.2 Phenotyping selected accessions for site specific biotic and abiotic stresses (under organic and conventional conditions)
- Task 2.3. Creation of Near infrared reflectance (NIR) spectroscopy calibration for selected quality parameters of peas

SPPBI is partners involved in WP 5 Legume supported cropping system in sustainable agriculture. Coordinator of the WP – AUA (Greece). Lead researcher in charge of the WP coordination: D.Savvas, Mr., Assoc. Prof., Dr.

- Task 5.1. High protein outcome-focused field investigations.
- Task 5.2. Biological nitrogen fixation focused investigations.

Information about the Project www.eurolegume.eu and www.cordis.europa.eu



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