

Editorial: Improvement of sustainable *Phaseolus* production in Europe for human consumption – PHASELIEU

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Among the plant species, grain legumes are considered as the major source of dietary protein. Importance of this food in human consumption varies from the developing regions (where in many cases poverty restricts the consumption of meat and animal protein) to the highly developed regions (where animal production is more important and meat consumption more frequent). However there is now an expanding utilization of protein food from grain legume origin throughout the world. This trend justifies therefore the growing interest in this vast plant family, in the cropping systems where they are integrated, in their constraints and in their nutritional value and valorization.

Within the diversity of the grain legumes, *Phaseolus* beans play a significant role in several temperate, subtropical and tropical regions. In Europe, these beans are still considered as a minor crop, with a production representing about 7% of the world *Phaseolus* production. In this continent, cultivation is more frequent in central and southern countries due to a higher temperature during growing season. Nevertheless, successful crops of beans have been grown at a short or medium-farm scale in northern France and southern England. Some research works on *Phaseolus* in Europe are also being conducted, with some progress, on agronomic and nutritional features. Such investigations should be encouraged with a view to improve and promote *Phaseolus* beans

PHASELIEU is a Concerted Action financed by the European Commission, inside the former FAIR Programme of RTD. It began in January 1998, but its origin is dated two years before, when several groups of scientists decided to join their efforts in *Phaseolus* research in Europe, with the major aim of the co-ordination of the current breeding bean programmes and the analysis of the production of *Phaseolus* in Europe from a sustainable point of view, with the cooperation of transnational organisations.

This initiative made possible the arising of a proposal entitled “Improvement of sustainable *Phaseolus* production in Europe for human consumption” under the short name of “PHASELIEU” that currently is the on-going project FAIR5–PL97–3463.

The overall objective of PHASELIEU is to coordinate the on-going research on *Phaseolus* and to elaborate an integrated strategy model for the improvement of *Phaseolus* production in Europe for human consumption. Also, this project would like to avoid the duplication of current research and other RTD activities at national and transnational level on *Phaseolus*. So the strategic aims of the project are the following ones:

- The establishment of an EU wide network of experts.
- The organisation of thematic workshops-group meetings.
- The publication of several scientific and technical documents.
- The scientific exchanges.

The priorities defined by the PHASELIEU consortium in *Phaseolus* research are as follows:

- Human needs: nutritional, antinutritional, sensorial aspects (including industry).
- Breeding for quality including sources of germplasm.
- Molecular support to improve quality.

Main components in this project are the five Workshops scheduled on it. The second Workshop was celebrated in Gembloux, Belgium, in October 1998, hosted by the “Faculté universitaire des Sciences agronomiques de Gembloux” under the co-ordination of JP. Baudoin and A. Maquet from the “Unité de Phytotechnie des régions intertropicales”.

In this volume of BASE are presented the contributions from the different groups integrated in the PHASELIEU consortium as well as those ones from invited scientists. The objective of this second

workshop was to seek increased nutritional and organoleptic qualities and improved cooking characteristics (including the hard-to-cook character). Nutritional (B. Wathelet) and sensory (M. Sanz Calvo) analyses of beans are of great importance in the improvement of beans and the achievement of standardised methods of analyses represent one of the main priorities. Parameters evaluating the nutritional and culinary qualities of bean seeds are also affected by environmental factors (J. Kigel and M. Muzquiz *et al.*). Bean improvement programmes have to take into account these factors influencing the estimation of nutritional and culinary qualities of beans.

These programmes focus their efforts on:

- removal antinutritional factors (R. Bollini *et al.*),
- improving seed quality traits using either the genetic diversity of *Phaseolus* (JP. Baudoin, A. Maquet) or intercropping systems with maize (M. Santalla *et al.*) which could overcome the low content of sulphur amino acids,
- new food application and industrial transformations (P. Ranalli).

More recently, progress in genetic transformation of *Phaseolus* opens the way to engineering beans with a higher nutritional value (G. Angenon *et al.*).

During the discussions in the second PHASELIEU workshop, a list of priorities on *Phaseolus* research in Europe was elaborated¹, according to the contributions of the different partners of PHASELIEU consortium and presented above.

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¹ PHASELIEU – Concerted action (FAIR5-PL97-3463). Technical Report 2, (1999). Pontevedra, Spain: Department of Plant Breeding, Misión Biológica de Galicia, MBG-CSIC.

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