

## Foreword

Among our foods of plant origin, pulses, including beans, lentils, chickpeas, peas, faba beans, cow peas and mung beans, are the richest in proteins and known to be an ideal complement to cereals in vegetarian diets. They were consumed by the populations of former civilizations, such as the Egyptians, Incas and Aztecs, but are neglected by most Western populations. Traditional consumers in Latin America also decrease their consumption of pulses when, moving from rural areas to large cities, they have access to 'Western foods'.

Due to their composition and characteristics, pulses have most of the qualities required to balance our diet and to reach recommendations for a healthy diet. Indeed, apart from their protein content, they are also rich in starch and fibre, both of which explain the low glycaemic index of pulses. Their lipid content is low and mostly of unsaturated fatty acids. Finally, they are also sources of some minerals (iron, zinc, calcium, magnesium, selenium) and folates (vitamin B<sub>9</sub>).

A new image is needed for pulses, which has to be based on the health benefits of these foods but also on attractive recipes, new ready-to-eat products manufactured by the food industries and much more use of pulses in restaurants and school canteens.

Pulses appear in the recommendations of many associations for prevention and/or treatment of chronic diseases, such as cancer, type 2 diabetes and obesity. We wondered what the scientific basis of such recommendations was and what could be said about pulses to consumers.

Thanks to the financial support of the European Commission, through an Accompanying Measure of the Quality of Life Programme, Key Action 1 on Food, Nutrition and Health (QLAM 2000-00161) 'Pulses and Health', as well as the LINK project (Legume Interactive Network, FAIR-CT98-3923) and INRA (Institut National de la Recherche Agronomique, Paris, France), a meeting was held in Paris in February 2001 to discuss the state of the art on 'Pulses and Human Health'. The reports of each of the experts involved are published in the present *British Journal of Nutrition* Supplement.

The present supplement is introduced by a report on recommendations by health organizations, which analyses the position of pulses in food guide pyramids as well as in other types of recommendations. It is followed by a presentation of the consumption of pulses in Europe and in Latin America, as an example of an area in the world where the consumption is very heterogeneous due to different average income levels, food habits and local production. Most of the papers deal with the impact of pulse consumption on the prevention of major Western diseases (cancer, type 2 diabetes and cardiovascular diseases), which are

thought to be at least partly related to diet. Pulses being rich in dietary fibre and phytate, the question of mineral bioavailability had also to be examined. Finally, we considered the different fractions of pulses, but also other legume sources, as therapeutic agents, sources of fibre and starch (purified or enriched) fractions for human uses. Unfortunately, a paper on protein isolates and concentrates is missing, as well as an evaluation of the allergenic effect of pulses. However, these diverse aspects have been reviewed recently in short reports published in *Grain Legumes* (Schwenke *et al.* 2001; Doxastakis, 2002; Fredrikson, 2002; Lallès and Peltre, 2002).

We would have appreciated evaluations of the risk (if any) of the consumption of pulses by specific populations with irritable bowel syndrome, young children, elderly populations, etc., but scientific information was lacking to allow a state-of-the-art statement, and only speculations can be made on these topics. Nowadays, most recommendations to patients with irritable bowel syndrome are to minimize fibre intake, as these patients have visceral hypersensitivity and may have a more fragile intestinal mucosa than healthy subjects. It would be interesting to evaluate the potential benefit, or adverse consequences, of the consumption of pulses outside of the periods of symptom exacerbations.

A question remains to be answered. If pulse consumption in Europe were to increase significantly, would the production of pulses for human use be sufficient to supply the food industries and consumers? The answer is 'no' for Europe, but America (both South and North) exports pulses to other continents, including Europe. Europe may have to react and increase its pulse production in order to supply high-quality products and high species and variety diversity to European citizens.

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