



EUCARPIA INTERNATIONAL SYMPOSIUM ON PROTEIN CROPS V Meeting AEL [V JORNADAS DE LA AEL]

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Second Announcement

PLANT PROTEINS FOR THE FUTURE

Because of the protein content of their seeds, grain legumes, cereals, pseudocereals and other minor crops, are attractive candidates for lowering the deficiency in plant protein production worldwide. However, despite their value, many of them are still not adequately assessed and many species are underutilized. Special attention has to be paid to genetic diversity of many species and its rational use for food, including the protein allergies and sensitivity, for feed and for agriculture and the environment, as well as to the limiting factors affecting yield, with water deficiency and other abiotic and biotic stresses being among the key factors, in order to obtain more stable, reliable and sustainable crop production through the genetic improvement of varieties.

Legumes, the main protein crops worldwide, contribute to the sustainable improvement of the environment due to their ability of biological nitrogen fixation and their effects on the soil and play a key role in the diversification and sustainable intensification of agriculture, particularly in light of new and urgent challenges such as climate change. In addition, the role of legumes in nutrition has been recognized as a relevant source of plant protein, together with other benefits for health. Soybean, peanut, common bean, pea, lupins, chickpea, faba bean, lentil grass pea, cowpea, pigeon pea, etc. are currently the most important legumes for human consumption and animal feed. Amaranth and quinoa are considered "pseudocereals" and are also good sources of proteins. Amaranth seeds contain lysine, an essential amino acid, limited in other grains or plant sources but are limited in some essential amino acids, such as leucine and threonine. Amaranth seed may be a promising source of protein to those who are gluten sensitive. Quinoa seed is appreciated for its nutritional value with very high protein content for a pseudocereal (14%) and its nutritional evaluations indicate that it is a source of complete protein. Although the main nutrients in cereals are carbohydrates, in wheat, rice, maize, oats, rye and other cereals, 7-12 % is protein. Glutamine, proline and glycine are the principal amino acids forming cereal proteins, including albumins, globulins, glutenins and prolamins. Gluten sensitivity and albumins and prolamins allergies are aspects that deserve special attention, and the proteomic approach could contribute to solve these problems. Other protein crops deserve also attention. Flax/linseed seeds contain high levels of dietary fibre as well as protein. Hemp has up to 33% of seed protein, with an amino acid profile close to "complete". Caraway, also known as meridian fennel, is a biennial plant whose seeds are rich in protein and they include about 12 non-essential amino acids and nine essential ones.

This Symposium will be an opportunity for breeders and researchers to meet with agronomists, geneticists and dieticians, and discuss ways to improve production of protein crops.

