



BOOK OF ABSTRACTS

First Legume Society Conference
2013: A Legume Odyssey

9-11 May 2013, Novi Sad, Serbia

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Book of Abstracts

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International Legume Society
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2013

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KEYNOTE LECTURE

Breeding annual legumes for sustainable agricultures must target for new and more complex variety ideotypes

G Duc¹, H Agrama², S Bao³, J Berger⁴, V Bourion¹, J Burstin¹, J Burton⁵, AM De Ron⁶, CL Gowda⁷, C Lecomte¹, P Marget¹, A Mikic⁸, D Millot¹, K Singh⁹, A Tullu¹⁰, B Vandenberg¹⁰, MC Vaz Patto¹¹, T Warkentin¹⁰, X Zong¹²

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Although yield and total biomass produced by annual legumes remain major objectives for breeders, environment-friendly, resource use efficient including symbiotic performance, resilient production in the context of climate change, adaptation to sustainable cropping systems (reducing leaching and glasshouse gas emissions), adaptation to diverse uses (seeds for feeds foods, non-food, forage or green manures), and finally new ecological services such as pollinator protection, imply the development of innovative genotypes, definition of new ideotypes and acceptance of their commercialisation. Taken as a whole, this means more complex and integrated objectives for breeders. Several illustrations will be given of breeding such complex traits for different annual legume species. Genetic diversity for root development and for ability to establish efficient symbioses with rhizobia and mycorrhiza can contribute to better resource management (N, P, water). Shoot architectures and phenologies can contribute to yield and biotic protection (weeds, disease, parasitic insects). Long winter cycles or short cycles, tolerance to biotic or abiotic stresses, are key features for the introduction of annual legumes in low input cropping systems. Adaptation to intercropping requires adapted genotypes. Improved health and nutritional value for humans are key objectives for developing new markets. Modifying product composition often requires the development of specific varieties and sometimes the need to break negative genetic correlations with yield. A holistic approach in legume breeding is important for defining objectives with farmers, processors and consumers. The varietal structures may be more complex, combining genotypes, plant species and associated symbionts. New tools to build, evaluate and register them are important.

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In the rich world of global agriculture, diverse legumes can play key roles to develop environment-friendly production, supplying humans and animals with the products of high nutritional value.

The Legume Society was initiated in 2011 with two primary missions. One of them was to treasure the rich legume research tradition of the European Association for Grain Legume Research (AEP), with emphasis on carrying out its the triennial legume-devoted conferences. Another one is to fulfill a long-term strategy of linking together the research on all legumes worldwide, from grain and forage legumes pharmaceutical and ornamental ones and from the Old World to the Americas.

We do anticipate that the First Legume Society Conference will be a unique and genuine contribution to our common goals: to promote the legume research and all its benefits into all spheres of the society, linking science with stakeholders and decision-makers, and to demonstrate how an efficient, useful and firm network of the legume researchers of the world is possible and sustainable.

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