



BOOK OF ABSTRACTS

First Legume Society Conference
2013: A Legume Odyssey

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Book of Abstracts

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International Legume Society
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Getting the message out: grow, use, feed and eat legumes

Preservation and molecular characterization of 13 central Balkan landraces of faba bean (*Vicia faba* L.)

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An increasing interest in cultivation and improvement of faba bean (*Vicia faba* L.), an important food and feed grain legume whose *ex situ* genetic resources comprise cultivated forms only, triggers both search for novel genotypes and their molecular characterization. Due to the poor representation of faba bean genotypes from the central Balkans in worldwide *ex situ* collections, we collected seeds of 13 faba bean landraces from this region, preserved them at the French National Institute for Agricultural Research (INRA) *ex situ* collection and used them also for amplification of ten nuclear microsatellites (simple sequence repeats – SSRs). Given the self-pollinating nature of faba bean and low heterozygosity levels in this crop, we assumed that relatively low number of alleles may be expected in each landrace. Therefore, we first demonstrated that all alleles obtained upon amplification of ten SSRs in 11 individuals from one landrace could be detected when DNAs from these individuals were pooled and such a bulk DNA was used as a template for PCR reactions, and then tested all SSRs in bulk DNA templates from each out of ten remaining landraces comprising six to 15 genotypes. Although such a cost-effective approach has certain drawbacks, it enabled us to acquire first insights into levels of genetic diversity and genetic structuring of a novel and untapped genetic material. We detected 203 alleles at ten loci, 20.3 alleles per locus and abundant private alleles (44). PCA and cluster analysis based on Simpson's similarity coefficients revealed that genetic differentiation of landraces mainly coincided with their geographic distribution despite relatively small sampling area (c. 1000 km²). Our findings support the view that the central Balkans represents a promising source of novel faba bean genotypes.

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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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