



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
Institute of Field and Vegetable Crops, Novi Sad, Serbia
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Getting the message out: grow, use, feed and eat legumes

Determination of Kunitz trypsin inhibitor types in soybean (*Glycine max*) and wild soybean (*Glycine soja*)

Gordana Zdjelar, Zorica Nikolić, Vuk Đorđević, Dušica Jovičić, Maja Ignjatov, Dragana Milošević, Gordana Tamindžić

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Among the antinutritional factors present in the soybean seed, the main ones are the protease inhibitors. Soybean seeds contain two major protease inhibitor classes - the Kunitz (KTI) trypsin inhibitor and the Bowman-Birk (BBI) trypsin–chymotrypsin inhibitor. Approximately 80% of the trypsin inhibition is caused by KTI. Soybean KTI has several polymorphic types, which are controlled by codominant multiple alleles at a single locus. Of these types, *Tia* and *Tib* are predominant types. In total 10 soybean varieties (7 cultivated and 3 wild) was analyzed. In order to determine the type of KTI present, PCR-RFLP using restriction enzyme *Mse* I (*Tru1* I) was performed. *Tib* type was found in cultivated as well as in wild soybean varieties. Using a pair of primers for KTI3 gene fragment of about 700 bp was amplified in all analyzed varieties, including the Kunitz variety, lacking active trypsin inhibitor. DNA extracted from the Kunitz variety and other varieties mixed equally and used for SNP analysis. SNP detection was based on a type of heteroduplex mismatch cleavage by a single-stranded specific nuclease from celery extracts named CEL I. Upon digestion of formed heteroduplexes with CEL I enzyme, it generated two fragments of 500 bp and about 250 bp. This study clearly demonstrated that CEL I extracted from celery could detect SNPs in KTI gene of soybean.

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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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