



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

Application of different *Lactobacillus* strains in production pea seed protein hydrolysates with antioxidative activity

Nemanja Stanisavljević¹, Goran Vukotić¹, Đorđe Fira², Živko Jovanović¹, Jovanka Miljuš Đukić¹, Svetlana Radović², Aleksandar Mikić³, Vesna Maksimović¹

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In recent years antioxidant properties of plant derived protein hydrolysates were established. Antioxidative activity of these hydrolysates largely depends on specificity of the proteinase used for hydrolysis, duration of proteinase treatment, as well as composition and molecular weight of hydrolysis derived peptides. In order to explore potential use of nine proteinase containing *Lactobacillus* strains in production of antioxidative peptides we tested their ability to hydrolyze lyophilized hydrosoluble protein fraction from dehulled and defatted dry pea seeds (*Pisum sativum*), cultivar NS Mraz. We also developed plant protein based liquid medium for cultivation of lactobacilli which was later used as starter for hydrolysis reaction in larger volume. We found that all nine strains could hydrolyze plant hydrosoluble fraction of pea seed proteins but with different efficiency. We also examined the effect of duration of hydrolysis on antioxidative activity in <10kDa fraction of obtained peptide extracts, using most proteolytically active strain, human vaginal isolate *Lactobacillus rhamnosus* T10. General conclusion was that antioxidative activity was positively correlated with increase of hydrolysis duration and amount of small peptides, which reached up to 34% of total proteins after 24h of hydrolysis treatment.

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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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