BOOK OF ABSTRACTS

First Legume Society Conference

2013: A Legume Odyssey

9-11 May 2013, Novi Sad, Serbia

First Legume Society Conference
2013: A Legume Odyssey

Book of Abstracts

Editors:
Aleksandar Mikić
Diego Rubiales
Vuk Đorđević

International Legume Society
Institute of Field and Vegetable Crops, Novi Sad, Serbia
2013

Scientific Committee

Michael Abberton (International Institute of Tropical Agriculture, Nigeria)
Paolo Annicchiarico (CRA, Centro di Ricerca per le Produzioni Foraggere e Lattiero-Casearie, Italy)
Marina Carbonaro (INRAN, Italy)
Branko Ćupina (University of Novi Sad, Faculty of Agriculture, Serbia)
Vuk Đorđević (Institute of Field and Vegetable Crops, Serbia)
Gérard Duc (INRA, France)
Noel Ellis (Aberystwyth University, IBERS, UK)
Aleksandar Mikić (Institute of Field and Vegetable Crops, Serbia)
Teresa Millan (University of Córdoba, Spain)
Fred Muehlbauer (Washington State University, USA)
Diego Rubiales (CSIC, Institute for Sustainable Agriculture, Spain)
Marta Santalla (CSIC, Misión Biológica de Galicia, Spain)
Petr Smýkal (Palacký University at Olomouc, Czech Republic)
Fred Stoddard (University of Helsinki, Finland)
Wojciech Święcicki (Institute of Plant Genetics, Poland)
Cengiz Toker (Akdeniz University, Turkey)
Carlota Vaz Patto (Universidade Nova de Lisboa, ITQB, Portugal)
Tom Warkentin (University of Saskatchewan, Canada)

Local Organising Committee

Svetlana Antanasović (University of Novi Sad, Faculty of Agriculture, Novi Sad)
Vuk Đorđević (Institute of Field and Vegetable Crops, Novi Sad)
Rada Jovanović (Institute of Field and Vegetable Crops, Novi Sad)
Đura Karagić (Institute of Field and Vegetable Crops, Novi Sad)
Snežana Katanski (Institute of Field and Vegetable Crops, Novi Sad)
Đorđe Krstić (University of Novi Sad, Faculty of Agriculture, Novi Sad)
Jelena Marinković (Institute of Field and Vegetable Crops, Novi Sad)
Ana Marjanović-Jeromela (Institute of Field and Vegetable Crops, Novi Sad)
Vojislav Mihailović (Institute of Field and Vegetable Crops, Novi Sad)
Aleksandar Mikić (Institute of Field and Vegetable Crops, Novi Sad)
Sanja Mikić (Institute of Field and Vegetable Crops, Novi Sad)
Jegor Miladinović (Institute of Field and Vegetable Crops, Novi Sad)
Branko Milošević (Institute of Field and Vegetable Crops, Novi Sad)
Zorica Nikolić (Institute of Field and Vegetable Crops, Novi Sad)
Mirjana Vasić (Institute of Field and Vegetable Crops, Novi Sad)
Sanja Vasiljević (Institute of Field and Vegetable Crops, Novi Sad)

Technical Editors:
Sanja Mikić and Aleksandar Mikić

ISBN 978-86-80417-44-8

Printed by Abraka Dabra, Novi Sad, Serbia, in 300 copies

The effect of legume cover crops on soil phosphorus availability

Margarida Arrobas, Ermelinda L Pereira, Isabel Q Ferreira, M Ângelo Rodrigues

Mountain Research Centre – Polytechnic Institute of Bragança, Bragança, Portugal

Legume can fix atmospheric N and sequester carbon. Some legumes are able to uptake sparingly soluble soil phosphorus. Additionally, all those effects may contribute to a beneficial increase in soil microbial activity. In this work three ground-cover treatments were imposed to an olive orchard located in NE Portugal: Natural vegetation (Nat veg); Natural vegetation fertilized with 60 kg N ha^{-1} yr^{-1} (Nat veg +N); and a mixture of self-reseeding annual legumes (Legumes). Three years after the establishment of the ground-cover treatments, soil samples were taken from the 0-10 and 10-20 cm depths. Extractable soil P was determined by the Olsen and Egner-Riehm methods, the acid phosphatase activity accordingly to Tabatabai and Bremner and soil organic carbon by the Walkley-Black method. In the 0-10 cm soil layer, the acid phosphatase activity was significantly higher in the treatments Legumes and Nat veg+N (7.81 and 7.30 μg p-Nitrophenol g^{-1}) than in the Nat veg (4.73 μg p-N g^{-1}). Considering both soil layers, there was observed a significant linear relationship between oxidizable organic C and the acid phosphatase activity (R^2=0.69). The P extracted by the Egner-Riehm method was better correlated with the acid phosphatase activity (R^2=0.42) than P extracted by the Olsen method (R^2=0.31) when all samples were taken into account. It seems that a similar effect of the legumes species on the acid phosphate activity may be achieved with the natural vegetation if fertilized with N.