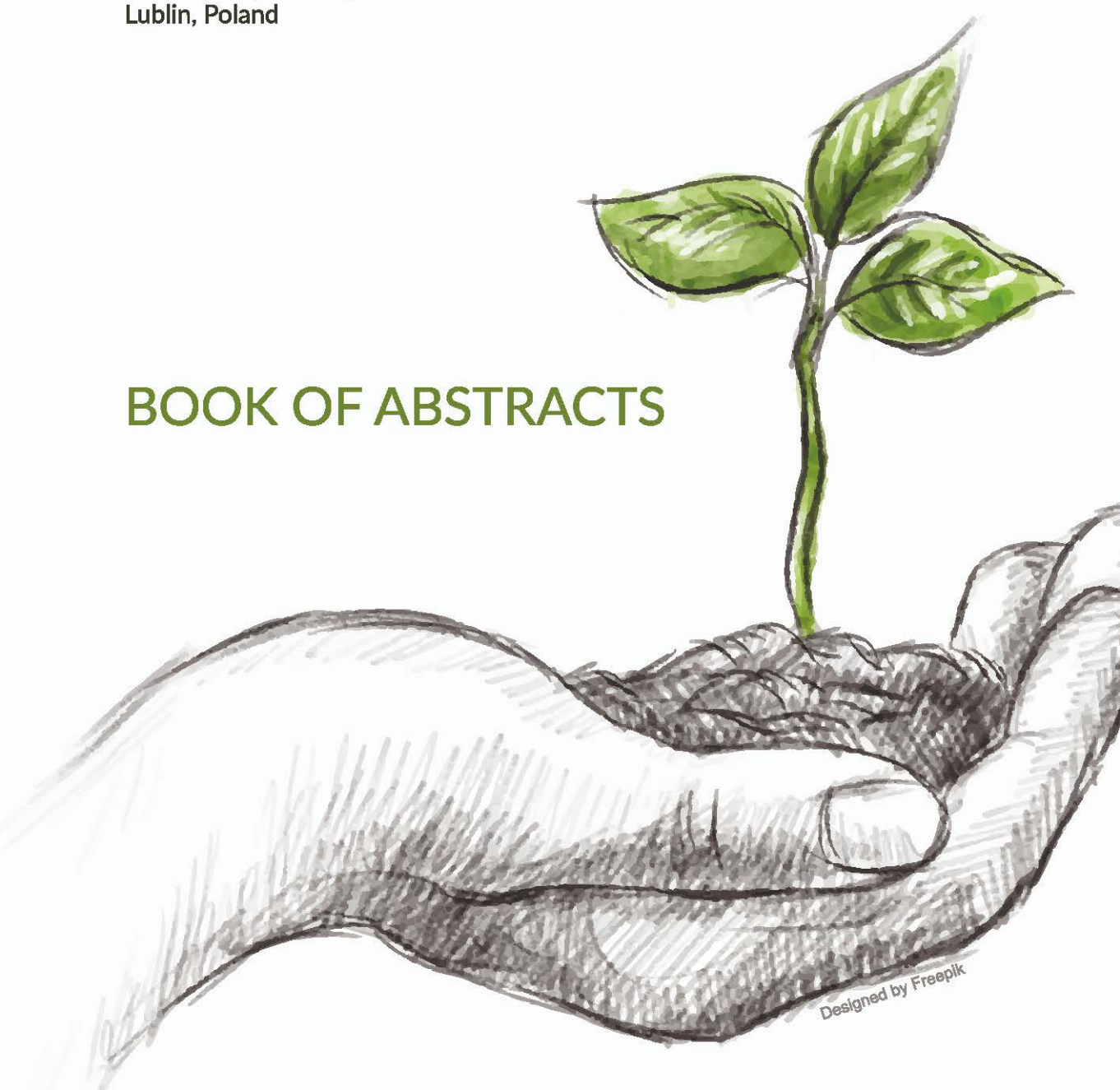
ICA 2018

12th International Conference on Agrophysics:
Soil, Plant & Climate

17th-19th September, 2018
Lublin, Poland



BOOK OF ABSTRACTS

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CONFERENCE PROGRAMME

12th International Conference on Agrophysics: Soil, Plant & Climate

16th September, Sunday	
18:00-20:00	**Registration and Welcome reception**

17th September, Monday		
8:00 - 9:15	**Registration**	
9:15 - 9:30	**Opening ceremony**	
9:30 – 10:10	***Opening lecture*** **Vesala, T.** - **Forest harvesting and climate and a public discourse** (pp.18)	
10:10 - 11:00	**Coffee break**	
	Session I – Soil & Plant Chairman: **Giancarlo Renella**	**Session IV - Fruit Structure workshop** Chairman: **Justyna Cybulska**
11:00 - 11:30	***Keynote*** **Kuzyakov, Y. -** Rhizosphere links the above- and belowground processes (pp.19)	***Keynote*** **Posé, S. -** Relevance of pectin nanostructure on strawberry fruit mechanical features - a case study under the AFM stylus (pp.34)
11:30 - 11:50	**Nowak, K.** - Fungal polysaccharides as a new sorbent (pp.20)	**Lahaye, M.** - Water dynamics and cell wall polysaccharides assessment of apple viscoelastic mechanical properties (pp.35)
11:50 - 12:10	**Fueki, N.** - Organic farming affects soil physical properties – study results conducted in Poland and Japan (pp.21)	**Brandes, N .** - Field adjusted irrigation requirements of Highbush Blueberry (*Vaccinium corymbosum* L.) considering fruit developmental stage (pp.36)
12:10 - 12:30	**Correia, C. -** Dynamics of minerals and nutrient imbalances in olive leaves under tillage and annual legume cover crops (pp.22)	**Leszczuk, A.** - Distribution of arabinogalactan proteins (AGPs) in fruit cell wall (pp.37)
12:30 - 12:50	**Alekseev, A. -** Soils response to the land use and soil climatic gradients at ecosystem scale (pp.23)	**Leca, A. -** NMR and texture measurements to characterize the evolution of apple microstructure during thermal treatment (pp.38)
13:00 - 14:00	**Lunch**	

TABLE OF CONTENTS

Dynamics of minerals and nutrient imbalances in olive leaves under tillage and annual legume cover crops

Correia, C.[1], Martins, S.[1], Silva, E.[1], Brito, C.[1], Pinto, L.[1], Moutinho-Pereira, J.[1], Gonçalves, A.[1], Arrobas, M.[2], Rodrigues, M. A.[2]

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The concentration of minerals in leaves depends on phenology, crop yield, soil characteristics, environmental conditions and agronomic practices. This study was undertaken to compare the dynamics of minerals of olive rainfed trees under tillage (two per year) with trees in consociation with a mixture of 11 early season self-reseeding legumes. The results of leaf minerals concentrations, on both treatments, showed similar variation between sampling dates, with higher levels of N, P, K, B and Zn found in summer, at endocarp sclerification, and of Ca, Mg, Fe and Mn at winter resting period, resulting in statistically significant changes on nutrient ratios, with higher Ca, Mg, Fe and Mn-to-N and Ca:Mg and Fe:Mn ratios and lower K, P, B, Cu and Zn-to-N and K:Ca, K:Mg, Cu:Zn, Zn:Fe and Zn:Mn ratios during winter. Trees of plots managed with the cover crop had higher concentrations of N, Mg and Mn, in close association with leaf water status, photosynthetic activity and crop yield. Moreover, legumes plots presented significant higher Mg and Mn-to-N ratios and lower P, Fe and B-to-N ratios, as well lower K:Mg, Ca:Mg, Fe:Mn and Zn:Mn ratios on both dates, and lower K and Cu-to-N ratios during summer. Although only Cu values were higher than typical sufficient levels, important relative nutrient changes were found. Phosphorus and Mg-to-N ratios were above the optimal ratios for olive leaves, on both seasons, the Fe: N ratio was over during winter, the Mn:N ratio was higher under cover crop, the K:N ratio was lower at winter and Ca:N was below the reference levels during summer. These results highlighted that nutrient ratios can be more indicative than nutrient concentrations regarded as optimal for olive. It is important to standardise the procedures for leaf sampling and to define target values for nutrient ratios in different conditions, in order to detect and, if necessary, to correct nutrient imbalances.

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