



**XII INTERNATIONAL SYMPOSIUM ON  
AGRICULTURAL SCIENCES**

**BOOK OF ABSTRACTS**

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**XII INTERNATIONAL  
SYMPOSIUM ON  
AGRICULTURAL SCIENCES**

**24-26, May, 2023  
Trebinje  
Bosnia and Herzegovina**

BOOK OF ABSTRACTS



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24-26. May, 2023; Trebinje, Bosnia and Herzegovina

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## PROGRAM OVERVIEW

Wednesday 24 May, 2023		
16:00 – 19:00	Symposium registration	Coloseum
17:00 – 17:30	Opening ceremony	Hall 2
17:30 – 18:45	Plenary lectures	
19:00	Coctail	Konoba Etno selo
Thursday 25 May, 2023		
08:30 – 17:00	Symposium registration	Coloseum
09:00 – 09:50	Plenary lectures	Hall 2
10:00 – 11:45	Session: Agricultural economics and rural development 1	Hall 1
10:00 – 12:00	Session: Horticulture 1	Hall 2
11:45 – 12:30	Coffee break	Hotel Panorama
12:15 – 14:10	Session: Agricultural economics and rural development 2	Hall 1
12:30 – 14:00	Session: Horticulture 2	Hall 2
14:00 – 16:00	Lunch break	Hotel Panorama
15:30 – 17:00	Workshop 1: Ecosystem services: not only benefits for environment, but also financial revenues for farmers	Hall 2
17:00 – 18:00	Workshop 2: What is needed to make research capacities in agricultural water management grow?	Hall 1
20:00	Cultural event	Dom kulture Trebinje
Friday 26 May, 2023		
08:30 – 17:00	Symposium registration	Coloseum
09:00 – 09:50	Plenary lectures	Hall 2
10:00 – 11:40	Session: Crop Science 1	Hall 2
10:00 – 11:15	Session: Animal Science	Hall 1
11:15 – 12:15	Coffee break	Hotel Panorama
12:15 – 14:00	Session: Crop Science 2	Hall 2
12:00 – 13:30	Session: Horticulture 3	Hall 1
14:00 – 16:00	Lunch break	Hotel Panorama
16:00 – 18:00	XXVIII savjetovanje inženjera poljoprivrede Republike Srpske	Hall 2
20:00	Galla evening	Hotel Panorama

## SCIENTIFIC PROGRAM

Wednesday, May 24

OPENING CEREMONY		The City of Sun'Trebinje	Hall 2
<b>17:00 – 17:30</b>	<ul style="list-style-type: none"> <li>➤ Zlatan Kovačević, Dean of the Faculty of Agriculture, University of Banja Luka;</li> <li>➤ Radoslav Gajanin, Rector of the University of Banja Luka;</li> <li>➤ Savo Minić, Minister of Agriculture, Forestry and Water Management of the Republic of Srpska;</li> <li>➤ Željko Budimir, Minister for Scientific and Technological Development, Higher Education and Information Society;</li> <li>➤ Mirko Ćurić, Mayor of the Trebinje City;</li> <li>➤ Branimir Nježić, President of the Organizing Committee.</li> </ul>		
PLENARY LECTURES		The City of Sun'Trebinje	Hall 2
	Chair: Borut Bosančić		
<b>17:30 –18:00</b> PL_01	Guido D'Urso EARTH OBSERVATION FOR CROP WATER REQUIREMENTS FROM THE FIELD TO THE REGIONAL SCALE: FROM RESEARCH TO OPERATIONAL APPLICATIONS		
<b>18:00 –18:30</b> PL_02	Carmelo Rapisarda IMPACT OF CLIMATE CHANGE ON INSECT PESTS AND THEIR MANAGEMENT: A CHALLENGE FOR FUTURE CROP PROTECTION		
<b>18:30 –19:00</b> PL_03	Dimitrije Markovic PLANT RESPONSE TO TOUCH - ECOLOGICAL AND AGRONOMIC IMPLICATIONS		
<b>19:00</b>	Coctail		Konoba Etno selo

## Thursday, 25 May

<b>PLENARY LECTURES</b>		Hall 2
Chair: Željko Vaško		
<b>09:00 – 09:25</b> PL_04	Fernández-Lorenzo, Juan Luis IN VITRO MICROGRAFTING: SWEET CHESTNUT AND MULBERRY AS CASE STUDIES	
<b>09:25 – 09:50</b> PL_05	Karmen Pažek METHODS AND TOOLS FOR DECISION SUPPORT IN AGRICULTURAL MANAGEMENT	

<b>SESSION: HORTICULTURE 1</b>		Hall 2
<b>Chair: Viktor Gjamovski, Boris Pašalić, Boban Đorđević</b>		
<b>10:00-10:15</b> O2_01	Eligio Malusa, <b>Invited lecture</b> SOIL MANAGEMENT IN ORGANIC FRUIT PRODUCTION: AN AGROECOLOGICAL APPROACH	
<b>10:15-10:25</b> O2_02	Gordana Đurić OPEN ISSUES OF KNOWLEDGE TRANSFER IN FRUIT GROWING IN BOSNIA AND HERZEGOVINA	
<b>10:25-10:35</b> O2_03	Gordana Đurić, Jelena Davidović Gidas CHALLENGES IN APPLE PLANTING MATERIAL PRODUCTION AND EXPORT IN BOSNIA AND HERZEGOVINA	
<b>10:35-10:45</b> O2_04	Miljan Cvetković, Jelisaveta Seka Cvijanović INFLUENCE OF PLUM VARIETY ON THE MECHANIZED PRUNING EFFICIENCY	
<b>10:45-10:55</b> O2_05	Nataša Čereković, Majken Pagter, Hanne Lakkenborg Kristensen, Hanne Lindhard Pedersen, Rex Brennan, Karen Koefoed Petersen THE EFFECT OF IRRIGATION DURING FLOWER INITIATION AND FLOWERING TIME ON BLACKCURRANT	
<b>10:55-11:05</b> O2_06	Miljan Cvetković, Petar Nikolić, Milan Šipka IOT BASED DIGITAL FARM MANAGEMENT FOR ORCHARD	
<b>11:05-11:15</b> O2_07	Vuk Pavić, Mirko Jokić DEVELOPMENT OF AUTOMATIC PEST TRAP BASED ON IOT (INTERNET OF THINGS) TECHNOLOGIES	
<b>11:15-11:45</b>	Poster presentations: P2_01 – P2_17	
<b>11:45-12:00</b>	Discussion	
<b>12:00-12:30</b>	Coffee break	

**Chair: Dragan Nikolić, Dushko Nedelkovski, Darko Jakšić**

<b>12:30-12:45</b> O2_09	Darko Jakšić, Veljko Perović, Ivan Bradić, Jordana Ninkov, Vesna Maraš, Pierfederico La Notte, Mirjam Vujadinović Mandić, <b>Invited lecture</b> THE APPLICATION OF ADVANCED TECHNOLOGIES IN THE RESEARCH OF TERROIR FACTORS IN VITICULTURE AND OENOLOGY
<b>12:45-12:55</b> O2_10	Vanja Miljanić, Jernej Jakše, Denis Rusjan, Andreja Škvarč, Nataša Štajner HIGH-THROUGHPUT SEQUENCING AND MULTIPLEX RT-PCR FOR DIAGNOSTICS OF GRAPEVINE VIRAL PATHOGENS
<b>12:55-13:05</b> O2_11	Veroslava Kocić, Dušica Čirković, Dragana Stanisavljević, Dobila Ranđelović, Milica Stojanović, Jelica Lazić Saković, Aleksandar Veličković THE INFLUENCE OF RAW MATERIALS AND THE PRODUCTION PROCESS ON THE QUALITY OF ROSÉ WINE
<b>13:05-13:15</b> O2_12	Stefan Gordanić, Dragoja Radanović, Snežana Mrđan, Jelena Golijan-Pantović, Sara Mikić, Željana Prijić, Tatjana Marković EXAMINATION OF THE INFLUENCE OF SOIL TYPE ON THE YIELD AND MORPHOLOGICAL PARAMETERS OF <i>Mellisa officinalis</i>
<b>13:15-13:25</b> O2_13	Milena Lakićević, Lazar Pavlović, Saša Orlović, Emina Mladenović INVENTARISATION OF THE WOODY PLANTS IN NOVI SAD
<b>13:25-13:45</b>	Poster presentations: P2_18 –P2_42
<b>13:45-14:00</b>	Discussion

**SESSION: AGRICULTURAL ECONOMICS AND RURAL DEVELOPMENT 1**

Hall 1

**Chair: Vesna Mrdalj, Branislav Vlahović, Črtomir Rozman**

<b>10:00-10:15</b> O3_01	Hrabrin Bachev, Bozidar Ivanov, <b>Invited lecture</b> ABOUT THE GOOD GOVERNANCE OF BULGARIAN AGRICULTURE
<b>10:15-10:25</b> O3_02	Veselin Krastev FARM SUSTAINABLE DEVELOPMENT OF THE EU NEW MEMBER STATES
<b>10:25-10:35</b> O3_03	Carsten Hümmer, Marius Funk, Markus Dirschl, Matthias Schneider, Dragan Brkovic, Peter Breunig, Johannes Holzner ECONOMICS AND INNOVATIONS IN MILK PRODUCTION AND PROCESSING IN GERMANY UP TO 2030 - PROSPECTS AND CHALLENGES

<b>10:35-10:45</b> O3_04	Gordana Rokvić Knežić, Ljiljana Drinić, Miljan Erbez ANALYSIS OF INDICATORS OF RURAL DEVELOPMENT OF SELECTED MUNICIPALITIES IN THE REPUBLIC OF SRPSKA
<b>10:45-10:55</b> O3_05	Željko Vaško, Marko Ivanković, Suzana Madžarić, Nemanja Jalić MODELLING OF ADDITIONAL RANKING OF AREAS WITH NATURAL CONSTRAINTS IN BOSNIA AND HERZEGOVINA
<b>10:55-11:05</b> O3_06	Katerina Kareska, Silvana Pashovska ECONOMIC INDICATORS FOR THE SUSTAINABILITY OF TOBACCO PRODUCTION IN THE REPUBLIC OF NORTH MACEDONIA
<b>11:05-11:15</b> O3_07	Črtomir Rozman ECONOMICS OF IRRIGATION IN NORTH-EASTERN SLOVENIA
<b>11:15-11:25</b> O3_08	Nataša Vukelić, Vesna Pavlović, Nebojša Novković, Veljko Šarac, Beba Mutavdžić MANAGERIAL CAPACITIES OF MILK PRODUCERS IN TITEL MUNICIPALITY
<b>11:25-11:35</b> O3_09	Dragan Dokić, Vera Popović, Vesna Gantner THE SIGNIFICANCE OF THE FISCAL RELIEF OF WHEAT AND CORN PRODUCTION IN THE FUNCTION OF PROTECTING THE FOOD MARKET IN THE REPUBLIC OF CROATIA
<b>11:35-11:45</b>	Discussion
<b>11:45-12:15</b>	Coffee break

<b>SESSION: AGRICULTURAL ECONOMICS AND RURAL DEVELOPMENT 2</b>	Hall 1
<b>Chair: Gordana Rokvić Knežić, Hrabrin Bachev, Nebojša Novković</b>	
<b>12:15-12:25</b> O3_10	Branislav Vlahović, Anton Puškarić FOREIGN TRADE OF WINE IN THE REPUBLIC OF SERBIA
<b>12:25-12:35</b> O3_11	Aleksandar Ostojić, Luka Vračar, Nemanja Jalić CONSUMER ATTITUDES ABOUT PURCHASING AND CONSUMING VEGETABLES
<b>12:35-12:45</b> O3_12	Nemanja Jalić, Nikola Ružević, Aleksandar Ostojić Z GENERATION ATTITUDES AND OPINIONS ABOUT BEER
<b>12:45-12:55</b> O3_13	Nistoroiu Bianca Florentina, Nicolae Iuliana GENDER TRENDS IN MODERN AGRICULTURE: THE CASE OF FEMALE FARMERS IN EUROPE
<b>12:55-13:05</b> O3_14	Blagoje Paunović, Nebojša Novković EVALUATING OF ENVIRONMENTAL IMPACT IN COST BENEFIT ANALYSIS OF INVESTMENT PROJECTS IN AGRICULTURE
<b>13:05-13:15</b> O3_15	Branislav Raketic CHALLENGES FOR THE FURTHER DEVELOPMENT OF THE ORGANIC SECTOR IN WESTERN BALKAN COUNTRIES/TERRITORIES

<b>13:15-13:25</b> O3_16	Senka Ždero, Zorica Srđević, Bojan Srđević SELECTING SOCIO-ENVIRONMENTAL INDICATORS TO UNDERSTAND THE EFFECTS OF DROUGHT ON RAMSAR SITES
<b>13:25-13:35</b> O3_17	Gvozden Mićić, Dimitrije Marković, Gordana Đurić TOOL FOR AGROECOLOGY PERFORMANCE EVALUATION TESTING IN BOSNIA AND HERZEGOVINA
<b>13:35-13:45</b>	Discussion
	Chair: Željko Vaško, Katerina Kareska, Dragan Brković
<b>13:45-13:55</b>	Poster presentations: P3_01 – P3_09
<b>13:55-14:10</b>	Discussion

	<b>WORKSHOP 1</b>	Hall 2
<b>15:30-17:00</b>	<b>ECOSYSTEM SERVICES: NOT ONLY BENEFITS FOR ENVIRONMENT, BUT ALSO FINANCIAL REVENUES FOR FARMERS - SUPPORTED BY THE PROJECT EU4FITO-BiH</b>	
	<b>Chair: Branimir Nježić</b>	
	<b>Eligio Malusa</b> <b>SUSTAINABLE USE OF IPM</b>	
	<b>Eduardo Ucciero</b> <b>PLANT HEALTH - A COMMON AFFAIR OF THE ENTIRE SOCIETY</b>	
	<b>Petar Nikolić</b> <b>WILD BEES, VITAL POLINATORS IN OUR ECOSYSTEM</b>	
	<b>Branimir Nježić</b> <b>ENTOMOPATOGENIC NEMATODES IN MANAGEMENT OF INSECT PESTS</b>	
	<b>Discussion</b>	

	<b>WORKSHOP 2</b>	Hall 1
<b>15:30-17:30</b>	<b>WHAT IS NEEDED TO MAKE RESEARCH CAPACITIES IN AGRICULTURAL WATER MANAGEMENT GROW? - SUPPORTED BY THE PROJECT SMARTWATER</b>	
	<b>Chair: Enrique Playán</b>	

## Friday 26 May, 2023

	<b>PLENARY LECTURES</b>	Hall 2
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**Chair: Sava Vrbničanin**

<b>09:00 – 09:25</b>	PL_06	Jovan Pavlov, Nenad Delić, Sofija Božinović, Zoran Čamdžija, Nikola Grčić CURRENT TRENDS IN MAIZE BREEDING AT MAIZE RESEARCH INSTITUTE “ZEMUN POLJE”
<b>09:25 – 09:50</b>	PL_07	Ivana Tlak Gajger THE RELATIONSHIP BETWEEN NUTRITION AND THE HEALTH OF HONEYBEE COLONIES

	<b>SESSION: CROP SCIENCE 1</b>	Hall 2
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**Chair: Novo Pržulj, Sava Vrbničanin**

<b>10:00-10:15</b>	O1_01	Nataša Čereković, Vojo Radić, Jovana Žunić, Mladen Babić, Milan Šipka, Marinko Vekić, Goran Banović, Sandra Petković, Mladen Todorović, Nery Zapata, Teresa Afonso do Paço, Wilk Almeida, Sabrija Čadro, Benjamin Crljenković, Mihajlo Marković, <b>Invited lecture</b> IRRIGATION AND NITROGEN APPLICATION FOR IMPROVING MAIZE YIELD GROWN AT DIFFERENT LOCATIONS IN BOSNIA AND HERZEGOVINA
<b>10:15-10:30</b>	O1_02	Zoran Bročić, Jasmina Oljača, Danijel Pantelić, Jelena Rudić, Dobrivoj Poštić, Ivana Momčilović, <b>Invited lecture</b> EFFECTS OF CULTIVAR AND PLANT ORIGIN ON THE AEROPONIC PRODUCTION OF POTATO MINITUBERS
<b>10:30-10:40</b>	O1_03	Enrique Playán, Nataša Čereković, Alen Mujčinović, Mihajlo Marković, Mladen Todorovic, Željko Vaško, Nevena Stojaković, Sabrija Čadro, Teresa Afonso do Paço, Wilk Almeida, Farida Dechmi, Piluca Paniagua, Nery Zapata A ROADMAP TO CONSOLIDATE AGRICULTURAL WATER MANAGEMENT RESEARCH IN BOSNIA-HERZEGOVINA
<b>10:40-10:50</b>	O1_04	Snežana Brajević, Željko Dželetović, Aleksandar Simić, Gordana Andrejić, Marija Čosić, Uroš Aleksić ORGANIC CARBON STOCK AND SUSTAINABLE LAND USE UNDER PERMANENT GRASSLANDS IN ZLATIBOR MOUNTAIN

<b>10:50-11:00</b> O1_05	Danijela Kondić, Stevan Trivković, Desimir Knežević, Zoran Bročić INTERACTION OF AGRONOMIC TREATMENTS IN A FUNCTION OF WINTER WHEAT YIELD
<b>11:00-11:10</b> O1_06	Helena Majstorović, Bogdan Garalejić, Maja Sudimac, Babka Jan, Miloš Pavlović PHOSPHORUS CONTENT AND STRATIFICATION IN THE SOIL LAYER 0-30 CM IN CONVENTIONAL (CT) AND NO-TILL (NT) TILLAGE SYSTEMS LONG TERM EXPERIMENT
<b>11:10-11:20</b> O1_07	Bozhidar Ivanov, Daniela Tsvyatkova COMPARATIVE ANALYSIS OF SLUDGE UTILIZATION IN AGRICULTURE IN EU COUNTRIES
<b>11:20-11:35</b>	Poster presentations: P1_01 – P1_17
<b>11:35-11:45</b>	Discussion
<b>11:45-12:15</b>	Coffee break

	<b>SESSION: CROP SCIENCE 2</b>	Hall 2
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Chair: Anđa Radonjić, Ljiljana Brbaklić	
<b>12:15-12:30</b> O1_08	Dragan Perović, Yu Cai, Robert Hoffie, Peter Dracatos, <b>Invited lecture</b> FROM GERMPASM SCREENING TO GENETICS AND GENOME EDITING IN BARLEY LEAF RUST RESISTANCE BREEDING
<b>12:30-12:45</b> O1_09	Desimir Knežević, Danijela Kondić, Aleksandra. Yu. Novoselskaya Dragovich, Alexander M. Kudryavtsev, Mirela Matković Stojšin, Veselinka Zečević, Adriana Radosavac, Aleksandar Paunović, <b>Invited lecture</b> VARIABILITY OF WHEAT TECHNOLOGICAL QUALITY PROPRIETIES AND THEIR RELATIONSHIPS WITH GLIADIN AND GLUTENIN ALLELES
<b>12:45-13:00</b> O1_10	Anđa Radonjić, Olivera Petrović-Obradović, <b>Invited lecture</b> MONITORING OF APHIDS AS VECTORS OF VIRUSES IN FIELD CROPS IN SERBIA
<b>13:00-13:10</b> O1_11	Cody Watzig, Francesco Vuolo, Aleksandar Dujakovic, Andreas Schaumberger, Andreas Klingler IMPROVING GRASSLAND CUT DETECTION METHODOLOGY BASED ON SENTINEL-2 TIME SERIES TO RESPOND TO THE CHALLENGES OF THE AUSTRIAN GRASSLAND PRODUCTION
<b>13:10-13:20</b> O1_12	Ahmad Ratib Sharafat INFLUENCE OF DIMETHYL SULFOXIDE ON THE PRODUCTION OF EMBRYOS AND GREEN PLANTS FROM ANTERS CULTURE OF WHEAT ( <i>Triticum aestivum</i> L.)



<b>13:20-13:30</b> O1_13	Ranko Gantner, Zvonimir Steiner, Vesna Gantner LOW-INPUT FARMING FOR AGRICULTURAL SUSTAINABILITY
<b>13:30-13:40</b> O1_14	Snežana Gošić Dondo, Dragan Grčak, Željko D. Popović, Danijela Ristić, Milosav Grčak, Danijela Kondić, Desimir Knezevic VARIABILITY OF DAMAGE IN MAIZE GENOTYPES CAUSED BY ATTACK CORN BORER <i>Ostrinia nubilalis</i> HBN.
<b>13:40-14:00</b>	Poster presentations: P1_18 – P1_33
<b>14:00-14:10</b>	Discussion

	SESSION: HORTICULTURE 3	Hall 1
<b>Chair: Mirjana Ljubojević, Dragana Šunjka, Branimir Nježić</b>		
<b>12:30-12:45</b> O2_14	Mirjana Ljubojević, Goran Barać, Tijana Narandžić, Jovana Ostojić, Biljana Božanić Tanjga, Milica Grubač, Magdalena Pušić, <b>Invited lecture</b> REMODELING HORTICULTURAL PLANTS' BREEDING TO MEET SUSTAINABLE DEVELOPMENT GOALS	
<b>12:45-12:55</b> O2_15	Ranko Sarić, Snežana Branković EFFECT OF WEED CONTROL IN A POPLAR PLANTATION CLONE <i>Populus x euramericana</i> 'I-214'	
<b>12:55-13:05</b> O2_16	Dragana Šunjka, Sanja Lazić, Slavica Vuković, Antonije Žunić, Aleksandra Šušnjar DIETARY RISK ASSESSMENT OF DIAMIDE INSECTICIDES IN PEACH FRUITS	
<b>13:05-13:15</b> O2_17	Zorana Đekanović, Đorđe Kusalović, Nevena Jokić, Jovana Radić, Relja Suručić, Vojo Radić, Ranko Škrbić, Duška Delić EVALUATION OF EFFICACY OF SOME PLANT EXTRACTS FOR THE CONTROL OF FUSARIUM WILT ( <i>Fusarium oxysporum</i> ) AND ALTERNARIA LEAF SPOT ( <i>Alternaria alternata</i> )	
<b>13:15-13:25</b> O2_18	Milan Ivanović, Milan Šević, Anđelka Prokić, Jelena Adamović, Aleksa Obradović USE OF ANTIBIOTICS IN CROP PROTECTION: YES OR NO?	
<b>13:25-13:35</b> O2_19	Dragana Marinković EFFECTS OF IONIZING RADIATION ON FOOD	
<b>13:30-13:45</b>	Poster presentations: P2_43 - P2_61	
<b>13:45-14:00</b>	Discussion	

SECTION: ANIMAL SCIENCES		Hall 1
<b>Chair: Ivana Tlak Gajger, Đorđe Savić, Vesna Gantner</b>		
<b>10:00-10:15</b> O4_01	Vesna Gantner, Biljana Rogić, <b>Invited lecture</b> THE IMPORTANCE OF EDUCATION IN THE FIELD OF AGRICULTURE IN TERMS OF CHANGES OF CLIMATE	
<b>10:15-10:25</b> O4_02	Aleksandar Ignjatović, Kazimir Matović, Goran Jevtić, Nebojša Nedić THE INFLUENCE OF GEOGRAPHICAL AREA ON MORPHOMETRIC PARAMETERS OF HONEY BEE IN SERBIA	
<b>10:25-10:35</b> O4_03	Stoja Jotanović, Predrag Ilić, Slaven Grbić, Jasmin Kazazović CHANGE IN PULSE FREQUENCY IN HORSES AS AN INDICATOR OF STRESS CAUSED BY LOADING	
<b>10:35-10:45</b> O4_04	Vesna Gantner, Ivana Jožef, Dragan Solić, Ranko Gantner, Zvonimir Steiner VARIABILITY OF MASTITIS OCCURRENCE IN DAIRY SIMMENTALS DUE TO RECORDING TIME	
<b>10:45-11:00</b>	Poster presentations: P4_01 – P4_15	
<b>11:00-11:15</b>	Discussion	
<b>11:15-11:45</b>	Coffee break	

XXVIII SAVJETOVANJE INŽENJERA POLJOPRIVREDE REPUBLIKE SRPSKE		Hall 2
Stručno savjetovanje na temu: <b>“Proizvodnja, arome i greške u voćnim destilatima”</b>		
<b>Moderator: Božana Odžaković</b>		
<b>Pozdravna riječ: Zlatan Kovačević i Borut Bosančić</b>		
<b>Izlagrač: Branko Drljača</b>		
<b>16:00-17:30</b>	<b>Proizvodnja (Sirovina; Enološki aditivi; Fermentacija; Destilacija)</b>  <b>Arome (Izvor i formiranje aroma; Tipične arome voćnih destilata, Arome iz bureta)</b>  <b>Greške u destilatima (Najčešće greške; Uzrok i formiranje; Greške iz radnih faza)</b>	

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P1_02	Radoš Zemunac, Milica Vranešević, Boško Blagojević, Radovan Savić, Atila Bezdán, Stanko Milić, Andrea Salvai TRENDS OF KEY IRRIGATION WATER QUALITY PARAMETERS IN THE ENDANGERED WATERCOURSES IN VOJVODINA (SERBIA)
P1_03	Vojo Radic, Ilija Komljenovic, Borislav Petkovic, Nikola Krstovic INFLUENCE OF IRRIGATION ON SEED PRODUCTION OF MAIZE HYBRIDS IN DRY SEASONS
P1_04	Ivica Đalović, Aleksandar Paunović NITROGEN FERTILIZATION AND HYBRID INTERACTIONS ALONG CLIMATIC CONDITIONS DETERMINE MAIZE YIELD IN CALCAREOUS SOIL
P1_05	Nikola Grčić, Zoran Čamdžija, Jovan Pavlov, Milomir Filipović, Sofija Božinović, Marko Mladenović ZP 4019- A NEW MAIZE HYBRID DEVELOPED USING DOUBLED HAPLOID (DH) TECHNOLOGY
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P1_07	Dalibor Tomić, Vladeta Stevović, Ivan Marković, Miloš Marjanović, Nenad Pavlović, Mirjana Petrović, Vladimir Zornić, Đorđe Lazarević, Jasmina Knežević FORAGE YIELD AND YIELD COMPONENTS OF SUDAN GRASS DEPENDING ON SOWING DENSITY
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P1_09	Andreas Schaumberger, Aleksandar Dujaković, Francesco Vuolo, Andreas Klingler, Cody Watzig SATELLITE-BASED MODELLING OF GRASSLAND YIELD AND QUALITY DYNAMICS (SATGRASS)
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P1_12	Zoran Čamdžija, Aleksandar Popović, Vojka Babić, Natalija Kravić, Jovan Pavlov, Nikola Grčić, Milomir Filipović EVALUATION OF COMBINING ABILITIES OF LOCAL MAIZE LANDRACES FOR STARCH, PROTEIN AND OIL CONTENT IN GRAIN
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## SESSION: HORTICULTURE 1

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## **Influence of pesticides on soil microorganisms**

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### **Abstract**

Plant protection agents (pesticides) are products of chemical or biological origin, intended for the prevention, suppression and destruction of organisms harmful to cultivated plants (pests, pathogens and weeds) and are intensively used in agriculture and forestry. Decades of systematic and improper application of pesticides caused their accumulation in the environment and, through the food chain, pesticides also accumulated in living organisms, where they exhibit negative biological effects. Pesticides exhibit their biological effects on the members of all biocenosis, including the community of microorganisms (microbiocenosis), and especially on soil microorganisms. The results of scientific research in the field of the impact of pesticides on soil microorganisms are different. These results are due to the ecological (soil-climatic) conditions in which the experiments are performed, the types of plant crops grown, and the agricultural techniques used. Fumigants have the strongest inhibitory effect on soil microorganisms. Fungicides inhibit the growth of most soil fungi. Herbicides exhibit different effects, stimulatory or inhibitory, on different groups of soil microorganisms, which also depends on the prevailing effect of ecological factors in agroecosystems.

*Key words:* pesticides, soil microorganisms, ecological factors, agroecosystem.

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