

2nd SCIENTIFIC CONFERENCE

**FOR CRITICAL ENVIRONMENTAL ISSUES OF
THE WESTERN BALKAN COUNTRIES**

BOOK OF ABSTRACTS

October 28th to 30th, 2021, Faculty of Agriculture, Goce Delčev University, Štip,
Republic of North Macedonia



Funded by
the European Union



“2nd Scientific conference for **CRITICAL ENVIRONMENTAL ISSUES OF THE WESTERN BALKAN COUNTRIES**”

October 28th to 30th, 2021, Faculty of Agriculture, Goce Delčev University, Štip, Republic of North Macedonia



“2nd scientific conference for
CRITICAL ENVIRONMENTAL ISSUES
OF THE WESTERN BALKAN COUNTRIES”

BOOK OF ABSTRACTS

October 28th to 30th, 2021, Faculty of Agriculture,
Goce Delčev University, Štip, Republic of North Macedonia



“2nd Scientific conference for CRITICAL ENVIRONMENTAL ISSUES OF THE WESTERN BALKAN COUNTRIES”

October 28th to 30th, 2021, Faculty of Agriculture, Goce Delčev University, Štip, Republic of North Macedonia

“2nd Scientific conference for **CRITICAL ENVIRONMENTAL ISSUES OF THE WESTERN BALKAN COUNTRIES**”

October 28th to 30th, 2021, Faculty of Agriculture, Goce Delčev University, Štip, Republic of North Macedonia



ORGANIZERS:

Goce Delčev University, Faculty of Agriculture, Štip,
Republic of North Macedonia

WBAA-Western Balkan Alumni Association

The conference is organized and financed within the project titled “Extracting Green-COVID effects for generating clean technologies and successful youth transition awareness for the climate change and sustainable development of the Western Balkan countries”, **project number 2021030, financed by Western Balkans Alumni Association.**

CONTENTS

PLENARY LECTURERS		
PL 1	TRAJČE STAFILOV, ROBERT ŠAJN Faculty of Natural Sciences and Mathematics, Institute of Chemistry, Ss.Cyril and Methodius, Skopje, Republic of North Macedonia GEOCHEMISTRY OF MAJOR AND TRACE ELEMENTS IN SOILS OF THE REPUBLIC OF NORTH MACEDONIA	1
PL 2	FLAMUR SOPAJ, TRAJČE STAFILOV, ROBERT ŠAJN, KRSTE TAŠEV, MUSAJ PAČARIZI University of Pristina, Department of Chemistry, Pristina Kosovo DETERMINATION AND STATISTICAL ANALYSIS OF THE ATMOSPHERIC DEPOSIT OF ELEMENTS IN KOSOVO THROUGH MOSSES AS BIOMONITORS	2
PL 3	PRANVERA LAZO, SHANIKO ALLAJBEU, FLORA QARRI, LIRIM BEKTESHI, TRAJCE STAFILOV University of Tirana, Department of Chemistry, Tirana, Albania STUDY OF AIR QUALITY BY MOSS BIOMONITORING AND TRACE ELEMENTS CONTENT	3
PL 4	STANKO MILIĆ, JORDANA NINKOV, MILORAD ŽIVANOV, JOVICA VASIN Institute of Field and Vegetable Crops, Laboratory for Soil and Agroecology, Novi Sad, Serbia SOIL CHARACTERISTICS OF PLUM ORCHARDS WITH INDICATION OF GEOGRAFICAL ORIGIN POTENTIALLY TOXIC ELEMENTS (PTEs) IN SOIL	4
PL 5	RADOMIR LJUPKOVIC, KATARINA STEPIC, JOVANA ICKOVSKI, ALEKSANDRA ZARUBICA Department of Chemistry, Faculty of Science and Mathematics, University of Niš, Serbia COMPOSITES OF GRAPHENE-OXIDE AND TITANIA AS PROMISING PHOTOCATALYSTS FOR ORGANIC POLLUTANTS DEGRADATION	5
PL 6	FLAMUR SOPAJ Chemistry Department of Natural Sciences Faculty, University of Prishtina, Kosovo FENTON AND ELECTRO-FENTON ADVANCED OXIDATION PROCESSES FOR ORGANIC POLLUTANTS REMOVAL FROM POLLUTED WATERS	6
PL 7	ALEN MUJČINOVIĆ, ALEKSANDRA NIKOLIĆ, ALMIRA KONJIĆ University of Sarajevo, Faculty of Agricultural and Food Sciences, Sarajevo, Bosna and Hercegovina INTRODUCING CLIMATE OPTIMIZED PRODUCTION - OPPORTUNITIES FOR WESTERN BALKAN ECONOMIES	7
ORAL PRESENTATIONS		
OP 1	ELENA DONEVA, ANA MIHAILOVSKA, SIMONA ANGELOVSKA, JOVANA PETROVSKA, DEJAN MIRAKOVSKI, AFRODITA ZENDELSKA Faculty of Natural and Technical Sciences, Goce Delceva University, Štip, North Macedonia	9

	INDOOR AIR QUALITY IN HOMES USING BIOMASS FOR HEATING AND COOKING	
OP 2	KRISTINA PANEV, NATASA MAVROMIHAILOVA, VESNA ZAJKOVA PANEVA UNILAB, Faculty of Agriculture, Goce Delcev University, Stip, North Macedonia DETERMINATION OF CHLOROPHYLL IN A WATER SAMPLE	10
POSTERS		
P1	Katerina Bačeva Andonovska, Robert Šajn, Claudiu Tănăselia, Trajče Stafilov LITHOLOGICAL DISTRIBUTION OF RARE EARTH ELEMENTS IN SOILS FROM THE LOCALITY OF THE ABOUNDED Sb–As–TI MINE ALLCHAR, N. MACEDONIA	11
P2	Adelina Haskaj-Kelmendi, Musaj Paçarizi POLAROGRAPHIC STUDY OF HEAVY METALS (Cu, Ni and Cr) COMPLEXES WITH ORGANIC LIGANDS	12
P3	Violeta Stefanova, Vojo Mircovski VENTIVE MEASURES FOR WATER PROTECTION OF POLLUTION FROM THE CATCHMENT OF THE RIVER LOSANA – DELCEVO	13
P4	Isak Nensi, Xhaxhiu K., Andoni A., Hamiti Xh., Hajrulai Z., Uzunov R A STUDY OF ENDRIN AND PERMETHRIN PESTICIDES REMOVAL FROM AQUEOUS SOLUTIONS BYFOUR ALBANIAN NATURAL CLAYS	14
P5	Jordana Ninkov, Stanko Milić, Jovica Vasin, Milorad Živanov, Dušana Banjac, Snežana Jakšić, Branka Mijić POTENTIALLY TOXIC ELEMENTS IN AGRICULTURAL SOIL OF CENTRAL SERBIA	15
P6	Violeta Ivanova-Petropulos, Isidro Herмосín-Gutiérrez, Borimir Vojnoski CHARACTERIZATION OF MERLOT WINES BASED ON PHENOLIC COMPOSITION DETERMINED BY HPLC-DAD-ESI-MS AND MS/MS TECHNIQUE	16
P7	Elida Dreshaj-Lecaj, Raife Mulliqi-Neziri, Musaj Paçarizi ADSORPTION OF HEAVY METALS (Cu, Cd, Pb AND Zn) FROM AQUEOUS SOLUTIONS USING ORANGE PEELS	17
P8	Nikolinka Doneva, Marija Hadzi-Nikolova, Dejan Mirakovski, Afrodita Zendelska REGIONAL WASTE MANAGEMENT IN REPUBLIC OF NORTH MACEDONIA: CASE STUDY FOR EAST AND NORTH-EAST PLANNING REGION	18
P9	Granit Kastrati, Flamur Sopaj, Krste Tašev, Trajče Stafilov, Robert Šajn, Musaj Paçarizi A STUDY ON THE ELEMENTS CONTENT IN HONEY SAMPLES IN THE TERRITORY OF KOSOVO	19
P10	Aleksandar Piperevski, Violeta Ivanova-Petropulos, Atanas Runchev, Filip Kamchev INFLUENCE OF DIFFERENT VINIFICATION TECHIQUES ON THE PHENOLIC CONTENT OF VRANEC WINES	20
P11	Violeta Hajdari, Burbuqe Demiraj, Flamur Sopaj, Elez Krasniqi,	21

	Muhamet Zogaj, Granit Kastrati, Musaj Paçarizi BIOACCUMULATION OF SOME METALS IN THE ENDEMIC PLANT <i>STACHYS SCARDICA</i> IN THE REGION OF PRISHTINA, KOSOVO	
P12	Biljana Jordanoska Shishkoska, Valentina Pelivanoska, Marija Srbinoska DISTRIBUTION CHARACTERISTICS OF TRACE ELEMENT CONTENT IN PELAGONIA TOBACCO GROWING REGION	22
P13	Ivona Sofronievska, Marinela Cvetanoska, Vlera Zendeli, Marina Stefova, Jasmina Petreska Stanoeva ASSAY OF ORGANOCHLORINE PESTICIDES AND POLYCHLORINATED BIPHENYLS IN AIR AND SOIL SAMPLES FROM THE AREA AROUND A HCH DUMP SITE	23
P14	Maria Hoxhaj, Ilirjana Boci, Suada Rustani CALCINED CLAY CEMENT MANUFACTURING (LC³)	24
P15	Sanja Kostadinović Veličkovska, Zoran Arsevski, Fidanka Ilieva, Daniela Dimovska, Aco Kuzelov TOTAL BACTERIAL COUNT IN RAW MILK FROM THE FARMS FROM REGION “OVČE POLE”, REPUBLIC OF NORTH MACEDONIA	25
P16	Burbuqe Demiraj, Violeta Hajdari, Flamur Sopaj, Elez Krasniqi, Muhamet Zogaj, Granit Kastrati, Musaj Paçarizi BIOACCUMULATION OF SOME METALS IN THE PLANT <i>SEDUM</i> <i>OCHROLEUCUM</i> IN THE REGION OF PRISHTINA, KOSOVO	26
P17	Jovica Vasin, Snežana Jakšić, Milorad Živanov, Jordana Ninkov, Stanko Milić, Dušana Banjac, Vladimir Ćirić HUMUS CONTENT IN DIFFERENT SOIL TYPES IN VOJVODINA PROVINCE, SERBIA - ANTHROPOGENIC INFLUENCE	27
P18	Gligor Bojkov, Emilija Arsov, Saša Mitrev DEVELOPMENT OF <i>BOTRYTIS CINEREA</i> UNDER REDUCTION OF PESTICIDES TREATMENTS IN MACEDONIAN VITICULTURE PRODUCTION	28
P19	Sanja Kostadinović Veličkovska, Zoran Arsevski, Fidanka Ilieva, Daniela Dimovska, Aco Kuzelov SOMATIC CELL COUNT AND PRESENCE OF AFLATOXIN M1 IN RAW MILK FROM THE FARMS FROM REGION “OVČE POLE”, REPUBLIC OF NORTH MACEDONIA	29
P20	Cvetanka Kulukovska, Sasa Mitrev, Emilija Arsov USE OF REAL TIME METHODS FOR DIFFERENT INVESTIGATION AT ENVIRONMENTAL PROTECTION	30
P21	Natalija Markova Ruzdik, Ljupco Mihajlov, Verica Ilieva, Biljana Kovacevik, Mite Ilievski, Nenad Petkovski STUDY OF RELATIONSHIP BETWEEN YIELD AND YIELD RELATED COMPONENTS IN SPRING BARLEY VARIETIES USING MULTIVARIATE ANALYSIS	31
P22	Biljana Balabanova, Dragana Mileva ANALITICAL CHALLENGES FOR DETERMINATION OF ELEMENTAL IMPURITIES IN PHARMACEUTICAL PRODUCTS	32
P23	Antonio Petrov, Fidanka Ilieva, and Sanja Kostadinović Veličkovska	33

	CANNABIS-WINE, A NEW WORLD TREND OR STORY WITH A QUICK END	
P24	Fidanka Trajkova, Elizabeta Karakaseva, Sasa Mitrev AGROCHEMICAL SOIL PROPERTIES AFTER CULTIVATION AND HARVEST OF WHEAT	34
P25	Tina Petrova, Sasa Mitrev, Emilija Arsov IMPORTANCE OF HAZELNUT (<i>CORYLUS AVELLANA</i>) AND MOST COMMON DISEASES IN CULTIVATION IN THE REPUBLIC OF NORTH MACEDONIA	35
P26	Maja Chochevska, Elizabeta Jančovska Seniceva, Sanja Kostadinović Veličkovska, Galaba Naumova-Letja, Valentin Mirčeski DETERMINATION OF QUALITY AND ANTIOXIDANT ACTIVITY OF TRADITIONAL HOMEMADE FRUIT VINEGARS PRODUCED WITH DOUBLE SPONTANEOUS FERMENTATION	36
P27	Fidanka Ilieva, Sanja Kostadinović Veličkovska, Violeta Dimovska THE IMPACT OF AUTOCHTHONOUS AND COMMERCIAL YEAST STRAINS ON FERMENTATION AND QUALITY OF WINES PRODUCED FROM VRANEC GRAPE VARIETY FROM TIKVEŠ WINE-GROWING REGION, REPUBLIC OF NORTH MACEDONIA	37
P28	Sanja Kostadinović Veličkovska, Natalija Markova Ruzdić, Ljupčo Mihajlov, Emilija Arsov, Saša Mitrev, Ivan Donev PHYSICO-CHEMICAL CHARACTERIZATION, FATTY ACID COMPOSITION AND THERMAL STABILITY OF COLD-PRESSED SUNFLOWER OILS OBTAINED FROM 17 NEWLY CULTIVATED HYBRIDS FROM THE REGION OF NORTH MACEDONIA	38
P29	Daniela Dimovska, Sanja Kostadinovik, Natalija Markova Ruzdik, Biljana Kovacevik DIFFERENCES IN SOME QUALITY TRAITS BETWEEN RED AND YELLOW CHERRY TOMATO VARIETIES GROWN IN REPUBLIC OF NORTH MACEDONIA	39
P30	Daniela Dimovska, Sanja Kostadinovik, Natalija Markova Ruzdik, Biljana Kovacevik THE EFFECT OF GENOTYPE ON SOME QUALITY TRAITS IN RED CHERRY TOMATO	40
P31	Biljana Balabanova, Ivan Boev, Maja Lazarova FAST TRACE METALS DEPOSITION IDENTIFICATION IN CROSS-IDENTIFICATION ANALYSIS USING ELECTRONIC MICROSCOPY	41
P32	Biljana Kovacevik, Sasa Mitrev, Ivan Boev, Natalija Markova Ruzdik, Blazo Boev ONE FACTORIAL ANOVA IN ASSESSMENT OF GROUNDWATER QUALITY IN VULNERABLE AREA OF AGRICULTURE POLLUTION	42
P33	Andrej Stankovski, Mihael Ivanov, Biljana Balabanova MEDICAL CANNABIS: HISTORY AND CURRENT USE, CHALLENGES AND RISKS	43

P29

DIFFERENCES IN SOME QUALITY TRAITS BETWEEN RED AND YELLOW CHERRY TOMATO VARIETIES GROWN IN REPUBLIC OF MACEDONIA

Daniela Dimovska¹, Sanja Kostadinovik¹, Natalija Markova Ruzdik¹, Biljana Kovacevik¹

Faculty of Agriculture, Goce Delčev University, Štip, Republic of North Macedonia

e-mail: daniela.dimovska@ugd.edu.mk

Abstract

Four red (*cerasiformae*, *grandifolium*, *rocemigerum*, *pyriformae*) and two yellow colored (*cerasiformae*, *pruniformae*) cherry tomato varieties were investigated in this study regarding some physical and chemical properties like pH, total carbohydrates (TC), total acidity (TA), ascorbic acid (AA), ash (AS), moisture (M), and dry matter (DM) content. A non-parametric Mann–Whitney *U* test for independent samples was performed to identify statistically significant differences between red and yellow cherry tomato regarding investigated traits. Yellow investigated varieties showed higher values for TC, AS, DM and AA content while red cherry tomato varieties showed higher content for TA and M. Statistically significant differences were observed regarding the DM, M, AA, AS, and TA content between the majority of the varieties. The varieties of *cerasiformae* and *pruniformae*, and the varieties of *pyriformae* and *grandifolium* were most similar regarding the DM and M content. The AS content was statistically different between the varieties of *grandifolium*, *rocemigerum* and *pyriformae* while red and yellow varieties of *cerasiformae* and the two investigated yellow varieties, *cerasiformae* and *pruniformae* were similar regarding this traits. The variety of *cerasiformae* and *grandifolium* didn't differ in TA content. TC is a trait where the majority of investigated varieties didn't differ from each other. Differences were observed only between varieties of *pruniformae* and *rocemigerum*, and between *pyriformae* and the investigated yellow varieties, *cerasiformae* and *pruniformae*.

Keywords: ascorbic acid, ash, moisture, total acidity, total carbohydrates, Mann–Whitney *U* test.