

**Faculty of Agriculture
Goce Delcev University - Stip**



**3rd INTERNATIONAL MEETING
AGRISCIENCE & PRACTICE
(ASP 2023)**

BOOK OF ABSTRACTS

**19-20th April 2023
Stip, Republic of North Macedonia**

BIOLOGICAL CONTROL OF GREEN MOULD DISEASE AND MUSHROOM FLY USING BIOFUNGICIDE <i>Bacillus subtilis</i> Ch-13 AND BOTANICAL INSECTICIDE AZADIRACHTIN (TECHNICAL SOLUTION) Ivana Potočnik, Tanja Drobnejaković, Svetlana Milijašević-Marčić, Jelena Luković, Miloš Stepanović, Dejan Marčić, Emil Rekanović.....	34
BIOLOGICAL CONTROL OF SCAB DISEASE (<i>Venturia inaequalis</i>) USING BACILLUS ISOLATES IN <i>IN VITRO</i> AND <i>IN VIVO</i> CONDITIONS Dzansel Bukovec, Marija Todorovska Ivkovic, Ana Nikolovska, Sofia Kostandinovska, Natalija Atanasova-Pancevska, Dzoko Kungulovski.....	35
QUALITY CONTROL AND FOOD SAFETY	36
MULTIPLIED BENEFITS FROM A COMPLEX SELF-SUSTAINABLE TECHNICAL SYSTEM FOR PRODUCING MEAT AND MEAT PRODUCTS Darko Veljanovski, Vangelica Jovanovska.....	37
THE INFLUENCE OF THE PERSONAL HYGIENE AND HEALTH OF MILKMEN IMPROVEMENT ON THE MILK SAFETY AND COMPOSITION ON SMALL DAIRY FARMS Branislav Stanković, Slavča Hristov, Jelena Miočinović, Dimitar Nakov.....	38
MASTITIS MAKE CHANGES IN THE ANTIOXIDANT ENZYMES CAPACITY OF RAW MILK FROM DAIRY COWS IN EARLY LACTATION Dimitar Nakov, Aco Kuzelov, Slavča Hristov, Katerina Belichovska, Branislav Stanković, Jelena Miočinović.....	39
OPTIMIZATION OF RAPID AND SIMPLE HPLC-DAD METHOD FOR ANALYSIS OF GLYCOALKALOIDS SOLANINE AND CHACONINE IN POTATOES Irena Petrova, Violeta Ivanova-Petropulos, Liljana Koleva-Gudeva, Sasa Mitrev.....	40
IMPLEMENTATION AND FUNCTIONING OF HACCP PRINCIPLES IN THE MACEDONIAN WINERIES: A MULTIPLE CASE STUDY Daniela Nikolovska Nedelkoska, Biljna Risteska, Tatjana Kalevska, Vesna Antoska Knights, Vezirka Jankuloska, Sashko Martinovski.....	41
MICROBIOLOGICAL QUALITY OF MACEDONIAN WHITE BRINED CHEESE Borche Makarijoski	42
SENSORY CHARACTERISTICS OF COLD PRESSED SUNFLOWER OIL WITH THE ADDITION OF AROMATIC HERBS Katerina Temelkovska, Gorica Pavlovska, Valentina Pavlova, Viktorija Stamatovska.....	43
OLEOGELS – INNOVATIVE TECHNOLOGY FOR REPLACING ANIMAL FATS IN MEAT PRODUCTS Tanja Stojanovska, Tatjana Kalevska, Daniela Nikolovska Nedelkoska, Eleonora Delinikolova.....	44
PHENOTYPIC AND EXTERIOR COMPARISON OF SALERS BEEF CATTLE WITH OTHER BEEF CATTLE BREEDS Daniel Simakoski.....	45
CHEMICAL COMPOSITION AND ANTIOXIDANT ACTIVITY OF XAD-7 EXTRACTS FROM LINGONBERRY (<i>Vaccinium vitis-idaea</i> L.) Sanja Kostadinovic Velickovska, Fidanka Ilieva, Daniela Todevska.....	46
SOIL SCIENCE AND HYDROLOGY.....	47
REDUCING GREENHOUSE GAS EMISSIONS IN AGRICULTURE: CHALLENGES AND POSSIBILITIES Biljana Balabanova, Verica Ilieva, Sasa Mitrev.....	48
ISOLATION, SCREENING AND CHARACTERIZATION OF CELLULOLYTIC BACTERIA FROM DIFFERENT SOIL SAMPLES FROM PELAGONIA REGION Dzoko Kungulovski, Natalija Atanasova-Pancevska, Elena Damcevaska- Josifovska.....	49
THE PRESENCE OF <i>Escherichia coli</i> AND <i>Enterococcus</i> IN THE WATER OF THE FIFTH CANAL AND BLACK RIVER NEAR BITOLA Tatjana Blazhevaska, Valentina Pavlova, Viktorija Stamatovska, Vesna Knights, Mihajlo Sviderski, Eleonora Delinikolova.....	50
THE INFLUENCE OF DIFFERENT CLIMATIC TYPES ON THE NUMBER OF <i>Bacillus</i> spp. ISOLATED FROM SOIL IN NORTH MACEDONIA Natalija Atanasova-Pancevska, Dzoko Kungulovski, Elena Usta Petrova, Nikola Radmanovik, Ognen Boskovski, Edi Frcovski, Hristijan Premcevski, Sofija Kostandinovska.....	51
VITICULTURE, ENOLOGY AND FRUIT PRODUCTION	52
PHENOLIC PROFILE OF MACEDONIAN RED WINES Violeta Ivanova-Petropulos, Borimir Vojnoski, Isidro Herminos-Gutiérrez.....	53
QUALITY OF RED WINES FROM VRANEC, MERLOT AND FRANKOVKA GRAPE VARIETIES F Todevska ERMENTED BY TWO DIFFERENT YEAST STRAINS Fidanka Ilieva, Antonio Petrov, Sanja Kostadinovic Velickovska, Violeta Dimovska ¹ , Daniela Todevska.....	54
ISOTOPIC (87 Sr/ 86 Sr) DETERMINATION OF WINE FROM THE TIKVES AREA Ivan Boev.....	55

BOOK OF ABSTRACTS
SECTION: QUALITY CONTROL AND FOOD SAFETY

CHEMICAL COMPOSITION AND ANTIOXIDANT ACTIVITY OF XAD-7 EXTRACTS FROM LINGONBERRY (*Vaccinium vitis-idaea* L.) Sanja Kostadinovic Velickovska¹, Fidanka Ilieva¹, Daniela Todevska¹

¹Faculty of Agriculture, Goce Delcev University, Stip, Krste Misirkov 10-A, Stip, Republic of North Macedonia
*Contact author: sanja.kostadinovik@ugd.edu.mk

Abstract

The chemical composition and antioxidant activity of XAD-7 extracts from Lingonberry (*Vaccinium vitis-idaea* L.) were object of this study. Cyanidin-3-*O*-galactoside, cyandin-3-*O*-glucoside and cyanidin-3-*O*-arabinoside were the most abundant anthocyanins. The results from electron transfer reactions analyzed by cyclic voltammetry of lingonberry extracts showed a current increase and had the ability to exchange electrons with the electrode. While the shape from cyclic and square wave voltammetry appeared similar for XAD-7 extract and its fractions, lingonberry samples differ in current intensity. In cyclic voltammograms, CF and XAD-7 extract showed the highest intensities. The results of AF were lower, nevertheless, antioxidant activity was detected. In square wave voltammograms, the ability to transfer electrons was as follows: XAD-7 extract > AF > CF. Phosphate buffer as solvent control had no effects. To sum up, lingonberry extracts showed electron transfer reactions with the highest potential for the XAD-7 extract.

Key words: *lingonberry extracts, Cyanidin-3-*O*-galactoside, cyandin-3-*O*-glucoside and cyanidin-3-*O*-arabinoside, antioxidant activity, cyclic voltammetry.*