

**FACULTY OF BIOTECHNOLOGY AND FOOD SCIENCES
SLOVAK UNIVERSITY OF AGRICULTURE IN NITRA**



PROGRAMME

of

THE 7th INTERNATIONAL SCIENTIFIC CONFERENCE

**BIOTECHNOLOGY AND QUALITY OF RAW MATERIALS
AND FOODSTUFFS**

**which is being held under the auspices of
the Ministry of Agriculture and Rural Development of the Slovak Republic,
FAO Regional Office for Europe and Central Asia
and the Slovak Academy of Agricultural Sciences**

**1. - 2. February 2012
MANOR HOUSE MOJMIROVCE, SLOVAK REPUBLIC**

February 1, 2012

8⁰⁰-16⁰⁰ REGISTRATION

9⁰⁰-9³⁰ OPENING CEREMONY

9³⁰-11³⁰ PLENARY LECTURES I

Chairpersons: Dana Urminská, Ján Tomáš, Jozef Bulla

9³⁰-10⁰⁰ THE ROLE OF EFSA ON HEALTH CLAIMS ON FOODS
Milan Kováč European Food Safety Authority, Slovak Republic

10⁰⁰-10³⁰ PRODUCTION OF ENRICHED BIOMASS BY RED YEASTS OF *SPOROBOLOMYCES* SP. GROWN ON WASTE SUBSTRATES
Ivana Márová¹, Andrea Haroniková¹, Sinisa Petrik¹, Terezie Dvořáková¹, Emilia Breierová² ¹Brno University of Technology, Faculty of Chemistry, Materials Research Centre, Brno, Czech Republic ²Slovak Academy of Sciences, Institute of Chemistry, Bratislava, Slovak Republic TARTARY

10³⁰ - 11⁰⁰ COFFEE BREAK

11⁰⁰-11³⁰ BUCKWHEAT AS A HEALTH PROTECTING FOOD IN ASIA AND EUROPE
Ivan Kreft University of Ljubljana, Slovenia

11³⁰-11⁴⁵ *Presentation of scientific journal The Journal of Microbiology, Biotechnology and Food Sciences*
Lukáš Hleba, Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Science, Slovak Republic

11⁴⁵-12⁴⁵ LUNCH

12⁴⁵-13¹⁵ PLENARY LECTURES I

12⁴⁵-13¹⁵ OILS AND FATS IN HEALTHY NUTRITION
Ján Šajbidor Slovak University of Technology Bratislava, Slovak Republic

13¹⁵ - 15⁴⁵ BIOTECHNOLOGY OF PLANT AND ANIMAL PRODUCTION

Chairpersons: Zdenka Gálová, Tadeusz Kamiński

13¹⁵-13³⁵ USING OF THE PHOTOCHEM SYSTEM FOR MEASURING THE ANTIOXIDANT ACTIVITY OF VEGETABLE SPROUTS
Małgorzata Dżugan University of Rzeszow, Rzeszow, Poland

- 13³⁵-13⁵⁵ COMPARISON TRANSGENIC AND NON-TRANSGENIC MILK QUALITY
Peter Chrenek^{1,2}, **Alexander Makarevich**², ¹Animal Production Research Centre Nitra, Lužianky, Slovak Republic, ²Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Science, Department of Biochemistry and Biotechnology, Slovak Republic,²Animal Production Research Centre Nitra, Lužianky, Slovak Republic
- 13⁵⁵-14¹⁵ EXPRESSION OF PATHOGENESIS-RELATED PROTEIN GENES AND CHANGES OF SUPEROXIDE DISMUTASE ACTIVITY INDUCED BY TOXIC ELEMENTS IN *LUPINUS LUTEUS* L.
Klaudia Jomová¹, **Melánia Feszterová**¹, **Martin Morovič**², ¹Constantine the Philosopher University in Nitra, Faculty of Natural Sciences, Department of Chemistry, ²Constantine the Philosopher University in Nitra, Faculty of Natural Sciences Department of Zoology and Anthropology, Nitra, Slovak Republic
- 14¹⁵-14³⁵ THE POTENTIAL OF ISSR MARKERS IN AMARANTH GAMMA-RADIANCE MUTANTS GENOTYPING
Mária Labajová¹, **Slavomíra Senková**¹, **Jana Žiarovská**¹, **Katarína Ražná**¹, **Milan Bežo**¹, **Veronika Štefúnová**¹, **Lucia Zeleňáková**², ¹Slovak University of Agriculture in Nitra, Faculty of Agrobiolgy and Food Resources, Department of Genetics and Plant Breeding, Nitra, Slovak Republic, ² Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Sciences, Department of Food Hygiene and Safety, Nitra, Slovak Republic

14³⁵ - 15⁰⁵ COFFEE BREAK

- 15⁰⁵-15²⁵ THE EFFECT OF THE PORCINE MELANOCORTIN-5 RECEPTOR (*MC5R*) GENE ASSOCIATED WITH FEED INTAKE, CARCASS AND PHYSICOCHEMICAL CHARACTERISTICS
Anton Kováčik¹, **Jozef Bulla**¹, **Anna Trakovická**², **Július Žitný**², **Alica Rafayová**², ¹Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Sciences, Department of Animal Physiology, Nitra, Slovak Republic; ²Slovak University of Agriculture in Nitra, Faculty of Agrobiolgy and Food Resources, Department of Genetics and Breeding Biology, Nitra, Slovak Republic
- 15²⁵-15⁴⁵ A-TRICHOHECENES INDUCE PORCINE OVARIAN TOXICITY *IN VITRO*
Nora Maruniaková¹, **Attila Kádasi**¹, **Jozef Bulla**¹; **Marcela Capcarová**¹, **Alexander V. Sirotkin**², **Adriana Kolesárová**¹ ¹Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Sciences, Department of Animal Physiology, Nitra, Slovak Republic, ²Animal Production Research Centre Nitra, Lužianky, Slovak Republic

15⁴⁵-16⁴⁵ **QUALITY OF RAW MATERIALS AND FOODSTUFFS OF ANIMAL ORIGIN**

Chairpersons: Giuseppe Maiorano, Stanislav Kráčmar

15⁴⁵-16⁰⁵ ENRICHED EGGS OF JAPANESE QUAIL AS A SOURCE OF LONG PUFAS

Sieпка, E., Bobak, Ł., Kosmalski, B., Trziszka T., Wrocław University of Environmental and Life Sciences, Wrocław Poland

16⁰⁵-16²⁵ NUTRITIONAL VALUE AND TECHNOLOGICAL SUITABILITY OF MILK PRODUCED IN INTENSIVE AND TRADITIONAL SYSTEMS IN 3 REGIONS OF EASTERN POLAND

Jolanta Król¹, Joanna Barłowska¹, Anna Litwińczuk¹, Zygmunt Litwińczuk², ¹University of Life Sciences, Department of Commodity Science and Processing of Raw Animal Materials, ²University of Life Sciences, Department of Breeding and Protection of Genetic Resources of Cattle, Lublin, Poland

16²⁵-16⁴⁵ ANTIMICROBIAL AND ANTIRADICAL ACTIVITY OF SLOVAKIAN HONEYDEW HONEY SAMPLES

Miroslava Kačániová¹, Nenad Vukovic², Alica Bobková³, Martina Fikselová³, Peter Haščík⁴, Juraj Čuboň⁴, Lukáš Hleba¹, Marek Bobko⁴, ¹Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Sciences, Department of Microbiology, Nitra, Slovak Republic; ²University of Kragujevac, Faculty of Science, Department of Chemistry, Serbia; ³Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Sciences, Department of Hygiene and Food Safety, Nitra, Slovak Republic; ⁴Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Sciences, Department of Animal Products Evaluation and Processing, Nitra, Slovak Republic

17⁰⁰-18⁰⁰ **POSTER SESSION**

18⁰⁰ - 22⁰⁰ **GALA DINNER**

February 2, 2012

8³⁰ - 9⁰⁰ **PLENARY LECTURES II**

Chairpersons: Dana Urminská, Ján Tomáš, Jozef Bulla

8³⁰- 9⁰⁰ SENSORY QUALITY OF RAW MATERIALS AND FOODSTUFFS IN THE XXI CENTURY

Angel A. Carbonell-Barrachina, Miquel Hernandez University Valencia, Spain

9⁰⁰-11³⁰ QUALITY OF RAW MATERIALS AND FOODSTUFFS OF PLANT ORIGIN

Chairpersons: Tatiana Bojňanská, Ángel A. Carbonell-Barrachina

9⁰⁰-9²⁰ INFLUENCE OF DIFFERENT OAK CHIPS ON AROMA COMPOUNDS IN WINE

Jana Návojská¹, Walter Brandes², Stefan Nauer², Reinhard Eder², Helena Francáková¹, ¹Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Sciences, Department of Storing and Processing Plant Products, Nitra, Slovak Republic, ²Department of Chemistry, Lehr- und Forschungszentrum für Wein- und Obstbau, Klosterneuburg, Austria

9²⁰-9⁴⁰ BIOGENIC AMINES CONTENT IN SELECTED WINES DURING WINEMAKING

František Buňka¹, Barbora Ivičičová¹, Leona Buňková², Radka Flasarová¹, Stanislav Kráčmar³, ¹Tomas Bata University in Zlín, Faculty of Technology, Department of Food Technology and Microbiology, Czech Republic; ²Tomas Bata University in Zlín, Faculty of Technology, Department of Fat, Surfactant and Cosmetics Technology, Czech Republic; ³Tomas Bata University in Zlín, Faculty of Technology, Department of Food Analysis and Chemistry, Czech Republic

9⁴⁰-10⁰⁰ THE USE OF SELECTED TRITICALE AND RYE VARIETIES IN RABBIT DIETS: EFFECT ON GROWTH PERFORMANCE, DIGESTIBILITY AND BALANCE OF NUTRIENTS

Mária Chrenková¹, Ľubica Chrastinová¹, Andrea Lauková², Ľubomír Ondruška¹, Mária Poláčiková¹, Zuzana Formelová¹, Renáta Szabóová², Ján Rafay¹, ¹Animal Production Research Centre Nitra, Lužianky, Slovak Republic, ²Institute of Animal Physiology, Slovak Academy of Sciences, Košice, Slovak Republic

10⁰⁰-10³⁰ COFFEE BREAK

10³⁰-10⁵⁰ CHEMICAL COMPOSITION OF BUCKWHEAT PLANT (*FAGOPYRUM ESCULENTUM*) AND SELECTED BUCKWHEAT PRODUCTS

Petra Vojtíšková¹, Kristýna Kmentová¹, Vlastimil Kubáň², Stanislav Kráčmar¹, ¹Tomas Bata University in Zlín, Faculty of Technology, Department of Food Analysis and Chemistry, Zlín, Czech Republic, ² Tomas Bata University in Zlín, Faculty of Technology, Department of Food Technology and Microbiology, Zlín, Czech Republic

10⁵⁰-11¹⁰ BUCKWHEAT AS A GLUTEN-FREE CEREAL IN COMBINATION WITH MAIZE FLOUR

Petra Dvořáková, Iva Burešová, Stanislav Kráčmar, Tomas Bata University in Zlín, Faculty of Technology, Department of Food Analysis and Chemistry, Zlín, Czech Republic

11¹⁰-11³⁰ LEGUMES – THE ALTERNATIVE RAW MATERIALS FOR BREAD PRODUCTION
Tatiana Bojňanská, Helena Frančáková, Miriam Líšková, Marian Tokár, Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Science, Department of Plant Products Storing and Processing, Nitra, Slovak Republic

11³⁰-12³⁰ **LUNCH**

12³⁰-13⁴⁰ **HYGIENE AND FOOD SAFETY**

Chair persons: Jozef Golian, František Buňka

12³⁰-12⁵⁰ SEVERAL FACTORS DEPEND OF RADIUM FOR OBSERVING RADIUM CAESIUM ¹³⁷CS CONTENT IN BEEF MEAT (CZECH PIED CATTLE) IN LESS-FAVOURED AREAS OF THE CZECH REPUBLIC
Pavel Smetana¹, Ivan Holko², Jan Rosmus³, ¹University of South Bohemia, Faculty of Agriculture, Department of Veterinary Branches and Quality of Products, České Budějovice, Czech Republic, ²Tomas Bata University in Zlín, Faculty of Technology, Department of Microbiology and Food, Zlín, Czech Republic, ³State Veterinary Institute, Department of Chemistry, Prague, Czech Republic

12⁵⁰-13¹⁰ FREE RADICAL SCAVENGING CAPACITY OF *PAPAVER SOMNIFERUM* L. AND DETERMINATION OF PHARMACOLOGICALLY ACTIVE ALKALOIDS USING CAPILLARY ELECTROPHORESIS
Stanislav Baroš¹, Marianna Karšayová¹, Klaudia Jomová¹, Marián Valko², Attila Gáspár³, ¹Constantine the Philosopher University, Faculty of Natural Sciences, Department of Chemistry, Nitra, Slovak Republic, ²Slovak Technical University, Faculty of Chemical and Food Technology, Bratislava, Slovak Republic, ³University of Debrecen, Department of Inorganic and Analytical Chemistry, Debrecen, Hungary

13¹⁰-13⁴⁰ MONITORING OF AIR POLLUTION AND ATMOSPHERIC DEPOSITION OF HEAVY METALS BY ANALYSIS OF HONEY
Peter Lazor¹, Ján Tomáš¹, Tomáš Tóth^{1,2}, Juraj Tóth¹, Silvia Čéryová¹, ¹Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Sciences, Department of Chemistry, Nitra, Slovak Republic, ²Institute of Chemistry, Center of excellence for white-green biotechnology, Slovak Academy of Sciences, Nitra, Slovak Republic

13⁴⁰-14⁰⁰ **CLOSING CEREMONY**

Chairpersons: Ján Tomáš, Dana Urminská

Important note:

- **Working language:** English, Slovak, Czech, Polish
- **The presentation is required to be in English.**
- **Maximal duration of oral presentation including discussion is 20 minutes.**
- **The proof of registration fee payment is required to be shown at registration**

Social event: Gala dinner (included in the conference fee) will be held in the Manor house Mojmirovce on February 1, 2012 at 18:00

POSTER SESSION

February 1, 2012 17⁰⁰-18⁰⁰

**Chairpersons: Helena Frančáková, Jozef Bulla, Ján Tomáš, Giuseppe Maiorano,
Zdenka Gálová, Ivan Kreft**

1. BIOTECHNOLOGY OF PLANT AND ANIMAL PRODUCTION

Number of panel

1. INTRACELLULAR MECHANISMS OF NATURAL SUBSTANCES INVOLVED IN THE REGULATION OF CELL SURVIVAL AND APOPTOSIS: A REVIEW. **Zuzana Baková¹, Nora Maruniaková¹, Sushmita Nath², Adriana Kolesárová¹**, ¹Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Sciences, Department of Animal Physiology, Nitra, Slovak Republic, ²Department of Life Science and Bioinformatics, Assam University, Silchar, India
2. PROTEIN MAPS OF OAT AND RYE. **Želmíra Balážová, Eva Palenčárová, Zdenka Gálová, Milan Chňapek**, Slovak University of Agriculture, Faculty of Biotechnology and Food Sciences, Department of Biochemistry and Biotechnology, Nitra, Slovak Republic
3. TRACE ELEMENTS IN FOLLICULAR FLUID AND THEIR EFFECTS ON REPRODUCTIVE FUNCTIONS. **Marcela Capcarová, Adriana Kolesárová**, Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Sciences, Department of Animal Physiology, Slovak Republic
4. *IN VITRO* GASTRO – INTESTINAL DIGESTION OF WHEAT COELIAC ACTIVE PROTEINS. **Zdenka Gálová, Eva Palenčárová, Milan Chňapek, Želmíra Balážová**, Slovak University of Agriculture, Faculty of Biotechnology and Food Sciences, Department of Biochemistry and Biotechnology, Nitra, Slovak Republic
5. PROTEOMICS ANALYSIS OF WHEAT AND BARLEY GRAIN. **Milan Chňapek, Eva Palenčárová, Zdenka Gálová, Želmíra Balážová, Marián Tomka**, Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Sciences, Department of Biochemistry and Biotechnology, Nitra, Slovak Republic
6. SOMATIC EMBRYOGENESIS AND PLANT REGENERATION FROM IMMATURE EMBRYO INDUCED CALLUS OF MAIZE (*ZEA MAYS* L.). **Miroslava Jakubeková, Anna Preťová, Bohuš Obert**, Slovak Academy of Sciences, Institute of Plant Genetics and Biotechnology, Nitra, Slovak Republic
7. PROOXIDANT EFFECT OF LYCOPENE ON TRIGLYCERIDE OXIDATION. **Klaudia Jomová¹, Michael Lawson², Lukáš Gaľa²**, ¹Constantine the Philosopher University in Nitra, Faculty of Natural Sciences, Department of Chemistry, Nitra, Slovak Republic, ²Slovak Technical University, Faculty of Chemical and Food Technology, Bratislava, Slovak Republic

8. THE EFFECT OF RAPAMYCIN ON SECRETORY ACTIVITY OF THE RABBIT OVARIAN FRAGMENTS. **Attila Kádasi¹, Alexander V. Sirotkin², Nora Maruniaková¹, Sushmita Nath³, Adriana Kolesárová¹**, ¹Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Sciences, Department of Animal Physiology, Nitra, Slovak Republic; ²Institute for Genetics and Reproduction of Farm Animals, Animal Production Research Centre Nitra, Lužianky, Slovak Republic; ³Assam University, Ethnobotany and Medicinal Plant Research Laboratory, Department of Life Science and Bioinformatics, Silchar, India
9. CHANGES OF PROTEIN PROFILES IN AMARANTH MUTANT LINES. **Monika Kečkešová¹, Zdenka Gálová^{2,1}, Andrea Hricová³**, ¹Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Sciences, Department of Biochemistry and Biotechnology, Nitra, Slovak Republic; ²Institute of Chemistry, Centre of excellence for white-green biotechnology, Nitra, Slovak Republic; ³Institute of Plant Genetics and Biotechnology, Slovak Academy of Sciences, Nitra, Slovak Republic
10. OPTIMIZATION OF MEDIUM COMPOSITION AND OTHER PARAMETERS FAVORING FOR MAXIMAL ACCUMULATION OF RIBOFLAVIN BY RECOMBINANT CANDIDA FAMATA STRAINS. **Maciej Kluz¹, Vladimír Sibirny¹, Małgorzata Dżugan¹, Valentyna Yatsyshyn², Andriy Sibirny^{1,2}**, ¹University of Rzeszow, Rzeszow, Poland; ² Institute of Cell Biology, National Academy of Science of Ukraine, Lviv, Ukraine
11. THE MERCURY AS ENDOCRINE DISRUPTOR ON THE ADRENOCARCINOMA CELL LINE H295R. **Zuzana Kňazická¹, Zsolt Forgács², Jana Lukáčová¹, Eva Tvrdá¹, Anetta Lukáčová³, Gabriella Ocztos², Mária Rác², Jana Slivková¹, Peter Massányi¹**, ¹Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Sciences, Department of Animal Physiology, Nitra; ²National Institute of Chemical Safety, Department of Molecular and Cell Biology, Budapest; ³Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Sciences, Department of Food Hygiene and Safety, Nitra, Slovak Republic
12. DEOXYNIVALENOL-INDUCED ANIMAL OVARIAN SIGNALING: PROLIFERATION AND APOPTOSIS. **Adriana Kolesárová¹, Marcela Capcarová¹, Nora Maruniaková¹, Zuzana Baková¹, Róbert Toman², Sushmita Nath³, Alexander V. Sirotkin³**, ¹Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Sciences, Department of Animal Physiology, Nitra, Slovak Republic; ²Slovak University of Agriculture in Nitra, Faculty of Agrobiolgy and Food Resources, Department of Veterinary Disciplines, Slovak Republic; ³Assam University, Ethnobotany and Medicinal Plant Research Laboratory, Department of Life Science and Bioinformatics, Stinchar, India; ³Institute for Genetics and Reproduction of Farm Animals, Animal Production Research Centre Nitra, Lužianky, Slovak Republic
13. OVARIAN FOLLICLE ATRESIA IN DAIRY COWS IN RELATION TO THE BODY CONDITION. **Alexander V. Makarevich^{1,2}, Juraj Pivko², Elena Kubovičova¹, Zdenka Hegedušová², František Louda²**, ¹Animal Production Research Centre Nitra, Lužianky, Slovak Republic; ²Research Institute for Cattle Breeding Ltd. Rapotín, Vיקyrovce, Czech Republic

14. INTRACELLULAR MECHANISMS OF A-TRICHOTHECENES INVOLVED IN THE REGULATION OF CELL SURVIVAL AND APOPTOSIS: A REVIEW. **Nora Maruniaková¹, Zuzana Baková¹, Attila Kádasi¹, Jozef Bulla¹, Marcela Capcarová¹, Adriana Kolesárová¹**, ¹Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Sciences, Department of Animal Physiology, Nitra, Slovak Republic
15. EFFECT OF FOOD-MICROORGANISMS ON GAMMA-AMINOBUTYRIC ACID PRODUCTION BY FERMENTATION. **Robert Mazur, Jozef Hudec, Kamila Kovalovská**, Slovak University of Agriculture in Nitra, Faculty of Agrobiological and Food Resources, Department of Agrochemistry and Plant Nutrition, Nitra, Slovak Republic
16. THE COMPARISON OF PROLAMINS EXTRACTED FROM DIFFERENT VARIETIES OF WHEAT, BARLEY, RYE AND TRITICALE SPECIES: AMINO ACID COMPOSITION, ELECTROPHORESIS AND IMMUNODETECTION. **Barbara Mickowska¹, Peter Socha², Dana Urminska^{2,3}, Ewa Ciešlik¹**, ¹Agricultural University in Cracow, Faculty of Food Technology, Malopolska Centre of Food Monitoring and Certification, Poland, ²Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Sciences, Department of Biochemistry and Biotechnology, Slovak Republic, ³Slovak Academy of Sciences, Institute of Chemistry, Center of excellence for white-green biotechnology, Nitra, Slovak Republic
17. STUDY ON THE ROLE OF GLUCANASES IN DIGESTION OF CARNIVOROUS PLANT *DROSER A ROTUNDIFOLIA* L. **Jaroslav Michalko, Ildikó Matušiková**, Slovak Academy of Sciences, Institute of Plant Genetics and Biotechnology, Nitra, Slovak Republic
18. POLYMORPHISM OF THE BOVINE GH AND LEP GENES IN POPULATION SLOVAK SPOTTED BULLS. **Nina Moravčíková, Anna Trakovická**, Slovak University of Agriculture in Nitra, Faculty of Agrobiological and Food Resources, Department of Animal Genetics and Breeding Biology, Nitra, Slovak Republic
19. EFFECT OF DIETARY SELENIUM FORMS ON SELENIUM BLOOD CONCENTRATION IN LAYING HENS. **Aleš Pavlik¹, Petr Slama¹, Martina Lichovnikova², Zdenek Havlicek¹**, ¹Mendel University in Brno, Faculty of Agronomy, Department of Animal Morphology, Physiology and Genetics, Czech Republic, ²University in Brno, Faculty of Agronomy, Department of Animal Breeding, Czech Republic
20. EFFECT OF PROPOLIS IN CHICKEN DIET ON SELECTED PARAMETERS OF MINERAL PROFILE. **Peter Petruška, Eva Tušimová, Anna Kalafová, Peter Haččík, Miroslava Kačániová, Adriana Kolesárová, Marcela Capcarová**, Slovak University of Agriculture, Faculty of Biotechnology and Food Sciences, Nitra, Slovak Republic
21. PREPARATION OF PLANT TRANSFORMATION VECTOR CONTAINING “SELF-EXCISION” CRE/LOXP SYSTEM. **Zuzana Polóniová, Martin Jopčík, Ildikó Matušiková, Jana Libantová, Jana Moravčíková**, Slovak Academy of Sciences, Institute of Plant Genetics and Biotechnology, Nitra, Slovakia

22. PREPARATION OF ZINC ENRICHED YEAST (*SACCHAROMYCES CEREVISIAE*) BY CULTIVATION WITH DIFFERENT ZINC SALTS. **Silvia Šillerová¹, Blažena Lavová¹, Dana Urminská¹, Anežka Poláková¹, Alena Vollmannová², Ľuboš Harangozo²**, ¹Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Sciences, Department of Biochemistry and Biotechnology, Nitra, Slovak Republic, ²Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Sciences, Department of Chemistry, Nitra, Slovak Republic
23. COPPER ENRICHED YEAST *SACCHAROMYCES CEREVISIAE* AS A POTENTIAL SUPPLEMENT IN NUTRITION. **Silvia Šillerová¹, Blažena Lavová¹, Dana Urminská¹, Anežka Poláková¹, Alena Vollmannová², Ľuboš Harangozo²**, ¹Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Sciences, Department of Biochemistry and Biotechnology, Nitra, Slovak Republic, ²Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Sciences, Department of Chemistry, Nitra, Slovak Republic
24. THE EFFECT OF DIFFERENT CONCENTRATION OF TREHALOSE ON TURKEY SPERMATOZOA MOTILITY *IN VITRO*. **Tomáš Slanina¹, Michal Miškeje², Peter Massányi¹**, ¹Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Science, Department of Animal Physiology, Nitra, Slovak Republic; ²Constantine the Philosopher University in Nitra, Faculty of Natural Sciences, Department of Zoology and Anthropology, Nitra, Slovak Republic
25. ANALYSIS OF POLYMORPHISM OF BARLEY STORAGE PROTEINS. **Marián Tomka¹, Milan Chňapek¹, Jana Bradová², Zdenka Gálová¹**, ¹Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Sciences, Department of Biochemistry and Biotechnology, Nitra, Slovak Republic, ²Crop Research Institute, Prague, Czech Republic
26. EXPLORATION OF GENETIC RELATIONS BETWEEN WINTER TRITICALE (*X Triticosecale* Witt.) AND RYE (*Secale cereale* L.) CULTIVARS USING RETROTRANSPOSON-BASED MARKERS. **Andrej Trebichalský¹, Alan Schulman², Ruslan Kalendar², Olga Stratula³, Zdenka Gálová¹**, ¹Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Sciences, Department of Biochemistry and Biotechnology, Nitra, Slovak Republic, ²MTT/BI Plant Genomics Lab, Institute of Biotechnology, University of Helsinki, Viikinkaari, Finland, ³South Plant Biotechnology Center, Odessa-Ukraine

2. QUALITY OF RAW MATERIALS AND FOODSTUFFS OF ANIMAL ORIGIN

Number of panel

27. INFLUENCE OF PRODUCTION SEASON ON THE NUTRITIONAL VALUE AND TECHNOLOGICAL SUITABILITY OF MILK OBTAINED FROM INTENSIVE (TMR) AND TRADITIONAL CATTLE FARMS. **Joanna Barłowska¹, Zygmunt Litwińczuk², Jolanta Król¹, Aneta Brodziak²**, ¹University of Life Sciences, Department of Commodity Science and Processing of Raw Animal Materials, ²University of Life Sciences, Department of Breeding and Protection of Genetic Resources of Cattle, Lublin, Poland

28. INFLUENCE OF DIFFERENT PLANT SUPPLEMENTS APPLIED IN CHICKEN NUTRITION ON QUALITY OF THEIR MEAT. **Marek Bobko, Peter Haščík, Alica Bobková, Vladimíra Kňazovická, Tomáš Tóth, Mária Angelovičová**, Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Sciences, Department of Animal Products Evaluation and Processing, Slovak Republic
29. PHYSICOCHEMICAL PROPERTIES OF MODEL MEAT PRODUCTS, PRODUCED FROM STORED MEAT OF WILD BOAR, TRATED BY BACTERIOSTATIC FACTORS. **Justyna Górecka, Tadeusz Szmańko**, Wrocław University of Environmental and Life Science, Faculty of Food Science, Department of Animal Products Technology and Quality Management, Wrocław, Poland
30. CONTENT OF POTASSIUM AND MAGNESIUM IN THE MUSCLE TISSUE OF FEMALE RABBITS AFTER NICKEL AND ZINC PERORAL ADMINISTRATION. **Anna Kalafová¹, Jaroslav Kováčik¹, Marcela Capcarová¹, Adriana Kolesárová¹, Peter Massányi¹, Norbert Lukáč¹, Robert Stawarz², Grzegorz Formicki², Tomek Laciak²**, ¹Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Sciences, Department of Animal Physiology, Slovak Republic; ²Pedagogical University of Cracow, Faculty of Geography and Biology, Poland
31. MILK FAT FATTY ACIDS IN RELATION TO MILK PRODUCTION AND QUALITY. **Katarína Kirchnerová¹, Vladimír Foltys¹, Jiří Špička²**, Animal Production Research Centre Nitra, Lužianky, Slovak Republic; ²University of South Bohemia in České Budějovice, Czech Republic
32. THE SLAUGHTER VALUE OF YOUNG BULLS OF POLISH BLACK-WHITE, WHITE-BACKED, POLISH HOLSTEIN-FRIESIAN AND LIMOUSINE BREEDS FROM SEMI-INTENSIVE FATTENING. **Zygmunt Litwińczuk¹, Witold Chabuz¹, Piotr Domaradzki², Przemysław Jankowski¹**, ¹University of Life Sciences, Department of Breeding and Protection of Genetic Resources of Cattle, Lublin, Poland ²University of Life Sciences, Department of Commodity Science and Processing of Raw Animal Materials, Lublin, Poland
33. SLAUGHTER VALUE OF LIMOUSINE BREED CALVES SLAUGHTERED AT DIFFERENT AGES AND DIFFERENT BODY WEIGHTS. **Zygmunt Litwińczuk¹, Piotr Stanek¹, Przemysław Jankowski¹, Piotr Domaradzki², Mariusz Florek²**, ¹University of Life Sciences, Department of Breeding and Protection of Genetic Resources of Cattle, Lublin, Poland, ²University of Life Sciences, Department of Commodity Science and Processing of Raw Animal Materials, Lublin, Poland
34. THE USE OF EGG YOLK PROTEIN PREPARATE IN THE PRODUCTION OF MEAT PRODUCTS. **Tril Urszula, Salejda Anna M., Krasnowska Grażyna**, Wrocław University of Environmental and Life Sciences, Department of Animal Products Technology and Quality Management, Wrocław, Poland
35. COMPARISON OF MEAT QUALITY IN BULLS AND COWS. **Kvetoslav Zaujec¹, Jozef Mojto¹, Martina Gondeková¹**, ¹Animal Production Research Centre Nitra, Slovak Republic

3. QUALITY OF RAW MATERIALS AND FOODSTUFFS OF PLANT ORIGIN

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36. ANTIOXIDANT PROPERTIES OF THE BESTSELLING SLOVAK RED WINES. **Daniel Bajčan, Silvia Čéryová, Ján Tomáš**, Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Sciences, Department of Chemistry, Nitra, Slovak Republic
37. PHENOLIC COMPOUNDS AND ANTIOXIDANT ACTIVITY OF MONOVARIETAL RED WINES PRODUCED IN LIMBACH REGION. **Daniel Bajčan¹, Silvia Čéryová¹, Tomáš Tóth²**, ¹Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Sciences, Department of Chemistry, Nitra, Slovak Republic, ²Institute of Chemistry, Centre of excellence for white-green biotechnology, Slovak Academy of Sciences, Nitra, Slovak Republic
38. RHEOLOGICAL PROPERTIES OF PRODUCTS OF STARCH ESTERIFICATION AND TRANSESTERIFICATION BY OLEIC ACID. **Maciej Bienkiewicz, Hanna Boruckowska, Tomasz Boruckowski, Józef Błażewicz**, Wrocław University of Environmental and Life Sciences, Wrocław, Poland
39. THE QUALITY OF SORGHUM GRAIN IN ASPECT OF UTILIZATION AMINO ACIDS IN PIGS. **Matej Brestenský, Soňa Nitrayová, Peter Patráš, Jaroslav Heger**, Animal Production Research Centre Nitra, Institute of Nutrition, Lužianky, Slovak Republic
40. PRODUCTION PARAMETERS OF SUNFLOWER (*HELIANTHUS ANNUUS*. L.) INFLUENCED BY WEATHER CONDITIONS AND FOLIAR APPLICATION OF PENTAKEEP - V AND ATONIK. **Ivan Černý, Alexandra Veverková**, Slovak University of Agriculture in Nitra, Faculty of Agrobiolgy and Food Resources, Department of Crop Production, Nitra, Slovak Republic
41. CHANGES OF CARBOHYDRATES COMPLEX INFLUENCED BY THE STORAGE TIME. **Helena Francáková, Miriam Líšková, Tatiana Bojňanská, Ján Mareček**, Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Sciences, Department of Plant Products Storing and Processing, Nitra, Slovak Republic
42. CHARACTERIZATION OF DURUM WHEAT (*TRITICUM DURUM* DESF.) QUALITY FROM GLIADIN AND GLUTENIN PROTEIN COMPOSITION. **Edita Gregová¹, Eva Medvecká², Klaudia Jómová², Svetlana Šliková¹**, ¹Plant Production Research Center, Piešťany, Slovak Republic, ²Constantine the Philosopher University, Faculty of Natural Sciences, Department of Chemistry, Nitra, Slovak Republic
43. DETERMINATION OF THE WHEAT-RYE TRANSLOCATION 1BL.1RS AMONG REGISTERED BREAD WHEAT VARIETIES OF SLOVAKIA. **Edita Gregová, Svetlana Šliková**, Plant Production Research Center Piešťany, Slovak Republic

44. POPPY SEED (*PAPAVER SOMNIFERUM* L.): EFFECT OF GENOTYPE AND YEAR OF CULTIVATION ON VARIABILITY IN ITS LIPID COMPOSITION. **Andrea Hlinková, Michaela Havrlentová, Jana Šupová, Adriána Bednárová**, University of SS. Cyril and Methodius in Trnava, Faculty of Natural Sciences, Department of Biotechnology, Trnava, Slovak Republic
45. THE CHARACTERISTICS OF CRUDE PROTEIN AND NDF IN LUCERNE AND MAIZE SILAGES ACCORDING IN SITU AND CNCPS. **Mária Chrenková, Mária Poláčiková, Zuzana Formelová, Zuzana Čerešňáková**, Animal Production Research Centre Nitra, Institute of Nutrition, Lužianky, Slovak Republic
46. INFLUENCE OF VARIETY, LOCALITY AND SOIL CONTAMINATION ON TOTAL POLYPHENOL CONTENT AND ANTIOXIDANT ACTIVITY OF FABABEAN GRAINS. **Dalaram S. Ismael, Mária Timoracká, Alena Vollmannová, Július Árvay**, Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Sciences, Department of Chemistry, Nitra, Slovak Republic
47. THE INFLUENCE PLANT PROTECTION OF BREWING BARLEY ON MALTS QUALITY. **Katarzyna Kupisz, Józef Błażewicz**, Wrocław University of Environmental and Life Science, Wrocław, Poland
48. VARIETAL DEPENDENCE OF ANTIOXIDANT ACTIVITY IN DIFFERENT ANATOMICAL PARTS OF COMMON BUCKWHEAT (*FAGOPYRUM ESCULENTUM MOENCH*) IN DIFFERENT GROWTH PHASES. **Eva Margitanová¹, Alena Vollmannová¹, Lívia Krížová¹, Iveta Čičová²**, ¹Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Sciences, Department of Chemistry, Nitra, Slovak Republic ²Plant Production Research Centre, Piešťany, Slovak Republic
49. STUDY OF DIGESTAROM[®] 1324 EFFECT ON SELECTED PARAMETERS OF MAIZE DDGS QUALITY IN PIG NUTRITION. **Soňa Nitrayová¹, Matej Brestenský¹, Peter Patráš¹, Thomas Weiland²**, ¹Animal Production Research Centre Nitra, Lužianky, Slovak Republic; ²MICRO-PLUS Konzentrate GmbH, Stadtoldendorf, Germany
50. IMPACT OF OATS β -GLUCANS ON PROPERTIES OF GLUTEN-FREE BREAD. **Dorota Pastuszka, Halina Gambuś, Rafał Ziobro, Krzysztof Buksa, Renata Sabat, Grażyna Augustyn**, University of Agriculture in Krakow, Faculty of Food Technology, Department of Carbohydrate Technology, Krakow, Poland
51. QUALITY AND NUTRITIONAL VALUE OF WHEAT BREAD WITH A PREPARATION OF OAT PROTEINS. **Dorota Pastuszka, Halina Gambuś, Rafał Ziobro, Barbara Mickowska, Krzysztof Buksa, Renata Sabat**, University of Agriculture in Krakow, Faculty of Food Technology, Department of Carbohydrate Technology, Krakow, Poland
52. EFFECT OF XYLANASE ADDED TO A RYE-BASED DIET ON NUTRIENT UTILIZATION IN PIGS. **Peter Patráš, Soňa Nitrayová, Matej Brestenský, Jaroslav Heger**, Animal Production Research Center Nitra, Lužianky, Slovak Republic

53. THE EFFECT OF BREWER'S BARLEY PLANTS NITROGEN FERTILIZATION ON GELATINIZATION CHARACTERISTICS OF STARCH CONTAINED IN UNMALTED GRAINS. **Witold Pietrzak**, Wrocław University of Environmental and Life Sciences, Wrocław, Poland
54. DETERMINATION OF CAFFEINE CONTENTS OF COFFEE BRANDS IN THE VIETNAMESE MARKET. **Thi Thanh Dieu Phan, Vlastimil Kuban, Stanislav Kráčmar**, Tomas Bata University in Zlin, Faculty of Technology, Department of Biochemistry and Food Analysis, Zlín, Czech Republic
55. INFLUENCE OF HYBRIDS ON FORMATION OF YIELD-FORMING ELEMENTS OF SUNFLOWER (*HELIANTHUS ANNUUS* L.). **Alexandra Veverková, Ivan Černý**, Slovak University of Agriculture in Nitra, Faculty of Agrobiological and Food Resources, Department of Crop Production, Nitra, Slovak Republic

4. HYGIENE AND FOOD SAFETY

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56. RATINGS OF THE HYGIENIC CONDITIONS AND VERIFICATION PROFESSIONAL COMPETENCE EMPLOYEE IN COMMON FOOD SERVICES. **Pavol Bajzík¹, Alica Bobková¹, Marek Bobko², Lucia Zeleňáková¹, Ľubomír Lopašovský¹, Jozef Čapla¹**, ¹Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Sciences, Department of Food Hygiene and Safety, Nitra, Slovak republic, ²Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Sciences, Department of Animal Products Evaluation and Processing, Nitra, Slovak Republic
57. EFFECT OF GLUCOSE CONCENTRATION AND GROWTH CONDITIONS ON THE FUNGAL BIOMASS, PH OF MEDIA AND PRODUCTION OF FUMAGILLIN BY A NON-PATHOGENIC STRAIN *PENICILLIUM SCABROSUM*. **Zuzana Barboráková¹, Roman Labuda², Georg Häubl², Dana Tančinová¹**, ¹Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Sciences, Department of Microbiology, Nitra Slovak Republic, ²Romer Labs Division Holding GmbH, Technopark, Tulln, Austria
58. IS THE MEAT OF WILD WATERFOWL FIT FOR HUMAN CONSUMPTION? PRELIMINARY RESULTS OF CADMIUM AND LEAD CONCENTRATION IN PECTORAL MUSCLES OF MALLARDS AND COOTS SHOT IN 2006 IN SOUTHERN POLAND. **Lukasz Jakub Binkowski**, Pedagogical University of Cracow, Institute of Biology, Poland
59. SANITATION PROCESS OPTIMALIZATION IN RELATION TO THE MICROBIAL BIOFILM OF *PSEUDOMONAS FLUORESCENS*. **Jozef Čapla¹, Peter Zajác¹, Pavol Bajzík¹, Lucia Zeleňáková¹, Jozef Golian¹, Vladimír Vietoris²**, ¹Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Sciences, Department of Food Hygiene and Safety, Nitra, Slovak Republic, ²Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Sciences, Department of Plant Products Storing and Processing, Nitra, Slovak Republic

60. AIR AS A FACTOR AFFECTING FOOD HYGIENE. **Melánia Feszterová, Klaudia Jomová**, Constantine the Philosopher University, Faculty of Natural Sciences, Department of Chemistry, Nitra, Slovak Republic
61. CADMIUM, COPPER, LEAD AND ZINC CONCENTRATIONS IN LOW QUALITY WINES AND ALCOHOL CONTAINING DRINKS FROM ITALY, BULGARIA AND POLAND. **Grzegorz Formicki¹, Robert Stawarz², Agnieszka Greń¹, Renata Muchacka¹**, ¹Pedagogical University, Department of Animal Physiology and Toxicology, Kraków, Poland, ²Pedagogical University, Department of Vertebrate Zoology and Human Biology, Kraków, Poland
62. COMPARING THE GROWTH OF *S. AUREUS* AND PRODUCTION OF STAPHYLOCOCCAL ENTEROTOXIN C IN SHEEP'S AND GOAT'S MILK. **Bohdana Janštová, Lenka Necedová, Bohumíra Janštová**, University of Veterinary and Pharmaceutical Sciences, Faculty of Veterinary Hygiene and Ecology, Department of Milk Hygiene and Technology, Brno, Czech Republic
63. CAN BE BLUEBERRIES THE RISK FOOD AND RAW MATERIAL? **Lívia Križová¹, Alena Vollmannová¹, Eva Margitanová¹, Ján Daniel², Michal Medvecký²**, ¹Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Science, Department of Chemistry, Nitra, Slovak Republic, ²Regional Research Station in Krivá on Orava, Slovak Republic
64. COMPARISON OF OCCURRENCE AND TOXINOGENITY OF *ALTERNARIA* SPP. ISOLATED FROM SAMPLES OF CONVENTIONAL AND NEW CROSSBRED WHEAT OF SLOVAK ORIGIN. **Zuzana Mašková, Dana Tančinová, Zuzana Barboráková, Soňa Felšöciová, Miroslava Cíсарová**, Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Sciences, Department of Microbiology, Nitra, Slovak Republic
65. DETERMINATION OF PROTEINS IN YOGHURT. **Lenka Ruprichová, Michaela Dračková, Ivana Borkovcová, Lenka Vorlová**, University of Veterinary and Pharmaceutical Sciences Brno, Faculty of Veterinary Hygiene and Ecology, Department of Milk Hygiene and Technology, Brno, Czech Republic
66. DETECTION OF TETRACYCLINE RESISTANCE GENES IN *ESCHERICHIA COLI* FROM RAW COW'S MILK. **Alena Skočková, Šárka Cupáková, Renata Karpíšková, Bohumíra Janštová**, University of Veterinary and Pharmaceutical Sciences, Department of Milk Hygiene and Technology, Brno, Czech Republic
67. HEAVY METALS IN MIDDLE NITRA RIVERSIDE. **Radovan Stanovič, Július Árvay, Alena Vollmannová, Silvia Čéryová**, Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Sciences, Department of Chemistry, Nitra, Slovak Republic

68. THE OCCURRENCE OF MICROMYCETES IN THE BREAD SAMPLES AND THEIR POTENTIAL ABILITY PRODUCE MYCOTOXINS. **Dana Tančinová¹, Zuzana Barboráková¹, Zuzana Mašková¹, Miroslava Císarová¹, Tatiana Bojňanská²**, ¹Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Sciences, Department of Microbiology, Nitra, Slovak Republic, ²Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Sciences, Department of Storing and Processing Plant Products, Nitra, Slovak Republic
69. HEAVY METALS IN PRODUCTIVE PARTS OF AGRICULTURAL PLANTS. **Ján Tomáš¹, Július Árvay¹, Tomáš Tóth^{1,2}**, ¹Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Sciences, Department of Chemistry, Nitra, Slovak Republic, ²Institute of Chemistry, Center of excellence for white-green biotechnology, Slovak Academy of Sciences, Nitra, Slovak Republic
70. IMPACT OF BIOSLUDGE APPLICATION ON HEAVY METALS CONTENT IN SUNFLOWER. **Tomáš Tóth^{1,2}, Ján Tomáš¹, Peter Lazor¹, Daniel Bajčan¹, Alena Vollmannová¹, Janette Musilová¹, Judita Bystrická¹, Marek Slávik¹, Juraj Tóth¹**, ¹Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Sciences, Department of Chemistry, Nitra, Slovak Republic, ²Institute of Chemistry, Center of excellence for white-green biotechnology, Slovak Academy of Sciences, Nitra, Slovak Republic
71. CADMIUM, LEAD AND MERCURY CONTENTS IN FISHES – CASE STUDY **Tomáš Tóth^{1,2}, Jaroslav Andrej³, Juraj Tóth¹, Marek Slávik¹, Július Árvay¹, Radovan Stanovič¹**, ¹Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Sciences, Department of Chemistry, Nitra, Slovak Republic, ²Institute of Chemistry, Center of excellence for white-green biotechnology, Slovak Academy of Sciences, Nitra, Slovak Republic, ³Slovak University of Agriculture in Nitra, Faculty of Agrobiolgy and Food Resources, Department of Poultry Science and Small Farm Animals, Nitra, Slovak Republic
72. THE POSSIBILITIES OF DETECTION OF PUTRESCINE PRODUCTION IN GRAM-NEGATIVE BACTERIA – A KICK-OFF STUDY. **Leona Wunderlichová¹, Leona Buňková², Marek Koutný¹, František Buňka³**, ¹Tomas Bata University in Zlín, Faculty of Technology, Department of Environmental Protection Engineering, Zlín, Czech Republic, ²Tomas Bata University in Zlín, Faculty of Technology, Department of Fat, Tenside and Cosmetics Technology, Zlín, Czech Republic, ³Tomas Bata University in Zlín, Faculty of Technology, Department of Food Technology and Microbiology, Zlín, Czech Republic
73. CAMPYLOBACTERIOSIS: IMPORTANCE OF STRENGTHENING SURVEILLANCE AND REPORTED FOODBORNE DISEASE CONTROL WITHIN EUROPEAN UNION. **Lucia Zelenáková¹, Jana Žiarovská², Dagmar Kozelová¹, Ladislav Mura³, Ľubomír Lopašovský¹, Alica Bobková¹, Peter Zajác¹, Jozef Čapla¹, Katarína Tináková⁴**, ¹Slovak University of Agriculture in Nitra, Faculty of Biotechnology and Food Sciences, Department of Food Hygiene and Safety, Nitra, Slovak Republic, ²Slovak University of Agriculture in Nitra, Faculty of Agrobiolgy and Food Resources, Department of Genetics and Plant Breeding, Nitra, Slovak Republic, ³Institute of Technology, Dubnica nad Váhom, Slovak republic, ⁴The regional Public Health Authority, Nitra, Slovak Republic