



*International Scientific Symposium
“Young researchers and scientific research in life sciences”
for bachelor, master and Ph.D. students*



*Section: “Young researchers in food
engineering”*

22nd of November 2018





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General Programme

Thursday, November 22, 2018

08³⁰ – 09³⁰

Registration at the Aula "Iulian Drăcea"

*Banat's University of Agricultural Sciences and Veterinary Medicine
"King Michael I of Romania" from Timișoara*

09³⁰ – 09³⁵

Opening of the Symposium

09⁴⁰ – 10⁰⁰

Plenary Lecture PL₁

10⁰⁰ – 10⁴⁰

Plenary Lecture PL₂

10⁴⁰ – 11⁰⁰

Plenary Lecture PL₃

11⁰⁰ – 13⁰⁰

Doctor Honoris Causa Award

Aula "Iulian Drăcea"

*Banat's University of Agricultural Sciences and Veterinary Medicine
"King Michael I of Romania" from Timișoara*

13³⁰ – 14⁰⁰

Lunch

RESTAURANT

*Banat's University of Agricultural Sciences and Veterinary Medicine
"King Michael I of Romania" from Timișoara*

14⁰⁰ – 14³⁰

Registration at the Faculty of Food Processing

14³⁰ – 14⁴⁵

Opening of the Symposium section

14⁴⁵ – 15⁰⁰

Oral Communication OC₁

15⁰⁰ – 15¹⁵

Oral Communication OC₂

15¹⁵ – 15³⁰

Oral Communication OC₃

15³⁰ – 15⁴⁵

Oral Communication OC₄

15⁴⁵ – 16¹⁵

Coffee break

16¹⁵ – 16³⁰

Oral Communication OC₅

16³⁰ – 16⁴⁵

Oral Communication OC₆

16⁴⁵ – 17⁰⁰

Oral Communication OC₇

17⁰⁰ – 17¹⁵

Oral Communication OC₈

17¹⁵ – 17³⁰

Oral Communication OC₉

17³⁰ – 18⁰⁰

Concluding Remarks and Coffee break

*„Emeritus Prof. Ionel Jianu” Amphitheatre - Faculty of Food Processing
Banat's University of Agricultural Sciences and Veterinary Medicine
"King Michael I of Romania" from Timișoara*

18⁰⁰ – 19⁰⁰

Dinner

RESTAURANT

*Banat's University of Agricultural Sciences and Veterinary Medicine
"King Michael I of Romania" from Timișoara*

19⁰⁰

Movie presentation - "România neîmblânzită"



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8³⁰ – Reception of the participants, Rector's Hall

9³⁰ – Opening of the Symposium, Aula Magna

9³⁵ – Opening speech

9⁴⁰ – **Filip Sima** - The effect of a new mixture of natural antimicrobials on *Campylobacter sp.* and *Cryptosporidium sp.* virulence *in vitro* and *in vivo* - Agri-Food and Biosciences Institute, Belfast, Northern Ireland

10⁰⁰ – **Svetlana Zhursinbekovna** Yerekeyeva, Nadezhda Gennad`evna Gemejiyeva, Ioana Mihaela Balan – *Northern Tien Shan medicinal herbs* – Kazakh National Agrarian University, Agrobiology, Ecology

10²⁰ – **Tiana Suici**, Mirela Imre, Narcisa Mederle, C. Sîrbu, S. Morariu - *ANINE ATOPIC DERMATITIS OVERVIEW- Treatment and diagnosis- what is old and what is new* – USAMVB Timisoara

11⁰⁰ – Doctor Honoris Causa Award – **Mr. Nicolae Corcionivoschi** – Agri-Food and Biosciences Institute, Belfast, Northern Ireland

13⁰⁰ – Lunch, USAMVBT Restaurant

14⁰⁰ – Presentation of the research papers on sections

18⁰⁰ – Dinner, USAMVBT Restaurant

19⁰⁰ – Movie presentation - "România neîmblânzită"



Section: "Young researchers in food engineering"

**"Emeritus Prof. Ionel Jianu" Amphitheatre- Faculty of Food Processing
Banat's University of Agricultural Sciences and Veterinary Medicine
"King Michael I of Romania" from Timișoara**

Chaired by: Prof. Assoc. Dr. Despina Maria Bordean

- 14⁰⁰–14³⁰** Registration at the Faculty of Food Processing
*"Emeritus Prof. Ionel Jianu" Amphitheatre- Faculty of Food Processing
Banat's University of Agricultural Sciences and Veterinary Medicine
"King Michael I of Romania" from Timișoara*
- 14³⁰–14⁴⁵** Opening of the Symposium section
Adrian Riviș
*Dean of the Faculty of Food Processing Banat's University of Agricultural
Sciences and Veterinary Medicine "King Michael I of Romania" from Timișoara*
- 14⁴⁵–15⁰⁰** **OC1:** Studies on the antioxidant activity of hydroalcoholic extracts from the
aerial parts of some species belonging to *Malvaceae* and *Polygonaceae* botanical
families
Simelda E. Zippenfening, Gabriela Sicoe, Ioan David, Anamaria Guran,
Nicoleta G. Hădărugă
*Faculty of Food Processing Technology, Banat's University of Agricultural
Sciences and Veterinary Medicine „King Michael I of Romania” from
Timisoara, Romania*
- 15⁰⁰–15¹⁵** **OC2:** Drying methods of pumpkin (*Curcubita maxima* L.) - an overview on the
physical chemical properties
Christine Lucan (Banciu), Carla Barbosa, Susanna Rocha, Tamara Vlăduțescu,
Nicoleta G. Hădărugă
*Faculty of Technology and Management, Polytechnic Institute of Viana do
Castelo, Portugal*
- 15¹⁵–15³⁰** **OC3:** Antioxidant activity of *Punica granatum* L. extracts
Gabriela Sicoe, Ciprian Mocanu, Ionela Puiu, Giulia Mădălina Golea, Adrian
Riviș, Nicoleta G. Hădărugă
*Faculty of Food Processing Technology, Banat's University of Agricultural
Sciences and Veterinary Medicine „King Michael I of Romania” from
Timisoara, Romania*



- 15³⁰–15⁴⁵** **OC4:**Water determination of some confectionery products by volumetric Karl Fischer titration
Marius D. Simandi, Iulia Gălan, Adrian Riviş, Nicoleta G. Hădărugă
Faculty of Food Processing Technology, Banat's University of Agricultural Sciences and Veterinary Medicine „King Michael I of Romania” from Timisoara, Romania
- 15⁴⁵–16¹⁵** **Coffee break**
- 16¹⁵–16³⁰** **OC5:**Obtaining and characterization of varieties of vegetable stew with salmon
Emanuela Bianca Han, Claudia Oprinescu, Ioana Simina Varan, Camelia Moldovan, Viorica Mirela Popa
Faculty of Food Processing Technology, Banat's University of Agricultural Sciences and Veterinary Medicine „King Michael I of Romania” from Timisoara, Romania
- 16³⁰–16⁴⁵** **OC6:** Obtaining and characterisation of some chamomile soft drink
Paula Meilă, Larisa Mihaela Miulescu, Nataşa Adelina Mărăcine, Viorica Mirela Popa, Camelia Moldovan
Faculty of Food Processing Technology, Banat's University of Agricultural Sciences and Veterinary Medicine „King Michael I of Romania” from Timisoara, Romania
- 16³⁰–16⁴⁵** **OC7:** Moisture content as a marker for fruits, nut fruits and vegetables fingerprint
P.M. Petridean, D.L. Ilioni, D.C. Mara, M.M. Marean, D.M. Bordean
Faculty of Food Processing Technology, Banat's University of Agricultural Sciences and Veterinary Medicine „King Michael I of Romania” from Timisoara, Romania
- 16⁴⁵–17⁰⁰** **OC8:** Thermogravimetry and differential scanning calorimetry of β -cyclodextrin / *Carassius gibelio* Bloch oil complexes
Raymond Nandy Szakal, Cristina Mitroi (Birău), Cosmina Chirilă, Nicoleta G. Hădărugă
Faculty of Food Processing Technology, Banat's University of Agricultural Sciences and Veterinary Medicine „King Michael I of Romania” from Timisoara, Romania
- 17⁰⁰–17¹⁵** **OC9:** Cow's cheese as mineralizing food
A. M Ivana, **M. Adamescu**, L. Radu, L.M. Alda
Faculty of Food Processing Technology, Banat's University of Agricultural Sciences and Veterinary Medicine „King Michael I of Romania” from Timisoara, Romania
- 17¹⁵–18⁰⁰** **Coffee break and posters**



Posters

- P1** Market research and consumption of organic food in Romania and worldwide
G.N. Țuțuc, Viorica Mirela Popa, Camelia Moldovan
Faculty of Food Processing Technology, Banat's University of Agricultural Sciences and Veterinary Medicine „King Michael I of Romania” from Timisoara, Romania
- P2** Obtaining and evaluating the quality characteristics of a sweet and sour-flavored vegetable sauce
Ioana Simina Varan, Emanuela Bianca Han, Viorica Mirela Popa, Camelia Moldovan
Faculty of Food Processing Technology, Banat's University of Agricultural Sciences and Veterinary Medicine „King Michael I of Romania” from Timisoara, Romania
- P3** Obtaining meat specialties in seed crusts
Ana-Maria Lioara Tripon, Corina Dana Mișcă
Faculty of Food Processing Technology, Banat's University of Agricultural Sciences and Veterinary Medicine „King Michael I of Romania” from Timisoara, Romania
- P4** Benefits of using almond flour to obtain pastries
Andreea Bianca Căluțoiu, Corina Dana Mișcă
Faculty of Food Processing Technology, Banat's University of Agricultural Sciences and Veterinary Medicine „King Michael I of Romania” from Timisoara, Romania
- P5** Characterization of a food supplement
L. M. Juravle, A. Rinovetz
Faculty of Food Processing Technology, Banat's University of Agricultural Sciences and Veterinary Medicine „King Michael I of Romania” from Timisoara, Romania
- P6** Optimum use of the elderberry fruits and the microbiological evaluation of finished product
Denisa Ramona Negomireanu, Corina Dana Mișcă
Faculty of Food Processing Technology, Banat's University of Agricultural Sciences and Veterinary Medicine „King Michael I of Romania” from Timisoara, Romania
- P7** Antioxidant activity of some rhubarb (*Rheum rhabarbarum*) and strawberries (*Fragaria ananassa*) jam varieties
G.P. Magda, A.L. Bogdan, A. Samfirescu, C. Moldovan, D.G. Dumbravă
Faculty of Food Processing Technology, Banat's University of Agricultural Sciences and Veterinary Medicine „King Michael I of Romania” from Timisoara, Romania



- P8** Assessment of total polyphenol content and antioxidant capacity of some pepper varieties

A.G. Parnea, R. Tulpan, I.D. Vasiliu, C. Moldovan, D.G. Dumbravă

Faculty of Food Processing Technology, Banat's University of Agricultural Sciences and Veterinary Medicine „King Michael I of Romania” from Timisoara, Romania

- P9** Raw vegan dessert - evaluation of microbiological parameters

Ioana Alina Pop, Corina Dana Mișcă

Faculty of Food Processing Technology, Banat's University of Agricultural Sciences and Veterinary Medicine „King Michael I of Romania” from Timisoara, Romania

- P10** Preliminary aspects regarding the antioxidant capacity of some unconventional plants

Boutayna Benabdeljalil, Diana Veronica Dogaru, Mariana Atena Poiană, T.I. Trașcă

Faculty of Food Processing Technology, Banat's University of Agricultural Sciences and Veterinary Medicine „King Michael I of Romania” from Timisoara, Romania

18⁰⁰–19⁰⁰ **Dinner** - „Restaurant USAMVBT”

18⁰⁰–19⁰⁰ Movie presentation - ”**România neîmblânzită**”



OC1

Studies on the antioxidant activity of hydroalcoholic extracts from the aerial parts of some species belonging to *Malvaceae* and *Polygonaceae* botanical families

Simelda E. Zippenfening¹, Gabriela Sicoe^{1,2}, Ioan David^{1*}, Anamaria Guran¹, Nicoleta G. Hădărugă¹

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Leaves from various plants and trees are generally rich in compounds having antioxidant properties such as flavonoids (e.g., kaempferol), flavonoid glycosides (e.g., quercitrin) and even anthraquinone like rhein. They are found also in some traditional leaves used in Romanian cuisine such as those belonging to *Malvaceae* or *Polygonaceae* botanical families.

The main goal of the study was to evaluate the antioxidant activity of hydroalcoholic extracts from leaves belonging to *Malvaceae* or *Polygonaceae* botanical families using DPPH· method (2,2-diphenyl-1-picryl-hydrazyl). Ethanol-water mixtures at various concentrations and water were used for antioxidant compounds extraction. The DPPH· reacts with these compounds and the overall reaction can be spectrophotometrically monitored at 517 nm for five minutes. The DPPH· reaction rates can also be determined using the absorbance variation. The variation of the absorbance for the foliage extracts clearly differs from those for the nervure extracts. The antioxidant activity was significant after 20 s of monitoring, having values between 32.8-82.4%. On the other hand, the DPPH· reaction rates varies in a narrow range of 0.1-0.5 $\mu\text{M/s}$ for the first time range up to 80 s. Both antioxidant activity and the corresponding reaction rates reveal the applicability of these raw materials for obtaining less or even non-processed food products.

Keywords: antioxidant activity, hydroalcoholic extracts, *Malvaceae* and *Polygonaceae* botanical families



OC2

Drying methods of pumpkin (*Curcubita maxima* L.) - an overview on the physical chemical properties

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²Faculty of Technology and Management, Polytechnic Institute of Viana do Castelo, Portugal

Pumpkins (*Curcubita maxima* L.) are valuable vegetable, being rich in vitamins, antioxidants and carotenoids. Drying processes can influence the quality of the final products due to the degradation of some of these biologically active compounds.

The goal of the study was to evaluate the degradation level of the biologically active compounds from pumpkin during drying by various methods. Freeze-drying in vacuum was the main drying method that preserves the original content and/or ratios of these biologically active compounds. The overall antioxidant activity varies in a range of 360-860 g dw/g DPPH·, while the carotenoid and total phenolic contents were determined in the ranges of 300-800 µg/g dw and 2.2-3.2 mg GA/g dw for storage at room temperature. Better results were obtained for frozen samples.

Keywords: Freeze-drying, pumpkin, *Curcubita maxima* L.,



OC3

Antioxidant activity of *Punica granatum* L. extracts

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The research paper presents a study on the antioxidant activity of *Punica granatum* L. extracted from fresh fruits marketed in the West of Romania. The fresh juice, as well as the alcoholic extracts from pomegranate core, inner and external shell, or seeds were evaluated for their actual antioxidant activity using 2,2-diphenyl-1-picryl-hydrazyl method (DPPH[•] method). The mixture containing pomegranate extract and DPPH[•] solution (at a concentration of 1 mM) in ethanol was spectrophotometrically monitored at 517 nm for 15 minutes. The variation of the absorbance against a control allows to evaluate the antioxidant activity as percentage (AO, %). Moreover, the variation of the DPPH[•] concentration in time, in the presence of the *P. granatum* extracts allows to evaluate the mean reaction rates on some pseudolinear time ranges. Important antioxidant activity up to 1 ½ minutes of 47-55% was observed for red and white shell extracts as well as for the pomegranate core extracts, all diluted to 1:50 and 1:100. On the other hand, significant DPPH[•] reaction rates of 2.8-3 μM/s was determined for the same extracts for the first time range. These results suggest the use of these pomegranate parts for their valuable antioxidant activity properties in various fields related to human health.

Keywords: Antioxidant activity, *Punica granatum* L., extracts, DPPH[•] method



OC4

Water determination of some confectionery products by volumetric Karl Fischer titration

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The moisture of raw materials and final products from the confectionery field is one of the most important parameter for the final quality, stability and shelf life of these food products. The determination of the water content can be done by various methods such as drying methods, chemical methods, etc. Karl Fischer titration (KFT) is one of the most sensitive method for water determination in various food products, being selective for water and applicable for a wide range of water content.

The aim of this study was to evaluate the water content of some confectionery products and the corresponding raw materials using volumetric bi-component Karl Fischer water titration technique. Cream, chocolate, glaze and other raw materials have been used for this reason. A KF 701 Titrino with 10 mL dosing system and 703 Ti Stand stirring system have been used. Titration parameters were: polarization current, I (pol), 50 μA , electrical voltage 250 mV, stop criterion "slope", gradient value 25 $\mu\text{L}/\text{min}$, extraction time 300 s, sample mass 0.1-0.2 g, and titration temperature 25 °C. The water content varies in a narrow range of 0.5-3.2%, with a minimum values for glaze and maximum water content for cream with cocoa or rum. Moreover, the type of water molecules bonding into the food matrices are relatively similar, according to the KFT water reaction rates of close values for almost all extraction time (11-60 $\mu\text{M}/\text{s}$), excepting the dark glaze with values of 6-13 $\mu\text{M}/\text{s}$.

Keywords: Water, volumetric Karl Fischer titration, food products



OC5

Obtaining and characterization of varieties of vegetable stew with salmon

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The aim of this paper was to obtain some kinds of vegetable stew with salmon and to characterise them by sensorial and physico-chemical point of view. Three recipes of vegetable stew with different percent of salmon were made, which were tested by sensorial parameters (appearance, colour, smell and taste). The most appreciated version was the one with 50% salmon. All of these vegetable stew versions with salmon were analyzed physico-chemical, following: acidity, salt content and antioxidant capacity. Our results show that acidity values are directly correlated with salmon percent. The salt content was in range of 0.35-0.4%. The best antioxidant activity was found in the variant 1 (with 20% salmon) – 57.105 mg TE/g and the worst was found in variant 3 (with 50% salmon) - 36.213 mg TE/g.

Keywords: vegetable stew, salmon, antioxidant capacity, salt, acidity



OC6

Obtaining and characterisation of some *Chamomile* soft drink

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In this paper is presented a chamomile soft drink with different sweeteners: white sugar, brown sugar, honey and *Stevia rebaudiana* leaves. These soft drinks were prepared by chamomile plant fermentation in the presence of beer yeast, in the same way elderflower soft drink being obtained, whose popularity is growing in Europe. After the recipe optimization, chamomile soft drink was analyzed in laboratory following acidity, sugar content, antioxidant capacity. Our results show the best antioxidant activity in the samples with brown sugar and honey (1.2086 mg TE/g, respectively 0.9643 mg TE/g). The titratable acidity values were in range of 0.21-0.48 acidity degrees. The highest sugar content was found in samples with white sugar 44 Brix, and the lowest in the sample with honey 35 Brix.

Keywords: *chamomile*, soft drink, sugar content, antioxidant activity, acidity



OC7

Moisture content as a marker for fruits, nut fruits and vegetables fingerprint

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Fruits and vegetables are important for the diet, because of the high nutritional value, varied colors, flavors and textures that they contribute with. Dehydration or drying of food using thermo-balance is a method that involves the removal of moisture in the presence of temperature. Fingerprinting is a technique widely used for quality control and differentiation of food products. Therefore, thermogravimetric and statistical analysis were employed to reveal the variation of dehydration profiles of the studied samples. Based on the obtained results walnuts might be used with any of the studied products while carrot pulp is recommended to be used with chestnuts.

Keywords: quince, carrot, walnut, chestnut, dehydration curves



OC8

Thermogravimetry and differential scanning calorimetry of β -cyclodextrin / *Carassius gibelio* Bloch oil complexes

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Danube fish oils are less studied from the omega-3 fatty acid content point of view. On the other hand, the presence of a higher content of mono- and polyunsaturated fatty acid glycerides in such fish oils provide omega-3 based food sources having poor thermal and oxidative stability.

The goal of the study was to evaluate the lipid profile of Prussian carp (*Carassius gibelio* Bloch, 1782) oil from Danube River and the efficiency of nanoencapsulation of the contained glycerides by natural β -cyclodextrin (β -CD) using thermal methods. Prussian carp oil were separated by boiling-pressing method from muscle and analyzed by gas chromatography-mass spectrometry (GC-MS) after derivatization to the corresponding fatty acid methyl esters (FAMES). This fish oil have been complexed with β -cyclodextrin (β -CD) at various molar ratios using kneading method. Complexes were analyzed thermogravimetry-differential thermogravimetry (TG-DTG) and differential scanning calorimetry (DSC). Monounsaturated fatty acids (MUFAs) were the most concentrated in the derivatized Prussian carp oil, as was revealed by GC-MS analysis. Oleic and palmitoleic acids (as methyl esters) had concentrations of 17.6 and 8.8% in fish oil. Polyunsaturated fatty acids (PUFAs), especially EPA and DHA, the valuable omega-3 FAs, were less abundant (0.4 and 0.2%, respectively). Other PUFAs were linoleic and arachidonic (omega-3) acids, with concentrations of 5.4 and 0.5%, respectively. The main saturated fatty acids (SFAs) were myristic, palmitic and stearic acids, which were identified at concentrations of 4.4, 16.2 and 4.1 %. A significant decrease of the moisture content of β -CD/Prussian carp oil complexes in comparison with the β -CD was observed by means of TG-DTG analysis. The DSC endothermal effects corresponding to the dissociation of “surface” and “strongly retained” water in complexes appears up to ~83 °C and 97-116 °C, respectively (~110 °C for β -CD, without differentiation). β -Cyclodextrin nanoencapsulation of Prussian carp oil was the first attempt to protect and stabilizes the thermally and oxidative labile compounds from this fish living in Danube River

Keywords: Danube fish oils, *Carassius gibelio* Bloch., β -cyclodextrin



OC9

Cow's cheese as mineralizing food

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The paper presents the results obtained in the determination of essential minerals from cow's cheese and the estimation of the mineral intake of this food in the recommended daily diet. The total concentrations of K, Ca, Mg, Zn, Fe, Cu and Mn from cow cheese samples from the Banat - Romania area were determined by atomic spectrometry. Average concentrations of the cheese samples analyzed elements: 4650 ± 305 mg/kg Ca, 425 ± 29.4 mg/kg Mg, 1220 ± 131 mg/kg K, 8.72 ± 1.2 mg/kg Fe, 21.0 ± 3.14 mg/kg Zn, 0.87 ± 0.25 mg/kg Cu and 1.08 ± 0.28 mg/kg Mn allowed the calculation of the coverage of the zinc mineral required for 100 grams consumption of this food. Under the present experiment, a daily consumption of 100 g of cow cheese can provide: 46.50 % of the Ca requirement, 3.30 % of the K requirement, 10.63 % of the Mg requirement, 19.09 % of the Zn requirement, 10.90 % of the Fe requirement, 9.67 % of the Cu requirement and 2.70% of the Mn requirement for men, respectively 46.50 % of the Ca requirement, 3.30 % of the K requirement, 13.28 % of the Mg requirement, 26.25 % of the Zn requirement, 4.84 % of the Fe requirement, 9.67 % of the Cu requirement and 3.44% of the Mn requirement for women. Under these conditions, it can be argued that the assortment of cheese taken in the experiment can be considered as an additional source of Ca and Zn, but also of Mg, Cu and Fe, for both genders.

Keywords: essential elements, cow's cheese, mineral intake.



P1

Market research and consumption of organic food in Romania and worldwide

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According to a american study, by 2020, global demand for organic food products will reach \$ 211.44 billion, analysts say. In 2015, the North American organic food market was valued at over \$ 38 billion and accounted for nearly 35% of global sales. The global organic product market is estimated at around \$ 70 billion in 2012. The United States ranks first in organic commerce with annual sales of \$ 30 billion, followed by Germany by \$ 9.2 billion and France by \$ 5.2 billion. Basically, world trade in organic products is dominated by 65% of three countries. This is also due to the large population of the two continents and the above average purchasing power of its inhabitants.

Romania has a relatively new history on the organic product market, but the growth of operators enrolled in the system is spectacular. Their number increased from 2000 operators in 2008 to almost 26,000 in 2012, this being possible thanks to subsidies granted by the Romanian state. Most manufacturers export their raw material production due to lack of processing points.

This paper addresses theoretical concepts and comparative analyzes of the evolution of the organic product market, relevant data of the economic efficiency of the ecological production and the long-term marketing strategies in this branch of commercial activity

The Romanian market for organic products is well below the European average due to the lack of processors. For this reason, the consumption of organic products represents in Romania less than 1% of the total food, while in the western part of Europe the average is 3-5%.

Keywords: organic food, consumption, market, export



P2

Obtaining and evaluating the quality characteristics of a sweet and sour-flavored vegetable sauce

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The purpose of this paper was to design and develop under laboratory conditions a sweet-sour sauce made from vegetables and fruits and its qualitative, organoleptic and nutritional evaluation.

The vegetables and fruits used to make the sauce were: carrots, tomatoes, peppers, pomegranates and pineapple. Technological flow has added ingredients and spices that have optimized the product so obtained from a qualitative and therapeutic point of view. Ingredients used were: onion, garlic, bay leaves, salt, pepper.

In the present paper were analyzed the organoleptic properties of both the ingredients and the sweet-sour sauce obtained, the physico-chemical characteristics of the vegetables, fruit and sauce were evaluated: antioxidant capacity, content of polyphenols, salt, sugar, acidity, moisture and pH.

Keywords: vegetables, fruits, sweet and sour-flavored vegetable sauce, antioxidant capacity, content of polyphenols, salt, sugar, acidity, moisture, pH



P3

Obtaining meat specialties in seed crusts

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The present study is designed to determine the microbiological load of a thermally prepared meat product - turkey roll with mint and cashew nuts.

The motivation of choosing this theme, would be that it's a subject very important for our health, because eating has a very important role in life. The meat industry is increasing in a great and continuous development, nowadays it has a wide range of technological possibilities to harness certain types of meat, but also by the evolution of techniques that contributes to the quality of the finished product offered to the consumer.

Statistics show an increasing percentage of the world's population who chooses to consume meat as a basic food, so nutritionists urge us to consume 25 grams of animal fat daily and 150 grams of meat. Nutritionists and dieticians claim that from all kinds of meat, the turkey contains the lowest amount of cholesterol. Among the first foods in the healthy food recommendation list is turkey meat, which is a rich source of protein, vitamin B and zinc, and has a low fat content.

In order to manufacture any type of food product, the hygiene conditions must be observed throughout the manufacturing process in order not to risk contamination of the product. This is very important and must be respected. Thus, the microbiological parameters that have been determined in this product are: the total number of coliform germs and the total number of germs belonging to the *Staphylococcus aureus* species. The microbiological exam provides useful information about the quality and sanitation of the analyzed product.

Keywords: meat, turkey, mint, cashew, coliforms, *E.coli*, *Staphylococcus aureus*.



P4

Benefits of using almond flour to obtain pastries

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This paper is the result of our attempt to get an innovative product with flavour and nutritional properties very appreciated by the evaluators and at the same time salubrious and safe for the consumer. Therefore, we obtained the muffins with almond flour stuffed with plum jam. We modified the standard technological scheme to obtain the muffins, replacing some raw materials with other ones, which we considered to be useful in order to increase the value of the finished product. We determined, at the same time, the microbiological parameters indicated by the legislation in force for the subjects of raw materials and for the end product, this being an obligation imposed by the law, to be able to sample the wholesomeness of food products and represents the criteria required to demonstrate an interest in the safety and health of the consumer. All the microbiological evaluations were done in accordance with the legislative standards in force, for each microbiological parameters evaluated: total coliforms, *Bacillus cereus*, *Staphylococcus aureus*, fungus.

Keywords: muffin, plum jam, coliforms, *Bacillus cereus*, *Staphylococcus aureus*, fungi.



P₅

Characterization of a food supplement

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Evaluation of structural and functional changes associated with everyday's stress has generated the appearance of *food-drug (nutraceuticals/foods supplements)*, with target functions, to compensate for the *prophylaxis/therapy of synthetic drugs*. The present study brings within discussion obtaining under *rustic* conditions, of the *fir tree syrup* from *Obcinele Bucovinei*, as a *food supplement* (considered *nutraceuticals*), administered in the case of respiratory diseases. Following the study of literature, supported by field studies, we developed a flow chart diagram of operations, including the *fortification* (by the *incorporation of some spices*), of *fir-tree syrup*. The determination of some quality indicators (vitamin C, Brix°, water, polyphenols), on the resulting products, highlights the increasing antioxidant and antimicrobial activity with increased health benefits.

Keywords: nutraceuticals, foods supplements, fir tree syrup, spices, quality indicators, health benefits



P6

Optimum use of the elderberry fruits and the microbiological evaluation of finished product

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This paper aims to highlight the health benefits of elderberry fruit consumption, recommending their use in the food industry in terms of beneficial elements held and at the same time, to perform the microbiological analysis of the jam obtained from the elderberry fruit. Verified microbiological parameters are coliform bacteria and fungal load.

Particular importance has been given to the technological process of obtaining the jam, the role of the raw materials and other ingredients that give the consistency, appearance and flavour of the finished product and to the same degree, their physico-chemical and microbiological characteristics and their contribution to the improvement of the technological processes, with the purpose to avoid the alteration of future food products. The technological flow highlights the main operations required for the production of quality products in terms of taste, physico-chemical and microbiological, characteristics that contribute to the obtaining of clean and safe products for the consumer.

The physicochemical and microbiological methods used are congruent with the current legislation, and the results obtained are referenced to the product quality standards.

Conclusions from our assessments have highlighted organoleptic quality products, clean and safe for human consumption, with nutritional and taste properties that recommend them for industrial propagation.

Keywords: elderberry fruits, jam, coliforms, *E. coli*, fungi.



P7

Antioxidant activity of some rhubarb (*Rheum rhabarbarum*) and strawberries (*Fragaria ananassa*) jam varieties

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The purpose of this paper is to analyze in terms of antioxidant activity, vitamin C content and polyphenols, two varieties of rhubarb and strawberry jam, obtained in the laboratory: one with white sugar from sugar beet and one with raw sugar from sugar cane. Of the raw and auxiliary materials used, strawberries had the highest antioxidant activity (11.82 mg Trolox/g), followed by lemon juice (9.46 mg Trolox/g). White sugar did not show an antioxidant activity, whereas raw sugar had a value of 4.52 mg Trolox/g. Of the two types of jam obtained, the one with raw sugar had the strongest antioxidant activity (18.23 mg Trolox/g). As for the content of ascorbic acid and total polyphenols, the jam obtained with raw sugar had a higher concentration (21.82 mg ascorbic acid/100g, respectively 6.14 mg gallic acid/g)) than that obtained with white sugar (14.27 mg ascorbic acid/100g, respectively 5.35 mg gallic acid/g).

Keywords: rhubarb, jam, antioxidant activity, vitamin C, polyphenols



P8

Assessment of total polyphenol content and antioxidant capacity of some pepper varieties

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This paper aims to analyze the content in total polyphenols (by Folin- Ciocâlțeu method), ascorbic acid content (iodometric method) and the antioxidant activity (by CUPRAC assay) of some pepper varieties from the Romanian local market: “Pintea” (red hot pepper), “Yanka F1” (yellow hot pepper), “Impala F1” (green hot pepper), “Punto F1” (red bell pepper), “Valira” (kapia red pepper) and “Vlad” (red fibster). The highest vitamin C content was recorded in kapia red pepper “Valira” (161.23 mg/100g fresh weight), then in red fibster “Vlad” (125.27 mg/100g fresh weight). The highest concentration of total polyphenols was found in sweet pepper varieties (2.17 mg gallic acid/g – for green hot pepper “Impala F1”, 1.92 mg gallic acid/g - for yellow hot pepper “Yanka F1” and 1.84 mg gallic acid/g – for red hot pepper “Pintea”). The best antioxidant activity was manifested by green hot pepper “Impala F1” (12.80 mg Trolox/g fresh weight).

Keywords: pepper, fibster, antioxidant activity, polyphenols.



P₉

Raw vegan dessert - evaluation of microbiological parameters

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Every person loves sweets in one way or another, or at least that's what I learned in the years that I learned and studied in the baking industry. For this study, we will present something that nowadays is very often found in bakeries, and that is a raw-vegan dessert which is healthy and sugar-free and appeals to many people today because mankind is more and more attracted to the raw vegan lifestyle.

In the four years that I have studied at USAMVBT, I have learned just how important a healthy diet is, and that most of the products that are found on supermarket's shelves contain many additives and artificial extracts, which, if consumed during a long period of time, can produce serious health damage for consumers. Because of this, I was determined to present you with a product that is both delicious and healthy.

In the second year of college, one of the subjects I studied was microbiology. I liked it so much that I decided right then and there that my paper for my diploma would be based on this subject.

Microbiology is the study of microscopic organisms, such as bacteria, viruses, archaea, fungi and protozoa. This discipline includes fundamental research on the biochemistry, physiology, cell biology, ecology, evolution and clinical aspects of microorganisms, including the host response to these agents.

Thus, I followed two things I loved, baking and microbiology, added knowledge from the human nutrition field and a matter of actuality (a healthy lifestyle) and combined all of them in a paper that follows isolation of contaminating microorganisms from a baking product.

Keywords: raw vegan, coliforms, *E.coli*, *Salmonella*, *Staphylococcus aureus*, *Streptococcus faecalis*, fungi



P10

Preliminary aspects regarding the antioxidant capacity of some unconventional plants

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In the human body, oxidant–antioxidant imbalance impairs cell functions and immunity and promotes cell death and DNA damage, which can cause mutations and ultimately contribute towards the development of chronic diseases such as cancer, this is the most important reason why we are interested in this subject. Recently, there has been growing interest in research into the role of plant-derived antioxidants in food and human health. Antioxidant compounds in food play important roles as health-protecting factors. Antioxidants are also widely used as additives in fats and oils in food processing to prevent delay spoilage of foods. Spices and some herbs have received increased attention as sources of many effective antioxidants. This study focuses on the antioxidant properties of various vegetal species with food applications potential, such as unconventional plants (dandelion and stinging nettle), spice (saffron bulbs) and vegetables (artichoke).

Keywords: antioxidant activity, phenolic compounds, saffron corms, artichoke