TÜBİTAK

MAM

4th International Congress on Food and Nutrition

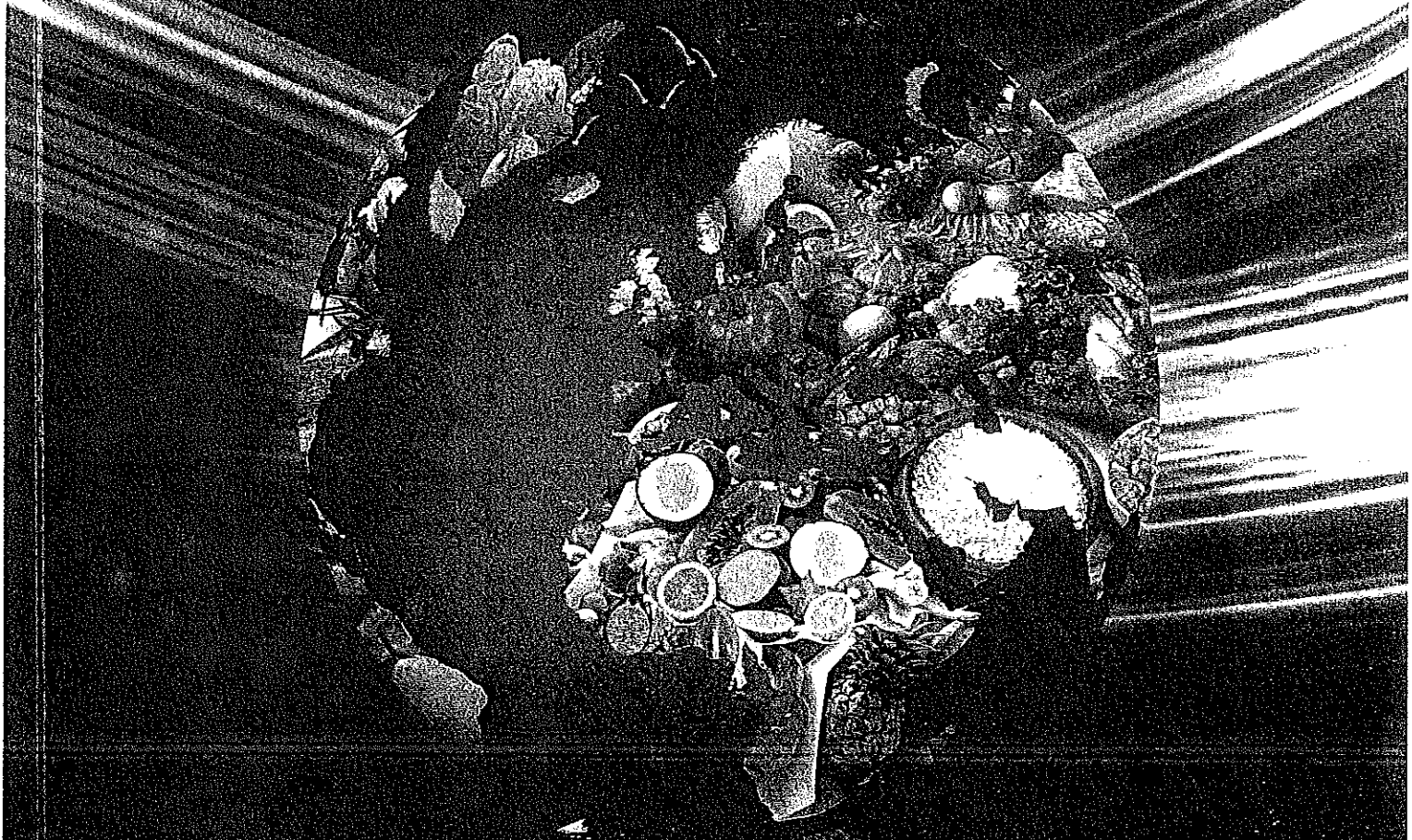
together with

the SAFE consortium

3rd SAFE Consortium International Congress on Food Safety

FP7 PARALLEL EVENTS:

- **MycoRed** - 2nd Mediterranean Workshop on Mycotoxins and Toxigenic Fungi
- **SAFETechnoPACK** - International Food Packaging Conference



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Abstract Book

MycoRed

SEVENTH FRAMEWORK

Safetechpack

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PREFACE

This abstract book was developed from the oral and poster presentations submitted to the 4th International Congress on Food and Nutrition, 3rd SAFE Consortium International Congress on Food Safety, MycoRed (2nd Mediterranean Workshop on Mycotoxins and Toxigenic Fungi), and SAFETechnoPACK (International Food Packaging Conference). For the compilation of this book, 145 oral (covering key-note speakers, plenary lecturers, session and workshop presenters) and 266 poster abstracts were used.

Coming from many different countries, researchers and experts who are recognized in their respective areas of interest provided a diverse and global perspective on the congress topics, contributed to this congress and, thereby, this abstract book.

Taking into account the gamut of the abstracts, the following topics were covered in details:

Food, Health and Well-being: Functional foods and beverages; Nutritional strategies in health and diseases; Factors affecting the quality of life; Phytochemicals and natural antioxidants; Nuts, dried fruits, and health benefits; Traditional and ethnic foods; Food safety, nutrition and health; and General nutrition.

Food Science and Technology: New approaches in food processing; New approaches for fermented foods and beverages; Food security, sustainability, and climate changes; Food residues, contaminants, and additives; Modelling in food processing; and General sessions.

Food Safey and Microbiology: Antibiotic resistance in food borne and commensal bacteria; Microbial pathogenesis, molecular aspects and host pathogen interactions; Food microbiology in food shelf life; Microbial behaviour in food spoilage; Novel preservation technologies and microbial resistance; New techniques in food microbiological analysis; and Microbial ecology of the food chain including gut ecology.

SAFETechnoPACK (Food Packaging and Preservation): Effects of packaging on food quality and shelf life; Safety of food contact materials; Active and intelligent packaging systems; Application of nanotechnology in food packaging; and Sustainability of food packaging materials.

MycoRed Workshop (Mycotoxins and Toxigenic Fungi): Mycotoxicological risks in Mediterranean countries; Regulations and economic impact of mycotoxin control; prevention, management and control of mycotoxins.

This abstract book will be a valuable source for those interested in the potential application of new developments in functional foods, nutrition, and health; food processing, technology, and innovation; food safety, quality, and regulations; and food packaging and preservation. Food scientists and technologists, nutritionists, biochemists/chemists, undergraduate and post-graduate students, working in academia, government laboratories, and industry will hopefully benefit from this publication.

Finally, we are grateful to the scientific board and the session chairs of the congress for their support and dedication. We are also indebted to the presenters for sharing their most recent findings with the participants. Our final appreciation goes to the organizing committee members who have worked hard and tirelessly to make the congress successful.

Assoc. Prof. Güner ÖZAY
(Congress Chair)

Harmen HOFSTRA
(Congress Co-Chair)

POSTER PRESENTATIONS

FOOD, HEALTH AND WELL-BEING

[P-001] **Characterization of grape seed oils from various grape varieties of South East Turkey**
İlknur Demirtaş, Ebru Pelvan, İncinur Hasbay, Banu Bahar, Ayşe Bakan, Sena Saklar Ayyildiz, Birdem Çetinkaya, Cesaretin Alaşalvar, Erdal Ertaş

[P-002] **Cheese production by adding iyophilized tomatoes**
İbrahim Başar Saydam, Oya Berkay Karaca[2], Mehmet Güven

[P-003] **Kinetics of lactose fermentation in milk by kombucha**
Katarina Gojko Kanuric;, Spasenija Danilo Milanovic, Marijana Djuro Caric, Mirela Dragoljub Ilicic, Vladimir Radovan Vukic, Marjan Ivan Ranogajec, Dajana Vukota Hrnejz

[P-004] **The influence of kombucha inoculated at different temperatures on fermented dairy product quality**
Spasenija Danilo Milanovic, Katarina Gojko Kanuric, Dajana Vukota Hrnjez, Marjan Ivan Ranogajec, Mirela Dragoljub Ilicic, Vladimir Radovan Vukic, Maja Ljubisa Milanovic

[P-005] **Antioxidant and functional properties of three beetroot pomace extracts**
Jelena Vulic, Jasna Canadanovic Brunet, Gordana Cetkovic, Sonja Djilas, Vesna Tumbas, Sladjana Savatovic

[P-006] **Characteristics of kombucha fermented milk products with stinging nettle**
Eva Loncar, Radomir Malbaša, Jasmina Vitas, Mirjana Djuric, Ljiljana Kolarov

[P-007] **Nutritional properties of enzyme resistant starch as a functional ingredient**
Müge Hendek Ertop, Didem Önay Derin

[P-008] **Honey which a functional food: composition of honey, its importance on human health and nutrition**
Didem Önay Derin, Müge Hendek Ertop

[P-009] **Human health effects of the caper plant**
Erman Duman, Mehmet Musa Özcan

[P-010] **DPPH activity and quality of milk-based kombucha beverages with peppermint and wild thyme**
Jasmina Vitas, Radomir Malbaša, Eva Loncar

[P-011] **Chemical compositions of okra *(Hibiscus esculenta* L.*)* seeds and skins**
Alev Akpınar Borazan, Caglayan Acikgoz, Nurgül Özbay

[P-012] **Yuvarlama**
Tahir Tekin Öztan, Ilkay Gök Pınarlı

[P-013] **Nutritional status of university students**
İlay Polat

[P-014] **A *Lactobacillus reuteri* selenium-enriched strain suitable as a new functional food**
Erika Mangiapane, Cristina Lamberti, Alessandro Pessione, Carlo Giunta, Enrica Pessione

[P-015] **Dough rheology of buckwheat enriched wholegrain wheat pasta**
Nataša Marko Nedeljkovic, Marijana Sakac, Djordje Psodorov, Anamarija Mandic, Dubravka Jambrec, Aleksandra

[P-016] **Instrumental and sensory evaluation of cookies supplemented with herbal mixture and extract**
Dubravka Josip Jambrec, Aleksandra Mišan, Marijana Sakac, Mladenka Pestoric, Olivera Šimurina, Ivana Sedej, Nataša Nedeljkovic, Anamarija Mandic

[P-017] **Comparative antioxidant capacity of flavonoids on cytotoxicity of CHO-K1 cells by enniatins**
Maria Jose Ruiz, Germana Lombardi, Alessandra Prosperini, Guillermina Font, Jordi Mañes

[P-018] **Nutritional profiles of some mono-varietal olive oils extracted by native cultivars of albania**
Dritan Topi, Fadil Thomaj, Minir Koni, Ana Paola Carvalho, Ana Maria Gomes

[P-019] **Antimicrobial and antioxidant effects of extract of endemic plant *kitaibellia vitifolia* in fermented dry sausage types Srem**
Vladimir Sreten Kurcubic, Pavle Zoran Maskovic, Lazar Radoslav Turbatovic, Slavica Mirko Veskovic Moracanin

[P-020] **Use of nano-emulsions in food**
Nazan Kavas, Gökhan Kavas

[P-021] **Antimicrobial and antioxidant activities of *salvia verticillata*; potential new sources of natural antioxidants**
Pavle Zoran Maskovic, Jelena Milovan Vujic, Vladimir Sreten Kurcubic, Milica Savo Cvijovic, Slavica Radojlo Solujic, Gordana Sreten Acamovic Djokovic

date, 'functional and medicinal foods' to take part approach, physiological effects of the caper plant with advancing technology in the field of both medicine and food is more known. In this direction, as traditionally caper plant used to purpose treat and food especially in the Mediterranean countries in the world to present from the first centuries that its stem, flowers, buds, seeds and fruits are used. Caper plants from different regions, different amounts of the extracted isothiocyanate and flavone glycosides, phenolic compounds and active agents in the structure of alkaloids, anti-tumoral, antisclerosis, anti-diabetic, antibacterial, antifungal, antiparasitics, antioxidant by means of effects have been identified to be useful on many diseases. In this study, particularly in the medical field properties rediscovered after World War II and also the world consumption growing as a food capers plant given the informations about mechanism of action and beneficial effects on human health.

[P-010]
DPPH ACTIVITY AND QUALITY OF MILK-BASED KOMBUCHA BEVERAGES WITH PEPPERMINT AND WILD THYME

Jasmina Vitas, Radomir Malbaša, Eva Loncar
Faculty of Technology, University of Novi Sad, Serbia

Kombucha is symbiosis of yeasts and acetic acid bacteria, which from simple substrate (usually black or green tea sweetened with sucrose) by metabolic activity creates a pleasant, slightly carbonated, acidic beverage that contains a numerous of nutritional and pharmacologically significant components. Kombucha is successfully cultivated on the other substrates too, such as: herbal teas, beer, wine, coca-cola, coffee and others. Kombucha-inoculum obtained on substrate with herbal tea can successfully be used in obtaining fermented milk beverage that is, by its physico-chemical and sensoric features, similar to yoghurt and kefir. There is an increasing interest in finding natural antioxidants from food, because it is believed that they can protect the human body from the attack of free radicals and retard the progress of many chronic diseases. Peppermint is traditionally used to treat different digestive problems. It is successfully applied for anxiety, neuroses and insomnia. Peppermint affect the regulation of rapid heart rate, relaxes and eases discomfort bronchi in asthma. Wild thyme helps with respiratory problems, intestinal and stomach problems and by irregular monthly cycles. Prepared in the form of baths or compresses it is used to treat skin diseases. The aim of this study was to investigate DPPH activity and quality of the milk-based kombucha beverages, obtained from milk with 2.8% milk fat, by using two starter cultures, at three different temperatures: 37°C, 40°C and 43°C. Both starter cultures were fermentative liquids of kombucha. One was obtained from peppermint extract and the other was obtained from wild thyme extract. Both extracts were sweetened with 7% of sucrose. The quality of the beverages was followed by monitoring of chemical composition and physico-chemical characteristics. DPPH activity was determined by DPPH radical-scavenging method. Fermentation performed using a fermentative liquid of kombucha on peppermint was shorter when temperature was higher. The fastest fermentation performed using a fermentative liquid of kombucha on wild thyme was at 40°C. The values of physico-chemical characteristics and chemical composition were in accordance with values characteristic to yoghurt and kefir. The highest DPPH radical-scavenging activity showed beverage produced at 43°C with fermentative liquid of kombucha obtained from peppermint extract.

[P-011]
CHEMICAL COMPOSITIONS OF OKRA *(HIBISCUS ESCULENTA* L.*)* SEEDS AND SKINS

Alev Akpınar Borazan, Caglayan Acikgoz, Nurgül Özbay
Chemical and Process Engineering Department, Engineering Faculty,Bilecik University, Bilecik, Turkey

Mature okra was obtained from Bilecik in the west region of Turkey in late August 2009 and separately, divided into seeds and skins. Moisture contents were immediately measured on arrival. The seeds and skins were crushed using hammer mill (Brook Series 2000). The milled samples were dried at room temperature in the laboratory and packed in thick gauge polythene bags. The samples in the polythene bags held at room temperature until analyzed.
Proximate compositions and mineral contents of the mature okra seeds and skins were separately investigated. Some physical properties of seeds were also evaluated. The seeds, which represent the 28.74 % of mature okra, were mainly composed by protein (28.71%), oil (22.62%), cellulose (48.67%), lignin (17.28%), ash (5.21%) and moisture (9.95%). Meanwhile, the skins of okra were composed by protein (8.30%), oil (4.42%), cellulose (61.67%), lignin (3.28%), ash (9.93%) and moisture (10.31%). Scanning Electron Microscopy

(SEM) images of the samples of grinded okra seeds and skins surface were obtained by using an EVO-50XVP (Carl Zeiss SMT Ltd.). Chemical compositions were determined by using the Genesis 4000EDX detector (EDAX Inc.). The most predominant elements in the seed and skin samples were found to be K, P, Ca, Mg. The elements S, Cl Al, Si were also presented in abundant amounts. GC-MS chromatography revealed that the major fatty acid of seed oil was linoleic acid (49.54%), palmitic acid (28.60%), oleic acid (16.81%). Some chemical properties such as crude protein, crude oil and crude fiber were found important due to nutritional values. It could be concluded that mature okra skin and seed are a promising source of protein and fat as earlier reported by other researchers. It may therefore be suggested that products from okra seeds could be put into alternative uses in Turkey instead of regeneration purposes alone such as incorporation into weaning or adult foods. The information supplied on the physical characteristics of the okra seed could serve as useful tool in designing processing equipment such as dehulling and cleaning equipment. Antioxidant activities in food plants are essential in this regard because they are active in inhibiting free radical reactions and consequently protect the human body against damage by reactive oxygen species. Thus, further studies are still needed to study on the antioxidant activities that can identify the mature okra skin and seed for the benefit of mankind.

[P-012]
YUVARLAMA

Tahir Tekin Öztan[1], Ilkay Gök Pınarlı[2]
[1]Barbaros Mahallesi, Kardelen Sokak No:4, 34746 İstanbul, Turkey
[2]University of Gaziantep, Faculty of Fine Arts, Gastronomy and Culinary Arts Department, Gaziantep, Turkey

Turkish cusine, when coupled with the use of traditional products, cooking techniques for food preperation and preservation methods for food storage, forms a unique culinary culture. Gaziantep is the one of the cities in the world associated by name with its own special cuisine, Gaziantep cuisine, which consists of original dishes that include a lot of special Anatolian flavors.Yuvarlama is one of the most special dishes of this cuisine and constitutes a precedent on this issue.
First, it is a traditional feast dish of Gaziantep and its preparation is time consuming, requiring intensive labor. In addition to being delicious and requiring laborious preparation, it also has high nutritional value, which makes yuvarlama special. It is prepared with rice, meat (minced and boned), chickpea, concentrated yogurt, butter, egg, dried mint, and powdered black pepper. Legume, cereal, meat, egg and yogurt are all combined together in yuvarlama, providing a balanced diet. Their nutrients complement each other and a plate of yuvarlama provides macro and micro nutrients together. Yuvarlama is healthy due to the chickpeas providing vegetable proteins, iron, B vitamins, phosphate and phosphorus rich compound; yogurt with high calcium content, proteins, and vitamins B12 and B6; rice containing vegetable protein, vitamins E, B1, and B2, potassium, calcium and magnesium; meat containing a high amount of animal proteins, vitamins A, B and D, enzymes, phosphorus, iron and copper; eggs providing proteins; and mint with digestive properties.
During the preperation of yuvarlama, the yogurt is cooked. The cooking of yogurt is special to Turkish cusine and is mostly used in Gaziantep's dishes.This is a different kind of preparation than is used in most of the world's cuisine.
Yuvarlama and other types of Gaziantep dishes also have a cultural influence. The preparation requires serious co-operation, solidarity, and social communication. In order to prepare yuvarlama, which is time consuming and labor intensive, relatives and neighbors gather together in one house to make yuvalama balls for the feast. The preparation of these kinds of labor-intensive dishes with groups of people increases communication and socializing, turns the feast preparation into a funny social activity, providing a sense of unity that makes us strong.

[P-013]
NUTRITIONAL STATUS OF UNIVERSITY STUDENTS

İlay Polat
Haliç University, İstanbul, Turkey

This reserch, done by university students to identify the feeding habits. The reserch performed on 110 university's students in 2010-2011. The data were analyzed using SPSS 15.0 and BEBİS programs. Statistical analysis, descriptive statistics, chi-square or Fisher exact test, Student's t test or Mann-Whitney U test or the Friedman test with repeated measure analysis of variance was used %62 of students participate in this study

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CERTIFICATE of PARTICIPATION

Alev AKPINAR BORAZAN participated in

- 4th International Congress on Food and Nutrition
- 3rd SAFE Consortium International Congress on Food Safety
- MycoRed Workshop
- SAFETechnoPACK Conference

held between October 12 and 14, 2011 Istanbul, TURKEY

Assoc. Prof. Sunullah ÖZBEK
TÜBİTAK MRC
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