

# 5ο Διεθνές Συνέδριο Τεχνολογίας Τροφίμων

# 5th International Congress on Food Technology

“Προστασία Καταναλωτή  
μέσω της Βελτίωσης  
Διεργασιών Τροφίμων  
& της Καινοτομίας στον  
Πραγματικό Κόσμο”

“Consumer Protection  
through Food Process  
Improvement  
& Innovation in the  
Real World”

**ΠΡΑΚΤΙΚΑ  
ΤΟΜΟΣ Ι  
Θεσσαλονίκη 2007**

**PROCEEDINGS  
VOLUME I  
Thessaloniki, 2007**

Επιμελητής Έκδοσης:  
Ε. Σ. Λάζος

Editor:  
Evangelos S. Lazos

Εκδότης:  
Πανελλήνια Ένωση Τεχνολόγων Τροφίμων  
Περιφερειακό Τμήμα Βορείου Ελλάδος  
Βασιλ. Ηρακλείου 21,  
546 24, Θεσσαλονίκη

Published by:  
Hellenic Association of Food  
Technologists,  
North Greece Branch  
21 Vassileos Irakliou St.,  
546 24, Thessaloniki GREECE

Αλεξάνδρειο Τεχνολογικό Εκπαιδευτικό Ίδρυμα  
Θεσσαλονίκης (Σίνδος)  
Σχολή Τεχνολογίας Τροφίμων & Διατροφής  
Θεσσαλονίκης

Alexander Technological Educational  
Institution of Thessaloniki (Sindos),  
Faculty of Food Technology & Nutrition  
Thessaloniki, GREECE



ΠΑΝΕΛΛΗΝΙΑ  
Ε Ν Ω Σ Η  
ΤΕΧΝΟΛΟΓΩΝ  
ΤΡΟΦΙΜΩΝ



ΣΧΟΛΗ  
ΤΕΧΝΟΛΟΓΙΑΣ  
ΤΡΟΦΙΜΩΝ & ΔΙΑΤΡΟΦΗΣ

664  
ΔΙΕ

Δ Ω Ρ Ε Δ

Τ.Ε.Ι. ΑΘΗΝΑΣ  
ΒΙΒΛΙΟΘΗΚΗ  
Αρ. εισ. 69339

Πρακτικά 5ου Διεθνούς Συνεδρίου Τεχνολογίας Τροφίμων  
Τόμος 1

Proceedings of 5th International Congress on Food Technology  
Volume 1

Επιμελητής Έκδοσης: Ε. Σ. Λάζος

Editor: E.S. Lazos

Πρακτικά 5ου Διεθνούς Συνεδρίου Τεχνολογίας Τροφίμων  
Τόμος 1

Εκδόθηκε από:

Πανελλήνια Ένωση Τεχνολόγων Τροφίμων Βορείου Ελλάδος  
Βασ. Ηρακλείου 21, 54 624 Θεσσαλονίκη

&

Σχολή Τεχνολογίας Τροφίμων και Διατροφής, Αλεξάνδρειο Τεχνολογικό  
Εκπαιδευτικό Ίδρυμα Θεσσαλονίκης, Σίνδος, 57 400, Θεσσαλονίκη

Απόψεις που εκφράζονται από τους συγγραφείς των άρθρων δεν αντανakλούν απόψεις ούτε της Πανελλήνιας Ένωσης Τεχνολόγων Τροφίμων, αλλά ούτε και της Σχολής Τεχνολογίας Τροφίμων και Διατροφής.

Proceedings of 5th International Congress on Food Technology  
Volume 1

Published by:

Hellenic Association of Food Technologists,  
North Greece Branch  
21 Vassileos Irakliou St.,  
546 24, Thessaloniki GREECE

&

Alexander Technological Educational Institution of Thessaloniki (Sindos),  
Faculty of Food Technology & Nutrition Thessaloniki, GREECE

Opinions expressed by authors in this proceedings volume do not reflect the opinion neither of Hellenic Association of Food Technologists nor of Faculty of Food Technology & Nutrition

SET ΠΕΤΕΤ: 978-960-88557-1-7

ISBN ΠΕΤΕΤ: 978-960-88557-2-4

SET ΑΤΕΙ ΘΕΣΣΑΛΟΝΙΚΗΣ: 978-960-287-085-3

ISBN ΑΤΕΙ ΘΕΣΣΑΛΟΝΙΚΗΣ: 978-960-287-086-0

## Οργανωτική Επιτροπή

- Εμμανουήλ Φιλίππου, Πρόεδρος
- Κυριακή Παναγιωτίδου, Γραμματέας
- Ξενοφών Λεωνής, Ταμίας
- Όλγα Γκορτζή
- Εύα Δούα
- Σπύρος Κοντός
- Ιωάννης Μαρκόπουλος
- Αφροδίτη Μελισουργού
- Ιωάννης Παπαδόπουλος
- Κωνσταντίνα Σκόκα
- Γρηγόρης Τσελεπίδης
- Ελευθερία Τσιτσανοπούλου

## Organising Committee

- Emmanuel Filippou, Chairman
- Kyriaki Panagiotidou, Secretary
- Xenophon Leonis, Treasurer
- Eva Doua
- Olga Gortzi
- Spyros Kontos
- Ioannis Markopoulos
- Afrodide Melissourgou
- Ioannis Papadopoulos
- Constantina Skoka
- Gregorios Tselepidis
- Eleftheria Tsitsanopoulou

## Επιστημονική Επιτροπή

- **Ευάγγελος Σ. Λάζος, Πρόεδρος, Αντιπρόεδρος ΕΦΕΤ και Καθηγητής, Τμήμα Τεχνολογίας Τροφίμων, ΤΕΙ Αθηνών**
- Απόστολος Κυριτσάκης, Αντιπρόεδρος, Διευθυντής της ΣΤΕΤΡΟ-Δ του ΑΤΕΙΘ, Καθηγητής, Τμήμα Τεχνολογίας Τροφίμων, ΤΕΙ Θεσσαλονίκης
- Γεώργιος Αγγελούσης, Καθηγητής, Τμήμα Τεχνολογίας Τροφίμων, ΤΕΙ Αθηνών
- Hami Alpas, Associate Professor, Dept of Food Engineering, Middle East Technical University, Ankara –TURKEY
- Ιωάννης Αμβροσιάδης, Αναπληρωτής Καθηγητής, Τμήμα Κτηνιατρικής, Αριστοτέλειο Πανεπιστήμιο Θεσσαλονίκης
- Κλειώ Αντωνίου, Καθηγήτρια, Τμήμα Τεχνολογίας Τροφίμων, ΤΕΙ Θεσσαλονίκης
- Μαλαματένια Αρβανιτίδου – Βαγιανά, Αναπληρώτρια Καθηγήτρια, Ιατρική Σχολή, Αριστοτέλειο Πανεπιστήμιο Θεσσαλονίκης
- Απόστολος Βλυσίδης, Καθηγητής, Σχολή Χημικών Μηχανικών, ΕΜΠ
- Σπυρίδων Γεωργιάκης, Ομότιμος Καθηγητής, Τομέας Υγιεινής & Τεχνολογίας Τροφίμων, Κτηνιατρική Σχολή, Αριστοτέλειο Πανεπιστήμιο Θεσσαλονίκης
- Μαρία Γρεβενιώτη, Καθηγήτρια, Τμήμα Διατροφής, ΤΕΙ Θεσσαλονίκης
- Eduardo Dubinsky, President of LA-AOCS / ASAGA, Argentina
- Mike Gordon, Senior Lecturer and Director of Teaching & Learning, Department, School of Food Biosciences, University of Reading, UK
- Αντώνης Ζαμπέλας, Επίκουρος Καθηγητής, Τμήμα Διατροφής & Διαιτητικής, Χαροκόπειο Πανεπιστήμιο
- Απόστολος Θωμαρείς, Αναπληρωτής Καθηγητής, Τμήμα Τεχνολογίας Τροφίμων, ΤΕΙ Θεσσαλονίκης
- Renato Iori, Senior Researcher, Istituto Sperimentale per le Colture Industriali, Bologna, Italy
- Βάιος Καραθάνος, Αναπληρωτής Καθηγητής, Τμήμα Διατροφής & Διαιτητικής, Χαροκόπειο Πανεπιστήμιο
- Παύλος Καρακολτσίδης, Καθηγητής, Τμήμα Τεχνολογίας Τροφίμων, ΤΕΙ Θεσσαλονίκης
- Ευάγγελος Κατσογιάννος, Επίκουρος Καθηγητής, Τμήμα Τεχνολογίας Τροφίμων, ΤΕΙ Αθηνών
- Αντώνιος Καφάτος, Καθηγητής, Ιατρική Σχολή, Πανεπιστήμιο Κρήτης
- Δημήτριος Κέκος, Καθηγητής, Τμήμα Χημικών Μηχανικών, ΕΜΠ

- Χρήστος Κεχαγιάς, Καθηγητής, Τμήμα Τεχνολογίας Τροφίμων, ΤΕΙ Αθηνών
- Μιχάλης Γ. Κοντομηνάς, Καθηγητής, Τμήμα Χημείας, Πανεπιστήμιο Ιωαννίνων
- Ευστράτιος Κυρανάς, Καθηγητής, Τμήμα Διατροφής, ΤΕΙ Θεσσαλονίκης
- Μιχαήλ Κωμαΐτης, Καθηγητής, Τμήμα Επιστήμης & Τεχνολογίας Τροφίμων, Γεωπονικό Πανεπιστήμιο Αθηνών
- Χαράλαμπος Ν. Λαζαρίδης, Καθηγητής, Εργαστήριο Επεξεργασίας & Μηχανικής Τροφίμων, Γεωπονική Σχολή, Αριστοτέλειο Πανεπιστήμιο Θεσσαλονίκης
- Σταύρος Λαλάς, Καθηγητής Εφαρμογών, Τμήμα Τεχνολογίας Τροφίμων, ΤΕΙ Λάρισας
- Αθανάσιος Λαμπρόπουλος, Καθηγητής, Τμήμα Τεχνολογίας Τροφίμων, ΤΕΙ Αθηνών
- Βλαδίμηρος Λουγκοβόης, Καθηγητής, Τμήμα Τεχνολογίας Τροφίμων, ΤΕΙ Αθηνών
- Werner Lorig, Professor, Fachbereich Technik BLV, Lebensmitteltechnik, Fachhochschule Trier, Deutschland
- Αντώνιος Μάντης, Ομότιμος Καθηγητής, Κτηνιατρική Σχολή, Αριστοτέλειο Πανεπιστήμιο Θεσσαλονίκης
- Ζαχαρίας Μαρούλης, Καθηγητής, Σχολή Χημικών Μηχανικών, ΕΜΠ
- Σοφία Μαστρονικολή, Αναπληρώτρια Καθηγήτρια, Τμήμα Χημείας, Πανεπιστήμιο Αθηνών
- Σοφία Μηνιάδου-Μειμάρογλου, Επίκουρος Καθηγήτρια, Τμήμα Χημείας, Πανεπιστήμιο Αθηνών
- Γεώργιος Μπλέκας, Επίκουρος Καθηγητής, Τμήμα Χημείας, Αριστοτέλειο Πανεπιστήμιο Θεσσαλονίκης
- Ιωάννης Γ. Μπλούκας, Καθηγητής, Εργαστήριο Επεξεργασίας & Μηχανικής Τροφίμων, Γεωπονική Σχολή, Αριστοτέλειο Πανεπιστήμιο Θεσσαλονίκης
- Κων/νος Μπιλιαδέρης, Καθηγητής, Γεωπονική Σχολή, Αριστοτέλειο Πανεπιστήμιο Θεσσαλονίκης
- Νικόλαος Μπότσογλου, Καθηγητής, Κτηνιατρικής Σχολής, ΑΠΘ, Αριστοτέλειο Πανεπιστήμιο Θεσσαλονίκης
- Μιχαήλ Μπρατάκος, Καθηγητής, Τμήμα Τεχνολογίας Τροφίμων, ΤΕΙ Αθηνών
- Michael Murkovic, Professor, Department of Food Chemistry and Technology, Technical University of Graz, Austria
- Viktor Nedovic, Department of Food Technology and Biochemistry, Faculty of Agriculture, University of Belgrade
- Παπαδοπούλου Χρυσάνθη, Αναπληρώτρια Καθηγήτρια, Ιατρική Σχολή, Πανεπιστήμιο Ιωαννίνων
- Δημήτριος Πετρίδης, Καθηγητής, Τμήμα Τεχνολογίας Τροφίμων ΤΕΙ Θεσσαλονίκης
- Σπυρίδων Ραμαντάνης, Καθηγητής, Τμήμα Τεχνολογίας Τροφίμων, ΤΕΙ Αθηνών
- Patrick Rollin, Professor, Responsable des stages de master 1, ICOA - UMR 6005, Université d'Orléans, France
- Antonio Sacco, Professor, Department of Chemistry, University of Bari, Italy
- Fereidoon Shahidi, Professor, Department of Biochemistry, Memorial University of Newfoundland, Canada
- Παναγιώτης Σίσκος, Καθηγητής, Τμήμα Χημείας, Πανεπιστήμιο Αθηνών
- Ευάγγελος Σουφλερός, Αναπληρωτής Καθηγητής, Γεωπονική Σχολή, Αριστοτέλειο Πανεπιστήμιο Θεσσαλονίκης
- Κωνσταντίνος Σφλώμος, Καθηγητής, Τμήμα Τεχνολογίας Τροφίμων, ΤΕΙ Αθηνών
- Πέτρος Ταούκης, Αναπληρωτής Καθηγητής, Εργαστήριο Χημείας και Τεχνολογίας Τροφίμων Τμήμα Χημικών Μηχανικών, ΕΜΠ
- Κωνσταντίνα Τζιά, Αναπληρωτής Καθηγητής, Εργαστήριο Χημείας και Τεχνολογίας Τροφίμων Τμήμα Χημικών Μηχανικών, ΕΜΠ
- Ιωάννης Τσάκνης, Καθηγητής, Τμήμα Τεχνολογίας Τροφίμων, ΤΕΙ Αθηνών
- Μαρία Χασαπίδου, Καθηγήτρια, Τμήμα Διατροφής, ΤΕΙ Θεσσαλονίκης
- Βάσω Ωραιοπούλου, Αναπληρώτρια Καθηγήτρια, Εργαστήριο Χημείας και Τεχνολογίας Τροφίμων, Σχολή Χημικών Μηχανικών, ΕΜΠ

## Scientific Committee

- **Evangelos S. Lazos, Chairman, Professor, Department of Food Technology, TEI of Athens & Vice-President of Hellenic Food Authority.**
- Apostolos Kyritsakis, Vice-Chairman, General Director of STETRO-D of ATEITH, Professor, Department of Food Technology, TEI of Thessaloniki
- George Aggelousis, Professor, Department of Food Technology, TEI of Athens
- Hami Alpas, Associate Professor, Dept of Food Engineering, Middle East Technical University, Ankara, Turkey
- Ioannis Ambrosiadis, Associate Professor, Department of Veterinary Medicine, Aristotle University of Thessaloniki
- Kleio Antoniou, Professor, Department of Food Technology, TEI of Thessaloniki
- Malamatenia Arvanitidou – Vagiona,, Associate Professor, Faculty of Medicine, University of Thessaloniki
- Constantinos G Biliaderis, Professor, Faculty of Agriculture, Aristotle University of Thessaloniki
- Georgios Blekas, Assistant Professor, Department of Chemistry, Aristotle University of Thessaloniki
- John, G.Bloukas, Professor, Faculty of Agriculture, University of Thessaloniki
- Nikolaos Botsoglou, Professor, Department of Veterinary Medicine, Aristotle University of Thessaloniki
- Michael S. Bratakos, Professor, Department of Food Technology, TEI of Athens
- Maria Grevenioti, Department of Nutrition, TEI of Thessaloniki
- Eduardo Dubinsky, President of LA-AOCS / ASAGA, Argentina
- Spyridon Georgakis, Professor Emeritus, Department of Veterinary Medicine, Aristotle University of Thessaloniki
- Mike Gordon, Senior Lecturer and Director of Teaching & Learning, Department, School of Food Biosciences, University of Reading, UK
- Maria Hassapidou, Professor, Department of Nutrition, TEI of Thessaloniki
- Renato Iori, Senior Researcher, Istituto Sperimentale per le Colture Industriali, Bologna, Italy
- Pavlos Karakoltsidis, Professor, Department of Food Technology, TEI of Thessaloniki
- Vaios Karathanos, Associate Professor, Department of Dietetics & Nutritional Science, Harokopion University, Athens
- Evangelos Katsogiannos, Assistant Professor, Department of Food Technology, TEI of Athens
- Antonios Kafatos, Professor, School of Medicine, University of Crete
- Demitrios Kekos, Professor, School of Chemical Engineering, National Technical University of Athens
- Christos Kehagias, Professor, Department of Food Technology, TEI of Athens
- Michael Komahitis, Professor, Department of Food Science & Technology, Agricultural University of Athens
- Michael G. Kontominas, Professor, Department of Chemistry, University of Ioannina
- Efstratios Kyranas, Professor, Department of Nutrition, TEI of Thessaloniki
- Athan. Labropoulos, Professor, Department of Food Technology, TEI of Athens
- Stavros Lalas, Lecturer, Department of Food Technology, TEI of Larisa
- Haris Lazarides, Professor, Faculty of Agriculture, University of Thessaloniki
- Vladimir Lougovois, Professor, Department of Food Technology, TEI of Athens
- Werner Lorig, Professor, Fachbereich Technik BLV, Lebensmitteltechnik, Fachhochschule Trier, Deutschland
- Sofia Mastronicolis, Associate Professor, Department of Chemistry, University of Athens

- Mantis Antonios, Professor Emeritus, Department of Veterinary Medicine, Aristotle University of Thessaloniki
- Zacharias Maroulis, Professor, School of Chemical Engineering, National technical University of Athens
- Sofia Miniadis-Meimaroglou, Assistant Professor, Department of Chemistry, University of Athens
- Michael Murkovic, Professor, Department of Food Chemistry and Technology, Technical University of Graz, Austria
- Viktor Nedovic, Department of Food Technology and Biochemistry, Faculty of Agriculture, University of Belgrade
- Vassiliki Oreopoulou, Associate Professor, Department of Chemical Engineering, National Technical University of Athens
- Chrisanthi Papadopoulou, Associate Professor, Faculty of Medicine, University of Ioannina
- Demitrios Petridis, Professor, Department of Food Technology, TEI of Thessaloniki
- Spyridon Ramantanis, Professor, Department of Food Technology, TEI of Athens
- Patrick Rollin, Professor, Responsable des stages de master 1, ICOA - UMR 6005, Université d'Orléans, France
- Antonio Sacco, Professor, Department of Chemistry, University of Bari, Italy
- Constantinos Sflomos, Professor, Department of Food Technology, TEI of Athens
- Fereidoon Shahidi, Professor, Department of Biochemistry, Memorial University of Newfoundland, Canada
- Panagiotis Siskos, Professor, Department of Chemistry, University of Athens
- Evangelos Soufleros, Associate Professor, Faculty of Agriculture, University of Thessaloniki
- Petros Taoukis, Associate Professor, Department of Chemical Engineering, National Technical University of Athens
- Apostolos Thomareis, Associate Professor, Department of Food Technology, TEI of Thessaloniki
- John Tsaknis, Professor, Department of Food Technology, TEI of Athens
- Constantina Tzia, Associate Professor, Department of Chemical Engineering, National Technical University of Athens
- Apostolos Vlyssidis, Professor, School of Chemical Engineering, National technical University of Athens
- Antonios Zabelas, Assistant Professor, Department of Dietetics & Nutritional Science, Harokopion University, Athens

**Food Engineering**

- Heat Capacity of Pizza and Puff Pastry Dough at Different Temperatures, Seher Kumcuoglu\* and Sebnem Tavman 3
- Some Technologic Proprieties Of Common Date (*Phoenix dactylifera L.*) Fruits, Salem Benamara\*, Hassina Gougam, Hayet Chibane, Amrane Djouab, Yassine Noui and Adiba Benahmed. 6
- Use of Weibull Model to Predict the Moisture and Salt Contents of Sardine Sheets during Vacuum Pulse Osmotic Dehydration, Otoniel Corzo, Nelson Bracho and Jaime Rodríguez 13
- Effect of Emulsifying Salts on the Textural and Viscoelastic Properties of Processed Cheese and in Relation to its Apparent Viscosity, Georgia Dimitreli\* and Apostolos S. Thomareis 19
- The Effect of Drying Method on Bulk Density, Porosity and Shrinkage of Quince, Banu Koç, İsmail Eren, Figen Kaymak-Ertekin 29
- Thermal Conductivity of Red Chillie as a Function of Moisture Content, M. Basavaraj, Dr. G. P. Prabhu Kumar and Dr. Sathyanarayana Reddy 36
- Drying Kinetics of Red Chillie in a Hot Air Dryer, M. Basavaraj, Dr. G. P. Prabhu Kumar and Dr. Sathyanarayana Reddy 41
- Degradation Kinetics of Chlorophyll in Spinach, Meltem Kozan1, Feryal Karadeniz, Nuray Koca, andHande Selen Burdurlu 47
- Novel Freeze Drying of Onion Slices Using Microwaves, Soleiman Abbasi & Sara Azari 54
- Influence of Fat and Hydrocolloids on Batter-type Dough Rheological Behavior, Theodora-Ioanna Lafka, Evangelos S. Lazos and Michael S. Bratakos 61
- Electrical conductivity can be used as a rapid tool for detection of antibiotics in cow's milk?, Özge Yıldız, Sevcan Ünlütürk , Mehmet Süleyman Ünlütürk and Canan Tari 71
- Effect of Water Content and Temperature on the Viscosity of Herbhoney, Lesław Juszczak, Robert Socha, Teresa Fortuna 77
- Viscosity of Concentrated Apple Juice as a Function of the Temperature and Soluble Solids Content, Lesław Juszczak, Mariusz Witczak, Teresa Fortuna 84
- Flow and Viscoelastic Properties of Wheat Starch Paste in Presence of Starch Syrups, Lesław Juszczak, Mariusz Witczak, Teresa Fortuna1, Rafał Ziobro 90
- Design and Analysis of Experiments in Spray Drying of Tomato Pulp, Athanasia Goula, Konstantinos Adamopoulos 96
- Influence of the Variety and the Osmotic Treatment on the Respiration Rate of Tomato , A. Heredia, C. Barrera, A. Andrés 106
- Analysis of chickpea (var. "Blanco Lechoso") rehydration using SAFES methodology, Chenoll, C., Betoret, N. , Sanz, J., Fito, P.J., Fito, P. 114
- Modeling the Effect of High Hydrostatic Pressure on Pectinolytic and Proteolytic Enzymes of Different Plant Origin, George J. Katsaros, Petros S. Taoukis 122
- Concentration of whole egg liquid with different membrane processes, Ivetta Vincze, Lajos Tóvári, Gyula Vatai 129
- Analysis of Dehydration Kinetics of Apple (var. Granny Smith) Applying SAFES Methodology and Nonlinear Irreversible Thermodynamic, Betoret, N., Oliver, L.; Betoret, E.; Castelló, M.L.; Fito, P. 137
- Drying Curves of White Layer Cake during Baking in a Convective Oven, Sakin, Melikea; Kaymak-Ertekin, Figena; Ilicali, Coskanb 146

- Twin-Screw Extrusion of Whey Protein Concentrate/Corn Flour Blends as Affected by Feed Moisture, Mladen Brnčić, Branko Tripalo, Marina Miličić, Damir Ježek and Tomislav Bosiljkov 153
- Effect of High Pressure on Pectinolytic Enzymes and Quality Parameters of Tomato Juice, Sofia Boulekou, Petros S. Taoukis, Constantinos Mallidis, and Nikolaos G. Stoforos1 159
- Towards The Definition Of The Mild Heat Pasteurisation Value (MH-value), Vasileios P. Valdramidis, Annemie H. Geeraerd, Alain Kondjoyan and Jan F. Van Impe 166
- Compression, creep and stress-relaxation testing of wheat flour and gluten-free doughs – relation to end-product properties, Patrick Fustier1, Athina Lazaridou & Costas G. Biliaderis 173
- Effect of Storage Time and Temperature on the Antioxidant Capacity and Phenolic Content of Boiled and Freezer Raspberry Jam, Ankit Patras and Nigel Brunton 182
- Applications of the Supercritical Anti-Solvent Process for the Re-Crystallization and Micronization of Food and Pharmaceutical Ingredient, Yan-Ping Chen, Muoi Tang, Pei-Jung Lien 187
- Mathematical Modelling Of Partial Oil Expression from Groundnuts: Effect of Bed Thickness, Ram Krishna Pandey and D.K. Gupta 190
- Effect of Moisture Content on Oil Expression Characteristics of *Jatropha Curcas* L. (Ratanjot) on a Hydraulic Press, Pankaj Kumar Paswan and Ram Krishna Pandey 199
- Research on the Evolution of Sensorial and Chemical Characteristics of the Sea Buckthorn Juice Preserved through Different Methods, Manea Iuliana, Buruleanu Lavinia, Manea Laur 209
- Study about the Vegetables Used as Raw Material for Lactic Acid Juices Processing, Manea Iuliana, Buruleanu Lavinia 214
- Application of the SAFES Methodology (Systematic Approach to Food Engineering Systems) to Asses Quality on Condensed and Powdered Milk, Cristina Barrera, Ana Heredia, Lucía Seguí, Ángel Argüelles, Pedro Fito 221
- The Hydrolyzed Whey Separation on SMB Continuous Chromatographic System, Svatopluk Henke, Milan Kubát, Ladislav Čurda, Klára Hellerová, Zdeněk Bubník 231

## Food Biotechnology

- Optimization of olive lipoxygenase extraction by an experimental design and its involvement in virgin olive oil flavour profile, Faten KOTTI, Kais JAZIRI, Faten ARAB, Yosra MATER, Samira SIFI, Noha FARES, Mohamed HAMMAMI, Mohamed GARGOURI 241
- Analysis of aroma active compounds in tarhana by GC-olfactometry, Duygu Gocmen, Ozan Gurbuz, Russell L. Rouseff, John M. Smoot, A. Fatih Dagdelen 245
- Effect of lactic starter on electrophoretic patterns of gliadins, Ozan Gurbuz, Duygu Gocmen, Adnan Fatih Dagdelen, Ayse Neslihan Inkaya, Ismail Tosun 252
- The Role of Aeration in Pectinase Fermentation of *Aspergillus sojae*, Selale Oncu, Sevcan Unluturk, Canan Tari 258
- Study of milk-clotting activity from higher basidiomycetes, T. Dmitriyeva, A. Korchmaryova, N. Denisova, M. Shamtsyan 265
- Biochemical Properties of *Aspergillus sojae* ATCC 20235 Polygalacturonase, Nihan Gogus, Canan Tari and Nergiz Dogan 271
- Screening of *Streptococcus thermophilus* ssp. isolated from traditional Turkish yogurts for  $\beta$ -galactosidase and lactic acid production, Fatma Isik Ustok, Canan Tari, Sebnem Harsa 277

- Enzymatic Activity Of Microbial Transglutaminase, Zübeyde Öner, Aynur Gül Karahan, İsmail Hakkı Boyacı, Gül den Kılıç, Hatice Aloğlu, Arzu Gündoğdu, Lütfü Çakmakçı, İbrahim Çakır 285
- High Pressure-Induced Changes In Milk Proteins, Zeynep ÖLMEZ, Zübeyde ÖNER 291
- Effects of various media parameters on pellet morphology, polygalacturonase and ethanol production of *Rhizopus oryzae* , Canan Tari , Kamer Ozkan, Aysun Sofuoglu 299
- Characterization of three phase partitioned polygalacturonase produced by *Aspergillus sojae* ATCC 20235, Nergiz Dogan and Canan Tari 307
- Production And Preliminary Characterisation Of A Honey Vinegar, Christina Ktenidou, Naomi Dunning, Teresa Cavaco and Ana Cristina Figueira 313
- Investigation Of Different Triticale Varieties As The Substitute For Malt In Wort Production, Olgica Grujic, Jelena Pejin and Srboljub Dencic 318
- The influence of information in shaping attitudes towards genetically modified foods. Anthimia Batrinou, Maria Paschou, Vasilis Stavroulakis, Vasilias Sinanoglou 324
- Quantification of genetically modified soy in processed foods by Real-Time PCR. Anthimia Batrinou, Dora Koraki, Vasilias Sinanoglou, Vasiliki Pletsas 331
- Technological Evaluation Of Winter Brewer's Barley Varieties From Selective Experiments Crop 2005 As A Raw Material For Malt Production, Olgica Grujic, Jelena Pejin and Novo Przulj 336
- Effect upon cellular lipid composition and growth of *Yarrowia lipolytica* of essential oil from *Citrus cinensis* cv New Hall – *Citrus aurantium*, Seraphim Papanikolaou, Olga Gortzib, Eleni Margelia, Paraskevi Mitliagac, Panagiota Diamantopoulou, Stavros Lalas 343
- Lipid production by the polymorphic yeast *Yarrowia lipolytica* growing on single-stage continuous culture with industrial glycerol used as the sole substrate, Seraphim Papanikolaou, Maria Galiotou-Panayotou, Michael Komaitis and George Aggelis 350
- Production of extracellular lipase by biofilms of *Mucor griseocyanus* using whey as culture media, Authors: Cuitláhuac Aranda-Vásquez, Cristóbal Noe Aguilar, Anna Iliina and José Luís Martínez-Hernandez 356
- Effect of fermentation and cooking on the antioxidant activity of *Cajanus cajan* , Marisela Granito & Gilberto Hernández 361
- Analysis of hydrodynamic parameters of air lift bioreactors with immobilized cells , Milan Milivojevic, Stavros Pavlou, Viktor Nedovic, Branko Bugarski 365
- Effects of *Ganoderma lucidum* extracts on beer flavour, Saša Despotović, Ida Leskošek-Čukalović, Anita Klaus, Viktor Nedović, Ninoslav Nikićević, Miomir Nikšić 370
- Ethanol production from apple pomace under inoculated conditions, Jain Anshul, Singh Anupama, Sahgal Manvika 375
- Possible Gene Transfer From Transgenic Plants To Nitrogen Fixing Bacteria, D. Argyropoulos, T. Varzakas, Ch. Psallida, M. Bocari and C. Israilides 381
- The quality evaluation of vegetables juices processed by lactic acid fermentation using the correlation analysis, Buruleanu Lavinia, Nicolescu Carmen 387
- Ca-alginate hydrogel structural ordering - the influence on yeast cell growth dynamics, Ivana Pajić-Lijaković, Milenko Plavšić, Branko Bugarski, Tatjana Volkof- Husović, Viktor Nedović, Mirjana Pešić, Georgiou Constantinos 393

## Food Additives & Contaminants

- Determination of Aflatoxin M1 in Iranian Milk Products, Mohammad Reza Oveisi, Behrooz Jannat, Naficeh Sadeghi, Mannan Hajimahmoodi, & Azadeh Nikzad 398

- Enzyme-linked Immunosorbant Assay Detection of Hormone Residue in Bovine Meat, Naficeh Sadeghi, Mohammad Reza Oveisi, Mannan Hajimahmoodi, Behrooz Jannat, Shadi kokabi 401
- Aflatoxin M1 (AFM1) In Milk And Dairy Products, Tuncay Gümüş & Orhan Dağlıoğlu 406
- Sterigmatocystin Stability and Presence In Latvian Grains, A.Versilovskis, V. Mikelsone 411
- Assessment of Heavy Metals (Cadmium and Lead) in Vacuum Packaged Smoked Fish Species (Mackerel, *Salmo Salar* and *Oncorhynchus Mykiss*) Marketed in Ankara (Turkey) U. Tansel Şireli, Muammer Göncüoğlu, Yeliz Yildirim, \*Ali Gücükoğlu, Ömer Çakmak 415
- Influence of drying method on chemical composition of berry marc , Ingrida Gailite, Envija Strautniece, Inta Krasnova, Dalija Seglina 421
- Lead Determination in Maltodextrins by Potentiometric Stripping Analysis, Jaroslava Švarc-Gajić, Zvonimir Suturović, Nikola Marjanović and Snežana Kravić 428
- Antioxidant Activity and Thermal Properties of *Salvia Leriifolia* (Norouzak) Root Extract, Amir Hussain Elhami-Rad, Amir Haghdoost, Qulamali G. Movahhed, Hojjat Karazhiyan and Mohammad H. Haddad Khodaparast 434
- Validation of simple headspace gas chromatography-mass spectrometry method for determination of toxic furan in foods, Janka Vranová , Alena Bednáriková and Zuzana Ciesarová 440
- Can Some Local Plant Gums Stabilize Doogh? Soleiman Abbasi, Sahar Foroughinaia, and Zohreh Hamidi 445
- Determination of Pesticide Residue Levels in Citrus Fruits of İzmir Region, Özkan TAĞA, Figen DAĞLIOĞLU 446
- Pasting Characteristics of Potato Starch in Hydrocolloid Solutions, Wiktor Berski, Mirosław Grzesik, Grzegorz Kowalski, Paweł Ptaszek 455
- Contents of some toxic and trace elements in Tuna (*Katsuwonus pelamis*) in Turkey, Ismail Yilmaz and Bulent Oktem 462
- Development of a Validated HPLC Method for the Determination of Cephalosporin Residues in Veterinary Drugs and Milk Samples , Victoria F. Samanidou, Emmanouil D. Tsochatzis, Ioannis N. Papadoyannis. 467
- Brief Immersion in Heated Solutions of Sodium Bicarbonate and Sodium Carbonate to Control Postharvest Green and Blue Moulds of Citrus Fruit, Clara Montesinos-Herrero, Miguel Ángel del Río, Cristina Pastor and Lluís Palou 470
- Enzyme-catalyzed synthesis of hexyl- $\beta$ -galactoside via reversed hydrolysis and alcoholysis reactions in organic mono-phased system, Irina Mladenoska, Daniela Nikolovska-Nedelkoska, Eleonora Winkelhausen and Slobodanka Kuzmanova 475
- Selectivity of various glycosidases towards alcohol nucleophyles in a transglycosylation alkyl-glycoside synthesis, Irina Mladenoska, Daniela Nikolovska-Nedelkoska, Eleonora Winkelhausen and Slobodanka Kuzmanova 481
- Is it possible to influence acrylamide level by the addition of spice extracts? Zuzana Ciesarova, Milan Suhaj, Jana Horvathova, Jana Sadecka 486
- Production of dough sheets from hard red winter wheat 1. Rheological properties of wheat dough, Alsaed, A.K., Amr, A.S and Zubaidi, H. H. 493
- The Presence of Some Anabolic Residues in Beef Meats, Ismail Yilmaz, Gursoy Durmaz & Baris Oz 502
- Determination of Benzo(a)Pyrene in Olive Oils of İzmir Region by High Performance Liquid Chromatography, Özkan TAĞA, Bilal BİLGİN 505
- Determining the changes of antibiotic residues in milk with heat treatment and during storage, Serap D. VELİOĞLU, Tuncay GÜMÜŞ & Osman ŞİMŞEK 512
- Heavy metal levels of some fish species sold at retail in Kayseri, Turkey, Yeliz Yildirim, Zafer Gonulalan, Ibrahim Narin & Mustafa Soylak 516

- Effect of Euphorbia antisyphilitica wax with natural antioxidants on the shelf life quality of cut fresh fruits, Saul Saucedo-Pompa, Diana Jasso-Cantú, Janeth Ventura-Sobrerilla, Aidé Sáenz-Galindo & Cristóbal N. Aguilar 520
- The Influence of PH on Adsorption of Red Alimentar Colorants on Substratums, Elena Corina Popescu 527
- Influence Of Thermal Treatment On The Color Of Soy Protein Isolate Gel, Elena Corina Popescu, Constantin Banu 530

## Food Legislation

- Ο κανονισμός (ΕΚ) αριθ. 1924/2006 του Ευρωπαϊκού Κοινοβουλίου και του Συμβουλίου, της 20ης Δεκεμβρίου 2006, σχετικά με τους ισχυρισμούς επί θεμάτων διατροφής και υγείας που διατυπώνονται για τα τρόφιμα , Όλγα Ήρα Δημοπούλου 537
- Development of the new EU food hygiene regulations, implementation in the UK and implications for the food industry, Dr. A. McKeivitt, E. Malissiova, M. P. Smith 542
- Πρόσφατες Εξελίξεις Της Κοινοτικής Νομοθεσίας Στο Πεδίο Των Γενετικώς Τροποποιημένων Τροφίμων, Ιωάννα Κυριτσάκη 551
- Σύγκριση των κυριότερων προτύπων που διαπραγματεύονται την ασφάλεια των τροφίμων με τις γενικές αρχές της υγιεινής των τροφίμων του Codex Alimentarius και τις απαιτήσεις του Κανονισμού (ΕΚ) 852/2004, Σ. Β. Ραμαντάνης 558
- Το νομικό πλαίσιο παραγωγής και διακίνησης βιολογικών προϊόντων και συσχέτιση με τη νομοθεσία περί συμβατικής κτηνοτροφίας και το νέο πακέτο υγιεινής τροφίμων., Γ. Μεθενίτου , Ε. Μαλισσιόβα 567

## Advances in Food Science & Technology

- Biogenic Ice Nucleators for Energy Saving and Quality Improvement in the Freezing and Storage of Foods, Tung-Ching Lee 578
- A Novel Technique for Coating Edible Citric Acid Using Electromagnetic Energy, Soleiman Abbasi\* & Somayeh Rahimi 587
- Use of Flour Lactoacid Concentrate for Quality Improvement of Wheat and Rye Bread, Elĭna Sturmoviĉa 595
- The Effect of Pre-treatment, Drying, Pressure, Processing Time and Storage at 4±1°C on the Quality of Liquid Smoked Trout (*Salmo gairdnerii*) Fillets, Vaikousi Aggeliki, Despoina Dimitriadou, Anastasios Zotos 599
- Effect of pan-frying in extra-virgin olive oil on odour profile, volatile compound and vitamins, Valeria Messina, Andrea Biolatto, Ana Sancho; Adriana Descalzo; Luciana Rosetti; Rosa Baby, Marcelo Cabezas and Noemí Walsöe de Reca 608
- Analysis of Volatile Compounds in Virgin Olive Oil after Pan-Frying by Solid Phase microextraction and Gas Chromatography, Andrea Biolatto, Valeria Messina, Ana M. Sancho, and Noemí Walsöe de Reca 614
- Infused Dried Fruits and Vegetables as Shelf Stable Food Ingredients, Nirmal K. Sinha and Meena Sinha 619
- Polysaccharide Complexes of Carbon Nanotubes, Piotr Tomasik, Bohdan Achramowicz & Leszek Stoiński 626
- Physicochemical Changes in Sardine (*Sardina pilchardus*) Muscle During Storage at -18°C and Functional Properties of Produced Surimi Gels Enhanced with Ca<sup>2+</sup> ions and MTGase, Antonis Papastergiadis, Panayotis D. Karayannakidis, Dimitrios Petridis and Anastasios Zotos 635

- Effect of Organic Acidulates and Its Salts in Hard Candy Processing by Continuous Vacuum Cooker, Bellal Hossain, Muazzem Hossain, Wabayed Rejoanoul Islam, Sadekul Islam 643
- Treatment of Mech-Degla date by immersion in the citrus juices, Hayet Amellal, Lamia Ait-Ameur, Salem Benamara and Yacine Noui 647
- Oxidation of Potato Starch Using Hydrogen Peroxide under Microwave Irradiation, Sz. Bednarz, M. Lukasiewicz, B. Achremowicz, M. Grzesik, D. Bogdal 652
- Triglycerides and their Fatty Acid Composition in Edible Mediterranean Molluscs and Crustacean., Vassilia J. Sinanoglou, Dido Meimaroglou and Sofia Miniadis-Meimaroglou 659
- The Effects of Interesterification Reactions on Color Parameters, Oxidative Stability of Some Oils – Fats, Goktay TAS, Ayca AYLANGAN, Aydin OZTAN 665
- Changes in Colour Characteristics of Irradiated Foods, Vassilia J. Sinanoglou, Anthimia Batrinou, Stamatis Tzimas, Niki Panopoulou and Konstantinos Sflomos 669
- Yoghourt with the Date Powder, Hayet Amellal, Salem Benamara and Khodir Madani 675
- The Structural Characteristics and Mechanical Properties of Biopolymer / Mastic Gum Microsized Particles Composites, Christos Mavrakis and Vassilis Kiosseoglou 679