5th INTERNATIONAL CONFERENCE
PREDICTIVE MODELLING IN FOODS
IC PMF 2007

Fundamentals, State of the Art and New Horizons

September 16-19, 2007

ATHENS - GREECE

TRAINING CENTRE OF THE
NATIONAL BANK OF GREECE - GLYFADA

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## PROGRAMME OVERVIEW

### Sunday, September 16th

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<td>Welcome Cocktail (Atrium)</td>
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<td>Coffee Break (Atrium)</td>
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<td>14:00</td>
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<td>Coffee Break (Atrium)</td>
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<td>16:00</td>
<td>Session 12 (Room Aristotle)</td>
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<td>17:20</td>
<td>Poster Session B (Lobby)</td>
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<td>Conference Dinner</td>
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<td>Session 14 (Room Aristotle)</td>
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<td>10:20</td>
<td>Coffee Break (Catering Area)</td>
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<td>11:00</td>
<td>Session 15 (Room Aristotle)</td>
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<td>Session 17 (Room Aristotle)</td>
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<tr>
<td>15:40</td>
<td>Poster Session B (Lobby)</td>
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<tr>
<td>17:00</td>
<td>Closing Event (Atrium)</td>
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PROGRAMME

Sunday, September 16th
14:00-19:00

14:00  Registration

Session 1: A Bird’s Eye View on Predictive Modelling in Foods

Room Aristotle


15:00  Welcome Addresses

15:10  Predictive Modeling of the Past: a Personal Account (S1-1)
      C. Genigeorgis

15:30  Key note lecture: The Future of Predictive Microbiology: Innovative Applications and Great Expectations (S1-2)
      T.A. McMeekin, J. Bowman, S. Dobson, L. Mellefont, T. Ross and M. Tamplin

16:10  A Global Approach to Predict *Listeria innocua* Growth at the Surface of Foods as a Function of the Media and Process Characteristics (S1-4)
      I. Lebert, S. Portanguen, C.G. Dussap and A. Lebert

16:30  Quantification of Hurdles: Predicting the Combination of Effects on the Growth-No Growth Boundary (S1-5)
      R.J.W. Lambert and E. Bidlas

16:50  Temperature is the Main Factor Governing the Rate of Non-Thermal Inactivation of Vegetative Bacteria (S1-6)
      T. Ross, D. Zhang and O. McQuestin

17:10  Poster Session A: Predictive Modelling Methodologies and New Modelling Techniques/Approaches

18:10  Welcome Coctail
Session 2: Applications in Quantitative Microbiological Risk Assessment (I)

Room Aristotle


09:00 Key note lecture: Risk Analysis-Current Thinking and Applications (S2-1)
L. Gorris

09:40 Quantitative Risk Assessment for *Escherichia coli* O157:H7 in Frozen Ground Beef Patties Consumed by Young Children in French Households (S2-2)
M.L. Delignette-Muller, M. Cornu, N. Bemrah and C. Vernozy-Rozand

10:00 Application of Predictive Modelling Techniques in Industry: from Food Design up to Risk Assessment (S2-3)
J.M. Membre and R.J.W. Lambert

10:20 Coffee Break

Session 3 (Parallel): Predictive Modelling Methodologies for (Non)thermal Microbial Inactivation

Room Aristotle

Chairs: V. Juneja – F. Devlieghere – P. Skandamis

11:00 Simulation Intricacies Associated with a Weibull-type Model, Developed Based on Microbial Inactivation Experiments under Static Conditions, when Applied under Dynamic Conditions (S3-1)

11:20 Modular Approach for Modelling the Non-Thermal Inactivation of *Listeria monocytogenes* and *Salmonella typhimurium* (S3-2)
L. Coroller, I. Leguerinel, E. Mettler, D. Thuault and P. Mafart

11:40 Modelling the Inactivation of a Bacterial Spore Population Composed of Heat Sensitive and Heat Resistant Spores (S3-3)
I. Leguerinel, A. Palop, L. Coroller, S. Condon and P. Mafart

12:00 Identification of Non-Linear Microbial Inactivation Kinetics under Dynamic Conditions (S3-4)
V.P. Valdramidis, A.H. Geeraerd, K. Bernaerts and J.F. Van Impe

12:20 Development of the Quasi-Chemical Model for the Inactivation of Pathogens and Bacterial Spores by High Pressure and Chemical Sterilizing Agents (S3-5)
F.E. Feeherry, C.J. Doona and E.W. Ross

12:40 Lunch Break

Session 4 (Parallel): Predictive Modelling Methodologies for Abiotic Stresses during Microbial Growth

Room Plato

Chairs: M. Jakobsen – P. Mafart – C. Biliaderis

11:00 Modelling the Vapour-Phase Antimicrobial Activity of Essential Oils against a Wide Array of Foodborne Microorganisms (S4-1)
L. Gutierrez, P. Lopez, C. Sanchez, R. Batlle and C. Nerin

11:20 Prediction of pH and Water Activity of Complex Bacterial Growth Media Containing Electrolytes Using UNIFAC Model (S4-2)
I. Lebert, C.G. Dussap, S. Portanguen, T. Rougier, J.D. Daudin and A. Lebert

11:40 Direct Imaging Based Quantification of the Growth Dynamics of Salt-Stressed *Bacillus cereus* (S4-3)

12:00 Towards a Unified Approach for Modelling the Effect of Different Levels of Osmotic Stress on the Survival of *Listeria monocytogenes* (S4-4)
P. Skandamis, A. Gounadaki, V. Valdramidis and G.-J.E. Nychas

12:20 Combined Effects of Thermal Treatment, pH and Ginnamaldehyde on the Viability of *Allicyclobacillus acidoterrestris* spores (S4-5)
A. Bevilacqua, M.R. Corbo and M. Sinigaglia

12:40 Lunch Break
Session 5: New Horizons in Shelf-Life Modelling and Monitoring

**Room Aristotle**

**Chairs:** T. Labuza – M. Zwietering – J.P. Sutherland – D. Thuault

**14:00** Application and Validation of the TTI Based Chill Chain Management System SMAS on Shelf Life Optimization of Vacuum Packed Tuna Slices (S5-1)

T. Tsironi, E. Gogou and P. Taoukis

**14:20** Modelling pH Evolution and Lactic Acid Production in a LAB. Application to Set a Biological TTI (S5-2)

M. Ellouze, C. Bonaiti, L. Corollier, O. Couvert, D. Thuault and R. Vaillant

**14:40** Modelling of Growth and Histamine Formation by *Morganella psychrotolerans* (S5-3)

J. Emborg and P. Dalgaard

**15:00** Development of a Microbial Time Temperature Indicator (TTI) for Monitoring Microbiological Quality of Foods (S5-4)

H. Vaikousi, C.G. Biliaderis and K. Koutsoumanis

**15:20** Coffee Break

Session 6 (Parallel): Predictive Modelling Methodologies in/on Structured Food/Model Systems

**Room Aristotle**

**Chairs:** T. Brocklehurst – D. Schaffner – T. Ross

**16:00** Modelling the Outgrowth of *Clostridium perfringens* during the Cooling of Bulked Meat (S6-1)

Y. Le Mare, J. Plowman, C.F. Aldus, M. Munoz-Cuevas, J. Baranyi and M.W. Peck

**16:20** Effect of pH, Water Activity and Gel Micro-Structure, Including Oxygen Profiles and Rheological Characterisation, on the Growth Kinetics of *Salmonella Typhimurium* (S6-2)


**16:40** *Listeria monocytogenes* Growth in Structured Food: Effect of Population Density (S6-3)

N. Gnanou-Besse, L. Barre, A. Cauquil and M. Simon-Cornu

**17:00** Effect of Food Structure (Type of Growth), Composition and Microbial Interaction on the Growth Kinetics of *L monocytogenes* (S6-4)

D. Dourou, A. Stamatiou, K. Koutsoumanis and G-J.E. Nychas

**17:20** Modeling *Bacillus cereus* Adherence to Stainless Steel Surface as Function of Temperature, pH and Time (S6-5)

W.E.L. Pena, N.J. de Andrade and N.F.F. Soares
Session 7 (Parallel): Applications of Predictive Modelling to Dairy Products & Processing

Room Plato


16:00 A New Web-Based Modeling Tool (Websim-MILQ) Aimed at Optimization of Heating Processes in the Dairy Industry (S7-1)

16:20 Application of Mathematical Modelling in Microbiological Spoilage Analysis and Shelf-Life Determination of Pasteurized Cream (S7-2)
A. Fasoulaki, E.Z. Panagou and G.-J.E Nychas

16:40 A Predictive Model for *Listeria monocytogenes* in Dairy Products (S7-3)
A. Lobacz and J. Baranyi

17:00 Modelling the Competitive Growth between *Listeria monocytogenes* and Biofilm Microflora of Smear Cheese Wood Shelves (S7-4)
L. Guillier, V. Stahl, B. Hezard, E. Notz and R. Briandet

17:20 Katiki - A traditional Greek Soft Cheese: Modeling Survival of *Listeria monocytogenes* during Storage from 5 to 20°C (S7-5)
V. Stergiou, A. Lazaridou, M. Mataragas, and G.-J.E. Nychas

17:40 Poster Session A: Predictive Modelling Methodologies and New Modelling Techniques/Approaches

20:30 Gala Dinner at Poseidon Temple, Sounio
Session 8: Predictive Modelling Methodologies at Individual Cell Level (I)

Chairs: S. Brul – R. Whiting – S. Koseki

09:00 Key note lecture: Microbial Adaptation: Continuously Discrete or Discretely Continuous? (S8-1)
J. Baranyi

09:40 Modelling the Individual Cell Lag Time Distributions of Listeria monocytogenes as a Function of the Physiological State and the Growth Conditions (S8-2)
J.C. Augustin and L. Guiller

10:00 A Study on the Variability in the Growth Limits of Individual Cells and its Effect on the Behaviour of Microbial Populations (S8-3)
K. Koutsoumanis

10:20 Coffee Break

Session 9 (Parallel): Applications in Quantitative Microbiological Risk Assessment (II)


11:00 Microbial Quantitative Exposure Assessment of Listeria monocytogenes in Minimal Processed Fresh Salads Using Hierarchical Bayesian Modelling and Second-Order Monte Carlo Simulation (S9-1)
A. Crepet, V. Stahl and F. Carlin

11:20 Behaviour of Clostridium perfringens in the Gastro-Intestinal Tract in Relation to Food Borne Disease (S9-2)
L.M. Wijnands and A. Pielaat

11:40 Implications of FSO Scenarios for the Broiler Chicken Supply Chain (S9-3)
E.D. van Asselt, S. Tromp, H. Rijgersberg and H.J. van der Fels-Klerx

12:00 Risk Associated with Salmonella on the Shell of Hens’ Eggs (S9-4)
P. Botey-Salo, A. Anyogu, A.H. Varnam and J.P. Sutherland

12:20 An Integrated Risk Assessment of Patulin in Apple Juices throughout the Food Chain (S9-5)
K. Baert, B. De Meulenaer, A. Amiri, J. Debevere and F. Devlieghere

12:40 Semantic Annotation of Web Data Applied to Risk in Food (S9-6)

Session 10 (Parallel): Presentations of Predictive Modelling Software

Chairs: J. Baranyi – P. Dalgaard – V. Juneja

11:00 Use of USDA-Pathogen Modeling Program and the Predictive Microbiology Information Portal (S10-1)
V. Juneja

11:30 ComBase: An Integrated Database and Predictor of Microbial Responses to Food Environments (S10-2)
J. Baranyi

11:50 Seafood Spoilage and Safety Predictor (SSSP): New Safety Models for Popular Software (S10-3)
P. Dalgaard, O. Mejlholt, J. Emborg and B.J. Cowan

12:10 Sym’Previus: System for Prediction of Processes and Environments Impacts on Microorganisms in Food (S10-4)
O. Couvert and F. Postollec

12:30 Software Tools for Food Safety Decisions: Risk Ranger and the Refrigeration Index (S10-5)
Tom Ross

12:50 GInaFIT: Revealing the Time-Dependence of Microbial Survival under Food Processing, Food Preservation or Environmental Stress Conditions (S10-6)
A.H. Geeraerd and J.F. Van Impe

13:00 Lunch Break
Session 11: Predictive Modelling Methodologies at Individual Cell Level (II)

Room Aristotle

Chairs: L. Gorris – C. Pin – J.C. Augustin

14:00 Development and Assessment of Growth/No Growth Models Incorporating the Effect of Cell Density on the Growth Probability of *Listeria monocytogenes* (S11-1)

14:20 Modelling the Effect of Acid Adaptation and Inoculum Size on the Growth Boundaries of *Salmonella Enteritidis* and *Listeria monocytogenes* in Response to pH, Water Activity and Temperature (S11-2)
P.N. Skandamis

14:40 Effects of Non-Growth Inhibitory Concentrations of Selected Fatty Acids on the Lag Time Distribution of *Staphylococcus aureus* Single Cells (S11-3)
S. Sado-Kamdem, C. Pin, M.E. Guerzoni and J. Baranyi

15:00 Modelling the Effect of Sub-Lethal Temperatures on the Subsequent Germination and Outgrowth Stages Constituting the Individual Lag Times of Spores of *Bacillus subtilis* (S11-4)
J.P.P.M. Smelt, A.P. Bos and S. Brul

15:20 Coffee Break

Session 12 (Parallel): Methodological Developments for Predictive Modelling and Risk Assessment

Room Aristotle


16:00 Quantification of the Adaptive Salt Stress Response of *Bacillus cereus* (S12-1)
H.M.W. den Besten, M. Mataragas, R. Moezelaar, T. Abee and M.H. Zwietering

16:20 Accurate Estimation of Cardinal Temperature Parameters of *Escherichia coli* from Dynamic Experiments: What Can We Gain from Optimal Dynamic Experiment Design? (S12-2)
E. Van Derlinden, K. Bernaerts and J.F. Van Impe

16:40 Validation and Performance of Predictive Modelling in Foods: Use of Prediction Confidence Bands (S12-3)
L. Coroller and J.P. Gauchi

17:00 A Global Bayesian Approach for Quantitative Risk Assessment (QRA) from Farm to Illness, Application to Campylobacteriosis through Broiler (S12-4)
I. Albert, E. Grenier, J.B. Denis and J. Rousseau
Tuesday, September 18th

Session 13 (Parallel): Applications of Predictive Modelling in Meat Products/Processing

Room Plato

Chairs: J. Sofos – A. Geeraerd – P. Skandamis

16:00 A Predictive Model for Growth of *L. monocytogenes* in Meat Products with Seven Different Hurdles Variables (S13-1)
A. Gunvig, J. Blom-Hanssen, T. Jacobsen, F. Hansen and C. Borggaard

16:20 Probabilistic Modelling of *Pseudomonas fluorescens* Behaviour on Surfaces in Meat Processing Premises (S13-2)
S. Peneau, B. Carpentier and M. Cornu

16:40 Combining Deterministic Models and Monte Carlo Analysis for Process Optimization in the Cooked Meat Products Industry (S13-3)
A. Esvedd-Amanatidou and I.C. Verhagen

17:00 The Comparative Study of Growth Rate, Lag Phase and Doubling Time of *E. coli* O157:H7 in Commercial Chicken Soup Extract Affected by Some Essential Oils (*Zataria multiflora*, *Carvi carum* and *Mentha piperita*) (S13-4)
A. Fazlara, H. Najafzadeh and E. Lak

Predictive Modelling Software Demonstrations

Room Hestia

17:20
- USDA-Pathogen Modeling Program
- Predictive Microbiology Information Portal
- ComBase
- Seafood Spoilage and Safety Predictor (SSSP)
- Sym’Previus
- Risk Ranger
- Refrigeration Index
- GlnAFit

17:20 Poster Session B: Applications of Predictive Modelling

20:30 Conference Dinner
Wednesday, September 19th
09:00-14:00

Session 14: New Horizons Involving Systems Biology
Room Aristotle

Chairs: P. Mafart – M. Zwietering – T. Brocklehurst

09:00 Key note lecture: Microbial Systems Biology; New Frontiers Open to Predictive Food Microbiology (S14-1)
S. Brul, F. Mensonides, B. Bakker, K. Hellingwerf and J. Teixeira de Mattos

09:40 Application of Network Science to Describe the Changes in Gene Expression during the Lag Time of *Escherichia coli* (S14-2)
C. Pin and J. Baranyi

10:00 Quantitative Evaluation of Spoilage (S14-3)
P. Skandamis, M. Mataragas and G.-J.E. Nychas

10:20 Coffee Break

Session 15 (Parallel): Applications of Predictive Modelling in Salads, Sourdough & Fish and Seafood Products
Room Aristotle

Chairs: P. Dalgaard – D. Thuault – E. Panagou

11:00 Evaluation of the Microbial Safety and Stability of Salads and Sauces Based on Growth/No Growth Models for Different Micro-Organisms (S15-1)

11:20 Modelling of the Functionalities of a Novel *Lactobacillus fermentum* Sourdough Starter Strain (S15-2)
G. Vrancken, T. Rimaux, L. De Vuyst and F. Leroy

11:40 Development and Field Validation of a Shelf-life Model for Emulsified Greek Appetizers (S15-3)
P.N. Skandamis, S. Manios, A. Skiadareis, K. Karavasilis, G.J.E. Nychas and E.H. Drosinos

12:00 Predicting Growth of Lactic Acid Bacteria and *Listeria monocytogenes* in Lightly Preserved Seafood – a Product-Oriented Modelling Approach (S15-4)
O. Mejlholt and P. Dalgaard

12:20 Optimization of Shelf Life Distribution of Frozen Shrimp Based on Modeling and TTI Monitoring (S15-5)
T. Tsironi, M. Giannakourou, E. Dermesanolouoglou and P. Taoukis

12:40 Development and Assessment of a Shelf Life Prediction System for Cultured Tilapia (S15-6)
Z. Xu, Q. Guo and X. Yang
Session 16 (Parallel): Application of Predictive Modelling in Food Products & Drinks

Room Plato

Chairs: J. Membre – C. Pin – J.P.P.M. Smelt

11:00 Microbial Interactions and Equilibrium during Wine Elaboration-Relationship with Wine Quality (S16-1)
V. Renouf

11:20 Predictive Modelling for the Recovery of Listeria monocytogenes on Sliced Cooked Ham after High Pressure Processing (S16-2)
S. Koseki and K. Yamamoto

11:40 Modeling High Hydrostatic Pressure Inactivation Kinetics of Pectinmethylesterase of Citrus Fruits (S16-3)
G.J Katsaros, B. Sidosi, T. Panagiotou, A. Polydera and P.S Taoukis

12:00 Effect of Ethanol Vapours on Inactivation of Fungal Spores (S16-4)
P. Dantigny, T. Dao, J. Dejardin and M. Bensoussan

12:20 Development of a Probabilistic Lag Model to Predict the Fate of Bacillus cereus Spores in Heat-treated Chilled Foods (REPFEDs) (S16-5)
J.M. Membre, D. Kan-King-Yu and C.W. Blackburn

12:40 A Logistic Approach to Assess the Suitability of Aroma Compounds to Improve Stability of Soft Drinks Inoculated with S. cerevisiae (S16-6)
N. Belletti, R. Lanciotti, S.L. Sado Kamdem, F. Patrignani and F. Gardini

13:00 Lunch Break

Session 17: A last bird’s eye view...

Room Aristotle


14:00 What Happens to the Diversity of Bacterial Pathogens along a Processing Chain? The Example of Bacillus cereus in Cooked and Pasteurised Vegetable Purées (S17-1)
A.L. Afchain, F. Carlin, C. Nguyen and I. Albert

14:20 Evolving from High through Low Uncertainty Risk Assessments for Dairy Products Using Kinetic, Stochastic and Fault Tree Modelling (S17-2)
J.H.M. van Lieverloo, M. Fox, M. Schutyser, M.C. te Giffel and P. de Jong

14:40 Variability and Uncertainty in the Campylobacter Load and the Corresponding Risk in Consumption of Poultry in the United Kingdom (S17-3)
P.K. Malakar, G.C. Barker, N. Gomez, L.C. Chai and R. Son

15:00 Risk Assessment of Salmonella spp. in Cocoa Products (S17-4)
J. Rossis, P. Skandamis and G-J.E. Nychas

15:20 Optimising Food Process and Formulation through Sym’Previs, Food Safety Management (S17-5)
O. Couvert, J.C. Augustin, P. Buche, F. Carlin, L. Coroller, C. Denis, E. Jamet, E. Mettler, A. Pinon, F. Postollec, V. Stahl, V. Zuliani and D. Thuault

15:40 Poster Session B: Applications of Predictive Modelling

16:00 Closing event
Predictive Modelling Methodologies and New Modelling Techniques/Approaches

Growth Interaction between *Staphylococcus aureus* and Lactic Acid Bacteria during Fermentation of Milk (PA1)

L. Valik, A. Medvedova, B. Bajusova and D. Liptakova

Evolutionary Combined Neural Networks for Modelling the Growth Boundaries for a Five Strain *Staphylococcus aureus* Cocktail against Temperature, pH and Water Activity (PA2)


Towards a Biological Process Model for the Behavior of Food-Borne Pathogens in the Gastro-Intestinal Tract (PA3)

A. Pielaat and L. Wijnands

A New Algorithm for Calculating Thermal Processes Related to Non-Log-Linear Survival Curves (PA4)

P. Mafart, H. B. Yaghlene and L. Coroller

Evolution of Biomass Distribution during Bacterial Lag Phase through Flow Cytometry, Particle Analysis and Individual-Based Modelling (PA6)

C. Prats, J. Ferrer, B. Flix, A. Giro, D. Lopez and J. Vives-Rego

Predictive Model for Growth of *Clostridium perfringens* at Temperatures Applicable to Cooking of Cooked Uncured Beef and Chicken (PA7)

V. Juneja, H. Marks, L. Huang and H. Thippareddi

Variability of the *Listeria innocua* and *Enterococcus faecalis* Inactivation in Ham by Irradiation (PA8)

J.S. Aguirre, M.R. Rodriguez and G.D. Garcia de Fernando

Baseline Assessment of the Microbial Contamination of Lori Cheese Sold in Yerevan Markets (PA9)

N. Truzyan, C. Dunlap and K. Grigoryan

Performance Evaluation of Secondary Models for Prediction of Growth Rate of *Salmonella* in Decontaminated Fresh Pork (PA10)

T.B. Hansen, Y. Kampmann, B.B. Christensen and S. Aabo

The Survey of Growth and Toxigenesis of *Clostridium botulinum* Type A under Effect of Multivariant pH, Salt, Temperature and Time of Storage in B.H.I Model (PA11)

Z. Mashak

Determination and Quantification of Microbiological and Chemical Changes in Yogurt Using Machine Vision System and Evaluation of Collected Data Using Artificial Neural Network during Storage (PA12)

A. Sofu, N. Demir and F.Y. Ekinci

Designing Experiments for Microbial Inactivation Kinetics Studies (PA13)

M.M. Gil, T.R.S. Brandao and C.L.M. Silva

Quantitative Studies on the Inhibition of the Growth of *Escherichia coli* and *Listeria monocytogenes* by Lactic Acid Bacteria (PA14)

C. Aguilar, C. Vanegas and B. Klutz

INDISIM-YEAST, a Simulator for Individual-Based Modelling of Yeast Metabolism and Process Dynamics in Asynchronous Batch Fermentations (PA15)

M. Ginovart, A. Gras and R. Carbo

Modelling of Surface Temperature during Inactivation of Bacteria by a Jet of Superheated Steam (PA16)

S. Portanguen and A. Kondjoyan

Variability of the *Listeria innocua* and *Enterococcus faecalis* Inactivation in Milk by Heating Treatment (PA17)

J. Aguirre, M.R. Rodriguez and G.D. Garcia de Fernando

The Use of Flow Cytometry and Particle Size Analysis in the Individual-Based Model INDISIM-YEAST, a Simulator of Yeast Populations (PA18)

M. Ginovart, R. Carbo, A. Gras and J. Vives-Rego

Modeling the Interface Growth/No Growth of *Alicyclobacillus acidoterrestris* CRA 7152 in Orange Juice as a Function of pH, Temperature, Brix and Nisin Concentration (PA19)

W.E.L. Pena and P.R. de Massaguer

Primary Growth Modeling of *Saccharomyces cerevisiae* in Co-Culture with *Lactobacillus fermentum* in Sugar-Cane Must (PA20)

V.O. Alvarenga and P.R. de Massaguer

Use of Monte Carlo Simulation to Determine Fate of *Salmonella* Enteritidis during Fermentation of Cassava (PA21)

J.P. Sutherland, A. Anyogu and A. Varnam
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Modelling and Predictions from Non Isothermal Heating to Control *Listeria monocytogenes* in Foods (PA22)
M. Munoz, L. Guevara, A. Palop, P.M. Periago and P.S. Fernandez

Control of *Listeria monocytogenes* Cells Combining Heat and Plant Essential Oils and Description through Frequency Distributions (PA23)
L. Guevara, M. Munoz, P.M. Periago, A. Palop and P.S. Fernandez

Validation of a Model for Lactic Acid Induced Interaction in Structured Media: Effect of Monopotassium Phosphate (PA24)
M. Antwi, K. Bernaerts, J.F. Van Impe and A.H. Geeraerd

Growth Probability of *Listeria monocytogenes* and Classification of Pork Meat Products (PA25)
J.C. Augustin, V. Zuliani and P. Garry

Quorum Sensing – Can Be a Variable for Modeling Microbial Behavior? (PA26)
D. Dourou, C. Michaelidis, V. Stergiou, P. Skandamis and G.-J.E. Nychas

Evaluation of Mathematical Models for Microbial Growth of *Enterobacter sakazakii* (PA27)
M.C. Pina, D. Rodrigo, E. Buesa, M.J. Pagan and A. Martinez

Modelling the Onset of Browning during Mushroom Storage (*Agaricus bisporus* spp.) Using Local Standard Deviation (LSD) (PA28)
L. Aguirre, J. Frias, C. Barry-Ryan and H. Grogan

Computing Optimal Dynamic Experiments for Model Calibration in Predictive Microbiology (PA29)
E. Balsa-Canto, A.A. Alonso and J.R. Banga

Integrated Modelling of Food Process and Bacterial Behaviour: Application for Predicting the Evolution of *Listeria monocytogenes* Contamination during Delicatessen Processing (PA30)
V. Zuliani, I. Lebert, J.C. Augustin, P.Garry, J.L. Vendeuvre and A. Lebert

Accurate Estimation of Cardinal Temperature Parameters of *Zygosaccharomyces bailii* from Dynamic Experiments (PA31)
E. Van Derlinden, K. Bernaerts and J.F. Van Impe

Neuro-Fuzzy Modelling for the Growth Rate of *Aspergillus carbonarius* (PA32)
E.Z. Panagou, C.C. Tassou, N. Magan and V.S. Kodogiannis

Automatic Monitoring the Redox Potential for Growth/Death Modelling and Data Gathering on Bacterial Contamination with Low Cell Numbers (PA33)
O. Reichart, J. Farkas, K. Szakmar, J. Beczner, E. Andrassy and I. Bata-Vidacs

Influence of Water Activity on the Distribution of the Germination Time amongst a Population of Fungal Spores (PA34)
P. Dantigny, D. Judet and M. Bensoussan

Flow Cytometry: a New Rapid Enumeration Method in Predictive Microbiology (PA35)

DNA Extraction and QPCR Methodologies for Direct and Species Specific Lactic Acid Bacteria (LAB) Quantification in Dairy Products (PA36)
A.S Le Dizes, I. Leguerinel, D. Thuault and D. Sohier

*E. coli* O157:H7 in Beef Burgers Produced in the Republic of Ireland: a Quantitative Microbial Risk Assessment (PA37)
G. Duffy, E. Cummins, P. Nally and F. Butler

Effects of the Mixture of Diverse Chloride Salts on *Saccharomyces cerevisiae* Growth (PA38)

Modelling of the Individual and Combined Effects of Moisture Content and Temperature on the Radial Growth of Black Aspergilli on Pistachio Nuts (PA39)
I. Hodzic, V. Sanchis, A.J. Ramos and S. Martin

Integrated and Longitudinal Approach to Risk Assessment of *E. coli* O157 in the Beef Chain (PA40)
I. Nastasijevic, R. Mitrovic and S. Buncic
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Applications of Predictive Modelling

A Stochastic Modeling Approach for Taking into Account Spoilage in Risk Assessment: Application for Escherichia coli/O157:H7 in Ground Beef (PB1)
K. Koutsoumanis

Statistical Distributions Describing Heterogeneous Contamination in a Dry Food Product (PB2)
I. Dijkhoff, A.A. Orphanides, M.W. Reij, L.G.M. Gorris and M.H. Zwietering

Behavior of Foodborne Pathogens in Teewurst Raw Spreadable Sausage (PB3)
D. Dourou, A. Porto-Fett, B. Shoyer and J. Luchansky

Growth and Inactivation of Escherichia coli, Listeria monocytogenes and Yersinia enterocolitica in fermented sausages (PB4)
M. Lindblad and R. Lindqvist

Modeling of Migration of Volatile Compounds from Cap-Liners into Liquid Food via Package Headspace (PB5)
G. Asadi, S.M. Mousavi and S. Desobry

Modeling Pathogen Thermal Inactivation Potential of two Industrial Processes for Precooked Meat Patties: the Case of Listeria monocytogenes (PB6)
L. Vannini, S.L. Sado-Kamdem, F. Ferioli, M.F. Caboni and M.E. Guerzoni

Predictive Modelling for Quantitative Risk Assessment in the Food Industry (PB7)
E. Cummins, F. Butler, N. Brunton and R. Gormley

Validation of Predictive Models for Growth of Listeria monocytogenes in Cooked Meat Products and Determination of Product Safe Shelf Life (PB8)
A. Sebok, S. Peresi, E. Horvath, C. Baar and J.G. Reichardt

Kinetic Study of the Activity of S. thermophilus Aminopeptidases Subjected to High Hydrostatic Pressure for Optimization of Feta Cheese Ripening (PB9)
G. Katsaros, M. Giannoglou and P. Taoukis

Assessment of the Influence of Low Pressure and Modified Atmospheres on the Microflora of Beef Cuts Stored under in Rigid Container Systems (PB10)
P. Paulsen, F. Smulders and S. Giefling

Modelling the Biofilm Formation of Pseudomonas fluorescens to Marble, Granite and Stainless Steel as Function of Time and Temperature (PB11)

Assessment of the Effect of Temperature, Relative Humidity and Strain-to-Strain Variability Listeria spp. Growth Kinetics under Refrigerated State (PB12)
J.M. Frias, C. Garvan, L. Lebert, N. Abu-Ghannam, P. Baurcou and A. Lebert

Predictive Modeling of Dough Quality Parameters Based on the Single Kernel Characterisation System (PB13)
L.N. Pietrzak, B. Baum and S. Matwin

Extending Shelf Life of Cooked, Cured Meat Product by the Addition of Sodium Chloride, Sodium Lactate and Sodium Di-Acetate (PB14)
M. Mataragas, P. Skandamis and E.H. Drosinos

A Preliminary Risk Assessment of Prevalence of Salmonella spp. during Pork Processing in the Republic of Ireland (PB15)
U. Gonzales-Barron, D. Bergin, F. Butler, S. Duggan, D. Prendergast and G. Duffy

Can Food Industry Rely on Predictive Microbiology? (PB16)
E. Mettler, L. Perrier and S. Henri-Dubernet

Evaluation and Enumeration of Enterococci in Iranian Traditional Ice-Cream with Reference Method and its Correlation with Impedance-Splitting Method and Designing their Mathematical Pattern (PB18)
A. Fazlara, S. Maktabi and A. Noori

Modelling Survival Curves of Heated Alicyclobacillus acidoterrestris spores with the Weibull model (PB19)
R. Conesa, P.S. Fernandez and A. Palop

Predictive Modelling of the Dietary Intake and Bio-Availability of B-Glucan in Bread (PB20)
E. Cummins and F. Butler

Kinetic Models for Pediococcus damnosus Survival during High Pressure Treatment (PB21)
E.Z. Panagou, C.C. Tassou, F. Samaras, J. Arkoudelos and C. Mallidis

Application of a Multilayer Perceptron Neural Network to Simulate the Growth Profile of Lactic Acid Bacteria Starter Cultures in Spanish-Style Green Olive Fermentation (PB22)

Computer Simulation of Water Activity in Food Products (PB23)
O. Couvert, D. Thuault and M. LeMaguer
POSTER SESSION B

Applications of Predictive Modelling

Modelling the Effect of Enterocins A & B Combined with Lactate and EDTA at Different Temperatures on Salmonella Growth Response (PB24)
S. Bover-Cid, A. Jofre, T. Aymerich and M. Garriga

Potential Pathogen Growth during Smoking of Traditional Portuguese Fermented Meat Products Using Predictive Modelling Tools (PB25)
I. Campelos, P. Gibbs and P. Teixeira

Lag Time Estimation Using Turbidity Measurements (PB26)
E. Peters, M. Reij, L. Gorris and M. Zwiertering

Growth Characteristics of Clinical and Seafood Strains of Listeria monocytogenes in Suboptimal Temperature, pH and Water Activity Conditions (PB27)
A. Pinon, S. Decherf, D. Caly and M. Vialette

Time to Growth Model for a Patulin Producer Strain of Byssochlamys in Bottled Clarified Apple Juice (PB28)
A.S. Santana and R.P. Massaguer

Modeling of the Growth of Bacteria in Sausages in Relation to NaCl and Phosphate Content (PB29)
L. Cervenka, I. Peskova I. Brozkova, M. Pejchalova, J. Vytrasova and S. Rezkova

Effect of Carvacrol, Nisin and Previous Thermal Treatments on the Growth of two Crops of Salmonella (PB30)
M.D. Esteban, L. Guevara, M. Munoz and A. Palop

Accelerated Shelf Life Testing (ASLT) of Heat Stable Ready-to-Eat Foods (PB31)
M. Nuin, M.C. Abaroa and B. Alfaro

Development of a “Decision Support Tool” (DST) for the Pork Supply Chain (PB32)
J. Kreyenschmidt, S. Aabo, S. Bruckner, B.B. Christensen, V. Gikasakis, T.B. Hansen, Y. Kampmann, T. Lettmann, V. Raah, F. Van Beek and B. Petersen

Modelling Growth of Neosartorya fischeri in Pineapple and Papaya Juices: Effect of Ascospores Formation Temperature, Juice Storage Temperature, Ratio and Package Head Space (PB33)
P.A. Leal, R.R. Massaguer and G.M.F. Aragao

Modelling and Predictions from Antimicrobial Compounds at Different pH Levels to Control Yersinia enterocolitica and Shigella sonnei (PB34)
S. Akcove, M.J. Morales, A. Palop, P.S. Fernandez and P.M. Periago

Modeling the Growth of Lactic Bacteria (Natural Flora) in Mortadella at Different Temperatures (PB35)
C.M.P. Sarmento and G.M.F Aragao

Risk Analysis of Listeria monocytogenes in Ready-to-Eat Salads (PB36)
E. Carrasco, F. Perez-Rodriguez, A. Valero, R.M. Garcia-Gimeno and G. Zurera

Modeling to Predict the Growth of Listeria monocytogenes on Ready-to-Eat Meat and Poultry Products as a Function of Storage Temperature and Time (PB37)
Y. Yoon, I. Geornaras, G. Duran and J.N. Sofos

Modeling the Growth of Salmonella in Cat tomatoes: a Risk Based Approach to Determining Safe Storage Temperatures (PB38)
D.W. Schaffner

Global Optimization of Process Conditions in Batch Thermal Sterilization of Food (PB39)
T. Miri, A. Tsoukalas, S. Pistikopoulos, B. Rustem, P.J. Fryer and S. Bakalis

The Use of Time Temperature Integrators to Determine the Heat Treatment Efficiency of Industrial Processes (PB40)
K. Mehauden, P.W. Cox, S. Bakalis, P.J. Fryer