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First International Symposium

on

MINERALS & DAIRY PRODUCTS

Palais du Grand Large,
1 quai Duguay Trouin, 35400 Saint-Malo, France

October 1-3, 2008

Program & General Information

FRANCE

IDF/INRA 1st International Symposium on MINERALS & DAIRY PRODUCTS
October 1-3, 2008 • Saint-Malo, France

Scope & Welcome Address

Ladies and gentlemen,

The IDF/INRA First International Symposium on "MINERALS & DAIRY PRODUCTS" is organized by the French Research Institute INRA in collaboration with the International Dairy Federation (IDF) and its French National Committee (ALF) and it is an honour and privilege for me to write a few words on this event.

The scientific objectives of this first Symposium in this domain are to:

- Provide an update on scientific knowledge in different areas (Chemistry, Physics, Biochemistry, Technology and Nutrition)
- Clarify the complexity of the behaviour of minerals
- Identify unresolved problems
- Propose new strategies in research and research-development sectors.

In order to attain these objectives, the symposium will be held in four sessions:

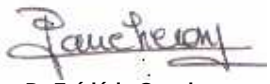
- Minerals of milk from different species and breeding conditions
- Minerals-minerals and minerals-proteins interactions
- Minerals as a function of physico-chemical conditions and technological treatments
- Minerals and nutrition-health.

During the Symposium, there will be approximately 50 oral presentations and 50 posters and 200 participants from more than 30 countries around the world. Accordingly, we hope that creative exchanges of valuable knowledge and ideas with the help of scientists, experts, and students from the dairy sector will take place.

I would like to thank the participants and especially sponsors for their active participation and financial support for the success of this event.

Saint-Malo is a beautiful and well-known medieval city on the North West coast of France. It is visited by thousands of tourists every year due to its historical centre, attractive coasts and magnificient landscapes. Saint-Malo is a pleasant place to work together and collaborate during these three days.

Enjoy the symposium and thanks a lot!



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Scientific & Organizing Committees

Scientific Committee

The Scientific committee comprises specialists in Dairy Science, Dairy Technology and Nutrition/Health.

- **Mary Ann AUGUSTIN** (CSIRO/Food Science Australia, Melbourne, Australia)
- **Gérard BRULE** (Agrocampus Ouest, Rennes, France)
- **Frédéric GAUCHERON*** (IDF Expert, France) (Chair)
- **Léon GUEGUEN** (INRA, Jouy-en-Josas, France)
- **Tim GUINEE** (Teagasc, Moorepark, Ireland)
- **Jean-Pierre GUYONNET** (CNIEL and IDF Expert, Paris, France)
- **Joëlle LEONIL*** (IDF Expert, France)
- **Juergen SCHREZENMEIR** (Institut Für Physiologie und Biochimie der Ernährung, Kiel, Germany)
- **Katharina E. SCHOLZ-AHRENS** (Institut Für Physiologie und Biochimie der Ernährung, Kiel, Germany)
- **Yvette SOUSTRE** (CNIEL and IDF Expert, Paris, France)

Organizing Committee

- **Sarfraz AHMAD***
- **Eric BEAUCHER***
- **Sylvaine BITTEUR (**INRA, Agrocampus Ouest, France)
- **Dominique BUREL** (FIL-ALF, Paris, France)
- **Jean-Pierre CALLEGARI** (CEREL, Rennes, France)
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- **Jacques FAUQUANT***
- **Laurence FAUVEL***
- **Frédéric GAUCHERON***
- **Christophe GENESTE***
- **Jennifer HUET (**FIL-ALF, Paris, France)
- **Omar MEKMENE***
- **Gabrielle OLIVIER***
- **Gwenaëlle PALIERNE***
- **Viviane PICARD***
- **Anne-Marie RENOUARD***

*INRA, Agrocampus Ouest, UMR 1253, Science et Technologie du Lait et de l'Œuf - Joint Research Unit for Science and Technology of Milk and Egg

Sponsors & Partners

The committees acknowledge all partners for their support.

General Planning

	Wednesday 01		Thursday 02		Friday 03
9.00	REGISTRATION	9.00	Session 3	9.00	Session 4
10.00		10.00		10.00	
11.00	Opening adress	11.00	**Break** (Coffee/poster)	11.00	**Break** Coffee/poster
12.00	Session 1	12.00	Session 3	12.00	Session 4 Concluding remarks
13.00	**Lunch**	13.00	**Lunch**	13.00	**Lunch**
14.00	Session 2	14.00	Session 3	14.00	**Free visit of INRA labs "Science & Technolgy of Milk and Egg Rennes"** **Transport Saint Malo/Rennes/Saint Malo by bus**
15.00		15.00		15.00	
16.00	**Break** (Coffee/poster)	16.00	**Break** (Coffee/poster)	16.00	
17.00	Session 2	17.00	Session 3	17.00	
18.00	Session 3	18.00			**END OF SYMPOSIUM**
	Free evening	2000-2400	**Gala Dinner**		

S1 : Minerals of milk from different species and breeding conditions
S2 : Minerals-minerals & minerals-proteins interactions
S3 : Minerals as a function of physico-chemical conditions and technological treatments
S4 : Minerals and nutrition-health

Oral Presentations

Session 1

MINERALS OF MILK FROM DIFFERENT SPECIES AND BREEDING CONDITIONS

Session 2

MINERALS-MINERALS & MINERALS-PROTEINS INTERACTIONS

Session 3

MINERALS AS A FUNCTION OF PHYSICO-CHEMICAL CONDITIONS AND TECHNOLOGICAL TREATMENTS

Session 4

MINERALS AND NUTRITION-HEALTH

Oral Presentations

Wednesday 01 October 09^{00} – 11^{00} Registration and opening by Frédéric Gaucheron (*France*)

SESSION 1. MINERALS OF MILK FROM DIFFERENT SPECIES AND BREEDING CONDITIONS

1. **Changes in milk composition and processing properties during the spring flush period.** Helen J Grimley, Alistair Grandison, Michael Lewis (*United Kingdom*)
2. **Dietary fat affects milk and plasma zinc content in dairy cows**. Lars Wiking, Torben Larsen, Jakob Sehested *(Denmark)*
3. **Pollution of camel milk by heavy metals in Kazakhstan.** Gaukhar Konuspayeva, Bernard Faye, Gérard Loiseau, Emilie Diacono, Shynar Akhmetsadykova (*France and Kazakhstan*)

SESSION 2. MINERALS-MINERALS & MINERALS-PROTEINS INTERACTIONS

4. **Calcium binding capacity of organic and inorganic ortho- and polyphosphates**. Esther de Kort, Marcel Minor, Thom Snoeren, Toon van Hooijdonk, Erik van der Linden (*The Netherlands*)
5. **pH of precipitation determines the quantity and crystalline structure of calcium phosphates obtained from aqueous solutions.** Omar Mekmene, Sophie Quillard, Thierry Rouillon, Jean-Michel Bouler, Frédéric Gaucheron (*France*)
6. **Stability of milk derived calcium phosphate suspensions.** Skelte G Anema (*New Zealand*)
7. **Ionic calcium measurement in milk– is it worthwhile.** Mike Lewis, Alistair Grandison, Mei-Jen Lin, Alexandros Tsioulpas, Helen Grimley, Marianthi Faka, Roussa Tstkritzi, Natirra On-Nom (*United Kingdom*)
8. **Simultaneous determination of free calcium, magnesium, sodium and potassium concentrations in simulated milk ultrafiltrate and reconstituted skim milk using the Donnan Membrane Technique.** R Gao, H P van Leeuwen, H J F van Valenberg, M A J S. van Boekel (*The Netherlands*)
9. **Determination of minerals in dairy products by ion chromatography.** Audrey Brault, Fabien Guérin (*France*)
10. **Thermodynamic characterization of calcium – cow milk protein interaction by Isothermal Titration Calorimetry (ITC).** Laetitia Canabady-Rochelle, Christian Sanchez, Michel Mellema, Sylvie Banon (*France*)
11. **Structural changes of casein micelles in calcium and enzym (rennet) gradient films**. Ronald Gebhardt, Manfred Burghammer, Christian Riekel, Stephan Volkher Roth, Peter Müller-Buschbaum (*France*)
12. **Effects of the environmental factors on the casein micelle structure studied by cryo-TEM, and small-angle/ultra small-angle x-ray scattering.** Frédéric Pignon, Stéphane Marchin, Jean Luc Putaux, Geneviève Gésan-Guiziou, Joelle Léonil (*France*)
13. **Casein dispersions under osmotic stress: the impact of structure and mineral composition.** Antoine Bouchoux, Pierre-Emerson Cayemitte, Julien Jardin, Geneviève Gésan-Guiziou, Bernard Cabane (*France*)
14. **Thermal stability studies on caprine and bovine lactoferrin. A comparative study.** Ashoka Sreedhara, Vishweshwaraiah Prakash, Ellen Sandberg, Purnima Kaul, Tove Devold, Thor Langsrud, Ragnar Flengsrud, Gerd Vegarud (*Norway*)

Oral Presentations

SESSION 3. MINERALS AS A FUNCTION OF PHYSICO-CHEMICAL CONDITIONS AND TECHNOLOGICAL TREATMENTS

15. **Evolution of the mineral equilibria of milk as a function of physico-chemical conditions and technological treatments: a review.** Frédéric Gaucheron (*France*)
16. **Effect of differences in calcium partitioning and casein micelle size on the rennet coagulation of raw skim milk and milk reconstituted from skim milk powder and MPC.** Gregory J O Martin, Roderick P W Williams, David E Dunstan (*Australia*)
17. **Acid gelation of colloidal calcium phosphate-depleted preheated milk.** Marie-Héléne Famelart, Géraldine Gauvin, Denis Paquet, Gérard Brulé (*France*)
18. **Molecular changes in casein micelles from buffalo and cow's skim milks during alkalinisation**. Sarfraz Ahmad, Jean François Grongnet, Florence Rousseau, Frédéric Gaucheron (*France*)
19. **Casein micelle dissociation in skim milk during high pressure; effects of pressure, pH, and temperature**. Vibeke Orlien, Lise Boserup, Karsten Olsen (*Denmark*)
20. **Ultra-high pressure homogenisation and mineral balance of milk.** Anna Zamora, Victoria Ferragut, Buenaventura Guamis, Antonio J Trujillo (*Spain*)
21. **Effect of pressurized carbon dioxide (CO_2) on the structure of casein micelles.** Phoebe X Qi, Peggy M Tomasula (*USA*)
22. **Measuring pH in milk under high pressure.** Karsten Olsen, Leif Skibsted, Vibeke Orlien (*Denmark*)
23. **Ohmic heating of infant formula.** Stéphanie Roux, Mathilde Courel, Lamia Ait-Ameur, Inès Birlouez-Aragon, Jean-Pierre Pain (*France*)
24. **Some observations on calcium fortification of milk and its effects on some factors affecting heat stability.** Mike Lewis, Alistair Grandison, Ese Omoarukhe, Natirra On-Nom (*United Kingdom*)
25. **Physicochemical and technological properties of iron fortified milk.** Sana Raouche, Sébastien Naille, Marie Dobenesque, Arjen Bot, Jean Claude Jumas, Jean Louis Cuq, Sylvie Marchesseau (*France*)
26. **Effect of physico-chemical changes on critical conditions and soluble protein transmission during microfiltration (0.1 µm) of skimmed milk.** Anne Jimenez-Lopez, Fabienne Garnier, Antoine Bouchoux, Florence Rousseau, Geneviève Gésan-Guiziou (*France*)
27. **Caseins evolution and calcium leakage with variation of the physico-chemical environment of skim milk: what kind of impacts on fluxes and selectivity in ultrafiltration, nanofiltration and reverse osmosis?** Murielle Rabiller-Baudry, Habib Bouzid (*France*)
28. **Effects of calcium on heat-induced denaturation of whey proteins** (Emmanuelle Riou, Palatasa Havea, Owen McCarthy, Harjinder Singh (*New Zealand*)
29. **What does added calcium do in heat-induced denaturation, aggregation, and gelation of whey proteins?** Emmanuelle Riou, Palatasa Havea, Owen McCarthy, Philip Watkinson, Harjinder Singh (*New Zealand*)
30. **Why concentrated acid whey is more prone to thickening?** Pierre Schuck, Arnaud Mimouni, Marie Héléne Famelart, Romain Jeantet, Delphine Naegele, Saïd Bouhallab (*France*)
31. **Retention of calcium in fresh cheese manufacture by means of milk nanofiltration pre-concentration.** Alexander Tolkach, Peter Schkoda, Jorg Hinrichs, Ulrich Kulozik (*Germany*)

Oral Presentations

32. **Salt diffusion in model cheese systems with regards to their structure-texture relationships.** Juliane Floury, Bénédicte Camier, Marie-Hélène Famelart (*France*)
33. **The effect of calcium content of Cheddar-style cheese on the compositional and rheological properties of processed cheese.** Tim P Guinee, Edward O Mulholland, Catherine Mullins (*Ireland*)
34. **Total contents of major minerals in the nature yoghurt and in the yoghurts with the date powder of three dry varieties.** Hayet Amellal-Chibane, Salem Benamara, Amrane Djouab (*Algeria*)
35. **Influence of sodium salt on production of organic acids during accelerated ripening of buffalo milk cheddar cheese.** Mian Anjum Murtaza, Salim-ur-Rehman, Faqir Muhammad Anjum, Nuzhat Huma, Ghulam Mueen ud Din, Sarfraz Ahmad (*Pakistan*)
36. **Characterization of the mineral profile of Portuguese and Greek traditional cheeses: influence of milk origin and dairy technology.** Maria Guoma, Kostas Sflomos, M Manuela Pintado, F Xavier Malcata, Ana M Gomes (*Portugal*)
37. **Lactic acid and minerals profile of cow and buffalo milk cheddar cheese.** Salim-ur-Rehman, Mian Anjum Murtaza, Faqir Muhammad Anjum, Nuzhat Huma, Omer Mukhtar Tarar, Sarfraz Ahmad (*Pakistan*)
38. **Effect of calcium on the physical properties of stirred yogurt.** Lakshmi Ramasubramanian, Connie Restuccia, Hilton Deeth (*Australia*)
39. **Mineral elements and conjugated linoleic acid in organically or conventionally probiotic fermented milk.** A C R Florence, R C Silva, A P Espirito Santo, D M Saccaro, L A Gioielli, C Colli, M N Oliveira (*Brazil*)

SESSION 4. MINERALS AND NUTRITION AND HEALTH

40. **Bedtime consumption of fermented milk supplemented with calcium, fructooligosaccharides and caseinphosphopeptides affects bone metabolism in healthy, postmenopausal women.** Berit Marten, Katharina E Scholz-Ahrens, Michael de Vrese, Yahya Açil, Christiane Laue, Jürgen Schrezenmeir (*Germany*)
41. **Importance of dietary calcium for intestinal barrier function: evidence from animal and human studies and mechanisms involved.** Ingeborg Bovee-Oudenhoven, Marloes Schepens, Roelof van der Meer (*The Netherlands*)
42. **Calcium availability from yoghurt with cereals.** Krystyna A Skibniewska, Elzbieta Baca, Janusz Zakrzewski, Marek Aljewicz, Aldona Bac (*Poland*)
43. **Influence of xylooligosaccharide enriched yogurt on mineral absorption and serum biochemical profile in Albino rats.** Semee Mumtaz, Salim-ur-Rehman, Nuzhat Huma, Amer Jamil, Sarfraz Ahmad, Mian Anjum Murtaza (*Pakistan*)
44. **Trace elements in obesity and diabetes.** Dominique Bouglé (*France*)
45. **Casein phosphopeptides as carrier for mineral absorption.** Saïd Bouhallab, Dominique Bouglé (*France*)
46. **The role of β-Caseinophosphopeptide (f1-25) on iron/ascorbate-induced oxidation of liposomes in the presence of β-casein tryptic hydrolysate.** Germain Kansci (*Cameroun*)

Posters

Session 1

MINERALS OF MILK FROM DIFFERENT SPECIES AND BREEDING CONDITIONS

Session 2

MINERALS-MINERALS & MINERALS-PROTEINS INTERACTIONS

Session 3

MINERALS AS A FUNCTION OF PHYSICO-CHEMICAL CONDITIONS AND TECHNOLOGICAL TREATMENTS

Session 4

MINERALS AND NUTRITION-HEALTH

Session 5

MINERALS ANALYSES

Posters

SESSION 1. MINERALS OF MILK FROM DIFFERENT SPECIES AND BREEDING CONDITIONS

1. **Can we determine dairy cow selenium status from milk instead of from blood ?**
   John FMee, Jim Grant, Bernadette O'Brien (*Ireland*)
2. **Effect of pasture species selection on ewe's milk mineral parameters.**
   Olga C Moreira, Carlos C Belo , José M B F. Ribeiro, Ana T Belo (*Portugal*)
3. **Evolution of the nitrogenous and mineral milk fractions of different breeds of ewes for the production of Niza (PDO) cheese.**
   Olga C Moreira, Ana T Belo, Carlos C Belo, António P L Martins (*Portugal*)
4. **Chemical composition of individual camel milks from Mauritania.**
   Aicha Sidi Baba, Diagana Yacouba, Youssouf Kone, Mohamed Yahya Bah, Sarfraz Ahmad, Eric Beaucher, Frédéric Gaucheron (*Mauritania*)
5. **Minerals and trace elements from milk of indigenous Portuguese goat breads: Preliminary results.**
   Inês Trancoso, Maria A Trancoso, António P L Martins, Luísa Bivar Roseiro *(Portugal)*
6. **Radionuclides in camel milk from polluted areas of Kazakhstan.**
   Gaukhar Konuspayeva, Bernard Faye, Gérard Loiseau, Vittorio Barci, Emilie Diacono (*France* and *Kazakhstan*)
7. **The effect of feeding extruded rapecake and full-fat soya on the milk iodine content and thyroid hormone status in dairy cows.**
   Jirí Trináctý, Michal Richter, Ludmila Krízová, Sylvie Hadrová, František Louda (*Czech Republic*)
8. **Contribution to the characterization of Niza (PDO) cheese production system: macro mineral composition of ewe's milk.**
   Olga C Moreira, Ana T Belo, António P L Martins, Carlos C Belo' (*Portugal*)

SESSION 2. MINERALS-MINERALS AND MINERALS-PROTEINS INTERACTIONS

9. **A model for predicting salt equilibria in milk and mineral-enriched milks.**
   Omar Mekmene, Yvon Le Graët, Frédéric Gaucheron (*France*)
10. **Characterization of isoforms of equine α_{s1}-casein: post-transcriptional variants and phosphorylation post-translational variants.**
    Aurélie Matéos, Laurent Miclo, Daniel Mollé, Jean-Michel Girardet, Jean-Luc Gaillard (*France*)
11. **Copper catalyse a covalent dimer formation through β-lactoglobulin heating.**
    Muhammad Gulzar, Thomas Croguennec, Saïd Bouhallab (*France*)
12. **Calcium stability of BAMLET (Bovine Alpha-lactalbumin Made Lethal to Tumor cells).**
    Kamila Lišková, Nora O'Brien, Alan Kelly, André Brodkorb (*Ireland*)
13. **Microstructure of casein micelles in their natural state: Atomic Force Microscopy potentiality.**
    Sana Raouche, Elias Estephan, Csilla Gergely, Didier Dupont, Sylvie Marchesseau (*France*)
14. **Phosphoylation variants of equine β-casein: purification of caseinophosphopeptides and determination of the phosphorylation sites.**
    Aurélie Matéos, Laurent Miclo, Daniel Mollé, Jean-Michel Girardet, Jean-Luc Gaillard' (*France*)
15. **Preparation of partially dephosphorylated bovine β-casein, a model for the human homologous protein.**
    Aurélie Matéos, Jean-Michel Girardet, Fateh Bouzobra, Laurent Miclo, Jean-Luc Gaillard (*France*)
16. **Understanding the self-assembly of dairy proteins in real time in skim milk systems with various casein to whey protein ratios.**
    Mandeep Kaur Jeswan Singh, Ian McKinnon, Mary Ann Augustin, Punsandani Udabage, Yacine Hemar (*Australia*)
17. **Partition of calcium ions in pectin/globular protein mixed system.**
    Catherine Garnier, Sylvie Durand, Jean-Louis Doublier (*France*)

Posters

SESSION 3. MINERALS AS A FUNCTION OF PHYSICO-CHEMICAL CONDITIONS AND TECHNOLOGICAL TREATMENTS

18. **Comparison of chemical and CO_2 pH-cycles in skim milk by NIR-turbidity monitoring.**
    Abdul Hamid Klandar, Dominique Chevalier-Lucia, Alain Lagaude (*France*)
19. **Calcium chloride supplemented skim milk subjected to pH cycle down to 3.5: Ionized calcium exchange between soluble and colloidal protein phase.**
    Laetitia Canabady-Rochelle, Christian Sanchez, Michel Mellema, Sylvie Banon (*France*)
20. ***In-situ* heat-induced changes of reconstituted milk solutions: effect of added phosphate and EDTA.**
    Jayani Chandrapala, Ian McKinnon, Mary Ann Augustin, Punsandani Udabage, Yacine Hemar (*Australia*)
21. **Measurement of pH and ionic calcium at high temperatures and their role on the heat stability of reconstituted skim milk powder.**
    Roussa Tsikritzi, Mike Lewis, Alistair Grandison (*United Kingdom*)
22. **Mineral equilibria of buffalo milk as a function of pH (acidification and alkalinisation): a comparison with cow milk.**
    Sarfraz Ahmad, Michel Piot, Jean François Grongnet, Frédéric Gaucheron (*France*)
23. **UF Permeate decalcification.**
    Bernard Remond, Jerry Van Loon (*France*)
24. **Impact of calcium availability on fouling, clean ability and cleaning of UF PES membrane.**
    Murielle Rabiller-Baudry, Lydie Paugam, David Delaunay, Habib Bouzid (*France*)
26. **Separation of caseins from whey proteins by high shear microfiltration using rotating ceramic membranes.**
    Valentina Espina, Michel Jaffrin, Matthieu Frappart, Lu Hui Ding (*France*)
27. **The effect of calcium phosphate fortification of skim milk on the production and separation of heat-induced κ-casein enriched soluble whey protein aggregates.**
    Brendan T O'Kennedy, John S Mounsey (*Ireland*)
28. **Influence of the use of steel and copper vats on cheese ripening.**
    Alberto Pecorari,Gianluca Gambini, Sergio Ghidini, Piero Franceschi, Paolo Formaggioni, Massimo Malacarne, Andrea Summer, Mauro Pecorari (*Italy*)
29. **Maturation of milk for Parmigiano-Reggiano cheesemaking: salts equilibria and curd rheology.**
    Massimo Malacarne, Andrea Summer, Piero Franceschi, Paolo Formaggioni, Sandro Sandri, Mauro Pecorari, Primo Mariani (*Italy*)

SESSION 4. MINERALS AND NUTRITION-HEALTH

30. **Calcium/Vitamin D-Deficiency Osteomalacia and Steroid-induced Osteoporosis in Minipigs.**
    Katharina E Scholz-Ahrens, Claus-C Glüer, Wolfram Timm, Yahya Açil, Wengun Yan-Classen, Jürgen Schrezenmeir (*Germany*)
31. **Effect of casein from goats' milk on calcium bioavailability in growing rats.**
    Hilary McKinnon, Marlena Kruger, Colin Prosser, Dianne Lowry (*New Zealand*)
32. **The effect of *Lactobacillus rhamnosus* (HN001) on mineral absorption and bone health in the growing male and ovariectomised female rat.**
    Marlena Kruger, Alison Fear, Gabrielle G Plimmer, Linda M Schollum (*New Zealand*)
33. **The inhibitory effect of Glycomacropeptide (GMP) on dental erosion.**
    Anita Setareh Nejad, Ara Kanekanian *(United Kingdom*)
34. **Impact of consumption of fruit beverages (with/without milk and/or iron) upon antioxidant status in healthy women.**
    Antonio Cilla, Giada De Palma, María Jesús Lagarda, Reyes Barberá, Rosaura Farré, Gonzalo Clemente, Fernando Romero (*Spain)*
35. **Influence of caseinphosphopeptides on iron bioavailability in fruit beverages.**
    M José García, Amparo Alegría, Reyes Barberá (*Spain)*

Posters

36. **Iron bioavailability in fortified fruit beverages using ferritin synthesis by Caco-2 cells.**
    Antonio Cilla, Sara Perales, María Jesús Lagarda, Reyes Barberá, Rosaura Farré (*Spain*)
37. **Zinc bioavailability in fruit beverages: influence of caseinphosphopeptides from different sources.**
    M José García, Amparo Alegría, Reyes Barberá (*Spain*)
38. **Reducing salt level in food: an integrated study of salt release and perception in model and real food systems.**
    Christian Salles, Solange Buchin, Cristian Tréléa, Juliane Floury, Pascal Schlich, Loïc Foucat, Philippe Courcoux (*France*)
39. **A short-term human intervention trial with selenate, Se-enriched yeast and Se-enriched milk.**
    Gitte Ravn-Haren, Susanne Bügel, Britta N Krath, Tien Hoac, Jan Stagsted, Erik H Larsen, Lars O. Dragsted (*Denmark*)

SESSION 5. MINERALS ANALYSES

40. **Validation and quality assurance applied to goat milk chemical composition.**
    Inês Trancoso, Luísa Bivar Roseiro, António P L Martins, Maria A Trancoso (*Portugal*)
41. **Comparison of ion selective electrode and inductively coupled plasma mass spectrometry to determine iodine in milk-based nutritional products.**
    Daniel Hammer, Daniel Andrey, (*Switzerland*)
42. **Determination of mineral constituents in milk whey.**
    Glauci Atauri, Greice Trevisan Macarovscha, Rafael Arromba de Sousa, Solange Cadore (*Brazil*)
43. **Rapid capillary zone electrophoresis method for the determination of metal cations in milk samples.**
    Silvia Suárez-Luque, Inés Mato, José F Huidobro, Jesús Simal-Lozano (*Spain*)
44. **Simple sample treatment for the determination of Ca^{2+} content in milk sample.**
    Silvia Suárez-Luque, Inés Mato, José F Huidobro, Jesús Simal-Lozano (*Spain*)
45. **Zinc speciation in milk sample.**
    Ana Rita A Nogueira, Carla M Bossu, Márcia C S Oliveira (*Brazil*)

Visit: Friday 03 October

Free visit INRA, Agrocampus Ouest,
UMR 1253 Science et Technologie du Lait et de l'Œuf
65 rue de saint Brieuc,
35042 Rennes, France

13^{30}	Departure from Saint Malo to Rennes by bus
14^{30}– 15^{30}	Visit of labs
15^{30}– 16^{30}	Departure from Rennes to Saint Malo by bus

Please, when you will receive your badge at symposium reception, you can inscribe yourself for this visit.

General information

Conference venue

Palais du Grand Large 2nd floor, 1 quai Duguay Trouin, 35400 Saint Malo, France

Contact during the conference only:
Phone 33299206020
Fax 33299206030

Registration fee

The participant registration fee includes:

- Admission to all scientific sessions
- Refreshments during session breaks
- Lunches (October 1, 2 and 3, 2008)
- Gala dinner (October 2, 2008)
- Book of proceedings

Academic or industrial researchers: 500 euros
Students : 430 euros

Travelling to Saint-Malo

- By road (A11 Motorway – Paris/Saint-Malo: 3 ½ hrs) - www.mappy.com
- By high speed train (TGV Paris/Saint-Malo: 3 hrs – 3 trains/day) - www.sncf.com
- By air (direct flights from Rennes/Saint-Jacques airport)
- By boat (sea links with Great Britain, Ireland and the Channel Islands)

Accommodation

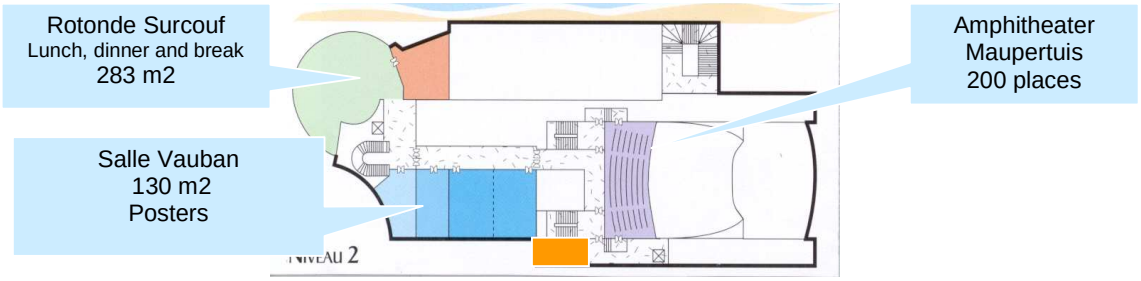
Each participant makes its own hotel reservation and is responsible for the booking. Saint-Malo offers 2460 bedrooms. 800 are nearby the “Palais du Grand large”. For more information, please check out the following websites:

- www.saint-malo-tourisme.com
- www.saint-malo.com
- www.saint-malo-gallery.com

General information

Oral session

The presentation room is Amphitheater Maupertuis in the 2nd floor.



Presentation time is 20 minutes including questions. Speaker has to contact chairman before the session.

General information

Poster session

The poster can be put up during the conference on the panels (A0 format : 120 cm x 80 cm).

Exhibition

The following companies have booked stands for demonstration materials (Dionex, Mettler Toledo, Setaram, Thermofisher, Alliance Instrument).

Lunches and Gala Dinner

Free of charge lunches and gala dinner are served during the luncheon period in the restaurant, adjacent to the conference amphitheater. The food restrictions (vegetarian, Hallal food, …) has been taken into account.

Scientific Event

Besides the scientific program of the Symposium, one visit of research laboratories has been planned on the afternoon of Friday October 03, 2008.

General information

Tourism

From Saint Malo, visits of Saint-Malo, Mont Saint-Michel, Cancale and Rennes are possible. Each participant makes his own reservation. For tourism information, you can contact www.saint-malo-voyages.com/
Examples of prices :

- Jersey Islands (one day – 150 euros/person)
- Dinan : (1/2 day – 40 euros/person)
- Saint Malo intra murs (1h30 – 15 euros/person)
- Saint Malo (1/2 day – 35 euros/person)
-

General information

Car Rental

AVIS Saint-Malo offers special car rental rates to participants of the Symposium "Minerals and Dairy Products" between September 26th and October 10th. To make a reservation, call AVIS Saint-Malo at +33 (0)2 23 18 07 18 quoting the Avis Worldwide Discount Number: U998702.

Currency

The monetary unit is the Euro.

Climate

The average temperature in October is 15℃ (www.weather.com)

Time Zone

French time is 1 or 2 hours ahead of Greenwich Time.

Electricity

AC, 50 cycles, 220 Volts.

General information

Saint-Malo The Corsair City

Saint-Malo was named after Welsh monk **Mac Low**, who, around the VIth Century, established his bishopric in Alet, a stone-throw away from the rock were the walled city now stands. The current city, initially founded in the XIIth century, is the product of its 1967 merger with its two immediate neighbours Saint-Servan and Paramé. As early as the XIIIth century, the "Malouins" were already quite successful at catching enemy ships. In 1308, they instated a sworn city and from 1395 to 1415, they swore allegiance to King Charles VI of France, who granted their port free practice

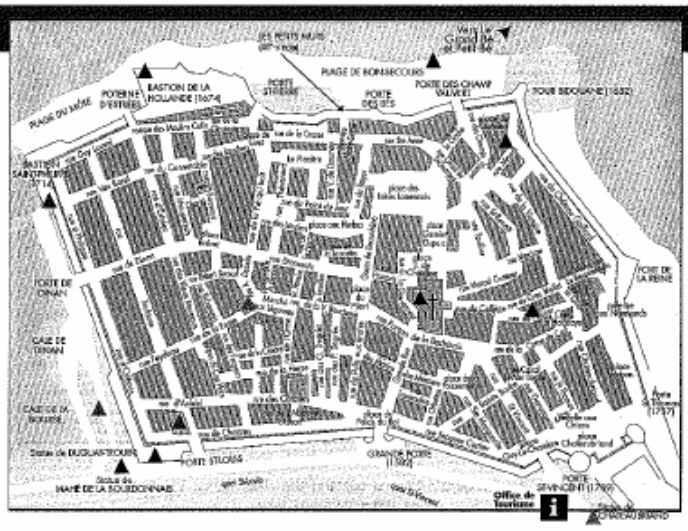
It was to keep them under control that the Duchy of Brittany had the main castle built, which the Malouins overtook in 1590 ; later, they declared themselves an independent republic, which lasted four years until King Henry IV of France agreed to become a Catholic. **Jacques Cartier**, in his 1534 to 1542 travels, had already opened the Newfoundland route and discovered Canada.

Formerly called " Saint-Malo de l'Isle ", the City, clustered around its cathedral within its very tight 16 hectares, burnt down for the first time in 1661. In the following years, architects **Vauban** and **Garangeau** rehabilitated it and extended it to 24 hectares, in 4 steps.

Thanks to its seafarers and merchant ship owners, who commissioned vessels to Eastern Indies, China, Africa and the Americas, the City enjoyed prodigious prosperity in the XVII and XVIIIth centuries; **Gouin de Beauchêne** tackled Cape Horn in 1701, **Mahé de la Bourdonnais** colonised Moskar and took over Madras, **Maupertuis** in1736 set off to Lapland to measure the shape of the Earth, then there were **Chateaubriand** and **Lamennais**, but above all the famous seafarers and privateers : **Duguay-Trouin**, who conquered Rio de Janeiro in 1711 and **Surcouf**, a few decades later, contributed to Saint-Malo's outstanding prestige. When in 1815 Privateers' Commissions were abolished, the Saint-Malo ship owners commissioned their ships to Newfoundland and kept developing their port.

Unfortunately, the 1944 liberation battles devastated the town and destroyed the walled city by 80%. It is from those preserved and restored ruins that Saint-Malo rose again, thanks to a careful and heritage-conscious reconstruction design. Having recovered its legendary skyline, Saint-Malo has since acquired all the facilities and equipment necessary to be one of Brittany's tourist highlights and the number one port on its Northern shores.

INTRA-MUROS



Duchess Ann's Castle
Castle - History Museum – Main Tower (1424)
Towers : "La Générale" (1475) – "des Moulins" (1500)
"Quic en Groigne" (1498)

- **Statue of Jacques Cartier**
- **André Désilles Mansion**
  XVIIth century (Library)
- **St Louis bastion (1714-1721)**
- **Asfeld Mansion**
  Hotel Magon de la Lande
- **Tomb of Chateaubriand**
- **Statue of Robert Surcouf**
- **Saint Vincent Cathedral (XIth–XVIIIth)**
- **The international poets and writers House**
- **Duchess Ann's Mansion**
- **Statue of Chateaubriand**
- **Statue of Duguay-Trouin**
- **Statue of Mahé de la Bourdonnais**
- **St Philippe bastion (1714)**

A city of granite rebuilt with its original style and skyline : Because of fires, Saint-Malo has kept only 2 or 3 specimens of half-timbered construction, e.g., the inner courtyard of Chateaubriand's birth place, timber-panelled houses in rue du Pélicot or the Recollets archway over Rue des Vieux Remparts. Although the walls and castle were spared by the 1944 destruction, three quarters of the city were rebuilt. Some front walls near the ramparts were rebuilt exactly as they were under the auspices of the French Directorate of Historical Monuments.

From the late XVIth century and mainly during the two subsequent centuries, stone was increasingly used, that of Chausey islands in particular, which significantly changed the city's aspect. The house around St-Malo is characterised by the sobriety and solidity of architectural design. During the reconstruction process, streets were widened or straightened to improve circulation and views.

The Bishopric : Saint-Vincent Cathedral, whose construction began in the XIIth century, included an Anjou-style nave and a cloister, whose restored remnants constitute the oldest part of the Cathedral. The magnificent gothic-style choir with Anglo-Norman style flat chevet was erected in the middle of the XIIth century. Carefully restored after its partial destruction, it was adorned with outstanding stained glass windows and a high and sharp spire in replacement of that built in the XIXth century.

Enjoy the Symposium

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Thanks a lot!