



Modelling and improving the spray drying process for whey derivatives

Pierre Schuck, Romain Jeantet

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Oral Programme

Sunday 7 September 2014

17:00-20:00	Registration <i>The Marketplace</i>	
18:00	Opening <i>The Marketplace</i>	
18:30-20:00	Welcome drinks reception and grand opening of the market place <i>The Marketplace</i>	Sponsored by: 


Monday 8 September 2014

09:00-09:20	Opening and panel discussion with platinum and gold sponsors <i>U.S. Dairy Export Council Room</i> Joop Kleibeuker, <i>EWPA, Belgium</i>	
	Plenary Session 1 <i>U.S. Dairy Export Council Room</i> Chair: Veli-Matti Riitamaa, <i>Valio Ltd, Finland</i>	
09:20-09:40	[Plen1.1] Supply and demand developments of whey in global perspective C.Lafougere, <i>GIRA, France</i>	
09:40-10:00	[Plen1.2] Whey-ing up the options: Yesterday, today and tomorrow G.W. Smithers, <i>Geoffrey Smithers Food Industry Consulting Services, Inc., Australia</i>	
10:00-10:10	Discussion with focus on future developments on whey supply	
10:10-10:30	Young scientists award- short presentations <i>U.S. Dairy Export Council Room</i>	
10:25-10:30	[P.01] Functional properties of whey protein-maltodextrin conjugates prepared by wet and dry heating methods E.M. Mulcahy*, D.M. Mulvihill, J.A. O'Mahony, <i>University College Cork, Ireland</i>	
10:10-10:15	[P.03] Lactose Phosphate as A Potential Compound for Whey Protein Conjugation N. Julmohammad*, Y. Hemar ¹ , D. Otter ² , G. Miskelly ¹ , ¹ <i>University of Auckland, New Zealand</i> , ² <i>AgResearch, New Zealand</i>	
10:15-10:20	[P.05] Interactions between epigallocatechin-3-gallate and β-lactoglobulin in a simulated milk ultrafiltrate environment with and without calcium V. Carnovale*, M. Britten ^{1,2} , C. Couillard ¹ , L. Bazinet ¹ , ¹ <i>Université Laval, Sainte-Foy, Canada</i> , ² <i>Agriculture and Agri-Food Canada, Canada</i>	
10:20-10:25	[P.07] Galactooligosaccharide synthesis in sweet and acid whey C. Fischer*, T. Kleinschmidt, <i>Anhalt University of Applied Sciences, Germany</i>	
10:30-11:15	Refreshment break <i>The Marketplace</i>	Sponsored by:  
11:15-11:35	[Plen1.3] Developments in consumer/customer needs related to whey based products R. Field, <i>Orrani Consulting, UK</i>	
11:35-11:55	[Plen1.4] Opportunities and challenges in the market for whey proteins P. Olson, <i>Davisco Foods International, Inc., USA</i>	
11:55-12:15	[Plen1.5] Opportunities and challenges in the market of lactose L.Cubel, <i>Arla Foods Ingredients, Denmark</i>	
12:15-12:35	Discussion on the market expectations for whey products	
12:35-14:05	Lunch and Poster session I <i>The Marketplace</i>	Sponsored by: 

14:05-15:15	Theme 1: Whey Proteins Chair: Richard Ipsen, <i>University of Copenhagen, The Netherlands</i> U.S. Dairy Export Council Room	Theme 2: Processing Chair: Pierre Schuck <i>INRA Rennes, France</i> Ton van de Ven Room Sponsored by: 	Theme 3A: Health Chair: Paul Moughan <i>Massey University, New Zealand</i> Jim Page Room
	14:05-14:30	14:05-14:30	14:05-14:30
	[Inv1.1] Maintaining textural quality in high protein foods E.A. Foegeding*, W.N. Reynolds, <i>North Carolina State University, USA</i>	[Inv2.1] Membrane separation techniques in whey concentration and fractionation and ways to control deposit formation T. Steinhauer, L. Voswinkel, S. Husby, P. Meyer, U. Kulozik*, <i>Technische Universität München, Germany</i>	[Inv3.1] Leucine defines the unique metabolic value of whey protein D.K. Layman, <i>University of Illinois at Urbana-Champaign, USA</i>
	14:30-14:55	14:30-14:50	14:30-14:50
	[Inv1.2] Whey protein ingredients for controlling hardening of protein bars T. Huppertz ^{1,2} , S. Hogan ³ , <i>¹NIZO food research, The Netherlands, ²South Dakota State University, USA, ³Teagasc Dairy Products Research Centre, Ireland</i>	[O2.1] Native whey proteins: reduction of bacteriophages in whey by a non-thermal/membrane treatment M. Samtlebe ¹ , N. Wagner ² , E. Brinks ² , H. Neve ² , K.J. Heller ² , J. Hinrichs ¹ , Z. Atamer ¹ , <i>¹University of Hohenheim, Germany, ²Max Rubner-Institute, Germany</i>	[O3.1] The effects of whey on an intestinal glucoregulatory hormone: Does whey protein have anti-diabetic actions? A.L. Gillespie*, B.D. Green, <i>Queen's University Belfast, UK</i>
	14:55-15:15	14:50-15:15	14:50-15:15
	[O1.1] Understanding the role of heat-induced structural changes of β-lactoglobulin in relation to its foaming properties J. Dombrowski*, F. Johler, U. Kulozik, <i>TU München, Germany</i>	[Inv2.2] Use of membrane cascades for production of high quality whey derived products and for treatment of side streams A. van der Padt, <i>Wageningen University, The Netherlands</i>	[Inv3.2] Trends in protein in Asia: focus on the Chinese infant milk market L.A. Williams, <i>Innova Market Insights, The Netherlands</i>
15:15-15:55	Refreshment break <i>The Marketplace</i>		
15:55-17:05	Theme 1: Whey Proteins (continued) Chair: Fred van de Velde, <i>NIZO food research, The Netherlands</i> U.S. Dairy Export Council Room	Theme 2: Processing (continued) Chair: Ulrich Kulozik, <i>TUM, Germany</i> Ton van de Ven Room	Theme 3A: Health (continued) Chair: TBC Jim Page Room
	15:55-16:20	15:55-16:20	15:55-16:20

	[Inv1.3] Enzymatic modification of whey proteins to alter functionality: cross linking and beyond R. Partanen ^{*1,2} , H. Ma ² , S. Laiho ^{1,2} , H. Boer ² , P. Forssell ² , K. Rajakari ¹ , H. Kallioinen ¹ , A. Mackie ³ , D.E. Cura ² , ¹ Valio Ltd, Finland, ² VTT Technical Research Centre of Finland, Finland, ³ Institute of Food Research, UK	[Inv2.3] Infant food quality whey products; microbiology and functionality M.Fox*, M. Wells-Bennink, T.Huppertz, NIZO food research, The Netherlands	[Inv3.3] Dietary protein, physical activity and aging D. Paddon-Jones, The University of Texas Medical Branch, USA
	16:20-16:40	16:20-16:40	16:20-16:45
	[O1.2] Complex Coacervates of Lactotransferrin with β-Lactoglobulin and Caseins S.G. Anema ³ , C.G. De Kruijff ^{*1,2} , ¹ Utrecht University, The Netherlands, ² NIZO Food Research, The Netherlands, ³ Fonterra Research, New Zealand	[O2.2] Extrusion cooking as a new process for the microparticulation of whey proteins using high protein concentrations M. Wolz*, U. Kulozik, Technische Universität München, Germany	[Inv3.4] The effects of milk proteins on immunity: Mechanisms and implications R.J.J. van Neerven ^{1,2} , ¹ Wageningen University, The Netherlands, ² FrieslandCampina Research, The Netherlands
	16:40-17:05	16:40-17:05	16:45-17:05
	[Inv1.4] Impact of enzymatic modifications of whey proteins on their bioactive properties A.B. Nongonierma, M.B. O'Keeffe, R.J. FitzGerald*, University of Limerick, Ireland	[Inv2.4] Modelling and improving the spray drying process for whey derivatives P.Schuck, INRA Rennes, France	[O3.2] Single-step electrodialytic process for b-Ig enzymatic hydrolysis and fractionation of bioactive peptides generated A. Doyen ¹ , E. Husson ^{1,2} , L. Bazinet ^{*1} , ¹ Université Laval, Canada, ² Université de Picardie, France
17:05	End of day		
18:30	Conference dinner (SS Rotterdam) – Ticket holders only		
Tuesday 9 September 2014			
09:00-10:10	Theme 3B: Whey and health Chair: Donald Layman, University of Illinois, USA Jim Page Room	Theme 4: Structure and functionality Chair: Thom Huppertz, NIZO food research, The Netherlands Ton van de Ven Room	Theme 5: Lactose and oligosaccharides Chair: Lars Bode, UC San Diego, USA U.S. Dairy Export Council Room
	09:00-09:25	09:00-09:25	09:00-09:25
	[Inv3.5] Immunomodulatory components in whey preparations H.F.J. Savelkoul, Wageningen University, The Netherlands	[Inv4.1] Controlled aggregation of whey protein: Matching structure and functionality R. Ipsen, University of Copenhagen, Denmark	[Inv5.1] Milk oligosaccharides: enzymatic synthesis and structural analysis L. Dijkhuizen ^{*1} , J. Kamerling ¹ , ¹ University of Groningen, The Netherlands, ² Carbohydrate Competence Center, The Netherlands
	9:25-09:45	9:25-09:45	09:25-09:50

	[O3.3] Innovative combination of whey protein and amino acids for improved glycaemic regulation E.M. Östman*, I.M.E. Björck, <i>Lund University, Sweden</i>	[O4.1] Whey Protein Microgels: A Multi-Faceted Ingredient C. Schmitt*, L. Bovetto, L. Donato-Capel, <i>Nestlé Research Center, Switzerland</i>	[Inv5.2] Potential utilization of milk oligosaccharides of cows and other domestic farm animals T. Urashima ^{*1} , T. Terabayashi ² , M. Morita ³ , ¹ <i>Obihiro University of Agriculture and Veterinary Medicine, Japan</i> , ² <i>Kitasato University, Japan</i> , ³ <i>Toko Pharmaceutical Industries Co.,Ltd., Japan</i>
	09:45-10:10	09:45-10:10	09:50-10:10
	[Inv3.6] Whey proteins, stunting, and international development V.Lagrange, <i>USDEC, USA</i>	[Inv4.2] Perception, microstructure and texture of WPI gels F. van de Velde ^{1,2} , ¹ <i>NIZO food research, The Netherlands</i> , ² <i>Ti Food & Nutrition, The Netherlands</i>	[O5.1] Oligosaccharides from bovine and non-bovine milk as an attractive source for potential application in human nutrition I. Clawin-Raedecker*, K. Zerge, P-C. Lorenzen, <i>Max Rubner-Institut, Germany</i>
10:10-10:55	Refreshment break <i>The Marketplace</i>		
10:55-12:05	Theme 3B: Whey and health (continued) Chair: TBC <i>Jim Page Room</i>	Theme 4: Structure and functionality (continued) Chair: Christophe Schmitt, <i>Nestlé Research Center, Switzerland</i> <i>Ton van de Ven Room</i>	Theme 5: Lactose and oligosaccharides (continued) Chair: Lubbert Dijkhuizen, <i>RUG, The Netherlands</i> <i>U.S. Dairy Export Council Room</i>
	10:55-11:20	10:55-11:20	10:55-11:20
	[Inv3.7] Treatment of undernutrition with whey ingredients in low-income countries K.F. Michaelsen, <i>University of Copenhagen, Denmark</i>	[Inv4.3] Whey protein-based structures for encapsulation and delivery of bioactive compounds H. Singh, <i>Massey University, New Zealand</i>	[Inv5.3] Functionality of milk oligosaccharides: Only the tip of the sugarloaf? L. Bode, <i>University of California, USA</i>
	11:20-11:40	11:20-11:40	11:20-11:45
	[O3.3] Metabonomic evaluation of whey protein isolates (WPIs) on gut microbiota composition and host metabolism in rats H.R. Jiang ^{*1,2} , L. Yang ¹ , Y. Shao ² , X.L. Liu ² , E.C. Ning ² , ¹ <i>Guangxi Medical University, China</i> , ² <i>Institute of Light Industry and Food Engineering, Guangxi University, China</i>	[O4.2] Whey-based proteins aggregates produced in the presence of buttermilk: mechanism, properties and uses M. Saffon ¹ , M-P. Gauvin ¹ , R. Jiménez-Flores ² , M. Britten ³ , Y. Pouliot ^{*1} , ¹ <i>Université Laval, Canada</i> , ² <i>California Polytechnic University, USA</i> , ³ <i>Agriculture & Agri-Food Canada, Canada</i>	[Inv5.4] Non-digestible carbohydrates: a breakthrough in advanced medical nutrition J. Garssen ^{1,2} , ¹ <i>Utrecht University, The Netherlands</i> , ² <i>Nutricia Research, The Netherlands</i>
	11:40-12:00	11:40-12:05	11:45-12:05

	<p>[O3.5] The effects of the delivery of protein enriched dairy products to the elderly: a community based study and a study undertaken in the clinical setting</p> <p>L.M. Stevenson^{*1}, A.A.J. van Til², E. Naumann², I.J.H.M. Cox-Claessens³, E. Boelsma⁴, M.A.E. de van der Schueren^{2,5}, ¹Fonterra Research & Development Centre, New Zealand, ²HAN University of Applied Sciences, The Netherlands, ³ZZG Rehabilitation centre, ⁴Wageningen UR, The Netherlands, ⁵VU University Medical Centre, The Netherlands</p>	<p>[Inv4.4] Approaches to modify structure and functional properties of whey proteins</p> <p>H.Patel, <i>South Dakota State University, USA</i></p>	<p>[O5.2] Dairy streams as a source of complex fucosylated oligosaccharides</p> <p>M. Marotta^{*1}, R. Mehra¹, H. Slattery¹, C.B. Lebrilla², C. Chu², J.B. German², D. Barile², ¹Teagasc, Ireland, ²University of California, USA</p>
12:05-13:40	Lunch and Poster session II The Marketplace		Sponsored by: 
	Plenary Session 2 U.S. Dairy Export Council Room Chair: James Neville, Volac, UK		
13:40-14:00	[Plen2.1] New approaches to the assessment of dietary protein quality in humans: Whey protein P.J. Moughan, <i>Massey University, New Zealand</i>		
14:00-14:20	[Plen2.2] Products, proteins, and consumers: How whey is answering the call V. Nicholson, <i>USDEC, USA</i>		
14:20-14:40	[Plen2.3] Health claims for whey products – A global evaluation of current and future opportunities K. Musa-Veloso, <i>Intertek Scientific & Regulatory Consultancy, Canada</i>		
14:40-14:55	Discussion on future applications of whey products		
14:55-15:35	Refreshment break The Marketplace		
15:35-15:40	Young scientist award ceremony <i>U.S. Dairy Export Council Room</i>		
15:40-16:00	[Plen2.4] New and emerging technologies for whey processing A.L. Kelly*, J.A. O'Mahony, <i>University College Cork, Ireland</i>		
16:00-16:20	[Plen2.5] Whey: part of sustainable food and nutrition security T. van Hooijdonk, <i>Wageningen University, The Netherlands</i>		
16:20-16:30	Discussion on technical options and limitations for future use of whey as source for food ingredients		
16:30-16:40	Scientific highlights René Floris, <i>NIZO food research, Netherlands</i>		
16:40-16:50	Closing and IWC 2017 Joop Kleibeuker, <i>EWPA, Belgium</i> Dave Thomas, <i>ADPI, United States</i>		
16:50	Close of conference		