Report of Congress
After six successful conferences held in Malta and Paris, the Seventh World Congress on Polyphenols Applications took place in Bonn, Germany, on June 6-7, 2013 under the auspices of the International Society for Antioxidants in Nutrition and Health (ISANH), the French Society of Antioxidants (SFA), and the Japanese Society of Antioxidants (JSA).

Prof. Dr. Marvin Edeas, Chairman of ISANH, and Prof. Dr. Andreas Schieber, Chairman of the Scientific Committee and local organizer of the conference, welcomed more than 130 academics and industry representatives from 28 countries at Collegium Leoninum, a former seminary for priests and today a four-star hotel and congress venue. Prof. Dr. Peter Stehle, Dean of the Faculty of Agriculture of the University of Bonn and himself active in polyphenol research, extended a welcome note to the audience.

Bonn Polyphenols 2013, which was financially supported by Eckes-Granini (Nieder-Olm, Germany) featured an interesting blend of world class keynote speakers and highly recognized experts in the field and also provided a platform for the next generation of emerging talents, postdoctoral researchers and PhD students, to present the latest results of their work on polyphenols. Taking the conclusions from Paris Polyphenols 2012 to Bonn, the 2013 conference covered topics of utmost current interest, such as the role of polyphenols in human health, bioavailability of phenolics, stability of polyphenols during processing, recovery and application of phenolic compounds from by-products, and modern methods of polyphenol analysis in foods and physiological samples.

In his introductory keynote lecture on the first day, Prof. Dr. Francisco Tomás-Barberán (CSIC, Murcia, Spain) highlighted the importance of the interactions between polyphenols and gut microbiota and pointed out the research needs and perspectives of applications. Subsequent presentations given by Dr. Paul Kroon (Norwich, UK), Dr. Clarissa Gerhäuser (Heidelberg, Germany), Prof. Dr. med. Harald Hönisch (Darmstadt, Germany) and Prof. Dr. Rikard Landberg (Uppsala, Sweden) were dedicated to the role of polyphenols in cardiovascular disease and diabetes, cancer prevention, chronic inflammatory bowel diseases, and to alkylresorcinols as biomarkers of whole grain intake. Prof. Dr. Rosa Maria Lamuela-Raventos from the University of Barcelona (Spain) presented her recent
investigations into tomato polyphenols and Ales Bartl (Brussels, Belgium) gave an overview of regulatory issues associated with polyphenols. Prof. Dr. Ulrich Engelhardt (Braunschweig, Germany) highlighted chemistry and potential health effects of polyphenols from tea, coffee, and cocoa. Short oral presentations on the phenolic metabolome of stevia (Prof. Dr. Nikolai Kuhnert, Bremen, Germany), effects of berry phenolics on gut health (Dr. Gordon McDougall, Dundee, UK), absorption and metabolism of procyanidin B4 (Katharina Bittner, Münster, Germany), chemoenzymatic preparation of silybin metabolites (Prof. Dr. Vladimir Křen, Prague, Czech Republic) and effects of quercetin on lipid metabolism (Dr. Ewert van Schothorst, Wageningen, The Netherlands) concluded the first day of Bonn Polyphenols 2013.

Prof. Dr. Reinhold Carle (Hohenheim University, Stuttgart, Germany) was the keynote speaker of the second day of the conference and gave an overview of studies into the recovery and application of polyphenols as natural food ingredients. Reactions of water-soluble and lipid-soluble antioxidants including phenolic compounds were covered in the presentation given by Prof. Dr. Leif Skibsted (Copenhagen, Denmark). Prof. Dr. Luke Howard (Fayetteville, AR, USA) highlighted grape pomace as a source of polyphenols and their extraction using subcritical water. Alma Fernanda Sánchez Maldonado (Edmonton, AB, Canada) presented a new method for the extraction and separation of glycoalcaloids and phenolic acids from potato peels, and Michelle Feuereisen (Bonn, Germany) introduced Brazilian pepper as a source of antimicrobial polyphenolics.

The afternoon session “Analysis of Polyphenols in Foods and Dietary Supplements” was dedicated to Prof. Dr. Rudolf Galensa, Chair of Food Chemistry at the University of Bonn, in recognition of his lifetime contributions to the field of polyphenol analysis. In his laudation “Polyphenols for Life”, Prof. Dr. Ulrich Engelhardt surveyed Rudolf Galensa’s professional career, starting with his thesis on HPLC of flavonoids in 1979, and gave an overview of his accomplishments, awards, most important projects and publications. “Rudolf Galensa stands for excellent science, excellent teaching, and a special sense of humour”, Prof. Engelhardt concluded. The audience gave standing ovations when Prof. Galensa took the floor to acknowledge his wife and co-workers for their support. Dr. Benno Zimmermann, Maike Gleichenhagen, Elvira Jungfer, and Lisa Kothe, who are current members of his research group, presented to him as a very special gift a two-volume hardcover compilation of his publications.

The subsequent scientific program proceeded with Dr. Benno Zimmermann’s overview of UHPLC as a tool for polyphenol analysis in foods and physiological samples. Prof. Dr. Chlodwig Franz (Vienna, Austria) highlighted the importance of polyphenols in quality and authenticity control of dietary supplements based on botanicals. Consequences of exposure to polyphenol-rich foods and beverages and their colonic metabolites were presented by Dr. Anna-Marja Aura (Espoo, Finland). Prof. Dr. Michael Gänzle (Edmonton, AB, Canada) gave a talk on sorghum polyphenols and their effects on the microbial ecology of cereal fermentations. Maike Gleichenhagen presented the results of her PhD thesis on intrinsic labeling of polyphenols by cultivation of plants in a $^{13}$C carbon dioxide atmosphere. Finally, Dr. Sandrine Milesi (Loos, France) introduced the potential of methyl tetrahydrofurane as a green solvent for polyphenol extraction and purification.

Prof. Dr. Francisco Tomás-Barberán and Prof. Dr. Reinhold Carle received the 2013 Polyphenols Award in recognition of their outstanding contributions to research on polyphenols.

In their conclusions, Prof. Dr. Marvin Edeas and Prof. Dr. Andreas Schieber expressed their appreciation to all speakers and poster presenters for their excellent contributions, which made this congress a huge success. According to them, interactions of polyphenols with gut microbiota will continue to be an area of intense research activities and very likely take up even more room in future polyphenol congresses.
7th International Conference on Polyphenols Applications
June 6-7, 2013 - Bonn University, Germany

Scientific Programme

Day 1 - June 6, 2013

8h50 Opening Session and Introduction
Prof. Dr. Marvin Edeas, President of ISANH and Congress Chairman, France

9h00 Welcome Addresses
Prof. Dr. Peter Stehle, Dean of the Faculty of Agriculture, University of Bonn, Germany
Prof. Dr. Andreas Schieber, Local Organizer and Chairman of the Scientific Committee, Germany

Session 1: Metabolism and Health Effects of Polyphenols
Chair: Prof. Dr. Marvin Edeas

9h15 Polyphenols, Gut Microflora and Human Health
Prof. Dr. Francisco A. Tomás-Barberán, CEBAS-CSIC, Spain

9h55 Role of Polyphenols in Cardiovascular Disease and Diabetes
Dr. Paul A. Kroon, Institute of Food Research, United Kingdom

10h25 Break & Posters Session

10h55 Dietary Cancer Prevention by Polyphenols – Recent Advances
Dr. Clarissa Gerhäuser, German Cancer Research Center, Heidelberg, Germany

11h25 Polyphenols & Chronic Inflammatory Bowel Diseases: Preventive and Therapeutic Effects
Prof. Dr. Harald Hoensch, Marienhospital, Darmstadt, Germany

11h55 Whole Grain Cereals and Polyphenols: Recent Advances and Perspectives
Prof. Dr. Rikard Landberg, Department of Food Science, Swedish University of Agriculture Science, Sweden

12h25 Lunch Break & Posters Session

Session 2: Polyphenols Bioavailability & Metabolomics
Chair: Prof. Dr. Michael G. Gänzle

14h00 Introduction about Polyphenols Bioavailability and Metabolomics: What's New?
Dr. Paul A. Kroon, Institute of Food Research, United Kingdom

14h15 Polyphenols and Food Metabolomics
Prof. Dr. Rosa-Maria Lamuela-Raventos, University of Barcelona, Spain

Session 3: Polyphenols, Market & Claims: The EFSA’s Red Line

14h45 Polyphenols & Regulation: Latest Developments in EU Legislation
Mr Ales Bartl, McKenna Long & Aldridge LLP, Brussels, Belgium

www.polyphenols-site.com
Session 4: Polyphenols & Functional Foods & Drinks: From Sciences to Innovations

15h15 General Introduction on Polyphenols & Functional Foods and Drinks  
Practical Case: Polyphenols & Tea, Coffee and Cocoa: From Chemistry to Health Effects  
Prof. Dr. Ulrich Engelhardt, University of Braunschweig, Germany

15h30 Break & Posters Session

16h00 Lessons from the Investigations of full Phenolic Metabolome Profiles in Identical Plant Species and closely related Members of Plant Families  
Nikolai Kuhnert, Jacobs University, Bremen, Germany

16h15 Beneficial Effects of Berry Polyphenols in the Gut: Effects on Food Digestion and Colon Cancer  
Gordon J. McDougall, Environmental and Biochemical Sciences Group, The James Hutton Institute, Dundee, United Kingdom

16h30 Systemic Absorption and Metabolism of Procyanidin B4 in Pigs  
Katharina Bittner, Institute of Food Chemistry, Westfälische Wilhelms-Universität Münster, Germany

16h45 Multistep Chemoenzymatic Preparation of Phase II Silybin Metabolites  
Vladimir Křen, Institute of Microbiology, Academy of Sciences of the Czech Republic, Prague, Czech Republic

17h00 Quercetin induces Hepatic Lipid Omega-oxidation and Lowers Serum Lipid Levels in Mice  
Evert M. van Schothorst, Human and Animal Physiology, Wageningen University, Wageningen, The Netherlands

17h15 End of the First Day

19h30 Thursday Dinner at Restaurant DaCapo - Fritz - Schroeder Uffer - Bonn

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Day 2 - June 7, 2013

Session 5: Technological Aspects and Stability of Polyphenols  
Chair: Prof. Dr. Dr. h.c. Reinhold Carle

9h00 Recovery and Application of Polyphenols as Natural Food Ingredients  
Prof. Dr. Dr. h.c. Reinhold Carle, University of Hohenheim, Stuttgart, Germany

9h40 Reactions of Polyphenols during Processing – an Overview  
Prof. Dr. Leif Skibsted, University of Copenhagen, Denmark

10h10 Covalent Polyphenol-Protein Interactions – Challenges and Research Needs  
Prof. Dr. Sascha Rohn, University of Hamburg, Germany

10h40 Break & Posters Session

11h10 Polyphenols from By-products of Food Production: Subcritical Water Extraction of Polyphenols from Grape Pomace  
Prof. Dr. Luke Howard, University of Arkansas, Fayetteville, USA

11h40 Extraction and Separation of Phenolic Acids and Glycoalkaloids from Potato Peels using Food Grade Solvents  
Alma Fernanda Sanchez Maldonado, University of Alberta, Alberta, Canada

11h55 Characterization and Antimicrobial Activity of Polyphenols from Brazilian Pepper Fruits (Schinus terebinthifolius Raddi)  
Michelle M. Feuereisen, University of Bonn, Bonn, Germany

12h10 Lunch Break
Session 6: Analysis of Polyphenols in Foods and Dietary Supplements
Session Dedicated to Prof. Dr. Rudolf Galensa,
University of Bonn in Recognition of His Lifetime Contributions to the Field
Chair: Prof. Dr. Andreas Schieber

13h30 Laudation
Prof. Dr. Ulrich Engelhardt, University of Braunschweig, Germany

13h45 UHPLC as a Tool for Polyphenols Analysis in Foods and Physiological Samples
Dr. Benno Zimmermann, University of Bonn, Germany

14h15 Polyphenols as Tools in Quality and Authenticity Control of Dietary Supplements
Prof. Dr. Chlodwig Franz, University of Veterinary Medicine, Vienna, Austria

14h45 Detection and Consequences of Exposure to Polyphenol-rich Foods and Beverages and their Colonic Microbial Metabolites in vivo and in vitro
Anna-Marja Aura, VTT Technical Research Centre, Espoo, Finland

15h00 Effect of Polyphenolic Compounds in Sorghum Grains on the Microbial Ecology of Cereal Fermentations
Michael G. Gänzle, University of Alberta, Edmonton, Canada

15h15 Polyphenols – Intrinsically Labeled with the Stable Isotope 13C
Maike Gleichenhagen, University of Bonn, Bonn, Germany

15h30 Industrial Potential of Methyltetrahydrofuran as a “Green” Solvent for the Extraction and Purification of Polyphenols
Sandrine Milesi, Purifunction, Loos, France

15h45 Discussion & Conclusion of Bonn Polyphenols 2013

16h00 Bonn Polyphenols 2013 Awards

16h15 Network Session around Drinks & Snacks – Posters Presentation

17h00 End of Bonn Polyphenols 2013