International Society of Antioxidants in Nutrition and Health

12th World Congress on Polyphenols Applications
September 25-28, 2018 - University of Bonn, Germany

Bonn Polyphenols 2018
Preliminary Agenda

www.polyphenols-site.com
Congress Tracks:
- Polyphenols-microbiome interactions
- Metabolism & health effects of polyphenols
- Technological & biotechnological aspects of polyphenols
- Characterization and analysis of polyphenols and their metabolites
- Polyphenols innovations in 2018
- Polyphenols as natural additives and pigments

Key dates:
- Early Bird Registration
  Mon. Sept. 10, 2018
- Short Oral Submission
  Tues. July 31, 2018
- Poster Submission
  Mon. Sept. 10, 2018

Bonn Polyphenols 2018 Speakers

Non-estrogenic xanthohumol derivatives improve cognitive function in diet-induced obese mice
Jan Frederik Stevens
Oregon State University, USA

Biosynthesis of acylphloroglucinols: novel phenolics from strawberry fruit
Wilfried Schwab
Technical University of Munich, Germany

Bonn Polyphenols 2018: General Introduction & Welcome Note
Peter Stehle
University of Bonn, Germany

Polyphenols-microbiome interactions from a food microbiologist’s view
Michael Gänzle
University of Alberta, Canada

Development of microbial production platforms for plant polyphenols
Mattheos Koffas
Rensselaer Polytechnic Institute, USA

Anthocyanins – Color enhancing strategies
Reinhold Carle
University of Hohenheim, Germany

The effects of novel processing technologies on the stability of polyphenols
Isabel Odriozola Serrano
University of Lleida, Spain

Processing as a modifier of polyphenol delivery and bioactivity
Mario Ferruzzi
North Carolina State University, USA

Investigating the biological activities of extracts from winery by-products
Christine Fuchs
Technische Universität Kaiserslautern, Germany

Impact of diet on human gut microbiota composition and functionality
Daniele Graf
Max Rubner-Institut, Germany

Phenolic compounds in food waste valorization: figures & perspectives
Richard Maroun
Saint-Joseph University of Beirut, Lebanon

Activity guided fractionation of red fruit juices to identify alpha-amylase and alpha-glucosidase inhibitors in vitro
Kirsten Berger
University of Kaiserslautern, Germany

Polyphenols and chronic disease risk: epidemiological perspectives
Ute Nöthlings
University of Bonn, Germany

Pineapple (Ananas comosus (L.) Merr.) as a source of unique phenolic compounds: analysis and applications as authenticity markers
Christof Steingass
University of Hohenheim, Germany

Why biotransformation matters: species differences in isoflavone metabolism and biological implications
Sebastian Soukup
Max Rubner-Institut, Germany

Stabilization of anthocyanins by co-pigmentation using mango peel and rooibos phenolics
Judith Müller-Maatsch
University of Hohenheim, Germany
Dear Colleagues,

On behalf of the International Society of Antioxidants in Nutrition and Health (ISANH) and the Scientific Committee, we are pleased to announce the 12th World Congress on Polyphenols Applications: Bonn Polyphenols 2018 to be held at the University of Bonn, Germany in September 26-28, 2018. Bonn Polyphenols 2018 will bring together experts from academia and industries to discuss the latest scientific advances in the field of polyphenols and their applications in food, pharmaceutical and medical sciences.

This year, the University of Bonn celebrates its 200th anniversary, highlighting the achievements and offering a varied program of close to 100 events. We are very pleased that the Organizing Committee has decided to hold the 12th edition of the World Congress on Polyphenols Applications at the University of Bonn in this anniversary year.

Research on plant phenolics has a long tradition at the University of Bonn. Authentication of plant-derived foods via analysis of the profile of phenolic compounds, recovery of secondary plant metabolites including phenolics from by-products, color stability of anthocyanins, and bioavailability studies on flavonoids have been key topics of former and current research groups at the Institute of Nutritional and Food Sciences. More recently, antimicrobial properties of phenolics and microbiome-polyphenols interactions have attracted our interest.

The 2018 edition of the World Congress on Polyphenols Applications will address these topics and many additional areas of current interest to the polyphenols community such as:

- Polyphenols-Microbiome Interactions
- Bioavailability, metabolism & health effects of polyphenols and their metabolites
- Technological & biotechnological aspects of polyphenols
- Characterization and analysis of polyphenols and their metabolites
- Polyphenols Innovations in 2018
- Polyphenols as natural pigments & additives: Science, Industry & Marketing

**Session 1: Polyphenols-Microbiome Interactions**

There is consensus in the scientific community that phenolic compounds are extensively metabolized by the human microbiome, and evidence is accumulating that phenolics present in food have an effect on the composition of gut microorganisms. This session addresses latest findings in the field from a cross-disciplinary view, including microbiology and food chemistry, and will highlight the following strategic points:

- Microbiota, polyphenols & food: recent advances & perspectives / modifying the microbiota through food
- Microbiota, polyphenols, food industry and formulation: presentation of the innovations
- Microbiota, polyphenols, food industry and regulatory aspects

**Session 2: Metabolism & Health Effects of Polyphenols**

Phenolic compounds have been associated with numerous beneficial effects on human health. The session will provide an overview of latest investigations into the interrelationship between bioavailability, metabolism and bioactivity, including among others, anti-obesity and cardiometabolic effects. In this session, we will address the question whether the beneficial effects observed are related to polyphenols or to polyphenols metabolites.
Focus on Polyphenols, Epidemiology & Neurodegenerative Diseases

In this session, we will focus on the neurodegenerative diseases. Indeed, epidemiological studies associating the intake of polyphenol-rich foods with a lower incidence of certain diseases including neurodegenerative diseases have greatly facilitated research on phenolic compounds. The objective of this session will be to provide an update on recent findings related to epidemiological research on polyphenols and the role these compounds play in cognitive health.

Session 3: Technological & Biotechnological Aspects of Polyphenols

There is still a gap in our knowledge about the effects of processing on the stability of phenolic compounds. In this session, we will address studies that deal with the impact of conventional and novel processes, such as heating, high hydrostatic pressure treatment, pulsed electric fields, and others, on plant phenolics. Furthermore, the application of phenolics as natural functional compounds to replace synthetic food additives will be covered. The session will also present recent trends in the biotechnological production of phenolic compounds.

Session 4: Characterization and Analysis of Polyphenols and Their Metabolites

Despite tremendous advances in analytical chemistry, the characterization and quantification of phenolic compounds is still challenging because of the structural heterogeneity of this class of secondary metabolites. The session will present novel analytical approaches including hyphenated techniques such as LC-MS and LC-NMR, characterization of novel structures, and innovations in sample preparation for the determination of free and non-extractable phenolics.

Session 5: Polyphenols Innovations in 2018

The session will highlight approaches in product development, exploitation of novel sources of phenolic compounds, characterization and application of novel nutraceuticals based on plant phenolics, and new processes for extraction and formulation of polyphenols. In this session, we will answer the following question: how to formulate with polyphenols and/or polyphenols metabolites to affect gut and skin microbiota?

Session 6: Polyphenols as Natural Pigments & Additives

The industrials from Food & beverage look to replace synthetic colorants with more respectful natural pigments. However many barriers remain in term of extraction, stabilization and industrial applications. The aim of this session is to present the latest advances and innovations in the field of natural pigments and additives and the strategies to convince the consumers.

Abstract submissions for consideration of potential inclusion as oral or poster presentation are welcome for all these topics.

We look forward to welcoming you at the University of Bonn for this special occasion!

Prof. Andreas Schieber
University of Bonn, Germany
President of Bonn Polyphenols 2018
12th World Congress on Polyphenols Applications

September 25-28, 2018 – University of Bonn, Germany

Scientific Preliminary Agenda

Day 1 – September 25, 2018

17h00 – 18h00  Registrations – Badges & material delivery

Day 2 – September 26, 2018

7h45  Welcoming of attendees - Registration

9h00  Bonn Polyphenols 2018: General Introduction by President of Bonn Polyphenols 2018

Prof. Dr. Andreas Schieber, University of Bonn, Germany

Bonn Polyphenols 2018: Welcome Note

Prof. Dr. Peter Stehle, Dean of the Faculty of Agriculture, University of Bonn, Germany

Session 1: Polyphenols-microbiome interactions

9h15 – 12h30

Polyphenols, microbiota, metabolites and short chains fatty acids: Where is the target?

Marvin Edeas, Cochin Institute-INSERM, France

Impact of diet on human gut microbiota composition and functionality

Daniela Graf, Max Rubner-Institut Karlsruhe, Germany

Polyphenols-microbiome interactions from a food microbiologist’s view

Michael Gänzle, University of Alberta, Canada

10h15 - Coffee Break & Poster Session

Short oral presentations – Among presentations already accepted

12h30 – Lunch Break & Poster Session

Session 2: Metabolism & health effects of polyphenols

Focus on Polyphenols, Epidemiology & Neurodegenerative Diseases

14h00 – 18h00

Non-estrogenic xanthohumol derivates improve cognitive function in diet-induced

Jan Frederick Stevens, Oregon State University Corvallis, USA

Polyphenols and chronic disease risk: epidemiological perspectives

Ute Nöthlings, University of Bonn, Germany

15h30 - Coffee break & poster session
Short oral presentations – Among presentations already accepted:

Can flavonoids and/or their metabolites influence the platelet aggregation?
**Premysl Mladenka**, Charles University, Czech Republic

Short-term supplementation with flavanol-rich cocoa improves lipid profile, antioxidant status and positively influences the arachidonic acid / eicosapentanoic acid ratio (AA:EPA) in healthy subjects
**Sergio Davinelli**, University of Molise, Italy

Evidence that polyphenols chemosensitize 5-Fu-Treated human colon cancer cells
**Constanze Friederike Buhrmann**, Ludwig-Maximilian-University Munich, Germany

Ginkgo biloba extract attenuates oxidative DNA damage upon in vitro digestive conditions
**Daniela Oliveira**, University of Minho, Portugal

Cytoprotective mechanisms of enolate-forming compounds
**Richard Michael Lopachin**, Albert Einstein College of Medicine, USA

Effects of polyphenolic extract from pine bark on the inattention and hyperactivity in children and adolescent with attention deficit hyperactivity disorder based on the antioxidative status
**Li-Hsuan Hsieh**, Taipei Medical University Taiwan

A single dose of a polyphenol-rich seaweed extract is insufficient to blunt elevated postprandial glycaemic responses in the evening, in healthy adults: a randomised cross over trial
**Margaret Murray**, Monash University, Australia

Approaches to control the antioxidant efficiency in multiphasic systems: tuning interfacial antioxidant concentrations
**Sonia Losada Barreiro**, University of Vigo, Spain

Dietary intake of polyphenols is inversely associated with body mass index in European adolescents: the Helena study
**Ratih Wirapuspita Wisnuwardani**, Ghent University, Belgium

Citrus flavonoid supplementation improves exercise performance in trained athletes
**Stevens Yala**, Maastricht University Medical Center, The Netherlands

18h00   End of the day
20h00   Bonn Polyphenols Dinner
Day 3 – September 27, 2018

8h55  Opening of day 3

**Session 3: Technological & biotechnological aspects of polyphenols**
9h00 – 12h30

**Phenolic compounds in food waste valorization: figures & perspectives**
*Richard Maroun, Saint-Joseph University of Beirut, Lebanon*

**Effects of precessing on the bioactivity of phenolics compounds**
*Mario Ferruzzi, North Carolina State University Kannapolis, USA*

**Effects of novel processing technologies on the stability of polyphenols**
*Isabel Odriozola Serrano, University of Lleida, Spain*

10h30 - Coffee break & poster session

**Investigating the biological activities of extracts from winery by-products**
*Christine Fuchs, Technische Universitaet Kaiserslautern, Germany*

**Development of microbial production platforms for plant polyphenols**
*Mattheos Koffas, Rensselaer Polytechnic Institute Troy, USA*

**Biosynthesis of acylphoroglucinols: novel phenolics from strawberry fruit**
*Wilfried Schwab, Technical University of Munich Freising, Germany*

**Short oral presentations**

**Tomato waste as feedstock to extract phenolic compounds with anti-oxidant and anti-inflammatory bioactivity**
*Parisa Abbasi Parizad, University of Milan, Italy*

12h30 - Group Picture, Lunch Break & Poster Session

**Session 4: Characterization and analysis of polyphenols and their metabolites**
14h00 – 15h30

**Why biotransformation matters: species differences in isoflavone metabolism and biological implications**
*Sebastian Soukup, Max Rubner-Institut, Germany*

**Pineapple (Ananas comosus (L.) Merr.) as a source of unique phenolic compounds: analysis and applications as authenticity markers**
*Christof Steingass, University of Hohenheim, Germany*

**Short oral presentations – Among presentations already accepted**

**Combined food ingredient polyphenols and probiotic bacteria for improved biological activities**
*Rachid Bel-Rhid, Nestlé Research, Switzerland*

**Flavonoids-pectin interaction: the effect of iron content, flavonoids structure and pH**
*Libi Chirug, Technion, Israel*

**Valorization of plant biomass feedstock by assessing the chemical composition of polyphenols and antioxidant potential of their extracts**
*Liga Lauberte, Latvian State Institute of Wood Chemistry, Latvia*

**Effect of ultrasound-assisted extraction on the phenolic composition of avocado peel extracts**
*Igor Alfonso, Bio Bio University Chile*
Vaccinium meridionale pomace as ingredient for the development of functional greek yogurt
*Gloria Astrid Garzon*, Universidad Nacional de Colombia, Colombia

Psidium fruits: a wealth of polyphenols
*Carolina Rojas-Garbanzo*, University of Costa Rica, Costa Rica

Anthocyanins in Potato towards the understanding of their genetic control
*Teresa Mosquera-Vásquez*, National University of Colombia, Colombia

Utilization of rapeseed pomace (RSP) extract: A study into its phenolic contents, in vitro anti-oxidant properties and in vivo activation of oxidative stress response enzymes
*Franziska Pohl*, Robert Gordon University, UK

UHPLC-ESI-QTOF-MS profile of polyphenols in Goji berries (Lycium Barbarum L.) and its dynamics during in vitro gastrointestinal digestion and fermentation
*Gabriela Rocchetti*, University Cattalica del Sacro Cuore, Italy

Enhancement of the antioxidant efficiency of gallates in intact fish oil-in water emulsions
*Sonia Losada Barreiro*, Universidad de Vigo, Spain

Session 5: Polyphenols applications & innovations in 2018
16h15 – 18h00

Activity guided fractionation of red fruit juices to identify alpha-amylases and alpha-glucosidase inhibitors *in vitro*
*Kirsten Berger*, University of Kaiserslautern, Germany

A blend of polyphenols, rich in tannins, as a successful alternative growth promoter in poultry chickens
*Leandro Martin Redondo*, Instituto Nacional de Tecnología Agropecuaria, Buenos Aires, Argentina

Short oral presentations – Among presentations already accepted:

Quercetin Phytosome™, a new bioavailable food grade delivery solution
*Antonella Riva*, Indena S.p.A. Milano, Italy

Simultaneous prediction of ultrasound-assisted extraction for total phenolic content and free radical scavenging activity of kidney beans (Phaseolus vulgaris L.) using response surface methodology (RSM) and artificial neural network (ANN) modeling.
*Qionggiong Yang*, Department of Food Science & Technology, China

The interlink of UV transmittance and flavonoids in Okra driven by diurnal
*Susanne Neugart*, Loyola University New Orleand, USA

Cellular quercetin accumulation and localization under stress
*Hanne Vissenaekens*, Ghent University, Belgium

The effect of different polyphenolic extrats of *Salix sp* (Willow) on the exsheathment of gastrointestinal nematode larvae
*Manal Haj-Zaroubi*, Galilee Society, Israel

Polyphenols for aquaculture applications: is there a future?
*Marina Paolucci*, University of Sannio, Italy

18h00 End of the day
Day 4 – September 28, 2018 (half-day)

8h55 Opening of day 4

Special workshop: Polyphenols as natural pigments & additives
Science, Industry & Marketing
9h00 – 12h30

The aim of this workshop is to highlight the strategic role of polyphenols as natural additives and pigments based on three axes:

(i) Present the recent scientific advances of polyphenols as potential natural pigments & additives
(ii) Discuss the industrial aspects and how to switch from synthetic to natural pigments
(iii) Discuss how to convince the consumers

Laudation

Ralf Schweiggert, University of Geisenheim, Germany

Anthocyanins – Color enhancing strategies
Reinhold Carle, University of Hohenheim, Germany

Stabilization of anthocyanins by co-pigmentation using mango peel and rooibos phenolics
Judith Müller-Maatsch, University of Hohenheim, Germany

Short oral presentations – Among presentations already accepted

Polyphenols from pecan nut shell as natural additives for food applications
Lucia Panzella, University of Naples Federico II, Italy

Control of Maillard reactions in lactose hydrolysed UHT-processes milk by green tea extract
Mahesha M. Poojary, University of Copenhagen, Rolighedsvej, Denmark

Oxidative coupling of chlorogenic acid with tryptophan: toward a natural product-based food dye
Alessandra Napolitano, University of Naples Federico II, Italy

Generation and structural elucidation of polar polyphenol derived chromophores, color enhancing of alkalized cocoa powders
Daniel Christian Germann, Technische Universität München, Germany

Complexation of anthocyanins by pectin fragments in model fruit juice
Lena Rebecca Larsen, University of Bonn, Germany

10h45 – Coffee Break & Poster Session

11h15 Round table discussion: Polyphenols - what's next?

Concluding remarks of Bonn Polyphenols 2018

Bonn Polyphenols Awards 2018

12h30 Lunch Break & End of Bonn Polyphenols 2018