



Deutsche Gesellschaft für Fettwissenschaft

SYMPOSIUM

Authenticity of Olive Oil and other Vegetable Oils

10 – 12 April 2016 · Nuremberg · Germany



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INVITATION · PROGRAMME

www.dgfett.de/meetings/aktuell/nuremberg2016

INVITATION

In addition to the quality assessment of olive oil and other vegetable oils, the need for authentication is of major concern for consumers and the food industry. Not only expensive and valuable oils such as olive oil or argan oil, but also cheaper oils purchased in high quantities may be subjected to different kinds of food fraud. The aim of oil authentication is to protect the consumer from adulteration and the industry from unfair competition.

Today, olive oil is the only oil in commerce for which a legal framework exists with many official methods to characterize the oil quality. For all other oils only national or international standard definitions of the quality such as the Codex Alimentarius are available. Traditionally, the characterization of oils has been based on one or more constituents such as fatty acids, phytosterols, tocopherols, waxes, the triacylglycerol composition or markers such as sesamol in sesame oil. This information is not enough to answer all the questions by comparing with known samples or legally established limits. In these times, not only the identity of oils is of interest due to its labeling as "organic", "virgin", "GMO-free", but also the specific geographic regions they are from are important purchasing arguments. Therefore, questions regarding the geographical origin, genetic variety, quantification of blends of vegetable oils or detection of refining treatments have to also be answered, ideally by the use of fast and rapid methods that are easy to handle.

More and more general methods come into the focus of interest which can provide information on more than one parameter at the same time. Such methods are fingerprinting techniques like NIR, MIR and NMR spectroscopy, but also chromatographic methods like GC, GCxGC, LCxGC or LC with mass selective detectors are in use, which analyze the metabolic profile of oils. In combination with chemometric techniques such as Principle Component Analysis or Linear Discriminant Analysis these methods can be used to identify parameters of high discriminatory power to answer the above mentioned questions.

It is widely accepted that there is a strong need for the harmonization and validation of methods to face the problems concerning the authenticity confirmation of olive oils and other high price vegetable oils. A part of the Horizon 2020 program initiated by the European Commission (SFS14-2014/2015) is open to development, validation and harmonization of analytical methods and quality parameters for olive oil that specifically address technical authenticity issues:

These issues concern in particular

- 1) The blend of extra-virgin olive oil or virgin olive oil with soft deodorized olive oil,
- 2) The blend of extra-virgin olive oil or virgin olive oil with other vegetable oil. Beyond the case of olive oil, there is also a strong need for better coordination of research in the area of food authenticity, integrity and traceability across the food supply chain between Member States and Associated Countries.

The aim of the symposium is to give an overview on the different aspects of authenticity of olive oil and other vegetable oils, from the legal regulations and approaches to traceability via the statistical techniques to the general and specific analytical aspects. This symposium will present new and fast methods to proof the quality and authenticity of olive oil and other edible oils and the participants will have the chance to discuss with outstanding experts the different aspects in the field of authenticity. This symposium is aimed at all people working as legal key opinion leaders, in official and commercial laboratories or in official or commercial food control or food industry. At the end the participants should be provided with the newest information on authenticity and the latest findings in order to make the market of edible oils fit for the future.

We look forward to welcoming you in Nuremberg in April 2016.



Dr. Bertrand Matthäus
Detmold



Dr. Christian Gertz
Hagen

VENUE

NUREMBERG

Nuremberg was, according to the first documentary mention of the city in 1050, the location of an Imperial castle. The city is often referred to as having been the „unofficial capital“ of the Holy Roman Empire, particularly because Imperial Diet (Reichstag) and courts met at Nuremberg Castle.

In the 19th century Nuremberg became the „industrial heart“ of Bavaria with companies such as Siemens and MAN. Nuremberg is still an important industrial centre with a strong standing in the markets of Central and Eastern Europe. Items manufactured in the area include electrical equipment, mechanical and optical products and motor vehicles.

In 1515, Albrecht Dürer, a native of Nuremberg, created woodcuts of the first maps of the stars of the northern and southern hemispheres, producing the first printed star charts. Around 1515 Dürer also published the first perspective drawing of the terrestrial globe. Perhaps most famously, the main part of Nicolaus Copernicus's work was published in Nuremberg in 1543.

VENUE

The symposium will take place at the

Maritim Hotel Nürnberg

Frauentorgraben 11
90443 Nürnberg
Phone +49 (0)911 2363-0
Fax +49 (0)911 2363-823

TRAVEL

The Maritim Hotel Nürnberg is located centrally and in a conveniently connected part of the inner city, just a few metres from the main railway station and a few kilometres from the autobahn, airport and the trade fair. The old city with famous buildings and monuments such as the Kaiserburg, or the numerous museums and the world famous Nürnberger Christkindlesmarkt (Christmas Market) are within walking distance.

Taxi fares from airport: approx. 15-20 €

Busses and trams: from airport U2 to stop "Hauptbahnhof"

Roadmap Hotel Nürnberg:

www.maritim.com/upload/media/media/306/thumb_1373_1400_Nuernberg%5B5417%5D.jpg

ACCOMMODATION

Hotel rooms at the Maritim are available at at rate of 99 € per single room and night until **14 February 2016**.

To book your room mention the keyword "DGF".

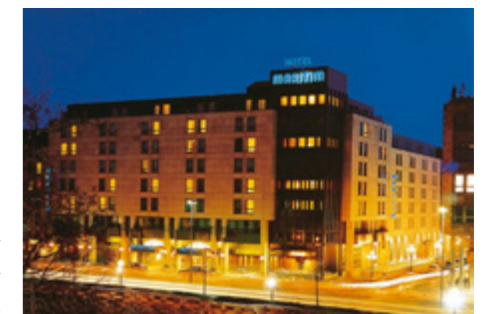
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PROGRAMME

Sunday, 10 April 2016

19:00 **Welcome Reception**

Monday, 11 April 2016

09:00 – 09:15 **Welcome and Introduction****Regulations**09:15 – 10:00 Franz Ulberth, European Commission, Joint Research Center, Geel/BE
Authenticity of Fats and Oils - Review, Regulations and Analytical Chemistry10:00 – 10:30 Lanfrancesco Conte, University of Udine, IT
European Regulations on Olive Oil - Are the Testing Methods good enough to detect Olive Oil Adulteration?10:30 – 11:00 Paul Miller, Australian Olive Oil Association, Coomandook/AUS
How Virgin is Extra Virgin?11:00 – 11:30 **Coffee Break**11:30 – 12:00 Bertrand Matthäus, Max Rubner-Institute, Detmold/DE
Legal Regulations of Edible Fats and Oils11:30 – 12:00 Reiner Wittkowski, Federal Institute for Risk Assessment, Berlin/DE
Scientific Approaches to Traceability in the Food Chain12:30 – 13:00 Peiwu Li, Oil Crop Research Institute, Wuhan/PRC
Current Situation and Challenges of Plant Edible Oils Authenticity in China13:00 – 14:00 **LUNCH****Fundamentals of Chemometry**14:00 – 14:30 Richard Brereton, University of Bristol, UK
Application of Multivariate Data Analysis in Analytical Chemistry - Practical Aspects14:30 – 15:00 Hans-Otto Cullmann, Comicon GmbH, Hamburg/DE
Genetic Algorithms to Calculate Adulterations in Fat and Oil Blends15:00 – 15:30 Richard Brereton, University of Bristol/UK
The Right Application of Chemometric Techniques - Fads and Fallacies15:30 – 16:00 **COFFEE BREAK****General Analytical Aspects**16:00 – 16:30 Bertrand Matthäus, Max Rubner-Institute, Detmold/DE
Minor Components to Determine Oil Authenticity16:30 – 17:00 Torben Küchler, Eurofins, Hamburg/DE
A Strategy for the Estimation of Extra Virgin Olive Oil Adulteration with Edible Oils17:00 – 17:30 Peiwu Li, Oil Crop Research Institute, Wuhan/PRC
Using of Immunoassay and GC/LC-MS-MS for Identification of Edible Plant Oil Adulteration19:30 **DINNER**

PROGRAMME

Tuesday, 12 April 2016

Special Analytical Aspects09:00 – 09:30 Bernd Diehl, Spectral Service, Cologne/DE
NMR Spectroscopy for Quality and Authenticity Assessment of Edible Fats and Oils09:30 – 10:00 Markus Link, Bruker BioSpin GmbH, Rheinstetten/DE
HR-NMR based Analysis of Edible Oils with Focus on Olive Oil10:00 – 10:30 Ole Winkelmann, Eurofins, Hamburg/DE
NMR Spectroscopy as a Discriminating Method for the Geographical Origin of Olive Oils10:30 – 11:00 Hans-Otto Cullmann, Comicon GmbH, Hamburg/DE
Determining the Formulation of Oil and Fat Blends based on SFC and Fatty Acid Composition11:00 – 11:30 **COFFEE BREAK**11:30 – 12:00 Markus Boner, Agrosolab GmbH, Jülich/DE
Stable Isotope Characterization of Olive Oils12:00 – 12:30 Christian Gertz, Maxfry, Hagen/DE
New Analytical Approaches for Verifying the Origin of Olive Oil using NIR12:30 – 13:00 Bertrand Matthäus, Max Rubner-Institute, Detmold/DE
Volatile Compounds as Mean for the Quality Assessment of Vegetable Oils13:00 – 14:00 **LUNCH**14:00 – 14:30 Dieter Oberg, German Olive Oil Panel (DOP), Wessling/DE
The “Harmony Value” as an Improving Factor for Private Label Quality of EVOO in the EU14:30 – 15:00 Christian Gertz, Maxfry, Hagen/DE
Evaluation of Sensory Profile and Detection of Sensory Defects of Olive Oils15:00 – 15:30 **Discussion**

LECTURERS

**Markus Boner**

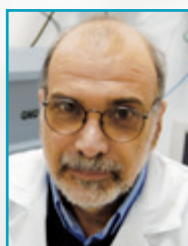
Agroisolab GmbH, Jülich, Germany

**Prof. Richard Brereton**

Brereton Consultancy, Bristol, UK

Professor Richard Brereton was awarded his BA, MA and PhD at the University of Cambridge, where he also did his postdoc and then subsequently was appointed to the staff of the University of Bristol where he has remained. He is Director of Brereton Consultancy. He is Fellow of the Royal Society of Chemistry, Fellow of the Royal Statistical Society and Fellow of the Royal Society of Medicine.

He has over 367 publications to his name, of which 173 are academic journal articles, and 7 are books. His latest book is Chemometrics for Pattern Recognition (Wiley, 2009). He is currently Editor-in-Chief of Heritage Science, Columnist for Journal of Chemometrics and on the Editorial Board of Chemometrics and Intelligent Laboratory Systems among others. He has given 172 invited lectures worldwide. His main expertise is in Multivariate Pattern Recognition primarily for classification, including One Class Classifiers and Partial Least Squares Discriminant Analysis among other techniques, as applied to a wide variety of problems.

**Prof. Lanfranco Conte**

University of Udine, Italy

Academic curriculum:

Since 1994: Full Professor of Food Chemistry at University of Udine

1992-1994: Associate Professor of Chemical Analysis of Foods at University of Udine

1982-1992: Chief Chemist at Inspectorate for food fraud detection (Laboratory of Bologna, Italian Ministry of Agriculture, Food and Forestry) Laboratory work of assessment of purity and quality of different foods: olive oil, seed oils, cheeses (extraneous milk detection), wine (diethylene glycol, methanol)

1973-1982: Laboratory technician at University of Bologna – Cooperation in researches in lipid chemistry

Research fields:

Chemistry of edible lipids, with peculiar attention to olive oils and stability problems, studies on oxidative rancidity, studies on volatile fraction of several foods (GC-MS). Development and validation of methods to assess purity and quality of foods as well as presence of contaminants (PAHs, MOSH, MOAH, Phtalates etc). Development of advanced analytical techniques: Co author of about 150 papers in journals with IF, of 7 book chapters, and 1 book devoted to sample preparation. In November 2015, Web of Science attributed an h-index of 31.

LECTURERS

**Dr. Hans Otto Cullmann**

Comicon GmbH, Hamburg, Germany

Education

- Study of chemical process engineering at the University of Applied Science in Juelich
- Study of chemistry at the University of Cologne
- Study of computer science at the University of Cologne

Employment

- Lab manager, quality manager and application manager at the 'Harburger Oelwerke' in Hamburg – now Cargill
- Since 1995 managing director of the comicon GmbH Hamburg

Experience Chemistry of edible oils and fats

- Product development of oil and fat blends for various applications
- Development of software solutions for lab automation eg fully automated determination of Solid Fat Content, fully automated FatLab etc.
- Development of methods and software solutions for calculation and simulation of oil and fat blends, among others a method to calculate the Solid Fat Content of oil and fat blends on the PC.

Memberships:

GDCh – German Chemical Society

DGF – German Society of Fat Science

Euro Fed Lipid – European Federation for the Science and Technology of Lipids

AOCS – American Oil Chemist Society

**Dr. Bernd W. K. Diehl**

Spectral Service AG, Cologne, Germany

Education:

Dr. rer. nat, Dipl. Chemist, Philipps University Marburg 1988
Organic chemistry and NMR Spectroscopy

Employment:

- Bayer Research Center, 1988 until 1990,
- 1990 founder and CEO of Spectral Service AG
- Part time university lecturer at the Universities of Marburg and Bonn
- Actually at the University of Applied Science Bonn-Rhein-Sieg
- Habilitation in Pharmacy at University of Würzburg in progress

Associations / Memberships:

President of I.L.P.S. (International Lecithin and Phospholipid Society)

Chair of AOCS (American Oil Chemist Society) Phospholipid Division,

Member of ACS, GDCh, DGF, Euro Fed Lipid

LECTURERS

**Dr. Christian Gertz**

Hagen/Westphalia, Germany

Dr. Gertz was director of the Official Institute of Chemical and Food Analysis in Hagen. His experience in fats and oils extends over 35 years.

Since 1997 he has co-chaired the Analysis and Standard Methods division of German Society for Fat Science (DGF) and has been responsible for the editing of the DGF Standard Methods for many years.

He is member of the „Joint Committee for the Analysis of Fats, Oils, and Fatty Products“ of DIN, Federal Health Office and DGF. He is also involved with various international working groups in Europe and the German Sensory Panel of Olive Oil. He has published more than 70 scientific papers including 3 book chapters and edited 2 books. His area of research includes all aspects of frying processing (analytics, HACCP, thermooxidative degradation, heat stabilizing agents, fat quality) and analysis of fats and oils (Olive oil and the development of chemometric methods to identify fats and oils).

His awards include: in 1982, the Josef Schormüller Foundation by the German Food Chemical Society and in November 2004 he received the Normann Medal by the German Society for Fat Research (DGF).

**Dr. Torben Küchler**

Eurofins Analytik GmbH, Hamburg, Germany

Food chemist, degree and doctorate at the University of Hamburg (research group of Prof. Steinhart)

From 2007 Head of Research & Development at Eurofins Analytik GmbH in Hamburg
Since 2011 Head of the Department of General Food Analysis at Eurofins Analytik GmbH in Hamburg.

Work areas are amongst others:

- Analysis of physical-chemical parameters in food and feed for manufacturers, retail and trade, focusing fats & oils, nutrition facts and marketability / authenticity of foods.
- Method development and method optimization for testing of identity, authenticity and quality in fats and oils

Participation in national and international bodies:

- Joint committee of DIN and DGF for the analysis of fats, oils and products thereof, related and primary products (GA Fett)
- ISO/TC 34/SC 11 – Animal and vegetable fats and oils
- ISO/TC 34/SC 2 – Oleaginous seeds and fruits and oilseed meals
- CEN/TC 307 – Oilseeds, vegetable and animal fats and oils and their by-products - Methods of sampling and analysis

LECTURERS

**Dr. Peiwu Li**

Oil Crops Research Institute

Chinese Academy of Agricultural Sciences, Wuhan, China

- Professor in Oil Crops Research Institute, Chinese Academy of Agricultural Sciences,
- Director of Quality & Safety Inspection and Test Center for oilseeds products, MOA P.R. China
- Director of Key Laboratory of Detection for Mycotoxins, MOA, China
- Director of Laboratory of Quality & Safety Risk Assessment for Oilseed Products, MOA, China

Research interests

- Authentication and traceability of edible oil and agricultural food
- HPLC/GC-MS-based analytical methods for agricultural food quality & safety
- Development of home-built monoclonal antibody against biotoxin and pesticides
- Immunoassay-based rapid assay for biotoxin and pesticide
- Miniaturized instrument and micro-instrument for determination of biotoxin
- Standards and arbitration inspection for agricultural food quality and safety
- Risk assessment of agricultural food, especially oilseed products
- Biotoxin-producing mechanism and prevention/control of hazards in Agro-food

International cooperation

Max Rubner-Institute, Detmold, Germany

Technische Universität München, Germany

Canadian Grain Commission (CGC), Canada

Royal Veterinary and Agricultural University, Denmark

**Markus Link**

Bruker BioSpin GmbH, Rheinstetten, Germany

**Dr. Bertrand Matthäus**

Food Chemist, Scientist at the Max Rubner-Institute, Federal Research Institute for Nutrition and Food, Detmold, Germany

In this position he is responsible for research dealing with the improvement of the quality of fats and oils, especially rapeseed oil, with the investigation of frying processes, with contaminants like acrylamide, phthalates or 4-hydroxy-2-trans-nonenal, 3-MCPD-esters and with the investigation of oxidation processes in edible fats and oils.

Since more than 20 years he has worked for the Max Rubner-Institute. He has published more than 200 articles, scientific papers and chapters of books. In several projects he worked together with the industry to evaluate and improve the quality of frying oils but also virgin rapeseed oil. He has presented lectures during the last four International Symposia on Deep-Fat Frying held in Germany and USA and is co-organizer of several symposia on Fats and Oils given for the industry. Matthäus is a member of the Euro Fed Lipid association and the German Society for Fat Science.

LECTURERS

**Dr. Paul Miller**

Coonalpyn, Australia

Paul Miller is an agricultural scientist with over 35 years working as a researcher, industry leader and farmer.

His research background is in plant physiology, chemistry and the climatic responses of fruit trees and grape vines. His commercial interests are in the olive oil and wine industries where he has overseen the development and management of large scale farms in Australia. He consults to businesses in the olive industry in several countries and is a regular invited speaker about olive oil quality and authenticity around the world.

Paul has led the development of the Australian olive industry as President of the Australian Olive Association from 2001 to 2015. His focus has been olive oil quality, authenticity and overcoming fraud in the marketplace. Paul spearheaded the development of the Australian Standard for Olive Oil (AS5264-2011) introducing effective science to better define olive oil quality for the trade and to help prevent fraud. Paul is a founding member of the American Oil Chemists Society (AOCS) Expert Committee on Olive Oil and an invited founding member of the Division of Olive Oil, Euro Fed Lipids society. He is an invited member of the United States Pharmacopeia expert committee on olive oil standards of identity. In January 2012 Paul co-founded the Extra Virgin Alliance (EVA) based in California – an alliance of olive oil producers, experts and trade associates from 13 countries.

**Dieter Oberg**

Wessling, Germany

Study at the „Akademie for Graphic Arts“ in Munich, 1971 founder of the Public Relation Agency „Syntax“ in Munich / Germany.

Since 1988 supervisor of the Information Office Olive Oil (IGO), today President of the “Association for care and support of the value of extra virgin Olive Oils e.V.” in Wessling/Germany. 17 years in charge for carrying out the Olive Oil promotion programmes for the European Commission. Generic promotion and Public Relations in Germany, Denmark and Austria. Research and diffusing of scientific findings about the nutrition value of Olive Oil for medical doctors and nutritionists. Numerous lectures, workshops and seminars partly incl. degustations for the European Commission, IOC, AOCS, DGF, DGE, VKD among other institutions. Since 2002 lecturer at the University of applied sciences in Wädenswil/Zürich (Switzerland) for Olive oil sensory items. In addition member and Co-trainer of the Swiss panel. Lecturer for interprofessional organisations, various international chambers of commerce, commercial divisions of embassies, wine & food societies.

Founder and 17 years supervisor of the German Olive Oil Panel (DOP), accredited by DAKKS, certified by the the International Olive Council, Madrid – from 2016 acting as deputy supervisor and tester. Close cooperations with panels in Italy, France, Greece, Portugal, Spain and Switzerland. Research and creating of the accredited method DOP 2007-1 for setting the harmony value as an official parameter in addition to the official COI/EU paneltest. Due to the philosophy of the Association mass market segments are as well included in the practical work as premium class segments. Presentations on many Olive Oil affine Workshops.

Advisor and trainer for creating new organoleptic panels. Member of international juries for olive oil competitions like PremioBiol (Italy), IOOA (Switzerland), FILAIOS Competition (Greece), Selection and Feinschmecker (Germany).

LECTURERS

**Dr. Franz Ulberth**

European Commission, Joint Research Center, Geel, Belgium

Franz Ulberth is Head of the Standards for Food Bioscience Unit at the European Commission's Joint Research Centre – Institute for Reference Materials and Measurements (JRC-IRMM). Franz graduated (PhD) in „Food Science and Biotechnology“ from the University of Natural Resources and Applied Life Sciences (BOKU) in Vienna, Austria. In 1994 he was appointed professor of food chemistry at the same university. Franz joined JRC-IRMM in 2002 as a programme co-ordinator for food and environmental reference materials at the IRMM.

In 2007 Franz was nominated Head of the Standards for Food Bioscience Unit at the JRC-IRMM. He represents the Joint Research Centre in relevant food related technical committees of standards developing organisations such as the European Committee for Standardization, International Organization for Standardization, AOAC International and the Codex Alimentarius. Franz served for a long time on the editorial board of Food Chemistry, European Journal of Lipid Science and Technology, and currently is editorial board member of Food Additives and Contaminants.

**Dr. Ole Winkelmann**

Eurofins Analytik GmbH, Hamburg

Chemist, obtained Diploma and PhD in Organic Chemistry at the University of Kiel, Germany

2009 Post-doctoral position at the University of Hawaii at Manoa, USA

Since 2010 Post-doctoral position at Eurofins WEJ Contaminants GmbH, Hamburg, Germany

Since 2012 Project Manager NMR at Eurofins Analytik GmbH, Hamburg, Germany

Field of activity:

- Method development for analysis of foodstuff by ¹H-NMR
- Quantitative ¹H-NMR analysis of food constituents
- Chemometric analysis of ¹H-NMR-data for classification and authentication of foodstuff
- Main focus: Classification of olive oil according to geographical origin

**Dr. Reiner Wittkowski**

Federal Institute for Risk Assessment, Berlin, Germany

REGISTRATION

REGISTRATION

Please register online at www.dgfett.de/meetings/aktuell/nuremberg2016

Alternatively, fill out the fax registration form.

FEES*

Status	until 18 March 2016	after 18 March 2016
Member**	740 Euro	790 Euro
Non-member	790 Euro	840 Euro

* Registration fees are not subject to value added tax (tax exemption according §4 Nr. 22a UStG).

** DGF or Euro Fed Lipid

The registration fee includes:

- Entry to the scientific programme
- List of participants
- Lunch (Monday, Tuesday), Dinner (Monday)
- Book of abstracts
- Welcome Reception
- Coffee Break beverages

After registration you will receive an invoice.

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CANCELLATION POLICY

Cancellations received on or before **18 March 2016** will be refunded (paid registrations) minus a 50 Euro Processing fee (unpaid registrations will also be subject to a 50 Euro Processing fee). After that date **until 1 April 2016**, 50% of the registration fee will be refunded. There will be no refund for cancellations **after 1 April 2016** or No-Shows. Substitute participants can be named anytime without costs. If the congress is cancelled for whatever reason, paid fees will be refunded. Further recourse is excluded.

ORGANISER



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