**Programme**

**COST863 WG1 + WG4 Joint Meeting**

# Bioactive compounds in berry fruits: genetic control, breeding, cultivar, analytical aspects and human health

**Zurich – Switzerland**
**ETHZ, Swiss Federal Institute of Technology Zurich**

**3rd - 5th December 2008**

**Organised by Agroscope Changins-Wädenswil ACW**
**and**
**the COST-Action 863**
**"Euroberry Research: from Genomics to Sustainable Production, Quality and Health"**

## Organising committee

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|---|---|
| **Béatrice Dénoyes-Rothan**, UREFV–INRA, France | WG1 Leader |
| **Margit Laimer**, Universität für Bodenkultur Wien, Austria | WG4 Leader |
| **Bruno Mezzetti**, Marche Polytechnic University, Ancona, Italy | COST863 Chairman |
| **Christoph Carlen**, Agroscope Changins-Wädenswil ACW, CH | Local organiser |

# Program

**Wednesday, December 3rd**

***Opening of the workshop and welcome***

14.00 **C. Carlen,** local organiser
**B. Mezzetti,** Chairman of the COST Action 863
**J.F. Housman,** Action rapporter
**A. Maggio** COST Scientific Officer

***Session 1 - How do genetics and genomics contribute to a better knowledge on bioactive compound in berry fruits ?***

**Moderation**: **Carlen Christoph**, Head of the Product Berries, Medicinal Plants, greenhouse crops, Switzerland

14:20 Strawberry genomics new impacts in basic biology and crop science
Invited speaker : K.M. Folta, T.M. Davis
Horticultural Sciences Department, University of Florida, Gainesville, FL USA

14:55 Polyploidy and its consequence on QTL detection on fruit quality compounds
Denoyes-Rothan B., Lerceteau-Köhler E., Rousseau-Gueutin M., Moing A., Renaud

15.20 Unraveling the regulation of flavonoid metabolism in strawberry fruits
C. Rosati, R. C. H. De Vos, G. Perrotta, A. Bovy, S. Martens

15:45 *T*he comparison of wild growing and cultivated red raspberries by molecular and biochemical markers in Turkey
S. Ercisli

16:10 Break

***Session 2 - Does variability exist in germplasm or collections and how can this variability be used for breeding programmes? (I)***

**Moderation**: **Carlen Christoph**, Agroscope Changins-Wädenswil ACW

16:30 Investigating genetic diversity, nutritional quality and bioactive compounds of berry species collections grown in Russia
Invited speaker: J.F. Hausman, D. Lamoureux, I. Lefèvre, T. Gavrilenko, S. Alexanian, P. Eyzaguire.

16.55 Breeding strawberry (Fragaria x Ananassa Duch) to increase fruit nutritional quality
J. Diamant, F. Capocasa, S. Tulipani, M. Battino, B. Mezzetti

17:20 Wild growinng berry fruits - valuable source of genetic variability in republic of croatia
B. Duralija, Z. Šindrak, S. Voća, D. Dujmović Purgar, A. Mešić, A.Vokurka

17:45 New blackcarrant breeding program for increasing consumption of fresh fruit with high level of bioactive compounds
S. Pluta and E. Żurawicz

18.10 End of the first day

**Thursday, December 4th**

09.00 Welcome and short overview of Agroscope Changins-Wädesnwil Research Station ACW
**Lukas Bertschinger,** Agroscope Changins-Wädenswil ACW, Research Director, Switzerland

***Session 2 - Does variability exist in germplasm or collections and how can this variability be used for breeding programmes? (II)***
**Moderation: Denoyes-Rothan Béatrice**, INRA-Bordeaux, France

09:20 Phenotyping fruit nutritional quality parameters in the inotalis collection of strawberry genotypes
A. Monfort, M.J. Aranzana, D. Sánchez, M.A. Hidalgo and P. Arús

09:45 Comparison of antioxidant capacity and chemical properties of wild and cultivated red raspberries (Rubus ideaus L.)
Ç. Çekic, M. Özgen

10:10 Portuguese endemic wild blackberries as an alternative source of polyphenols and antioxidant activity
L.R. Tavares, C.N. Santos, G.J. McDougall, D. Stewart, R. B. Ferreira

10:35 Quality fruit traits and phenolic compounds characterisation of blueberry cultivars in three different cultural areas
C. Andreotti, M. Castagnoli, M.L. Maltoni, W. Faedi

11:00 Break

11:20 Antioxidant compounds in Ribes SPP. cultivars grown in Piemonte (Italy)
Cavanna M., Beccaro G.L., Bounous G.

11:45 The effect of genotype and maturity at harvest on blackcurrant (Ribes nigrum L.) bioactives
J. Giné Bordonaba, L.A. Terry

12:10 Health valuable compounds in blackurrants evaluated at the research institute of pomology and floriculture (RIPF), skierniewice, Poland
Markowski J., Pluta S., Mieszczakowska M., Żurawicz E.

12:35 Determination of the variance component of capacity and chemical properties of strawberry (Fragaria x Ananassa)
K. Gündüz, S. Serçe, E. Özdermiri, S. Payadaş, M. Özgen

13:00 – 14.30 Lunch and Poster Session

**Thursday, December 4th**

***Session 3 - Analysis to measure bioactive compounds in berry fruits and their agronomic improvement (I)***
**Moderation: Mezzetti Bruno**, SAPROV - Marche Polytechnic University, Ancona Italy

14.30 Berryfruit for health research at HortResearch, New Zealand
Invited speaker : Dr R. Hurst, Leader of the Healthy Berry Programme, HortResearch, Auckland, New Zealand

15.05 Development of high throughput analyses of polyphenol composition in berries using abbreviated mass spectrometry techniques
G. McDougall, Inger Martinussen, Derek Stewart

15.30 Automation of analytical methods to screen antioxidant capacity of biological matrices
J. Héritier, W. Andlauer

15.55 *Effect of preharvest factors on strawberry (Fragaria x ananassa) bioactives*
L.A. Terry, J. Giné Bordonaba

16:20 Break and Poster session

16.50 Understanding health-promoting bioactive compounds in blackcurrants and their agronomic improvement
R.O. Karjalainen, D. Stewart, G. McDougall, H. Hilz M. Anttonen, N. Saviranta, P. Mattila, R. Törrönen

17:25 BTH induces protection against downy mildew in arctic bramble (Rubus arcticus) and the accumulation of several phenolics
H.I. Kokko, A.T. Hukkanen, K.H. Kostamo, S.O. Kärenlampi

17:50 Quality of strawberry cv. Elsanta after hot water dips of different exposures
B. Duralija, Z. Šindrak, S. Voća, D. Dujmović Purgar, A. Mesic, A. Vokurka

18.15 End of the second day

19.30 Dinner

**Friday, December 5th**

**Section 4 - How may bioactive compounds benefit human health?**
**Moderation: Margit Laimer**, Universität für Bodenkultur Wien, Austria

09:00 Bioactive compounds: absorption and effects on human health
Invited speaker : Prof. Dr. Gary Williamson, Functional Food, Department of Food Science, University of Leeds, England

09:35 Antioxydant capacity of portuguese endemic Rubus fruits in a neurodegeneration cell model
C. Santos, L. Tavares1, V. Pontes, P. Alves, R. Ferreira1

10:00 Strawberry consumption and antioxidant status in humann subjects
S. Tulipani, S. Romandini, J.M. Alvarez Suarez, J. Diamant, F. Capocasa, B. Mezzetti, M. Battino

10:25 *Break*

10.45 Final discussion (B. Denoyes-Rothan, M. Laimer, C. Carlen)
Further research requirements and open questions related to genetics, cultivars, breeding and bioactive compounds as well as related to measurement of bioactive compounds and their benefit to human health

12.00 End of the Joint Meeting

**Posters**

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| I. Badjakov, R. Gevrenova, M. Niklova, V. Kondakova, E. Todorovska, A.Atanassov0 | Agro Bio Institute | Bulgaria | Bioactive constituents and DNA profiling of raspberry germplasm collection in Bulgaria. |
| P. Crespo, A. Ançay, D. Baumgartner, W. Andlauer, P. Stamp, C. Carlen | Agroscope ACW | Switzerland | Cultivars effects on bioactive compounds in strawberries |
| S. Ercisli | Ataturk University, Agricultural Faculty | Turkey | Preliminary characterisation of cornelian cherry genotypes for their physico-chemical properties. |
| M. Laimer | Boku | Austria | Vacccinium mytrillis and bioactive compounds |
| S. Magnani, G. Baruzzi, L. F. D'Antuono, M. L. Maltoni, M. Ranieri,W. Faedi | CRA-Unità di Recerca per la Fritticoltura | Italy | Health-promoting components in old and new Italian strawberry varieties |
| A. Masny, E.Zurawicz, J. Markowski | Research Institute of Pomology ad Floriculture | Poland | Anthocyanins and ascorbic acid - important quality traits in strawberry breeding program at ripf skierniewice, Poland |
| R. Nestby | Bioforsk | Norway | Vaccinium mytrillis and bioactive compounds |
| E. Oprea, V. Rădulescu, C. Balotescu, V. Lazar, M. Bucur, P. Mladin, I. Farcasanu | University of Bucharest, Faculty of Chemistry | Romania | Essential oils form Ribes nigrum buds : GC/MS analysis and antimicrobial activities |