COST ACTION FA 1104
‘Sustainable production of high-quality cherries for the European market’

STATUS OF THE ACTION, PLAN ACTION AND SUMMARY

3rd Management Committee and all WG Meeting, 15-17 October 2013, Pitesti, Romania
Summary of Year 1

Meetings:

- **Kick-off** meeting at Brussels (April 2012)
- **WG1** meeting at Trento (Oct 2012) jointly with RGC6
- 2nd MC and all **WG** meeting at Palermo (Nov 2012)
- **WG3** meeting at Zurich (March 2013)
- **EC** meeting at Chania (April 2013)
- **All WG** meeting at Plasencia (June 2013) jointly with 7th Int Cherry Symp
Summary of Year 1

- **STSM:**
  - **Elisabeth Schüller:** Austria → England ‘Molecular genotyping techniques to support sweet cherry cultivar identification and characterisation’ (WG1)
  - **Vlasios Goulas:** Cyprus → Greece ‘NMR fingerprinting on sweet cherry’ (WG2)
  - **Svetoslav Malchev:** Bulgaria → France ‘Sweet cherry evaluation methods and techniques. Processing new cultivars and hybrids’ (WG1)
  - **Stefan Gandev:** Bulgaria → Hungary ‘Training and pruning of the cherry trees’ (WG2)

- **Training School:** None (one on WG3 was cancelled)

- **Scientific Report and APC meeting (Jerusalem):** Done

- **Dissemination:** Website launched and recently updated
Non-COST Countries participants

International Partner Countries (IPC):

- **Australia**: Tasmanian Institute of Agriculture (Penelope Measham). Pb: Reciprocal Agreement discontinued

- **New Zealand**: NZ Institute for Plant & Food Research (PFR) (Virginia Marroni). MC validation scheduled (October)

- **Argentina**: Centro de Investigacion y Desarrollo en Criocinetologia de Alimentos (Ariel Vicente). Motivation letter uploaded

- **South Africa**: Initial contact with Ken Tobbutt from ARC Infruitec-Nietvoorbij
Non-COST Countries participants

- Near-Neighbouring Countries (NNC):
  - **Azerbaijan**: Mehraj Abbasov, Genetic Resources Institute
  - **Belarus**: Natallia Valasevitch, Institute for Fruit Growing
  - **Russia**: Yuri Shneyder (virologist at All-Russia Plant Quarantine) and Ivan Suprun (geneticist at Russian Academy of Agricultural Sciences)
  - Other countries? Albania, Algeria, Armenia, Egypt, Georgia, Jordan, Lebanon, Lybia, Moldova, Montenegro, Morocco, Palestinian Authority, Syria, Tunisia and Ukraine

In the final year of a COST Action, no requests from researchers from NNC to join an Action shall be possible.
Important information from EC Meeting, Chania

- **STSM**: how to be more attractive?
  - Possibility of inviting participants to training workshops or schools as STSM
  - STSMs for senior scientists as well

- **Training schools**: not possible to organise one in two different places

- **Dissemination and transfer-of-knowledge**:
  - Final COST publication: *book* on cherries. Possibility of US-Europe collaboration (other countries?). Contacts with CABI initiated and chapters outlines + key authors to be decided
  - Importance of publishing in different languages: Gregorio Lopez-Ortega will handle a special page for extension and stakeholders within the webpage
  - Importance of technology transfer: Manfred Buchele responsible for this Task

- Launching of **collaborative European projects**: thorough socio-economics analysis of the cherry sector: importance, potential and vulnerability
Executive Committee composition

- **Chair** and **Vice-Chair**: José Quero Garcia (FR) and Brion Duffy (CH)

- **WG1** leaders: Sergiu Budan (RO), Monika Hoffer (GER), Gregorio Lopez-Ortega (SPA)

- **WG2** leaders: George Manganaris (CYP), Bénédicte Wenden (FR)

- **WG3** leaders: Joanna Pulawska (POL), Slawomir Lux (POL), Bruno Graf (CH)

- **WG4** leaders: Mario Njavro (CRO), Manfred Buchele (GER)

- **STSM** Coordinator: Francesco Marra (ITA)

- **Financial Rapporteurs**: Hugo Magein (BEL), Felicidad Fernandez (UK)
Work Plan for Year 2 - Meetings

- **WG3** SG 02/09/2013 at Olomouc, Czech Republic (Joseph Spak): ‘Detection of virus and virus-like pathogens in cherry and sour cherry’. 11 participants (7 funded by COST)

- **3rd MC and all WG** at Pitesti, Romania (Sergiu Budan). 51 participants (43 funded by COST)

- **WG1** SG 28/10/2013 at Skierniewice, Poland (Elzbieta Rozpara): ‘Methodology of cherry gene resources management in ex situ collections, accounting problem of viruses’. 6 participants funded by COST

- **WG3** late Nov 2013 in Poland – place to be decided (Slawomir Lux): ‘Ethological aspects in IPM’

- **WG1** from 03-05/03/2014 at Budapest, Hungary (Ildiko Balla): ‘Use of molecular markers for diversity studies’
Work Plan for Year 2 - Meetings

- **APC Meeting** 28-30/04/2014 at **Plovdiv**, Bulgaria

- **WG2** 01-02/05/2014 at **Ullensvag**, Norway (**Mekjell Meland**): ‘Phenology and data modelling’.

- **WG1-WG2-WG3** late May 2014 (to be confirmed) at **Plovdiv**, Bulgaria (**Petya Gercheva**): ‘Phenotyping protocols for tolerance to cherry pests and diseases and other important agronomic traits’

- **WG2** 10-13/06/2014 at **Koulia**, Cyprus (**George Manganaris**): ‘Post Harvest Unlimited ISHS meeting’

- Technology-transfer workshop/conference, location and date to be defined! (**Manfred Buchele**)
Work Plan for Year 2 - STSMs

- **Completed:**
  - **Geza Bujdoso:** Hungary → Germany ‘New tart cherry orchard systems’ (WG2)
  - **Maria Theodorou** and **Faidon Makris:** Cyprus → France ‘Sweet cherry evaluation methods and techniques. Processing new cultivars and hybrids’ (WG1)
  - **Gregorio Lopez-Ortega:** Spain → England ‘Pomological characterization and introduction to the use of molecular genotyped techniques’ (WG1)

- **Approved:**
  - **Zsuzsanna Befi:** Hungary → England ‘Cherry breeding strategies with special respect to molecular tools in marker-assisted selection’ (WG1)

- **Planned:**
  - **Emma Skipper:** England → Italy. Title and period to be defined (WG1)

- **Summary:** 7 WG1, 3 WG2...
WG1: Genetic Resources and Breeding, Genetics and Genomics
(Leader: Sergiu Budan; co-leaders: Monika Hoffer and Gregorio Lopez-Ortega)

- **Task 1**: Compile evaluation protocols and develop innovative protocols:
  - Questionnaire done by **Monika Höfer**: presentation to be made at next big meeting
  - New protocols:
    - **Meeting in Plovdiv**
      - Danish project **approved** on NMR metabolomics assisted development of resistant sour cherry cultivars (**Martin Jensen**)
WG1: Genetic Resources and Breeding, Genetics and Genomics

- **Task 2**: Prioritise the characterisation of the most promising genetic resources for breeders
  - Questionnaire sent by Daniela Giovannini.
  - Meeting in Budapest (March 2014)

- **Task 3**: Optimise current methodologies for pollination and germination of cherry seeds:
  - Questionnaire sent by Martin Jensen: Numerous answers.

- **Task 4**: Set the basis for a coordinated European MAS strategy:
  - Questionnaire prepared by Felicidad Fernandez/José Quero Garcia. To be presented in WG1 breakout session at Pitesti
Task 5: Select candidate sites to conduct multi-location trials:
- Questionnaire sent by Hugo Magein. In progress (only 8 answers)
- Multi-site trials already implemented for one INRA mapping progeny, Regina x Lapins: Bordeaux, Nîmes (France), Maribor (Slovenia), Murcia (Spain), Kent (UK), and Palermo (Italy, maybe). Future trials to be implemented with one EMR mapping progeny (Kent, Bordeaux, Palermo). Links with Task 4

Task 6: Evaluate the potential of recent NGS technologies

Task 7: Investigate the potential use of ‘omics’ approaches
- Tasks merged. Questionnaire in preparation by Angel Fernandez and Haibo Xuan
- Project for the sequencing of a DH of cherry initiated. DH lines appear not to be homozygous!!
Bordeaux, France (2001-2002)

Murcia, Spain (2012-2013)

Bordeaux, France (2010-2011)

Maribor, Slovenia (2009-2010 and 2011-2012)
WG2: Crop Production & Postharvest physiology
(Leader: George Manganaris; co-leader: Bénédicte Wenden)

Sub-group 1: Agronomy and physiology

- Task 8: Study the impact of climate change on flowering phenology and fruit productivity. Modelling approaches:
  - Data on flowering data compiled and analysed by Bénédicte Wenden.

Meeting in Ullenswag (May 2014)
WG2: Crop Production & Postharvest physiology

Sub-group 1: Agronomy and physiology

- **Task 9**: Develop harmonized protocols for important fruit traits such as cracking tolerance and double fruits. Link with Task 1 (WG1) and meeting at Plovdiv.
  - Cracking: activity potentially leaded by Moritz Knoche
  - Double fruits: activity potentially leaded by Gregorio Lopez-Ortega

- **Task 10**: Compile data on trials conducted on training systems and pruning for the promotion of high-density orchards. Not initiated. Group to be settled (potential participants: Gérard Charlot, Guglielmo Costa...)

- **Task 11**: Produce a synthesis on current initiatives to study the nutritional status of orchards. Not initiated (Alesandro Roversi retired)

- **Task 12**: Investigate the impact of novel production methods on fruit quality and orchard productivity (cover-plastic roofs, nets...). Not initiated. Group to be settled (potential participants: Elzbieta Rozpara, Mekjell Meland...)

![Cherry](image1)
![Double fruits](image2)
WG2: Crop Production & Postharvest physiology

Sub-group 2: Post-harvest technology


- **Task 14**: Optimise methods to maintain better fruit quality during storage

- **Task 15**: Improve acceptability of stored cherries by the consumer. Not initiated.

- **Task 16**: Produce reliable and simple protocols for the characterisation of mechanical properties of cherries, which could be used by breeders

Tasks 14 and 16, two activities planned or initiated:
- The writing of a technical paper dealing with sweet cherry fruit quality (leded by Ana Santos)
- The establishment of two summer schools (2014 and 2015) including experimental demonstration of techniques (Portugal, Spain, Cyprus)
WG3: Crop Protection
(Joanna Pulawska, Slawomir Lux, Bruno Graf?)

- **Task 17**: Validate and optimise current visual or molecular detection assays for the most important pests and diseases
  - Planned training school in early 2013 cancelled (*Brion Duffy*)
  - EU project accepted (Brion) and national projects accepted in Poland and Slovakia

  **Meeting** in Olomouc (Sept 2013)

- **Task 18**: Optimise protocols to gather epidemiological data, and to develop predictive models based on pest and disease phenology

  **Meeting** in Zurich (March 2012)

  **Meeting** in Poland (November 2013)

  - IPM project based on the use of sterile insects (Regio-Bioconstrôle) (*Bernard Blum*)
WG3: Crop Protection

- **Task 19**: Compile all data from trials of biological pest and disease control. Synthesis of current results from organic cherry trials. Participants: Italy, Sicily (Virgilio Caleca), UK (EMR) and Switzerland (Agroscope). Not initiated (?)

- **Task 20**: Based on results from Tasks 17 to 19, promote the development and application of advanced support systems (DSS) and design common strategies to avoid new species invasions
  - Distribution and translation of information flyers on *D. suzukii*
  - Links with EPPO and NPPOs to raise awareness on invasive pests and diseases

- **Task 21**: Propose and validate simple, harmonised and cheap phenotyping protocols to be used by breeders for the screening of their genetic materials, in terms or tolerance or resistance, if present

**Meeting** in Plovdiv (May 2014)
WG4: Socio-economics and dissemination
(Leader: Mario Njavro; co-leader: Manfred Buchele)

- **Task 22**: Draw an accurate picture of the economic situation of the cherry sector at the European level

- **Task 23**: Investigate which are the main economic bottlenecks and/or constraints for cherry producers and consumers
  - For these tasks, two approaches will be used: *microeconomics* (farm level) and *marketing-oriented* or *value-chain* oriented.
  - Available information on the socio-economic situation (production, trade, prices, family farms characteristics etc.) will be collected from secondary sources and by Action members
  - Questionnaire in prep. to collect necessary data to produce cost calculations on cherry production in every participating country
  - Questionnaire in prep. for collecting data on cherry value chain
WG4: Socio-economics and dissemination

- **Task 24**: Provide information and transfer knowledge to end-users from other WG’s activities and achievements
  - Meeting to be held (2014)

- **Task 25**: Train young scientists

- **Task 26**: Attempt the identification of novel market niches or opportunities for the cherry sector. Not initiated
Planned Program of the meeting in Budapest from 03 – 05. 03. 2014.

03.03.2014.

Arrival in the morning

14.00 - 14.10 Greetings
14.10 – 15.30 Presentations
15.30. – 16.00 Coffee break
16.00 – 17.30 Presentations

18.00 Dinner
04.03.

9.00 – 10.30 Morning presentation
10.30 – 11.00 Coffee break
11:30 – 12:30 Presentations

12:30 – 14:00 Lunch
14:00 – 15:30 Presentations
15:30 – 16:00 Coffee break
16:00 – 17:30 Presentations

18.00 Sightseeing

05.03.

9.00 – Visit the Genetic Departments of the Uni Corvinus
-organized by Attila Hegedüs

12 - Leaving
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<tr>
<th>Applicants</th>
<th>Suggested to invite</th>
<th>Location</th>
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<tbody>
<tr>
<td>Sezai Ercisli</td>
<td>Ryutaro Tao</td>
<td>Kyoto</td>
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<td>Angel Fernandez</td>
<td>M. Laimer</td>
<td>Wien</td>
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<td>Elisabeth Schüller</td>
<td>L. Mansvelt</td>
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<td>Felicidad Fernandez</td>
<td>Ken Tobbut</td>
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<td>Larisa Gustavsson</td>
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<td>Attila Hegedüs</td>
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