

COST ACTION FA0807

Integrated Management of Phytoplasma Epidemics in Different Crop Systems

Minutes of the 3rd Management Committee Meeting

Castelbrando - Cison di Valmarino, Treviso, Italy

February, 27th 2011

11:30 -13:00

Meeting of the Executive committee (WG leaders Bojan Duduk, Phyllis Weintraub, Wolfgang Jarausch, Saskia Hogenhout, Chair Assunta Bertaccini, Vice-chair Mogens Nicolaisen, STSM chair Matthew Dickinson, Web Master not present, Secretary Dijana Škorić)

The details of the MC meeting agenda were discussed. The agenda was established. Points for future actions within the WG activities were discussed. Some points for the activities foreseen in 2012 were laid out.

14:15-19:00

Management Committee Meeting

1. Welcome to participants by the Chair Assunta Bertaccini

2. Adoption of the agenda

The agenda was adopted without changes.

3. State of the Action: report by the Chair of 2010 activities

All 28 countries signed the MoU. Malta signed last on January 11, 2011.

Non-COST countries listed here alphabetically have also been included in the Action upon the obtained agreements from all the MC members (Australia, Brazil, Canada, Chile, Colombia, Egypt, India, Lebanon Mauritius, New Zealand and South Africa). The details of the non-COST countries participation were discussed under point 6 in the agenda.

The use of COST instruments was documented by the list of 10 STSMs realized since the last MC meeting (Sitges, Jan 31, 2010) and by the Workshop/training schools listed and presented below.

The possibility to use a new instrument (new conference grants for early stage researchers) was presented with details relevant to the Domain Committee of Food and Agriculture. No application for conference has been received so far from this COST Action.



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Summary of the meeting (WG1-WG2-WG3-WG4 workshops) entitled “Current status and perspectives of phytoplasma disease research and management” (February 1 & 2, 2010, Sitges, Spain) was given. There were 111 participants from 29 countries.

Summary listing of the following activities: WG2 Psyllid training school (AlPlanta Institute, Neustadt, Germany, Apr 19-23, 2010) and Grapevine yellows vector sampling and monitoring training school (Bernkastel-Kues, Germany, Jul 5-9, 2010), workshops organized by the WG1+WG4 (Phytoplasma classification, Jul 16, 2010, Chianciano Terme, Siena, Italy) and WG3 (Phytoplasma control in crop systems, Sep 23-24, 2010, Ancona, Italy) and Core meeting in Belgrade (Oct 29-30, 2010) dealing with the possibility of screening phytoplasma strain collection by next generation sequencing techniques within the activities of WG1, were presented.

Dissemination results were presented. Abstract book was printed with contributions of the Sitges meeting. A section in the IOM (International Organization of Mycoplasma) conference abstract book with the results of WG1-WG4 workshop Chianciano Terme was printed. The Web site with presentation of all COST FA0807 activities is set up and regularly updated. About 170 publications were issued in 2010 authored by the action members participating in the activities of all WGs.

The 2010 year report on the budget of € 109,000.00 with detailed elaboration of the expenditures was given by the chair with regard to all performed activities and their costs.

The scientific context and objectives of the Action was reviewed.

4. Implementation of the Action

4.1. Objectives and working programme

4.1.1. Working Group 1: Detection / diagnostics

Bojan Duduk, the WG1 leader presented the WG1 (82 participants from 27 countries) activities in 2010. One of the important outcomes was 32 publications in 2010.

Ten oral and 29 poster presentations were given by WG1 members at the Sitges meeting and 31 participants were present at the WG1 separate workshop.

Eight oral presentations were given at the WG1 & WG4 Phytoplasma classification workshop in Chianciano Terme discussing general bacteria taxonomy rules and those applicable to phytoplasmas. Three prominent speakers were invited and the most economically important phytoplasma diseases were presented by 5 speakers.

The results of the core meeting in Belgrade were presented. They include: the planning of the 2011 WG1 activities, links to EUPHRESKO project “Interlaboratory comparison and validation of detection methods for phytoplasmas of phytosanitary concern in European orchards” coordinated by Dr. Ester Torres and verifying possibility of screening phytoplasma strain collection by next generation sequencing techniques. The links with EUPHRESKO on 3 real-time and 1 nested PCR protocols comparison in fruit tree

phytoplasmas detection was discussed because the harmonization of phytoplasma detection protocols is also one of the goals of WG1. The EUPHRESKO protocol issue was discussed in detail by Ester Torres. A meeting on April 27, 2011 in Paris under this COST action is planned for the final preparation of the report on its results, harmonization with COST Action FA0807 and the possible outputs. One STSM is foreseen for next generation sequencing for the improvement of phytoplasma diagnostics.

The phytoplasma sequences in the databases are piling up. Bioinformatics tools for checking and analyses of these sequences are needed. A training school is proposed for bioinformatical analyses of phytoplasma sequences. The organization of the 3/4-day-school is outlined, not more than 25 trainees are foreseen, tentative time is July, 2011 and tentative location is in Lithuania. Final schedule will be circulated for MC agreement in short time.

4.1.2. Working Group 2: Epidemiology including vector ecology

Phyllis Weintraub, the WG2 leader, presented in detail the organization structure, lecturers, participants and outcomes of the Psyllid school in Neustadt. The Psyllid key of Daniel Burkhardt is online and available to everybody. Although there were many more applicants, 12 persons were selected for the Psyllid school but only 8 attendees were able to come due to the Iceland volcano eruption. Because of these unforeseen difficulties, the proposal to repeat the Psyllid school was given.

The training school on GY in Berkastel-Kues, was summarized regarding to its organization, participants, activities, setup of the transmission trials. Repetition of that school is also proposed. This school was fully attended (all 11 applicants were present).

A questionnaire on monitoring phytoplasma diseases and their putative vectors was made and sent out by the WG2 task leaders Rosemarie Tedeschi and Duska Delic in order to collect relevant information for this task (Task 2). It needs to be resubmitted and participants should be encouraged by their MC members to complete it. Mike Wilson will link his website with the vector photos with the COST action FA0807 website.

Barbara Jarausch presented the venue of the 2nd IPWG meeting in Neustadt an der Weinstraße (Sep 12 – 16, 2011), the tentative programme, deadlines and plans for the adjoined meeting of all WGs of the COST FA0807.

4.1.3. Working Group 3: Phytoplasma control in crop systems

WG3 leader Wolfgang Jarausch summarized the group (57 members from 19 countries) structure and 2010 activities; 23 publications were produced by WG3 members in 2010.

Besides participating in the Sitges meeting, the members of WG3 had a workshop attended by 26 participants in Ancona (Sep 23-24, 2010). The replies to the questionnaire sent out to WG3 members at the beginning of the action showed that WG3 need to focus on fruit-tree

and grapevine phytoplasmas. The tasks were redefined at Sitges and problems in fulfillment of tasks were widely discussed at the workshop in Ancona.

As a part of the activities within task 3, a questionnaire was produced by M. Maixner on the control of grapevine phytoplasmas. Only 3 countries and 6 regions replied so far. MC members are charged with asking local collaborators to translate this questionnaire and disseminate it locally in order to collect relevant information on the grapevine phytoplasmas from every possible source. Tim Belien produced the same type of questionnaire for fruit-tree phytoplasmas apple proliferation (AP), pear decline (PD) and European stone fruit yellows (ESFY). The case study of almond witches broom disease in Lebanon is pointed out as a possible case study important for European countries (task 4).

Task 6 on cross protection (verification whether mild phytoplasma strains can effectively protect plants from infection by virulent or severe) phytoplasma strains presents a problem. Since the members have come to the decisions that cross protection applications with quarantine organisms will not be supported, the high genetic variability of phytoplasma isolates makes it very difficult to work with defined strains, and the stability and reliability of cross protection cannot be guaranteed, the resulting conclusion is to abandon the task 6 as such. The interaction of mild and severe strains should be studied in WG4.

The presentations and discussions at the Ancona meeting showed that plant resistance to phytoplasmas, recovery and action of bioactive compounds may all be based on similar interactions of the plant with the phytoplasma. A better understanding of this interaction on the molecular level is urgently needed. For this, a special workshop on the recovery phenomenon is planned in 2011 and a joint meeting with WG4 is proposed at 2nd IPWG meeting in Neustadt. Several STSMs are expected within this WG in the 2011.

Discussion on the questionnaire analysis, distribution methods and their importance for the future of this action ensued. The MC members are urged to act at the national level.

4.1.4. Working Group 4: Phytoplasma / host interactions

Saskia Hogenhout – overview of the WG4 group (43 members) activities. In 2010, the members produced 38 publications (19 in international peer-reviewer journals and 19 abstracts/proceedings at meetings). Five STSMs were realized by the members. WG4 symposium and working group meeting was held in Sitges, and WG1-WG4 workshop after the IOM meeting in Chianciano Terme.

A questionnaire to WG4 members was circulated to get feedback of how to proceed with this COST action objectives.

An overview of the WG4 objectives (tasks) was given. Detailed task by task activities are proposed for 2011. Within the task 1, a new database ASAP is introduced as potentially useful. Xavier Foissac added information on the MolliGen database option for private sessions even with incomplete genomes for comparative genomics and other information

on phytoplasma genomes. He pointed out that MolliGen is not an annotation platform. Therefore the genomic data need to be annotated prior to its upload on MolliGen. Within the task 3, collaboration among Dickinson-Nicolaisen-Hogenhout labs resulted in proposals to sequence phytoplasma genomes with the objective to improve phytoplasma diagnostics.

Instead of focusing on task 4 (Identify model systems in which to co-ordinate effort and research funding to enhance understanding of phytoplasma/host interactions), WG4 members propose to focus on specific research aims. These include: (i) identifying conserved aspects of phytoplasmas, such as conserved virulence factors and transcription factors, (ii) identifying phytoplasma “Achilles’ heel” that can be targeted for controlling phytoplasmas, (iii) development of a phytoplasma ‘microarray’ for phytoplasma diagnostics, (iv) development of methods to improve phytoplasma DNA isolation (this may not be necessary with cheaper sequencing technologies – sequence information of the host is useful too). New technologies possibly applicable to this research type are discussed such as single (genome) molecule sequencing. One of the outputs contributing to the visibility and recognition of phytoplasma research including the activities within this action is the first time that phytoplasmas are represented in a separate session (Pathogenic bacteria/phytoplasma) at the XV International Congress on Molecular Plant-Microbe Interactions (IS-MPMI) held in Kyoto, Japan on August 2-6, 2011.

Improvements of the website were discussed in order to offer more basic information on phytoplasmas, economic losses, vectors, images of symptoms, list of meetings, as well as the possibility of intensifying communication within the Action members by opening Twitter and/or Facebook account.

Future direction were discussed with the identified need for more genome and another bioinformatics school. More sequencing data are needed. Initially, four workshops had been proposed but after some discussion on a joint proposal bioinformatics school already in this year’s budget, due to the more advanced methods envisaged here, as compared to the WG1 bioinfo school another one is proposed in the UK probably in 2012. The location is tentatively in Norwich. A microscopy workshop proposal venue in the UK was also discussed. Funding solutions were discussed, the use of fellowships within the EU funding scheme (Marie Curie, EMBO, Newton) is desirable.

A questionnaire on the Bioinformatics school within WG1 will be sent out by Bojan Duduk to see how many people would be interested (with tentative topics) in it.

Saskia Hogenhout will send a second questionnaire for the second bioinformatics school with the requirements for sequence analyses.

Innovative work was discussed within the Euphresco toward harmonization of detection protocols to integrate/modify Eppo suggestions for phytoplasma detection. More innovative work will also be carried out sharing information between WG2-WG4 topics and genomics platform (Qbol project).

The chair informed that the budget for all 2011 planned activities is € 92,000.00.

Technical questions regarding the Euphresco meeting (April 27, 2011, Paris) in the EPPO offices were discussed. There is a room for 25 participants only. EPPO will not charge the use of their meeting rooms, the travel expenses will be covered according to the established rules.

Second IPWG meeting – Cost Action FA0807 all WGs will organize workshops in an adjoined meeting. The date will be fixed before or after the IPWG meeting to fulfill COST rules, and this issue will be decided shortly and circulated for MC approval.

4.2. STSM

Matthew Dickinson – gave a detailed overview of all STSMs done in 2009 (2) and in 2010 (10) including the visiting researchers, receiving institutions, and the budget for each STSM. There are already five STSM applications in 2011 and two are going on. The wording considering requests for budgets above the limit agreed upon (€ 1,500) will be strengthened towards requiring a full justification of all the costs. Deadlines are going to be changed (moved one month forward) because all the STSMs need to be completed before the end of December for the reporting purposes.

4.3. INTERNET/WEB site

Martin Verbeek, acting as a webmaster for this Action website, could not attend this meeting. As he does the webmaster duty in his spare time, another person is needed to help out with updating and improvements of the web. The chair inquired about volunteers but no offer was received, so she will be helping the web master. Suggestions were taken regarding the contents and the technical aspect of the web problems.

4.4. Linking FA0708 to other COST Actions

Piero Bianco gave a short comment on the possibility of linking with FA0701. Barbara Jarausch shared information on the EFSA-funded project for conducting pest risk assessment by means of case studies on three phytoplasmas (*Candidatus Phytoplasma mali*, '*Ca. P. prunorum*', '*Ca. P. pyri*') that started in 2009 including 11 partners (publication on this in the EPPO Bulletin). Nicolas Sauvion, a participant of this Cost Action is involved in that project, as well as Gerard Labonne. They will be asked to present the EFSA-project at the IPWG in the COST WG workshops.

4.5. Prospects for future collaborative actions under the FP framework

Future Work Programme KBBE packages were discussed and intentions to apply, especially within
2.1.1. Sustainable management of biological resources and
2.1.2. Plant health and Crop Protection
Activity 2.1.1: Sustainable production and management of biological resources from land, forest and aquatic environment

4.6. Outreach, prospective publications

New journal Phytopathogenic Mollicutes (published by Indian Journals.com, Internationally marketed by IOS Press Netherlands) that will promote the interdisciplinary exchange of knowledge and ideas in recent research on phytoplasma, spiroplasma and other phloem-delimited plant pathogens was announced. The first issue is expected in June 2011. Some members of this COST Action are invited to act as editorial board members and everybody was invited to consider publishing in this journal. The chair asked to acknowledge the role of this COST Action by adding to publications, when possible, the following sentence: "The work was performed also in the frame of COST Action FA0807 Integrated Management of Phytoplasma Epidemics in Different Crop Systems". In case of manuscripts produced as follow ups of STSM, the chair requested to add the STSM number as well.

5. Place and date of future meetings

There is a possibility to attend a meeting dealing with the recovery phenomenon in Udine, in the beginning of September, 2011.

The 2012 MC Meeting time and venue are to be agreed upon at the end of COST WG workshops in Neustadt (Sep 16, 2011). Turkish and Portuguese participants of the Action offered to consider organizing it.

6. Non-COST countries

The list of the countries and participating institutions was shown. The second institution in Colombia (CIAT) is tentatively approved, and the participating institution from Brazil Universidade Federal Rural do Rio de Janeiro was presented by Helena Guglielmi Montano. She also gave a short comment on the phytoplasma (together with '*Candidatus Liberibacter*' taxa) role in the HLB disease in Brazil.

7. Any Other Business

Barbara and Wolfgang Jarausch were thankfully acknowledged for their continuing efforts in organizing future COST WG meetings in Neustadt, Germany.