8th International Forest Quarantine Research Group Meeting

Oeiras, Portugal

September 27th to October 1st, 2010

Meeting Report

Abbreviations and Definitions	
ALB	Asian Longhorned beetle
APPPC	Asia and Pacific Plant Protection Commission
CLB	Chinese Longhorned beetle
COFO	IPPC- Committee on Forestry
CPM	Commission on Phytosanitary measures
EAB	Emerald Ash Borer
EPPO	European Plant Protection Organization
EU	European Union
FAO	Food and Agricultural Organization
HT	Heat Treatment
IFQRG	International Forest Quarantine Research Group
INRB	Instituto Nacional de Recursos Biologicos
IPPC	International Plant Protection Convention
ISPM	International Standard for Phytosanitary Measures
KD	Kiln drying
MBr	Methyl Bromide
NAPPO	North American Plant Protection Organization
NPPO	National Plant Protection Organization
PWN	Pine Wood Nematode
RF	Radio Frequency
SC	Standards Committee
SF	Sulfuryl Fluoride
TPFQ	Technical Panel on Forest Quarantine
TPPT	Technical Panel on Phytosanitary Treatments

1.	**Introduction** (2010 IFQRG-8-01 / 2010 IFQRG-8-03)
	IFQRG Chair Eric Allen opened the meeting, welcoming the participants and introducing Dr. Edmundo Sousa who welcomed the group to Portugal and to the INRB. Allen provided an overview of the role of IFQRG as offering scientific support to IPPC and of the distribution of tasks within IPPC. He encouraged all participants to stay in the realm of scientific critical thinking and objective analysis, and emphasized the need for more international expertise and diversity within the IFQRG membership, which might be achieved by moving the meeting location to developing regions. Allen also discussed options for publication of IFQRG information, one of which is to publish the proceedings of the IFQRG annual meetings through the Canadian Forest Service Publication Unit and he encouraged all presenters to prepare abstracts of their talks to be included in the proceedings. Allen introduced the steering committee, provided logistic information concerning the meeting and mentioned the new website issues as a topic to be discussed during the meeting. Participants introduced themselves, and discussed and adopted the meeting agenda.
2.	**Action Items from IFQRG-7 (2010 IFQRG 8-05)**
	1. *On the update to the FAO fumigation manual*: IPPC Secretariat explained that FAO fumigation manual is outdated. Australia and the US among other countries have developed manuals which could be used as basis for an international manual that takes in consideration the varying development levels and capacities of all countries across the world. A group was formed among the participants to coordinate the preparation of an international manual (Action item 01) 2. *On the paper that defines the characteristics of the pests included in ISPM-15 annex and the risks associated with them*: Bob Haack reported the work on the paper was delayed when the annex on criteria was sent out to country consultations. The group of authors discussed further the importance of this paper and all participants agreed that a scientific paper suggesting and justifying testing criteria based on biological information of pests is needed (Action item 02). 3. *On Analysis on chip size and its relationship with pest risk*: Eric Allen and Bob Haack reported that they were awaiting results of industrial categorization of chip

	sizes to base their research on (Action item 03). 4. *On the information related to the volume of trade and species of forest tree seeds*: Allen explained that data on species of forest tree seeds in trade are hard to find because standard trade data does not differentiate among tree seeds. He also explained that the information was requested by TPFQ to support the writing of a standard on tree seeds which was postponed in the last TPFQ meeting. 5. *On the RF guidance manual*: IPPC secretariat is currently working on identifying the importance of explanatory documents. The group agreed on the need to start drafting a microwave manual before the RF manual since microwave treatment has already been submitted (Action item 04). The remaining action items from IFQRG-7 report are addressed in research reports below.
3.	**Updates on IPPC standards (2010 IFQRG-8-30)**
	IPPC Secretariat presented updates on the IPPC standards, which included: - Criteria for treatments for ISPM 15 annex currently in country consultation process, - Guidelines for heat treatments being drafted, - International movement of wood standard: The standard is currently in final stages of drafting and will be presented to SC in May 2011. - International movement of forest seeds standard- drafting planned for 2011. IPPC-Sc will consider possible connection to proposed ISPM on seed in general - Standard on forest surveillance- drafting will probably begin in 2012 - Biological control of forest pests- specification being developed - Wood ware and handicrafts made from raw wood- TPFQ to review specifications in the coming meeting in 2011 IPPC Secretariat also presented the priority topics on IPPC's future work program, such as finding alternatives to MBr., plants for planting, minimizing pest movement by sea containers, minimizing pest movement by air containers, guidelines to ISPM-6, diagnostic tools, etc.
4.	**Updates on TPFQ (2010 IFQRG-8-30)**
	IPPC Secretariat presented updates from the last TPFQ meeting held in Rome Sep 21-25,

	2010. IPPC Secretariat proposed a joint work program between IFQRG and TPFQ through which TPFQ requests technical information in support of standard setting and IFQRG develops technical guidance and advises TPFQ of any science issues that should be considered. IPPC Secretariat asked IFQRG for help in thinking of alternatives for the process of registration of the symbol in all countries (on a national and more preferably regional basis). The symbol is not yet registered in ~80 countries and the only way to prevent its misuse is to keep the registration centralized.
5.	**TPFQ's requests from IFQRG**
	IPPC Secretariat communicated to IFQRG the following list of requests arising from the 2010 TPFQ meeting: 1. Guidance about risks associated with bacteria as forest pests. 2. Consider whether the current treatment requirements specified under ISPM No. 15 (2009) sufficiently reduce the risks associated with emerald ash borer moving in wood packaging 3. Consider whether a tool can be developed to allow better evaluation of the environmental impacts of specific treatments under consideration for approval. 4. Provide any new information regarding recent published information that Sulfuryl fluoride (SF) may be a greenhouse gas
6.	**Updates on TPPT (2010 IFQRG-8-08)**

	Mike Ormsby reported on the TPPT meeting in Kyoto last July. Out of 72 treatment applications submitted, 28 were closed, 11 adopted by CPM, 4 currently recommended to the SC for adoption; 8 consulted awaiting CPM approval; 1 under consultation; 1 not yet being evaluated; and 19 requiring more information. Of the 72 treatment applications submitted, 7 were submitted as new treatments for ISPM-15. In terms of criteria, all treatments submitted in 2005 and 2007 needed to be tested for PWN and ALB at Probit 9 level for lack of alternative criteria. Subsequent ISPM-15 treatment submissions should follow the new criteria (still under review by IPPC-SC) The Microwave treatment was recommended for CPM-member consultation after submission of additional details. Mike Ormsby communicated the need for IFQRG to support treatment submissions and revisions when possible. As an example, the Japanese NPPO submitted a treatment without testing for ALB because they do not have it in Japan. The recommendation for the Japanese scientists from Haack and Hoover was to use CLB as a substitute test organism. In similar cases, IFQRG support is valuable and can be done through the NPPO submitting the application. TPPT can also share with IFQRG their comments on the submission. Cooperation among all parties is seen as beneficial.
7.	**Description of the process of standards adoption (IPPC Secretariat)**
	IPPC secretariat provided a detailed description of the Standards Setting Process (2010 IFQRG-8-36). Anytime during the year, individuals can contact their NPPO and suggest topics and when the call comes out, the NPPO can add that topic to the list they send to SC. The number of comments provided by countries does not usually affect the process. If some comments cannot be addressed, CPM will take the decision on how to proceed.
8.	**Forestry highlights from CPM-05 (2010 IFQRG-8-06)**
	Eric Allen provided an overview of the CPM meeting using extracts from the CPM full meeting report (available on the IPP https://www.ippc.int/index.php?id=13330&L=0).

9.	**Highlights of other meetings**
	- World Forestry Congress in Korea: Bob Haack provided an overview of the meeting which was attended by ~3000 people from more than 90 countries- next meeting will be Sep 2014 in Salt Lake City, USA. - FAO Guide to International Standards of Forestry draft was presented by Roddie Burgess on behalf of FAO forestry. The guide is in the last stages of editing and copies of draft were provided for IFQRG members. Burgess also emphasized the role of IFQRG in determining outreach options and supporting awareness about this guide in the different countries represented. FAO Guide will be presented to COFO meeting in Rome (Oct 4-5) for their consideration.
10.	**Current phytosanitary issues (NAPPO, EPPO, APPPC)**
	Shane Sela reported on the current work of the forestry panel in NAPPO: 1. Developing a standard regulating the movement of handcrafted wood articles entering the NAPPO region. 2. Harmonization of inspection standards for the movement of Christmas trees within the NAPPO region to reduce pest movement and minimize trade interuptions. 3. Collaboration on pest and pest management information, especially emerging pests and compliance to ISPM-15. 4. Asian Gypsy moth regional standard written (ISPM-33- available online). Andrei Orlinski reported on updates from EPPO: 1. EPPO underwent administrative changes (move to new headquarters / elections of new director general and new chairman) 2. Continued work on EPPO standard on pine wood nematode by EPPO panel on forest quarantine (comments received from countries and standard being extended for symptomless cases) 3. EPPO forestry Panel is highly concerned about the Probit 9 issue that is affecting new treatment submissions. 4. Panel appreciates the plants for planting standard 5. Contingency plans being developed for EAB, CLB and ALB by some EPPO member countries – workshops were held in 2009 and 2010

	6. Pest Risk Assessment for the bronze birch borer (BBB), *Agrilus anxius*, conducted in Sep. 2010: identified pathways as chips, plants for planting including bonsais and large plants, and wood. The pest risk management results (very high potential for establishment and spread and high economic impact) raised the concern about the absence of clear treatment procedure for chips. 7. Workshop on ash canker disease - publications in the EPPO bulletin soon David Letham reported for APPPC that 2 new pathogens were found in Australia: Myrtle rust (*Uredo rangelii*) on myrtaceous plants in nurseries that is also affecting 5 species of Eucalyptus in artificial inoculations and Chestnut blight (*Cryphonectria parasitica*) found on European sweet chestnut in Northeast Victoria. Roddie Burgess provided an overview of the recent spread of *Phytophthora ramorum* infection in and around the UK (2010 IFQRG-8-32). The pathogen is mostly seen on Japanese larch, birch and Douglas fir- first found in April 2002- Japanese Larch is a major concern because it is producing spores at least 5 times more than Rhododendron did. Infestations areas are: England 2208 ha; Wales 501 ha; Northern Ireland 205 ha. If no measures of eradication are taken, all Japanese larch in UK could be lost in 10 years.
11.	**Bacteria as International Pests**
	The group discussed item 1 on the IFQRG- TPFQ joint work program. Roddie Burgess reported on 2 major bacterial diseases found in UK: horse chestnut bleeding canker (*Pseudomonas syringae* pathovar *aesculi)* and acute oak decline (in which 5 species of bacteria, 3 of which are new to science, might be implicated in transmission). The group agreed that there is a serious knowledge gap on bacteria involved with wood commodities. David Letham volunteered to provide a literature review to the group on the subject, with the help of UK scientists (Action Item 05). More research will be conducted on the current infestations in the UK. IPPC Secretariat clarified that TPFQ is looking for guidance on whether bacteria are a risk for movement and establishment through wood commodities. IFQRG will provide response to TPFQ on this item when more information is provided

	on the subject by Letham and Burgess.
12.	**Inclusion of Rusts as required test group in ISPM 15 treatment testing**
	David Letham reported that the group of pathologists who met the previous evening agreed that: - The risk from rust contamination of timber products is too low for it to be considered as a pest to be included in the new criteria for testing. - The most important rusts are bark-inhabiting cankers and the size of bark tolerated almost eliminates the risk - The risk associated with wood packaging is no different from the risk associated with any other commodity contaminated with rust IFQRG meeting participants then agreed that risk associated with rust does not justify its addition to the list of pests included in the new criteria for testing and thus it should not be added. Participants decided to communicate this information to IPPC through a comment that was drafted by Eric Allen, discussed and approved by all participants and submitted to IPPC on Sep. 29, 2010: " Rust fungi should be removed from the list of Fungi and fungus-like organisms. Risk associated with rust fungi found on bark of trees (limited to Pinus) is significantly reduced with compliance with the bark tolerances introduced into the 2009 revision of ISPM 15. In addition, rust spores from other rust species that may be present as contaminants are present on other commodities, conveyances, etc and are not unique to wood packaging." (Action Item 06).
13.	**Fumigants Penetration in Wood**
	Eric Allen raised the question on penetration of fumigants in the wood, explaining that standards have been based so far from limited literature specifying 100mm penetration. Ron Mack reported work done by Al Barak in USDA on fumigant penetration, which shows that penetration is largely affected by log orientation with limited transverse penetration (across the grain of the wood) and much higher penetration longitudinally (with the grain of the wood).

	The group concluded that information available on the subject is not sufficient, especially on the effect of bark on fumigant penetration. A group of IFQRG scientists took the responsibility of collecting more information and communicating it to IPPC through IFQRG chair when available. Modeling to fit real-life situations could also be done when enough data is available (Action Item 07).
14.	**Heat treatment and EAB**
	The group discussed item 2 on the IFQRG- TPFQ joint work program. The studies published on EAB so far were conducted on firewood and wood chips and did not test the ISPM-15 standard and were therefore not valid for consideration in wood packaging. The group is unaware of any interceptions of EAB in wood packaging material in international movement of regulated wood. The EU has not reported any interception of EAB in any wood commodity; no US interceptions of EAB in wood packaging. Participants agreed that the phytosanitary measures applied under normal operating conditions to fulfil requirements of ISPM-15 continue to be appropriate to sufficiently reduce the risk of EAB.
15.	**Research reports**
	- Ron Mack gave a presentation on the efficacy of radio frequency against ALB and EAB in round wood showing full mortality at 55ºC. More work is needed to confirm the results (2010 IFQRG-8-27). - Brian Zak gave a presentation on wood chips on global trade. Zak gave a summary of world trade of pulp wood chips in 2009 (export and import data), provided the different size categories of pulp wood chips used worldwide showing the increased demand for biomass fibre (2010 IFQRG-8-33- response to IFQRG-7 action item 4). - Jon Janowiak presented life cycle analysis and cost comparison of current & proposed pallet treatment method, comparing conventional heat treatment and MBr fumigation to Radio frequency (RF) in terms of economical costs and environmental impact. The research presented was based on real data from one US kiln and MBr. treatment

	facility and showed that the cost of heat treatment increases significantly with increased temperature and time of treatment and that the cost and environmental impact (including the carbon footprint) of RF treatment is lower than conventional HT. The model will be further updated by adding more data from other treatment facilities (2010 IFQRG-8-26 – response to IFQRG-7 action item 3). - Ahmad Koubaa gave a presentation on preliminary cost analysis of microwave energy for treatment of wood. The presentation showed that microwave irradiation is slightly more profitable than Heat treatment. The differences between treatments were not highly significant but adding the factors of labor and energy costs to the model might largely affect the results. Suggestions on adding capital costs and taking carefully in consideration the variability in costs and operation conditions among developed and developing countries were given for future steps in the study (2010 IFQRG-8-25). - Thomas Schroeder gave a presentation on PEKID project assessing phytosanitary efficacy of kiln drying on wood borne insects, nematodes and fungi, and concluding that: 1) nematodes and insects were killed at ISPM-15 treatment at 56ºC for 30 min except for *Orthotomicus erosus*, and that KD based on < 20% moisture content alone is not be a satisfactory phytosanitary treatment 2) that work needs to be repeated for fungi and *Orthotomicus erosus*, and 3) that Directive 2000/29/EC needs to be updated (2010 IFQRG-8-23). - Adnan Uzunovic presented University of British Colombia-Wood Science work on RF treatment of commercial-size wood material. RF treatment was evaluated for the control of nematodes and wood fungi at 56ºC/30min and 60ºC/15min. 60ºC/15min was found to be more successful in killing all fungi and nematodes while some fungi survived the first schedule. A blindfold test (no temperature sensors) at a power density of 50kW per m3 maintained for 75 min. fully pasteurized all the tested boards. The work was done on western hemlock and 2 pine species. - Bob Haack clarified misinterpretations presented in 3 published papers where failure of heat treatment of EAB was erroneously interpreted into failure of ISPM-15 and invited the scientists to carefully read the methods, explaining that none of the three papers followed ISPM-15 protocol since none had the probe set in the core of the wood. Participants agreed that it is one of IFQRG's roles to verify information communicated through scientific papers between countries and evaluate its importance in affecting regulation and inform editors and associate editors when such errors occur

	and of the importance of their implications. Haack reported also new results from heat treatment of EAB infested firewood. Winter collected wood was successfully treated at 56 ºC /30min (2010 IFQRG-8-07/ IFQRG-8-15). - Mike Ormsby presented the results of experiments conducted on wood infested with pure cultures of different species of fungi, specifying the time and temperature needed to kill different isolates of each species. All except few decay fungi died at 56 ºC /30min. The estimated lethal temperature using confidence intervals of 95; 99 and 99.99% would raise the required temperature (2010 IFQRG-8-16). - Adnan Uzunovic followed with a presentation on heat disinfection of fungi found in wood infested with Mountain Pine Beetle. In his experiments, few decay fungi also survived 56ºC /30min but were killed at 61ºC /30min in artificially infected wood. In naturally infected wood (e.g. wood cut from MPB infested wood), all fungi were killed at 56ºC /30min. Drying wood to 15% moisture content for 4 months did not kill any fungi. An important finding of the study was that drying wood prior to treatment favored aggressive saprophytic species, which might have important phytosanitary implications (2010 IFQRG-8-17). - Giuseppe Fragnelli presented on heat treatment systems and temperature control in different heat chambers in Italy. Fragnelli also showed the procedure followed in Italy to certify heat chambers (2010 IFQRG-8-24). - Mike Drinkall presented data from fumigation studies with sulfuryl fluoride (SF) at different doses and temperatures for the eradication of pinewood nematode (PWN) on maritime wood boards. All nematodes, including the resistant juvenile stage, were killed at 15^{o}C and 30^{o}C with a very low survival occurring at 20^{o}C. The reason for low survival is not clear and consideration is being given to repeating the experiment at this temperature. Regarding questions on environmental effects of SF he stated that SF environmental fate and behaviour data has been evaluated by different regulatory agencies around the world. In the European Union (EU) it has recently been evaluated by two rigorous schemes – the EU Directive 98/8/EC (Biocides Products Directive) and 91/414/EEC (Plant Protection Directive). It has been Annex 1 listed under Directive 98/8/EC and Annex 1 in 91/414/EEC comes into force in November 2010. He also explained as part of the regulatory process in the EC atmospheric data must be provided every five years for the fumigant.

	- Adnan Uzunovic presented preliminary work done on phosphine gas fumigation. - Edmundo Sousa gave a presentation on non-vector transmission of PWN between wood pallets. The study showed that PWN can move from infested to clean wood pallets. Transmission was highly affected by moisture content and kiln dried pallets are safe from post-treatment infestation. The study concluded that the probability of boards getting infested with PWN is very high and raised the question of regulation of the vector rather than the nematodes, from the perspective that infestation of pallets can only be transported to forests in the presence of a vector. - Mike Ormsby gave a presentation on measurement of treatment efficacy and a review of research practice when developing phytosanitary treatments. In summary, the presentation provided a list of major criteria and common pitfalls in treatment development-related research. (2010 IFQRG-8-13). Mike Drinkall suggested that guidelines on criteria for treatment submissions be published in a manual that can be used by treatment developers around the world. Mike Drinkall also suggested that the IPPC should have within its process an opportunity for treatment developers to submit their experimental designs prior to them undertaking treatment development. - Hoover presented the list of criteria for choosing substitute species (2010 IFQRG-8-34- response to IFQRG-7 action item 9). Mike Ormsby explained that TPPT has a general list of criteria for substitute species. Ormsby suggested that the criteria developed by IFQRG, which are more specific to forest pests, be transmitted to TPPT to be added to their guidance (Action Item 08). The group discussed and agreed on the text for the list (2010 IFQRG-8-34) to be presented to TPPT for their consideration. - Adnan Uzunovic gave a presentation on liquid chemical treatment of wood (2010 IFQRG-8-28 – response to IFQRG-7 action item 10). Discussion among the participants clarified that the requirements of wood preservative treatment is a country-by-country decision and although it is not part of ISPM-15, there is mention of these treatments in the standards but guidelines are limited due to lack of information. Cheryl Grgurinovic indicated that Australia allows preservatives- treated wood. In the US, trials proved it to be very species-specific. Chuck Dentelbeck explained that in Canada, there is no standard for wood preservatives and each company has its own standard.

	- Thomas Schroeder presented an overview of work on controlled atmosphere log storage, initially established for storage of food, then used for softwood and hardwood. Results showed that storage of coniferous wood up to 4 years in controlled atmosphere was successful. Controlled atmosphere seems to be a promising alternative to water storage (2010 IFQRG-8-29 – response to IFQRG-7 action item 6). - Luis Fonseca gave updates on their work in developing detection techniques for PWN. Through double amplification of a PCR product obtained with PWN-specific primers, specificity of 1 PWN per 100mg or per insect vector was achieved. - Cheryl Grgurinovic presented a study done in Australia to compare several techniques of detection of insects in timber. Trained dogs were found to be the most reliable in finding termites, and AED, X-rays and Termatrac were promising techniques for non-destructive detection. Thomas Schroeder reported on the use of trained dogs to detect CLB in Austria and on a EU project on non-destructive methods for CLB detection in plants for planting starting soon; Roddie Burgess reported the development of acoustic detection of insects in wood using very sensitive microphones; and Ron Mack indicated the use of dogs in the US for detection of bed bugs and termites. Bob Haack pointed out that acoustic detection of insects in wood is highly affected by temperature which clearly affects larval feeding and activity. - Bob Haack presented an overview of invasive borers in the US.
16.	**Probit 9 discussion**
	Cheryl Grgurinovic gave a presentation on Probit 9 explaining the concept and origin of Probit 9 and the difference in applicability between organisms available in high numbers and cerambycids and other insects that are hard to find in large numbers, are hard to rear or have long life cycles. Bob Haack provided a history overview of the development and controversy of Probit-9 for phytosanitary use. Adnan Uzunovic followed with data showing that tests to determine lethal dose address statistical reliability that represents population variability. This can be achieved with

	lower levels of replication e.g. 60 or 100 replicates giving reliability of data ~95%. After studying and discussing the issue of probit 9 at length, several participants concluded that probit 9 has nothing to do with the scientific validity of experimental testing to determine the lethal effect of a treatment. Probit 9 in this context has been required because its meaning has been misconstrued. It comes from a historic anomaly where 99.997 was (incorrectly) calculated from fruit fly data and has no statistical basis. A treatment's efficacy has been confused with statistical reliability of the data when a treatment lethal dose is being determined through testing. This major misunderstanding is preventing researchers from generating data for new treatments that will assist finding succesfull and economical alternative treatments. This needs to be urgently addressed A more detailed explanation and a possible way forward using a three-step approach is discussed in paper IFQRG 2010- . There we suggest (1) preliminary tests be done to establish the dose that produces 100% mortality (2) additional replication (we suggest n=60) at this dose to verify that the lethal dose always produces 100% mortality and (3) a field test to confirm the lethal dose in a scaled up experiment. For this last stage of testing the efficacy of treatment can be statistically assessed using a probit concept; however, requiring Probit 9 for this test is inappropriate due to the biological nature of wood-related pests. To assess efficacy using statistics requires agreement between regulators (TPPT members) of the population of organisms that the treatment will be applied to and agreement on the level of efficacy that is economically acceptable in the context of risk-based pest management. This considers pest biology, possible pathways, and the risk of establishment to decide if the level of survival is acceptable before treatment is suggested for adoption. The efficacy level could be set based on the economic consequences of, for example, 1%, 5%, or 10% of target pests getting through (2010 IFQRG-8-37). After extensive discussion, the group agreed that: - The experimental unit for testing could be the piece of wood and not the individual insect, fungus or nematode. - Achieving Probit 9 through testing ~93,000 individuals is impractical for many forest pests but can be modeled through statistical extrapolation of the data using fewer individuals. However, modeling will lead to an overestimation of the lethal dose. - If Probit 9 is no longer required, alternatives are needed to provide guidance to treatment testers, and should take in consideration the biology of the organism and the phytosanitary risk in international trade.

	- The IFQRG will complete the paper on 'the characteristics of the pests included in ISPM-15 annex and the risks associated with them, how these characteristics affect treatment efficacy and what levels of efficacy will be needed for each group of pests' (Action Item 02) as soon as possible. - The level of infestation and sample size in any test has to be representative of the natural variation in the field. Andrei Orlinski suggested having a publication in EPPO bulletin or similar regulatory publications for pro- and cons- Probit 9 arguments to explain it to the regulatory community. Next Meeting: Participants from Australia communicated an offer from their country to host the next IFQRG meeting (IFQRG-9). The advantage of having the following meeting in Australia is mostly in bringing participants from southeast Asia, which would respond to the growing concerns about the international representation of IFQRG. Participants agreed that IFQRG-9 is to be held in Canberra, Australia in September- October 2011. The exact date will be decided on upon further communications with the host country and members. IPPC secretariat suggested to move the IFQRG meeting time to coincide before the TPFQ meeting to allow the TPFQ to receive responses to their requests in a timely manner. The change will not be feasible for next year but could be discussed for the following years. The option of changing the TPFQ meeting date is also present. IPPC secretariat also stressed on the importance of international collaborations and international representation in the IFQRG group, especially from developing countries. The secretariat also advised the IFQRG membership to use all available opportunities to increase visibility and awareness about IFQRG's role and achievements, on of which would be to give a talk in the coming CPM meeting about the economic and environmental analysis done by Chuck Ray and that was presented in IFQRG-8 by John Janowiak.

Next meeting proposed date: September-October 2011

Location: Canberra, Australia

Work programme of TPFQ/IFQRG 2009-2010

IFQRG Action Item No.	Action Item description	Expected date	IFQRG member(s) responsible	Deliverable - Submission to (TPFQ, TPPT, IPPC Secretariat) - Journal publication	Status
01	Development of an International MBr. Manual	June 2011	**Cheryl Grgurinovic** Mike Ormsby IPPC Secretariat (EPPOcontact- Brent-Andrei)	Manual- IPPC Secretariat	
02	Paper that defines the characteristics of the pests included in ISPM-15 annex and the risks associated with them, how these characteristics affect treatment efficacy and what levels of efficacy will be needed for each group of pests.	Dec. 2010	**Bob Haack** Kelli Hoover Ron Mack Maya Nehme Adnan Uzunovic Cheryl Grgurinovic David Letham	Forum paper at the Journal of Economic Entomology	
03	**Request from TPFQ -** Analysis on mechanically processed wood (processes and chip size) and its relationship with pest risk.	Mar. 2011	**Eric Allen** Bob Haack	Discussion paper to TPFQ – possibly journal paper	
04	Microwave and RF guidance manuals	MW- Sep 2011 RF- Dec 2012	**John Janowiak** Ron Mack IPPC secretariat	Manual – IPPC secretariat	
05	**Request from TPFQ -** Literature review on bacteria as forest pests	Sep. 2011	**David Letham** Roddie Burgess (Sandra Denman)	Journal paper - TPFQ	

06	Send a comment from IFQRG to IPPC on Rust fungi	Sep 29, 2010	**Eric Allen**	IPPC Secretariat	**completed**
07	Collect information on fumigant penetration in wood, with/without bark	Sep. 2011	**Ron Mack** Ahmad Koubaa Grgurinovic (+names) David Letham	Ongoing report	
08	Communicate Hoover-Haack list of criteria for choosing a substitute species to TPPT	Oct. 11, 2010	**Eric Allen** Maya Nehme	TPPT	?
09	**Request from TPFQ -** Investigate the validity of heat treatment at 56°C/ 30 mins given the information regarding EAB.	Past		Publication –Haack In preparation See IFQRG-8-report	**Done**
10	**Request from TPFQ -** Review the applicability/necessity of Probit 9 in determining the efficacy of all wood treatments	Past/ongoing		See IFQRG-8-report + action item 02	
11	Investigate the relevance of wood flies in wood packaging	Jan. 2011	**Edson Tadue-Iede** IFQRG members (check interception data with NPPOs)	IFQRG document	
12	Prepare next meeting's agenda	Jan 7th, 2011	Eric Allen Maya Nehme	Possibility of soliciting topics through IPPC	
13	Presentation on carbon footprints/ 2010 IFQRG-8-26 in CPM-06,	March 14-18, 2011	Eric Allen Charles Ray- Hoover IPPC secretariat		

TPFQ Action Item	Expected Date	Responsible	Related IFQRG Action Items	IFQRG Expected Date	IFQRG Responsible	Status
TPFQ members to ensure their regional workshops to review draft ISPMs and are aware of FAO Forestry guide (presentation is posted on IPP).	20 July, 2009	All	Nil			Complete
Draft submission of topics for biological control and bamboo to be sent to TPFQ for review.	31 July, 2009	All	IFQRG to commence gathering technical information in support of risks of movement of bamboo			Submission on biological control received by Secretariat
Submit to Secretariat an example of the operation of the treatment criteria	20 July, 2009	All	Nil			
Review proposed ISPM No. 15 Questionnaire	31 July, 2009	All	Nil			Completed, questionnaire posted. Request sent to TPFQ to submit information (1 country completed.
Provide technical information to Magnusson in the development of a paper regarding approaches for testing for PWN	10 August, 2009	All	IFQRG to review the scientific validity			

TPFQ Action Item	Expected Date	Responsible	Related IFQRG Action Items	IFQRG Expected Date	IFQRG Responsible	Status
			Ability to publish scientific/technical documents in support of quarantine processes and procedures			
Finalize international movement of wood proposed standard for submission to Secretariat	15 November, 2010	All Wolff to finalize and submit to Secretariat	Provide to TPFQ scientific information on the risks of varying wood chip sizes	Mar. 2011	Eric Allen Bob Haack	Standard submitted to Secretariat
			Develop a technical document supporting the measures in the wood standard including: debarking, bark freedom, chipping, sawing, water storage, plastic wrapping of logs, drying, etc.			Standard to be reviewed by May 2010 SC

TPFQ Action Item	Expected Date	Responsible	Related IFQRG Action Items	IFQRG Expected Date	IFQRG Responsible	Status
			Summary of risks associated with chips transferring pinewood nematode to living trees without a vector (related to end-use being a limiting factor)			
Review of emerging science suggests HT standards may not be sufficient in managing the risks of all pests	Next meeting	All	Investigate the validity of heat treatment at 56°C/ 30 mins given the information regarding EAB.	Completed	Publication – Haack *In progress* See IFQRG-8-report	
Finalize WP and wood treatment criteria	1 December, 2009	All Wolff to finalize and submit to Secretariat	Review the applicability/necessity of Probit 9 in determining the efficacy of all wood treatments	Ongoing	See IFQRG-8-report + action item 02	Standards submitted to Secretariat Standards to be

TPFQ Action Item	Expected Date	Responsible	Related IFQRG Action Items	IFQRG Expected Date	IFQRG Responsible	Status
			Request IFQRG to develop a report scoping out the costs and benefits of implementing ISPM No. 15 internationally. Secretariat to check with FAO to assist with the study.			reviewed by May 2010 SC
Investigate status of SF in relation to it being a greenhouse gas.	Next meeting	Secretariat	Nil			Secretariat requested submitting NPPO to consider reports and to provide any information regarding potential greenhouse gas impacts. No information received.

TPFQ Action Item	Expected Date	Responsible	Related IFQRG Action Items	IFQRG Expected Date	IFQRG Responsible	Status
Consider in relation to the development of a explanatory document on ISPM No. 15: – procedures for the identification of compliance with bark requirements; – uniformity in import requirements related to the identification of pests (e.g., saprophytic fungi, etc.); – procedures for inspection (identification of repaired vs. remanufactured pallets) and marking of wood packaging	1 December, 2009	Sela	Nil			Text completed and submitted to TPFQ and others for review
Review of TPPT comments regarding FAO fumigation manual	25 October, 2009	All	Review ability to develop fumigation manual or good practices guide	June 2011	**Cheryl Grgurinovic** Mike Ormsby IPPC Secretariat (EPPOcontact-Brent-Andrei)	

TPFQ Action Item	Expected Date	Responsible	Related IFQRG Action Items	IFQRG Expected Date	IFQRG Responsible	Status
Develop and send to TPFQ a process for answering public/NPPO questions related to the implementation of ISPM No. 15	10 September, 2009	Ormsby All to review and comment	Review applicability of IFQRG Forum or Questions and Answers	completed	Roddie Burgess	Draft process provided to TPFQ. Comments to be returned to Ormsby. No consensus on process established.
Develop document on HT and MBr best practices for ISPM No. 15	1 November, 2009	Sela	Nil			Draft completed February 2010 and circulated to TPFQ as part of explanatory document for ISPM No. 15 No comments received
Contact ISTA regarding quality controls, certification processes, trade data, and assistance in helping to identify the types of data that is required for establishing the standard.	8 January, 2010	Allen and Schroeder	Nil			Schroeder indicates that information on trade volumes is limited.

TPFQ Action Item	Expected Date	Responsible	Related IFQRG Action Items	IFQRG Expected Date	IFQRG Responsible	Status
In light of Japan comments on Annex 1 of ISPM No. 15: provide comments on FAO fumigation manual fumigation guidance on CT product calculations						
Complete revision of the explanatory document for ISPM No. 15	1 November, 2009	Sela	Nil			Draft completed February 2010 and circulated to TPFQ No comments received
Collect data related to forest tree seed information based upon the broad outline (pest groups, harvest period, climatic zones)	1 February , 2010	All	Provide to TPFQ data related to forest tree seed information related to pest groups, harvest period, climatic zones, etc.		Eric Allen	1 summary paper received

TPFQ Action Item	Expected Date	Responsible	Related IFQRG Action Items	IFQRG Expected Date	IFQRG Responsible	Status
Identify missing gaps related to forest seed standard and notify the Secretariat so that expertise required could be requested for the 2010 TPFQ meeting	1 February 2010	All	Identify technical expertise which could be utilized in addressing pest gap questions related to development of the standard			No information received

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