ANNEX 1

JAPAN – MEASURES AFFECTING THE IMPORTATION OF APPLES (WT/DS245)

RECOURSE TO ARTICLE 21.5 OF THE DSU BY THE UNITED STATES

Working Procedures for the Panel

1. In its proceedings the Panel shall follow the relevant provisions of the Dispute Settlement Understanding (DSU). In addition, the following working procedures shall apply.

2. The Pa91noilall apppute from disclosing statements of its own positions
shall treat as confidential information submitted by another Member to the
er has designated as confidential. Where a party to a dispute submits a
s written submissions to the Panel, it shall also, upon request of a Member,
al summary of the information contained in its submissions that could be

antive meeting of the Panel with the parties, the parties to the dispute shall
ten submissions and subsequently written rebuttals in which they present the
arguments and their count

(c) (The parties and the third parties shall provide the Secretariat with 8 paper copies of their written submissions as well as an "electronic" copy of the submissions on a diskette or as an e-mail attachment, if possible in a format compatible with the Secretariat's software. Paper copies shall be delivered to the Dispute Settlement Registrar, Mr. Ferdinand Ferranco (Room 3154). Electronic copies may be sent by e-mail to Mr. Ferranco, Ms Serra Ayral, Ms Gretchen Stanton, Ms Kerry Allbeury and Mr. Yves Renouf.

(d)

ANNEX 2

ANNEX 3

TRANSCRIPT FROM PANEL MEETING WITH EXPERTS OF 12 JANUARY 2005

Chair

1. I would like to begin by welcoming the parties and the panel's expert advisers, Doctors Geider, Hale, Hayward and Smith to this meeting of the Panel on Japan – Measures Affecting the Importation of Apples, Recourse to Article 21.5.

2. The Panel has agreed to the Japanese delegation's request for them to provide continuous and consecutive modes of translation between Japanese and English, and may I request that Japan confirm that all the necessary arrangements are in place? Thank you.

3. Let me begin by introducing the Members of the

letter, in which it restated the text of paragraph 8 of the Working Procedures, setting the time limit on a party's ability to present new evidence absent a finding of good cause by the Panel, and further stating that: "The Panel considers it of particular importance that any evidence which the parties intend to submit during this proceeding, be made available to the scientific experts at the time they received the questions from the Panel, i.e. 25 November 2004." Thank you.

Chair

20. Does Japan have any comment on that statement?

Japan

21. No, we are not going to submit any evidence *per se* at this time.

Chair

22. Thank you very much. I think that answers the point. Are there any other comments or questions at this stage? Mr. Kho.

Mr. Kho

23. Some of us were talking earlier today and we were wondering how the process of the experts would go. We know that last time you went alphabetical order as you just did now and requesting the experts to introduce themselves and poor Dr. Geider had unfortunately to go first all the time and for those of us who were here last time we thought maybe we could spice things up a little and maybe go reverse alphabetical order, or however you choose. Just a suggestion. Thank you.

Chair

24. That's fine by me if that is alright with the experts. We will do it in reverse alphabetical order. If that is all at this stage, I will now invite the experts, in particular, to comment on any point raised by the parties responses to the experts' written replies to questions, and in the context at the same time to make whatever introductory remarks they wish to make. I suggest we hear from the experts in reverse alphabetical order, starting with Dr. Smith.

Dr. Smith

25. Thank you Mr. Chairman. I would like to make a general comment, which is that what we have been asked to do as experts has proved for me rather difficult. We are asked to consider new evidence, which was submitted to us in the form of short papers which contain significant results, which suggest that maybe if more research were done more substantial results could be obtained that

and on the other hand, whether certain measures taken are likely or not likely to be effective or how

of such material that is coming illegally and which has not been intercepted at the airport. Thank you Mr. Chairman.

apples with *E .amylovora* we will find the pathogen. It will persist. It will even increase little bit depending on the storage conditions or it will just persist for as long as the apple is suited for storage. So, this is trivial. You can bring a pathogen to other surfaces like plastic bags, or paper or wood or something else - even to metal – it will persist for some time. Sometimes for a very long time. On this basis the papers are not wrong. But as I expressed in my statements, they also do not say very much about distribution of fire blight. The last paper, which is about the spread of fire blight by flies, is also not completely wrong. In this respect fire blight is actually initiated every spring by ooze coming out of infected trees. This ooze is picked up or insects are feeding on the ooze and then they visit flowers. I think we should be honest. This is the way fire blight is initiated in an orchard with fire blight. Otherwise I think no flowers will survive in the winter but the pathogen survives in the stem sections and the stem sections are oozing. As far as I recall there was an older, not well documented, but still somehow published experiment of Tom Van der Zwet saying: "When I remove all the cankers and I protect the whole tree against visiting insects then it will not develop any fire blight." So, I agree with this statement, but I also have to admit that ooze is the primary source to get fire blight into the trees in spring. In this respect the paper is not wrong. But it is wrong in this assumption that everything that looks like ooze on fruit is now a source to bring fire blight to other places. There is no evidence that this can happen. Although, and this is my scientific task, I cannot completely reject and deny that it can for all reasons never happen, the chances are close to zero. But what is zero mathematically? It is a difficult number. Of course I could also comment a little bit on the papers what they did and what are the pictures and the results. Maybe at a later stage I will come back to this point. Thank you.

Chair

42. Thank you Dr. Geider. I wonder if, before I go on, if I could just go back to Dr. Hayward. We heard Dr. Geider refer just now to an outbreak in Melbourne, Australia. I wonder if you had any more information about that that might be relevant to this case?

Dr. Hayward

43. Well I wouldn't call it an outbreak, Mr. Chairman. It was a single plant of Cotoneaster, as I understand it. There was no spread from that point source. Because it was in that category of there having been no spread from point source, it has to be categorized as an incursion, I think, isn't it? If you have no spread, it's an incursion. I have no more information. We have the published record, and that is it.

Chair

44. There was no information about how it got there, or where it came from?

Dr. Hayward

45. No, I think Dr. Geider has made a number of suggestions which are quite reasonable. He had 1.5 million people visiting the Melbourne Botanic Gardens. Human nature being what it is, various things might have happened. It is all hypothetical and speculative.

Chair

46. Thank you very much. Thank you to all the experts for their pertinent remarks. At this stage I would now like to ask the parties to pose questions to the experts. I propose that the parties begin the opportunity to do so in alternate order, starting with the applicant, the United States. The United States, you have the floor.

United States

47. Thank you Mr. Chairman. The United States thanks the experts for the care they have taken in responding to the Panel's questions, and in particular their efforts to respond to the Panel's questions in terms of the scientific evidence as it relates to apple fruit and fire blight. The experts' role in advising the Panel on the scientific evidence is an important component to an SPS proceeding. In light of the experts' role as advisers on the scientific evidence, the United States has only a few confirmatory questions, one of which we will ask now in light of the Chairman's suggestion of alternating questions, but both of wh

happen. All I can say is that at this stage there is no evidence. No, I don't see any scientific evidence that this is happening under natural conditions.

Chairman

55. Thank you very much. Dr. Geider.

Dr. Geider

56. Of course there are two ways to look at an apple. One is the apple which is mature and looks healthy. It is very difficult to find in those apples *E. amylovora.* That means that you have to assay tons of apples to make a big survey to find out if this can really happen or it cannot happen. I think there are enough data from New Zealand that in certain circumstances that apple can carry some *E. amylovora*

E. amylovora

Dr. Hale

65. The reason that we have done the work on the calyx end of the fruit results from some earlier work in the 1980s which looked at apples, mature symptomless apples harvested from a heavily infected, or severely blighted orchard with more that 75 strikes per tree. We were unable to pick up any bacteria on the surface of the fruit, of these mature, harvested fruit, but we did pick up bacteria in the calyx end of the fruit. We have been consistently able to do this from apples taken from severely

say: yes, we have a model to start with. We can obtain a positive result, in the most favourable scenario. Then you must go on, and you must investigate scenarios that are more realistic. I cannot

Japan

77. Thank you. As a follow-up question to the same issue, of Tsukamoto II- completion of the pathway, certainly some expressed that the conditions are very extreme because it was done in very limited opportunities and very close lab situation. We had to choose it, as Dr. Smith expressed, we really would have like to used the earth instead of the insects, but we didn't have a choice. Now, is it fair to say that, assuming all the conditions are equal, every ecological conditions are equal, the presence of a certain amount of inoculum and common flies and wounded pear, with these three elements present, isn't it more likely that the pathway will be completed than in the absence of these three elements, assuming all the other conditions, ecological factors, are identical? And it seems to me that Tsukamoto II, too, had assumed all these combinations of these three elements, these three factors, it would be more likely that the pathway will be completed than otherwise, than in the absence of these elements. Is it fair to say that, or no?

Dr. Smith

78. Well, I must reflect, Mr. Chairman. One could speculate that if this line of investigation was continued, and the various experimental variables were changed to be closer to natural conditions (that would mean that perhaps the amount of inoculum from the fruit was brought down to a lower level, that the insects were freer to move and to decide for themselves whether they would or would not contact the fruit, that they had more time in which then to fly, disperse, to do various other things, before they would alight on other fruits and infect them). It is perfectly possible in that case, that although there is a starting inoculum, and the insects do pick up some bacteria in the first instance, that the amount of bacteria picked up is quite small. Even that it is undetectable. I recall that in the , tinseintens.5(ment7.2674(thly)-7h)o 0.001 T05478Tuil1T2(7.9is)-5.4(a 8tarhowhatndedoe)-3.9ould or2.5792con v

78.

(10^5) bacteria of 1 to 2 micrometres transpired into the fruit. Azegami described that they proved the presence of the pathogenic bacteria in the flesh at the level of colony formation units of 10 to the sixth power (10^6) to 10 to the eighth power (10^8) per 0.1 cubic centimetres. This fact clearly indicates that the bacteria actively propagate in the fruit tissues.

88. Since the growing stage from fruitlet to immature fruit, and further to mature fruit is a continuous process, I consider that the notion, "infected apple fruit always develop visible symptoms, and thus symptomless fruit are always healthy and free from fire blight bacteria" has not yet been established. On the contrary, both Azegami Studies I and II seem to suggest that a possibility has become extremely high where apple fruit may become latently infected with the bacteria which exist inside a fruit-bearing twig and then invade through a pedicel into the fruit before completion of the formation of an abscission layer.

89. Azegami Studies and Tsukamoto Study I also seem to suggest that the current view that "mature apple fruit can not be infected or infested with fire blight bacteria" should be modified, and that latent infection should be further confirmed under the natural conditions.

90. In order to confirm this latent infection, scientists, in impartial position, from both fire blight occurring countries and fire blight-free countries should jointly conduct experiments in a fire blight occurring country and to find conclusions. I believe that the International Society of Plant Pathology (ISPP) would be the most appropriate organization to conduct such project.

91. The necessity to confirm the results of Azegami Studies under natural conditions is also recognized by all of the four panel experts, although their expression somewhat varies form one another. I believe that there are still many important phenomena that we have overlooked on fire blight epidemiology. The transmission by latently infected fruit is one of the most important features to be reinvestigated immediately. Thus, I believe that the research of fire blight epidemiology has entered into a new era, and we "plant pathologists" should seriously consider this situation in order to protect apple and/or pear orchards in the world from further spreading of fire blight disease.

92. It is my view that the quarantine measures for fire blight of apple fruit should be maintained until the results of the proposed research under the ISPP project research proves that the latent infection of apple fruit does not really occur under natural conditions, and latently infected fruit does not certainly relate with fire blight dissemination in the natural world. I thank you for your attention.

Chair

93. Thank you. Can I ask if there is an English translation of that document, a written English document available? Could it be circulated to the Panel and to the experts before we invite them to respond?

United States

94. Mr. Chairman, if it is possible, we would like a copy as well.

Chair

95. Yes, indeed I intended to include you in that.

96. Can I ask the Japanese delegation if that will be the end of your questions and comments? It will. When we have dealt with this, depending how long it takes, it will then be the time for the Panel to ask questions to the experts. We will have a brief adjournment, after we have heard their responses

themselves and to have the questions in front of them. We will take a fifteen minute break after we have dealt with the response. I don't suppose it will take too long for them to run off a few copies, will be back in a minute.

Dr. Hayward

97. Chairman, may I ask a question? May I ask the Japanese delegation if the Azegami I study scheduled for publication in the December issue of the Journal of General Plant Pathology is already out. It has been published?

Japan

98. Azegami I has been published. Tsukamoto I is going to be published in February.

Chair

99. I'll just give a moment or two for the experts to read through the documents from Japan and Dr Smith are you prepared now, thank you. Dr Smith you have the floor.

Dr Smith

100. Mr Chairman, I am sorry, I am not prepared. Can I pause while you ask someone else?

Chair

101. You can come back, yes

Dr. Hayward

102. Thank you Mr Chairman. I'll go through questions one, two, three, etc. The Azegami I studies involve inoculation of bacterial suspensions onto the pedicel. I accept the evidence that there has been some proliferation of the bacteria because the data given in paragraph 2 do show that you get an increase in numbers. That's done by plating, that has nothing to do with the luminology, the bioluminescence. Azegami II studies involve application of inoculum to a scalpel incision. The exact

and I had to wait two hours until I saw light. I think this is very obvious. Bacteria with slow metabolism do not produce light. For those reason, I appreciate the high technology of Japan in developing cameras which amplify single photons without any background. Still when I look to the conditions in the first paper its one minute exposure, it's a very short time. I think these cameras must be extremely powerful to see all that light from these few non-metabolising bacteria.

111. We did many experiments showing whenever those bacteria go into a stationary culture the light production is so low that it is hard to detect it, even in a dense culture. I am wondering what these pictures and what these observations mean. I don't know the camera and I don't know the light detecting system. I know that a colleague of mine was cited before, Sherm Thompson, tried similar experiments (in cooperation with NASA) in Utah, that he had a camera which was amplifying light to a million fold or so and they could see a few dots. There was a lot of background and it was difficult. I think it is a very difficult system in biology, in biochemistry, of light production, and also in physical arrangement – how to pick up the light. For those reasons, I severely have objections if these papers are really producing a message. I would have expected that these methods which are attractive (and Dr Smith, I think, said in his comments) that its an advancement in biology to do that, that there are basic publications telling about the circumstance of light production, how was a mutant created, in which gene is a transposon inserted? In that it must be a strong promoter, it must work continuously, otherwise it would shut off the light immediately if the promoter was not working. So we did similar experiments. We used that transposon and, of course, you can get strains which have a high life production with insertion of a transposon as a chromoso7.6(0.01180.0714tc)tnts. 4o(n with Niifficult0.55f

115. First of all, about the comment made by Dr Smith. Dr Smith stopped in the middle of his comments, however, I heard that he said that the inoculum level or density was quite high and I have also seen they say this expression in some of the reports made by the experts. However, this level of inoculum we are talking about is 10^4 or 10^5. This is not high at all. This is very natural. This is the level of inoculum we can easily find out in natural conditions.

116. As for the comments made by Dr Geider on the issue of light. Azegami carried out our research on the issue of light and also on the number of bacterium at the same time. He looked at the two issues at the same time. He did not look at the light issue only. This is the very reason why this is one of the misunderstandings we can find among the people. This is one of the very reasons why we are asking for international collaborative research on this issue.

117. The next point I would like to talk about is the role played by the abscission layer. People tend to say that the abscission layer does not work as a barrier to prevent the invasion or invasion or introduction of the bacteria into the fruit, but Azegami continued his study or research on this point. He has already produced some data about this. He found out that the bacteria can actually infect the fruit itself through the abscission layer, even on the mature fruits.

118. I wanted to touch on the comments made by Dr Hayward. He said he was quite doubtful whether the same kind of wound made by the scalpel in the Azegami research can really happen in natural conditions or not. He did not really look at the possibility whether the bacteria in the fruit bearing twig can actually go into the flesh or the fruit of the mature apple. We can say that some bacteria which already exists within a twig can actually be increased in the natural conditions. Then they can actually go into the fruit bearing twig, and then into the pedicel and into the flesh, and then they can become the primary infection source.

119. Many of the experts said that we have already observed such and such data and the results in the previous research and in experiments which were carried out in the past, but any progress made in the scientific field is based on the denial of made in the past, and if we stick to the result found in the past we cannot made any progress in the scientific field. Over the last two years we have made such a great progress in this field. We are living in a world with high speed and if we really identify the core problem we can make great progress in this field. Therefore, we should not stick to data produced in the past. If we keep doing so we cannot make any progress in the field. This is one of the reasons why I am advocating for the establishment of joint research – collaborative research – in this field. So that we can make more progress.

Chairman

120. Can I ask the experts whether they wish to say anything further in response to that. There were a number of different points there. Dr Smith? Nothing to say.

Dr Hayward

121. I would only refer to Azegami II study; entry of *E. amylovora* into apple fruit from fruit bearing twig, through abscission layer prior to fruit maturation. The experiment was done as follows. Fruit bearing twigs on trethaIo1 fr,4Tw[(ma/TT8 rior to fru-203s(ask.8( )5.4(pof(40w(we)-5.2.3(re pvnu)1no00001 Tv

Chairman

122. Thank you. Dr Hale?

Dr Hale

123. I am interested in what Professor Goto has just said because from what I just heard, Azegami has shown that the bacteria can actually go through the abscission layer into the mature fruit. Now, we haven't seen that evidence anywhere. We haven't seen the paper which says anything about that. The only evidence that we have is with Azegami II, where the bacteria from inoculated twigs were then found in the fruit. But that could well have been before any abscission layer had been produced. So, are we now being asked to comment on some evidence or some data that we haven't seen? I don't need to comment on the other things, but I am confused at the moment as to what we are actually talking about. Is this some new information that we have not seen yet?

Japan

124. It's new information, not in Azegami II. It's a different study.

Dr Hale

125. Well, then I have no comment to make on it.

Dr Geider

126. To start with the last words of Dr Goto, I agree that past and present are not always comparable. Of course, its dangerous to cite papers from 1926 and this year's and to refer that these people have seen or not seen something. Of course, including your papers, progress is made. I think we should be open to new methodologies and to new ways to answer questions.

127. On the other hand, there are also biological requirements and just biological facts which cannot really be changed. One fact is that light production and cell number are not in a ratio. The light is dependent on the ATP content of the cells and not so much of the cell number. By having few cells with high ATP and having many cells with low ATP you can get the same light production. This is an example where we cannot proceed. We can proceed on technology; that better cameras with better background sensitivity will pick up other signals, but there are also some biological facts that cannot be changed.

128. This other fact that was the answer to Dr Hayward's that the bacteria were used as a low group density and they multiplied quite a bit. I cannot confirm that. I told you in our hands they multiplied by a factor of ten. The only thing we can discuss is if we used the wrong cultivar. We used Braeburn and, as far as I understand in the Japanese experiments, 'Rome Beauty' was used and Jonagold. So, 'Rome Beauty' is considered to be most susceptible. I don't know if we can get to this cultivar easily in Germany but we can, of course, try to answer the same questions with other fruits, other cultivars and find out if there is a difference. We have to be a little cautious that we are not doing all our lab work looking for these minor differences and minor changes which might occur or may not occur. At the end, the question is: does what we are finding in artificially inoculated fruits, where ever its coming from a pedicel or even from the stem section, say something about distribution of fire blight. I agree, somehow, that whatever we know – and I think this was published earlier – that fire blight is moving from the tip, from the shoot, down eventually to the root. This is the proposed way to move down and up again to the twigs with fruit bearing twigs. I cannot really say if on a natural tree fire blight is coming from the top and is distributed in all parts. I think I mentioned that in my comments. Pears have a tendency to be more systemic in the distribution of *E. amylovora* within the tree. For those reasons, pears can get systemically infected and the whole tree can die. With apples, I don't know if there are cultivars which might have the same feature but, is it possible that

apples can systemically be destroyed by single infection? [....Yes, it is possible....] But I don't know if this is the case for the apples which are thought to be exported. Do we have cultivars that are so highly susceptible that they can be destroyed systemically – that the whole tree is affected at the end and everything that is on the tree might bear the pathogen? That is a question, I may give to the American delegation if they have these sort of observations. At least, in general, heavily blighted tree will be destroyed and removed by the owner of the orchard. We are now thinking about very hypothetical assumptions which may not really be realistic.

129. You objected that three experts were referring to soaking up bacteria just by water evaporation. You can always say that this is not true in all cases or its not exclusively this mechanism. I still think it is rare that a cut wound in the plant will take up water and when there are bacteria in the water they will be soaked up. There

Dr Smith stated that whether the requirement for a pest free place of production or a pest free production site is an effective phytosanitary measure, is a technical question depending primarily on the biology of the pests and also on the management of the crop".(answer to Q10).

Dr Geider stated that "there should be no severely blighted commercial orchards. In that case the orchard is not suited for fruit production and the trees have to be removed. An orchard with only one fire blight strike - is a blighted orchard and should be handled with care for fruit trade to fire blight free countries". (answer to Q12).

(a) given the available scientific evidence regarding the biology of *E.amylovora* and commercial apple crop management in the United States, is there any scientific justification for requiring that apple fruit be sourced from an orchard free of fire blight irrespective of how an orchard is defined? Let me stress here that I am interested only in the scientific basis, if any, for such a requirement. I'm not asking whether there is a common practice or policy in this regard.

(b) if there is scientific justification for requiring that apple fruit is sourced from an orchard free of fire blight, is there any scientific justification for distinguishing between a severely blighted orchard and one in which a limited number of strikes occurs?

(c) if there is justification for requiring that apple fruit is sourced from an orchard free of fire blight, can this freedom be maintained without requiring that the orchard be surrounded by a fire blight free buffer zone.

Chair

134. I'll follow the order that we followed before and invite Dr Smith to address this question.

Dr Smith

135. Well, Mr Chairman, the justification of requiring that fruits should come from a fire blight-free site is that it solves all your problems. All th

blight. There was no fire blight but at first we did not do a complete survey. Still I think having fire blight in one place in a continent like Australia, could affect other apple producing areas. They were considering it to be very dangerous. I think this is an extreme.

143. On the other hand going back to orchards, it's a matter of negotiation. You can make a requirement that an orchard has to be free of fire blight for five years and subject to careful inspections held by qualified people which can identify or detect the pathogen unambiguously. There are many things in between when you ask me for my personal opinion. The risk even when food is picked from a papaya plant orchard is low that this will spread fire blight. I think we discussed that issue many times in the last and in this meeting. But politically it might not be so easy. People say you have fire blight and there might be fruit with fire blight, so it's dangerous. I think these negotiations have to be done between the parties and scientifically it might be difficult to define fire blight in a large orchard because it's hard to detect when its occurring. I know from the institute I am with now, usually there are 10-20 strikes per year in an orchard, maybe two hectares, which is not that big but still its not easy to look at everything. Is that a fire blight orchard or not? Of course the people say that they will remove the branches and the people are wondering where the fire blight is coming from. They always blame the hawthorn hedges and something else outside. This is of course the discussion we are not really having. When infested host plants are not in the orchards they are somewhere else. Back to the answer, I think the chance for blighted orchards to introduce fire blight by a fruit is low.

Chair

144. Thank you very much. So can we go on to the second question ?

145. In its comments on the experts replies to the questions Japan indicates in paragraph 9 that in light of the Japanese environment the most likely pathway scenario will be in surburban areas where most of the population live but not inside the orchards. Does this statement by Japan alter your previous replies regarding the likelihood of completion of the pathway for the introduction of fire blight into Japan through importation of mature symptomless apple fruit from the United States.

Dr Smith

146. Well Mr Chairman, first of all, I would say that this most likely scenario is one which applies not only in Japan, but almost in every case where fire blight has spread from one country to another. Although the authorities have tried to monitor the situation in orchards and detect the first signs in orchards, it's not in the orchards that they were found. They were found in gardens, parks, along motorways. These places are not normally inspected. It is easier for fire blight to appear and to start multiplying to form quite an outbreak without being noticed under those conditions. But this, I must say, applies to a situation where fire blight is spreading naturally by insect or by wind over a relatively short distances from infected plants. In that respect it is not the same scenario as the introduction from fruits entering by intercontinental trade. I don't think that the basic question whether an infected fruit provides inoculum which a vector could transfer to a susceptible host is much altered by the question whether that susceptible host is an apple tree in an orchard or whether it is a Cotoneaster growing in a garden.

Chair

147.

Chair

156. Thank you. Dr Hale

Dr Hale

157. Mr Chairman, again, I think that has been expressed very well. I find this question rather difficult to answer to be perfectly frank. I would have thought that processing facilities do in fact have an identification system for the origin of fruit which they process. Whether the available scientific evidence shows that this is necessary is another question. I would have thought that the practice is needed for other reasons as well, and I frankly find this question rather outside my experience. I can only talk from experience within New Zealand and the processing facilities do reliably identify the origin of apples. In fact, every case of apples, and in many cases each apple is identified and can be identified back to an orchard. If you look at a lot of New Zealand apples in the market place, they will have a sticker on them which has a number on which actually relates back to the orchard from where those apples came. I think that the processing facilities do reliably identify the origin of apples and I'm sure that in most cases the US has a similar system. I'm certain that US apples which come to New Zealand, for example, can be identified back to the processing facility and the orchard involved. This is not to do with disease situations in particular, but it is usually to do with supermarket traceability of those particular items of fruit.

Dr. Smith

158. The need to maintain the integrity of consignments does not, of course, necessarily relate only to one pest, fire blight, and whether the apples are going to New Zealand, Japan or wherever. They are not being certified only for one pest. The whole procedure of phytosanitary certification is, in any case, required for exported apples. I don't see any alternative.

Chair

159. Dr Geider, do you have anything to add ?

Dr Geider

160. The question reminds me about BSE habits developed in Europe and especially in Germany that you can trace back all meat to the farmer. Even if that can be done, what does it help ? Will you say we are now proving that we somehow got fire blight out of one apple or detected a few *E. amylovora* cells in an apple are now doing something to the orchard ? Do you want to prove that they have fire blight and they are not allowed to export anymore or what would be the consequence ? The question is a little bit difficult scientifically. Probably things can be traced back but even if you do that there are very rare occasions that an apple can be associated with fire blight.

Chair

161. Thank you very much.

162. In Japan's written response to a question posed by the Panel on post harvest requirements Japan states that it has been suspected, for a long time, that healthy fruit can be infected with fire blight bacteria from contact with infected fruit (a) are you aware of scientific evidence demonstrating that healthy apples can be infected through contact with infected fruit, (b) if such evidence exists does it suggest that all apples could become infected or that only damaged apples are susceptible to infection through contact with infected fruit and (c) is there any evidence that such spread of infection has occurred through trade in apple fruit.

Chair

171. In that case I will go on to the last question. The Panel recalls that the scientific experts have previously been asked to comment on the availability of scientific evidence supporting post harvest treatment of apple fruit. The Panel notes that Japan has asserted that Japan's post harvest requirement such as packing facilities, disinfection requirements are normal requirements in any process. To what extent do Japanese post harvest treatments e.g. surface disinfestations, disinfection of packing facilities, separation of fruit destined for Japan represent commonly accepted commercial practice. To what extent are these types of treatment normally identified in phyto sanitary certificates accompanying apple exports. If apples were sourced from a severely blighted orchard would this alter your responses to previous questions related to scientific evidence supporting post harvest treatment. Dr Smith I think this is probably more in your field.

Dr Smith

172. Surface disinfestation of apples is not worldwide, I would say, a regularly accepted

fruit. Disinfection of packing facilities, whilst this is normal practice – certainly in the packing facilities within New Zealand – I don't believe it needs to be made a mandatory situation or regulation. Separation of fruit destined for Japan is not a major problem at all. Certainly within the packing facilities that I have been involved with in New Zealand, we can separate fruit destined for just about any market anywhere in the world. Ninety five per cent of the apple fruit which is produced in New Zealand is in fact exported to markets all over the world. It is separated in the process of packing for the destination by requirements which may be "small fruit", "large fruit", the colour and type of fruit, the variety and so on. That is not a major issue.

176. To what extent are the treatments normally identified in phytosanitary certificates accompanying apple exports? I believe that there is some identification in phytosanitary certificates for exports of apple fruit for treatments for insect pests, but I am not aware of any necessarily for diseases. As for apples sourced from a severely blighted orchard- our experience is that surface contamination is not a problem. The only area where the bacteria would reside would be in the calyx and that would not be affected by any of the disinfestation treatments.

Chair

177. Thank you very much. Dr Geider.

Dr Geider

178. I think I pointed out last time that I am personally a little bit concerned about chlorine treatment of apples because chlorine has certainly other effects including some effects on human health. I agree with the others that it might not help to get sterile surface of apples where everything is fine. I think it is a goodwill action that you say "I have done something and you should feel safe now", and for those reasons we should seriously consider if this is by legal requireme6-afe 4-6.a

fruit harvested from severely blighted orchards and discuss how your opinion is based on that evidence.

Dr Smith

183. Mr Chairman, I am not quite sure how I understand that question. I can take it by analogy with Europe. Apples are freely traded between European countries and so are pears, and fire blight is widespread in many European countries but fire blight is also controlled in commercial orchards. The level of commercial fireblight control does not assure complete freedom from fire blight, and some infection most probably persists which is not seen. It would not be possible to market successfully apples or pears from severely blighted orchards. I think it is simply not realistic to address the question of fruits from severely blighted orchards. I'm not sure that it is even necessary. The key question is just how little fire blight it is advisable to have in production orchards. I don't think that it is easy to give a scientific answer to this question, because ase

Chair

195. Does that respond to the US question.

US

196. Yes Mr Chairman. Thank you.

Chair

197. Do you have any other questions.

US

198. We do not have any more questions.

Chair

199. Thank you very much. Can I ask Japan if you have any final questions for the experts.

Japan

200. Just one question. We understand that all the experts agree to some extent that mature, symptomless or mature healthy apples are the ones to be exported to Japan, and there is an issue of export control, or quality control, or export inspection, how tight it is, and without tight exporting inspection or tight export control we may never be getting what we want. You might recall the last time we met, we presented the fact that some American apples were found to have a codling moth larva in Taiwan, and you might also recall that the discussion took for the first time in the past 25 years. So now we have discovered in 2004 once again some of the American apples were found to have a codling moth larvae destined to Taiwan. Those shipments definitely have been exports certified as well as inspected by the United States. That took place in 2004 and that previous case was in 2002. Therefore it is not in a once in a twenty-five experience but taking place once in two years or maybe every year – I am just guessing.

201. Obviously I think the experts have put much emphasis on the quality of export control so that counts out any immature apples or infested applObviously pl

you are dealing with are mature and symptomless and without controls you can't be sure of that. So that if you are relying on the idea that they should be mature and symptomless, that has to be established, it has to be verified. It is an exemplary measure in itself ensuring that they are mature and symptomless. The simplest phytosanitary measure of all is a phytosanitary inspection of an exported consignment to determine whether or not the fruit are symptomless.

Chair

204. Very good. In that case I believe we may conclude our question and answer session. The secretary of the Panel will prepare a summary of all the information provided by the experts both in written responses to the questions and oral responses in today's meeting. Each of the experts will be asked to review this summary and to confirm that it accurately reflects his views. The summary will be part of the Panel's report on this dispute.

205. Before closing our proceedings I would like to invite the experts to make any final comments if they so wish.

Dr Smith

206. I will just reassert what I said a moment ago, which is that the experts conclude that there is a low probability that any mature symptomless fruit exported from the United States should be latently infected with fire blight. There is a low probability that even if such fruit (even for that matter fruit that showed symptoms) reached Japan, that fire blight will be transmitted to hosts. If that is so, the main risk and the main phytosanitary concern is to ensure that only mature symptomless fruits are exported. Adequate phytosanitary measures to ensure that are needed.

Chair

207. Thank you. Dr Hayward do you have any final comments.

Dr Hayward

208. Mr Chairman, possibly a couple of comments. I would have liked a little more time to think about the Panel's questions but I guess that the circumstances meant that we had to do it this way. To go back to question 1 I am not entirely clear about the publications of Azegami I and II, Tsukamoto I and II, but perhaps this is not a critical issue. Publications have the greatest impact when they are put out into the international arena. An international journal will have 50-100 or even more associate editors. I am not meaning to diminish the status and quality of the Journal of General Plant Pathology, but if you can get your work accepted by an international journal with the widest spectrum of referees from the widest range of background, then you really have something which you can show to the world and say "this is our work and it stands up no matter who judges it". Mr Chairman I've probably said too much.

Chair

209. Thank you very much. Dr Hale.

Dr Hale

210. Just before I sum up, I would just like to add to what Dr Hayward has just said and the fire blight community worldwide is a very strong community. There's a lot of work that has been going on regarding fire blight for many years. It's the most studied bacterial disease and on a three yearly basis we have an international workshop on fire blight. The eleventh one will be coming up in the year 2007 to be held in Portland, Oregon, and the last one was last year in July in Bologna, Italy. I would like to encourage the researchers from Japan to actually present the work that they are doing at future workshops. There was one of your colleagues from Japan at the meeting but there was no

presentation of any of the work that had been going on. I think it is very important that we as research workers in the area of plant pathology and in particular fire blight, exchange our views, and have the opportunity to exchange our views not only on a formal but on an informal basis by posters and by oral presentations at these international workshops which are held on a three year basis. I would like to really encourage you in future to make sure that the sort of work that you have been talking about, and you're starting to publish now, is in fact aired at these international workshops. We are not talking about a disease which comes up and appears on an irregular basis. This disease has been around for a long time, and we have a lot of people who are actively working in this area. I would really just like to thank the Panel for inviting me, and of course the other experts as well, to this meeting so that we can, in fact, hear the views on a personal basis particularly from Japan and also from the United States. For me, it really has not changed my views from those of two years ago, but I think we should not neglect the fact that there is some good research work which is going on in Japan and elsewhere in the world as well. If we can possibly get some collaborative work on some of these areas, I don't think it has to be under the auspices of ISPP, as I am sure that there is enough goodwill within various communities working on fire blight to be able to continue and perhaps do some further work in these areas. However, at this stage, my feeling is that we have no proof that mature symptomless apple fruit can be latently infected. We have no proof that a pathway can actually be completed. So, just as Dr Geider and the Japanese delegation mentioned, research is an ongoing process. I agree with that, but again the research work must be critically peer reviewed before it can actually stand up and persuade us, the experts, to start to change our minds. That's all I have to say.

Chair

211. Thank you very much. Dr Geider.

Dr Geider

212. Just to catch up with the last point of course I personally agree with the opinion of Dr Hale and Dr Hayward that all papers should be peer reviewed and try to submit it to high quality journals. Of course it does not guarantee that the value of the content is therefore the truth in science. It is a small selection but it is not that it is the end of the story. I think the reason that we are here is the concern from Japan to catch fire blight in the country and I think there was one point made - maybe it was in the New Zealand statement – although it is a little bit risky to do this research in Japan of course you can never say I don't know whether there are high risk facilities with labs completely isolated and then whatever. However on the other hand we are humans, we carry bacteria on our hands even if we wash them. There is always the risk that you can carry some out. Therefore I am enot completely i-21.50007 TwoAiisto7 TwoAi1.054to7wuit canNme rto tihat the vom212. h