

**2020 FIRST CONSULTATION****1 July – 30 September 2020****Compiled comments for Draft PT: Vapour heat–modified atm treatm for Cydia P. - Grapholita M (2017-037 and 2017-038)****Summary of comments**

Name	Summary	SC Response
Cuba	No hay comentarios al documento propuesto.	Noted
European Union	The comments have been introduced by the European Commission on behalf of the European Union and its Member States.	Noted
Myanmar	Agree with the document	Noted
OIRSA	Revisión Completa	Noted
Viet Nam	Viet Nam would like to support agreement with this draft	Noted

T (Type) - B = Bullet, C = Comment, P = Proposed Change, R = Rating

FAO sequential number	Para	Text	T	Comment	SC Response
1	G	(General Comment)	C	<b>Guyana</b> Guyana has no reservation regarding the draft document at this point. <i>Category : SUBSTANTIVE</i>	Noted
2	G	(General Comment)	C	<b>Australia</b> Australia has reviewed this phytosanitary treatment and is supportive of this treatment and the respective text. <i>Category : TECHNICAL</i>	Noted
3	G	(General Comment)	C	<b>Costa Rica</b> I agree with the draft. No comment <i>Category : SUBSTANTIVE</i>	Noted
4	G	(General Comment)	C	<b>Paraguay</b> Paraguay agrees with Cosave's comments <i>Category : TECHNICAL</i>	Noted
5	G	(General Comment)	C	<b>Argentina</b> We have no comments on this phytosanitary treatment <i>Category : SUBSTANTIVE</i>	Noted
6	G	(General Comment)	C	<b>Slovenia</b> Slovenia would like to formally endorse the EPPO comments submitted via the IPPC Online Comment System.	Noted

7	G	(General Comment)	C	<p><i>Category : TECHNICAL</i></p> <p><b>European Union</b>                  The procedure describes the vapour heat treatment under modified atmosphere of fruit which results in the mortality of eggs and larvae of the Apple moth and Eastern moth respectively.                  However, this approach does not describe any technical details and does not guarantee the preservation of external and taste qualities of the fruit, as well as the carbohydrates, sugars and organic acids it contains (exposure in a vapour heat and modified atmosphere chamber and once the treatment is complete, the fruit is cooled with forced air of 0 °C or above.) The changes and loss of these features may directly affect on decrease in the demand in international markets that ultimately can reflect on export potential.                  Kindly ask you to provide reasonable facts that this procedure (standard) will not affect the quality of the product (apples, peach, etc.). A caveat might be added in the "Other relevant information" section.</p> <p><i>Category : TECHNICAL</i></p>	<p><b>CONSIDERED BUT NOT INCORPORATED</b>                  The text of the draft annex contains (in a footer note) the following statement:                  "In addition, potential effects of treatments on product quality are considered for some host commodities before their international adoption. However, evaluation of any effects of a treatment on the quality of commodities may require additional consideration."</p>
8	G	(General Comment)	C	<p><b>Japan</b>                  1. According to the draft standard, the amount of treated insects for calculation of the efficacy is 25,882 and the efficacy level of the treatment is 99.9884%. However, many countries (including Japan) use a treatment in actual international trade for which the amount of treated insects is more than 30,000 and the efficacy level is more than 99.99%. Japan would like to recommend that more than 30,000 be tested so that more countries will be able to adopt the treatment schedule. For reference, "Guidelines for the Development of Vapor Heat Disinfestation Treatments for Fruit Fly Host Commodities" published by Phytosanitary Measures Research Group (PMRG) in February 2019 mentions that "an example of a procedure (of large scale testing) that has been widely used is mortality trials testing 30,000".</p> <p>2. Neven &amp; Rehfield-Ray (2006) indicates that 31,331 insects in apple were treated, but the amount of treated insects for calculation of the efficacy is 25,882 in the draft standard. It is not clear why the deference of the numbers occurs, so it is recommended that the source of information for calculating the number of treated insects as 25,882 be referred in the standard as reference.</p> <p>3. The number of target pest and efficacy on peach should be described in the PT with relevant references after reviewing supplemental data if necessary.</p>	<p><b>CONSIDERED BUT NOT INCORPORATED</b>                  1. The level of efficacy required by countries for measures that may include treatments should reflect what that country has determioned to be their appropriate level of protection (ALOP). While some countieres have stipulated the level or protection (efficacy) they require for some pests or pest groups, many have not and as such may use a treatment that achieves an efficacy of 99.9884%. It should also be considered that a treatment may be adopted as part of a systems approach to the management of pest risk, and the efficcay of the system as a whole including the treatment may be sufficient to meet the countries ALOP.                  2. Neven &amp; Rehfield-Ray (2006) estimated the mean number of insects treated at 31,331. The TPPT noted in their 2019 report that they estimated the number of insects treated to a 95% level of confidence.                  3. All supporting evidence is provided in the reference list. The draft treatment is for the pest and fruit types used in the research supporting the treatment. The TPPT did nt consider it necessary to provide separate schedules for each of the fruit types supported by this treatment (apple and peach/nectarine).                  4. Testing the tolerances of geographically separated populations of a single species is not something the TPPT has required for treatment development. The TPPT did request this for a species of Tephritidae that</p>

				<p>Para [126] of the 2019 TPPT report states that the fourth-instar larva of codling moth on apple is the most tolerant than other stages on apples and peaches (include nectarines). The level of efficacy stated in the PT was calculated based on the results of a confirmation test of VHT + MA treatment of codling moth on apple. However, ISPM28 annexes have not previously been examined whether the comparison of treatment efficacy across more than two commodities (cross-items) is appropriate, except for irradiation treatment and treatments against woods. While a phenomenon in which the treatment intensity differs between different fruit species is observed as described in Dohino et al. (2017), the reason for this has not been clarified. It may not be appropriate to carry out the evaluation for peaches in this draft under such circumstance. If peaches are to be included in the PT together with apples, peaches itself should be evaluated individually based on relevant references data of peaches, just like apples.</p> <p>4. Japan would like to check whether TPPT has reviewed the difference of treatment tolerance between different geographical populations of target pests. Japan recognizes, through the past country consultations of Annexes of ISPM28, TPPT has reviewed potential differences of treatment tolerance between different geographic populations of Tephritidae against temperature treatment such as VHT, but has not yet reviewed those of Lepidoptera against VHT and MA. <i>Category : SUBSTANTIVE</i></p>	<p>had recently had a range expansion due to changes in taxonomy. This range expansion resulted in research from different areas producing potentially conflicting results for treatment tolerances. A study to compare tolerances of geographically separated populations in a single laboratory was undertaken to resolve these conflicting results. No such conflicting results are evident for <i>Cydia pomonella</i> or <i>Grapholita molesta</i>.</p>
9	G	(General Comment)	C	<p><b>OIRSA</b> No momentous comments for this document. <i>Category : SUBSTANTIVE</i></p>	Noted
10	G	(General Comment)	C	<p><b>Barbados</b> Barbados has no changes to make to this draft. <i>Category : SUBSTANTIVE</i></p>	Noted
11	G	(General Comment)	C	<p><b>Mexico</b> I support the document as it is and I have no comments <i>Category : SUBSTANTIVE</i></p>	Noted
12	G	(General Comment)	C	<p><b>Uruguay</b> We agree with the document as it is <i>Category : TECHNICAL</i></p>	Noted
13	G	(General Comment)	C	<p><b>United States of America</b> The treatment, as currently written, has potential implementation issues related to commodity (apples) damage. <i>Category : TECHNICAL</i></p>	<p><b>CONSIDERED BUT NOT INCORPORATED</b> The text of the draft annex contains (in a footer note) the following statement: "In addition, potential effects of treatments on product quality are considered for some host commodities before their international adoption. However,</p>

					evaluation of any effects of a treatment on the quality of commodities may require additional consideration.”
14	G	(General Comment)	C	<p><b>EPPO</b> The procedure describes the vapour heat treatment under modified atmosphere of fruit which results in the mortality of eggs and larvae of the Apple moth and Eastern moth respectively. However, this approach does not describe any technical details and does not guarantee the preservation of external and taste qualities of the fruit, as well as the carbohydrates, sugars and organic acids it contains (exposure in a vapour heat and modified atmosphere chamber and once the treatment is complete, the fruit is cooled with forced air of 0 °C or above.) The changes and loss of these features may directly affect on decrease in the demand in international markets that ultimately can reflect on export potential. Kindly ask you to provide reasonable facts that this procedure (standard) will not affect the quality of the product (apples, peach, etc.). A caveat might be added in the “Other relevant information” section. <i>Category : TECHNICAL</i></p>	<p><b>CONSIDERED BUT NOT INCORPORATED</b> The text of the draft annex contains (in a footer note) the following statement: “In addition, potential effects of treatments on product quality are considered for some host commodities before their international adoption. However, evaluation of any effects of a treatment on the quality of commodities may require additional consideration.”</p>
15	G	(General Comment)	C	<p><b>Qatar</b> We don't have any comment <i>Category : SUBSTANTIVE</i></p>	Noted
16	G	(General Comment)	C	<p><b>Malawi</b> We agree with draft annex <i>Category : SUBSTANTIVE</i></p>	Noted
17	G	(General Comment)	C	<p><b>United States of America</b> The US supports this treatment, but we are concerned that the treatment details as described in the draft annex may not align with the treatment details in the original submission package. Edits are recommended to the treatment description, for example, we recommend adding the maximum heating rate (maximum of 12°C/hour is important for apples). We recommend the TPPT contact the submitter, Dr. Lisa Neven, to review and provide wording suggestions for the draft annex. Because this will be the first CATTs treatment adopted by IPPC, and since CATTs is a complex treatment, we think it's important to carefully review the details of how the treatment is described. <i>Category : TECHNICAL</i></p>	<p><b>INCORPORATED</b> The treatment descriptions provided are intended to ensure the treatment will achieve the stated level of efficacy. When considering issues of commodity quality, the draft annex contains (in a footer note) the following statement: “In addition, potential effects of treatments on product quality are considered for some host commodities before their international adoption. However, evaluation of any effects of a treatment on the quality of commodities may require additional consideration.” Dr. Lisa Neven has been contacted during the development of this treatment schedule.  To further help manage potential commodity impacts from the application of this treatment, we have added the following text to section on additional information: “To minimize effects on commodity quality, users should refer to the papers Neven, L.G. &amp; Rehfield-Ray, L. (2006) and Neven, L.G., Rehfield-Ray, L.M. &amp; Obenland, D. (2006)”</p>

18	G	(General Comment)	C	<b>Thailand</b> Thailand has no objection on the proposed draft Vapour heat–modified atmosphere treatment for <i>Cydia pomonella</i> and <i>Grapholita molesta</i> on <i>Malus pumila</i> and <i>Prunus persica</i> . <i>Category : SUBSTANTIVE</i>	Noted
19	G	(General Comment)	C	<b>Singapore</b> Singapore has no issue with this standard. <i>Category : EDITORIAL</i>	Noted
20	G	(General Comment)	C	<b>Venezuela</b> La parte técnica del Organismo Fitosanitario de Venezuela, al analizar el proyecto de NIMF: normas para medidas fitosanitarias para productos, concluyo estar de acuerdo con lo planteado por el Grupo de debate sobre normas <i>Category : TECHNICAL</i>	Noted
21	G	(General Comment)	C	<b>UZBEKISTAN</b> The procedure describes the vapour heat treatment under modified atmosphere of fruit which results in the mortality of eggs and larvae of the Apple moth and Eastern moth respectively.  However, this approach does not describe any technical details and does not guarantee the preservation of external and taste qualities of the fruit, as well as the carbohydrates, sugars and organic acids it contains (exposure in a vapour heat and modified atmosphere chamber and once the treatment is complete, the fruit is cooled with forced air of 0 °C or above.) The changes and loss of these features may directly affect on decrease in the demand in international markets that ultimately can reflect on export potential.  Kindly ask you to provide reasonable facts that this procedure (standard) will not affect the quality of the product (apples, peach, etc.). <i>Category : SUBSTANTIVE</i>	<b>INCORPORATED</b> The text of the draft annex contains (in a footer note) the following statement: “In addition, potential effects of treatments on product quality are considered for some host commodities before their international adoption. However, evaluation of any effects of a treatment on the quality of commodities may require additional consideration.”  To further help manage potential commodity impacts from the application of this treatment, we have added the following text to section on additional information: “To minimize effects on commodity quality, users should refer to the papers Neven, L.G. & Rehfield-Ray, L. (2006) and Neven, L.G., Rehfield-Ray, L.M. & Obenland, D. (2006)”
DRAFT ANNEX TO ISPM 28: Vapour heat–modified atmosphere treatment for <i>Cydia pomonella</i> and <i>Grapholita molesta</i> on <i>Malus pumila</i> and <i>Prunus persica</i> (2017-037 and 2017-038)					
22	1	<b>DRAFT ANNEX TO ISPM 28: Vapour heat–modified atmosphere treatment for <i>Cydia pomonella</i> and <i>Grapholita molesta</i> on <i>Malus pumila</i> and <i>Prunus persica</i> (2017-037 and 2017-038)</b>	C	<b>Nepal</b> we have no comments in the document <i>Category : EDITORIAL</i>	Noted

23	1	<b>DRAFT ANNEX TO ISPM 28: Vapour heat–modified atmosphere treatment for <i>Cydia pomonella</i> and <i>Grapholita molesta</i> on <i>Malus pumila</i> and <i>Prunus persica</i> (2017-037 and 2017-038)</b>	C	<b>Viet Nam</b> Viet Nam would like to support agreement with this draft <i>Category : SUBSTANTIVE</i>	Noted
Treatment description					
24	26	<b>Treatment type</b> <u>Modified atmosphere combined vapour heat treatment</u> ”Physical (vapour heat) and modified atmosphere	P	<b>China</b> More accurate. <i>Category : SUBSTANTIVE</i>	<b>CONSIDERED BUT NOT INCORPORATED</b> The text as currently written aligns with previous treatment annexes to ISPM 28.
25	27	<b>Target pests</b> <i>Cydia pomonella</i> Linnaeus (Lepidoptera: Tortricidae) and <i>Grapholita molesta</i> (Busck) (Lepidoptera: Tortricidae)	C	<b>European Union</b> <i>Cydia pomonella</i> (Linnaeus) <i>Category : EDITORIAL</i>	<b>INCORPORATED</b> ' <i>Cydia pomonella</i> (Linnaeus)' is correct.
26	27	<b>Target pests</b> <i>Cydia pomonella</i> ( <del>Linnaeus-Linnaeus</del> ) (Lepidoptera: Tortricidae) and <i>Grapholita molesta</i> (Busck) (Lepidoptera: Tortricidae)	P	<b>China</b> More accurate. <i>Category : EDITORIAL</i>	<b>INCORPORATED</b> ' <i>Cydia pomonella</i> (Linnaeus)' is correct.
27	27	<b>Target pests</b> <i>Cydia pomonella</i> Linnaeus (Lepidoptera: Tortricidae) and <i>Grapholita molesta</i> (Busck) (Lepidoptera: Tortricidae)	C	<b>UZBEKISTAN</b> can this procedure be implemented for melon as well and is it effective against melon fruit fly ( <i>Bactrocera cucurbitae</i> )? <i>Category : TECHNICAL</i>	<b>CONSIDERED BUT NOT INCORPORATED</b> The treatment as described may be effective against other pests not listed, however no evidence was provided to support including any other pests in the treatment description at this time. If information is available to support the use of this treatment on other pests, that information can be submitted to the IPPC Secretariat for consideration by the TPPT.
Treatment schedule					

28	31	with air temperature held at 45 °C or above	C	<b>Malawi</b> There is need to be specific temperature and not 45 above <i>Category : SUBSTANTIVE</i>	<b>CONSIDERED BUT NOT INCORPORATED</b> It is generally accepted that the efficacy of a temperature based treatment increases with increasing temperature (above 35-40°C). Therefore the TPPT is confident that temperatures at or above 45°C will achieve or exceed the stated level of efficacy. Requiring treatmets achieve a specific temperature only would be practically very difficult under operational environments.
29	34	to maintain a fruit core temperature of 44.5 °C or above and relative humidity <del>between 90% and 95%</del> <u>or above</u> for at least 25 minutes.	P	<b>Japan</b> It is considered that mortality is not affected even if the relative humidity exceeds 95%. In addition, the adopted PTs of vapor heat treatment do not have the upper limit of relative humidity. <i>Category : TECHNICAL</i>	<b>INCORPORATED</b> While it is generally accepted that the efficacy of a temperature based treatment increases with increasing temperature (above 35-40°C), the same can not be said for levels of relative humidity. On review the TPPT considered that a minimum level of humidity would be appropriate, and the suggested change in the text was accepted.
30	35	Once the treatment is complete, the fruit may be cooled with forced air that is at 0 °C or above.	C	<b>Egypt</b> it is more reliable if a reference added referring to the quality of the fruits after cooling, this is to assure the quality was not affected after the drop in the temperature regarding the forced air <i>Category : TECHNICAL</i>	<b>INCORPORATED</b> The text of the draft annex contains (in a footer note) the folowing statement: "In addition, potential effects of treatments on product quality are considered for some host commodities before their international adoption. However, evaluation of any effects of a treatment on the quality of commodities may require additional consideration."  To further help manage potential commodity impacts from the application of this treatment, we have added the following text to section on additional information: "To minimize effects on commodity quality, users should refer to the papers Neven, L.G. & Rehfield-Ray, L. (2006) and Neven, L.G., Rehfield-Ray, L.M. & Obenland, D. (2006)"
31	36	There is 95% confidence that the treatment according to this schedule kills not less than 99.9884% of eggs and larvae of <i>Cydia pomonella</i> and <i>Grapholita molesta</i> .	C	<b>Botswana</b> agreed <i>Category : SUBSTANTIVE</i>	Noted
<b>Other relevant information</b>					
32	39	The efficacy of this schedule was calculated based on a total of 25 882 fourth- and fifth-instar larvae of <i>Cydia pomonella</i> treated with no survivors; the control survival was 89.6%.	C	<b>European Union</b> This paragraph only mentions instars, but is this also true for the eggs: did no eggs hatch following treatment? <i>Category : TECHNICAL</i>	<b>CONSIDERED BUT NOT INCORPORATED</b> When developing the treatment the reseachers confirmed that fourth- and fifth-instar larvae of <i>Cydia pomonella</i> were equally or more tolerant of the treatment than any other egg or larval lifestage of <i>Cydia pomonella</i> and <i>Grapholita molesta</i> . Therefore the TPPT considered that the stated treatment efficacy

					would be achieved or exceeded for any egg or larval lifestage of <i>Cydia pomonella</i> and <i>Grapholita molesta</i> .
33	39	The efficacy of this schedule was calculated based on a total of 25 882 fourth- and fifth-instar larvae of <i>Cydia pomonella</i> treated with no survivors; the control survival was 89.6%.	C	<b>China</b> Suggest listing the references and putting the larvae corrected per replicate for control mortality. To be consistent with the other PTs of ISPM 28. <i>Category : SUBSTANTIVE</i>	<b>CONSIDERED BUT NOT INCORPORATED</b> Information on the analysis of the data is provided in the 2019 report of the TPPT.
34	39	The efficacy of this schedule was calculated based on a total of 25 882 fourth- and fifth-instar larvae of <i>Cydia pomonella</i> treated with <b>no survivors</b> ; the control survival was 89.6%.	C	<b>EPPO</b> This paragraph only mentions instars, but is this also true for the eggs: did no eggs hatch following treatment? <i>Category : TECHNICAL</i>	<b>CONSIDERED BUT NOT INCORPORATED</b> When developing the treatment the researchers confirmed that fourth- and fifth-instar larvae of <i>Cydia pomonella</i> were equally or more tolerant of the treatment than any other egg or larval lifestage of <i>Cydia pomonella</i> and <i>Grapholita molesta</i> . Therefore the TPPT considered that the stated treatment efficacy would be achieved or exceeded for any egg or larval lifestage of <i>Cydia pomonella</i> and <i>Grapholita molesta</i> .
35	40	The air humidity is lower at the beginning of the treatment to prevent condensation on the fruit and hence maintain fruit quality. <u>The schedule was developed using cultivars "XXXX"</u> .	P	<b>Japan</b> It should include the cultivars which was used for the development of treatment schedule as reference information. The adopted PTs of temperature treatment have information on cultivars which was used for the development of treatment schedule. <i>Category : TECHNICAL</i>	<b>CONSIDERED BUT NOT INCORPORATED</b> The TPPT has included information of cultivars when they consider either the taxonomy of the cultivars may change in future revisions or the level of efficacy achieved may be affected by the cultivar used. Neither of these circumstances exist in this situation.
36	40	The air humidity is lower at the beginning of the treatment to prevent condensation on the fruit and hence maintain fruit quality.	C	<b>Botswana</b> agreed <i>Category : SUBSTANTIVE</i>	Noted
References					
37	41	<b>References</b>	C	<b>Australia</b> There are more recent papers evaluating vapour heat treatment that have not been referenced. Propose these too are considered. <i>Category : SUBSTANTIVE</i>	<b>CONSIDERED BUT NOT INCORPORATED</b> The text contains the references most relevant to the development of the annexes. The reference list is not intended to be a general literature review on the subject.



