

2020 FIRST CONSULTATION

1 July – 30 September 2020

Compiled comments for Draft PT: Irradiation Treatment for Tortricidae on fruits (2017-011)

Summary of comments

Name	Summary	SC Response
Argentina	Provided a single no comment on the draft PT	Noted
Australia	Provided a single comment supporting the draft PT	Noted
Barbados	Provided a single comment proposing no changes to the draft PT	Noted
Botswana	Provided a single comment endorsing the draft PT	Noted
China	Provided three comments – one raising concerns on the extrapolation of data to the family level; one on the wording of adult state post-treatment to ensure efficacy has been achieved; and one proposing changes to the text of the commodity extrapolation of irradiation.	Noted
Costa Rica	Single comment endorsing the draft PT with a 'no comment' response	Noted
Egypt	Single comment on referencing a publication to support the cited data.	CONSIDERED Supporting information supporting the proposed schedule is already referenced in the draft PT, with the approach being consistent with previous Annex PTs.
EPPO / European Union	Three comments on editorial changes to referencing in the draft PT.	INCORPORATED or MODIFIED Two editorial changes were included in an amended draft PT. The remaining comment resulted in changes to an erroneous citation also.
European Union	Five comments provided – four on referencing/editorial issues, the remaining a statement.	CONSIDERED or INCORPORATED or MODIFIED Three editorial changes were included in an amended draft PT. One comment resulted in changes to an erroneous citation also. The remaining comment is for noting only and required no further response.
Guyana	Single comment expressing no reservations with the draft PT.	Noted
Malawi	Two comments – one endorsing the draft PT; the other on the wording of the commodity extrapolation text.	CONSIDERED Current wording retained to be consistent with existing Annex PT schedules.
Mexico	Single comment endorsing the draft PT	Noted
Nepal	Single 'no comment' response	Noted
OIRSA	Single 'no comment' response	Noted

Panama	Single comment on the wording of the scope text, strengthening from 'consideration' to 'test'	CONSIDERED Wording retained to be consistent with previous Annex PTs. However, referred to the Secretariat for confirmation on the Spanish translation.
Paraguay	Single comment endorsing the draft PT	No further consideration
PPPO	Single comment on the MAP restrictions.	CONSIDERED No revision to MAP restrictions for Tortricidae supported at this time.
Qatar	Single 'no comment' response	Noted
Singapore	Single comment endorsing the draft PT	Noted
Slovenia	Single comment endorsing the draft PT	Noted
Thailand	Single comment expressing no objections to the draft PT	Noted
Uruguay	Single comment endorsing the draft PT	Noted
Viet Nam	Single comment endorsing the draft PT	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	Guyana Guyana has no reservation regarding the draft document at this point. <i>Category : SUBSTANTIVE</i>	Noted
2	G	(General Comment)	C	Australia 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	China More evidences for tolerance comparing or large-scale confirmatory trails on Tortricidae species are recommended to be done for this PT. This is a general standard for the family Tortricidae, but currently only <i>Grapholita molesta</i> has been conducting the large-scale confirmatory tests, more species should be tested to support the generic dose defined in this standard. <i>Category : SUBSTANTIVE</i>	Considered but not incorporated. While the efficacy under the draft annex is determined on the basis of <i>Grapholita molesta</i> , the TPPT has reviewed a considerable amount of available research across Lepidoptera in determining the proposed 250Gy dose. Key factros supporting the generic 250Gy dose for Tortricidae are provided by the detailed review by Hallman <i>et al.</i> (2013) and include the following relevant points: 1. The authors identified 54 studies in Lepidoptera where an irradiation dose was applied to late-instars and with at least one dose resulting in adult non-emergence. This included an analysis of 33 species across 11 families of Lepidoptera (number of species by family included 1 Arctiidae, 1 Carposinidae, 3 Crambidae, 1 Elachistidae, 6 Gelenchiidae, 1 Gracillaridae, 1

					<p>Lymantriidae, 7 Noctuidae, 15 Pyralidae, 2 Tineidae and 16 Tortricidae). All but four of the reviewed publications reported a dose of ≤ 250Gy. Of those four, 300Gy and 350Gy was reported for <i>Plodia interpunctella</i>, 289Gy for <i>Cryptophlebia illepida</i>, and 300Gy for <i>Opogona sacchari</i>. For <i>P. interpunctella</i>, the two > 250Gy publications contradicted 6 other studies which reported non-emergence with doses of 100-200Gy. For <i>O. sacchari</i> at 300Gy, the findings were again contradicted by another study showing efficacy at 240Gy to achieve non-emergence. Hallman <i>et al.</i> (2013) also note that in both <i>O. sacchari</i> studies, only very few adults survived lower doses and no distinction was made between normal and abnormal adults following treatment. Further, the authors cite an additional study which reported 150Gy as sufficient to prevent F1 egg hatch from emerged adults – 250Gy providing an appropriate margin of security on top of the reported 150y dose. For <i>C. illepida</i>, Hallman <i>et al.</i> (2013) note the supporting research publication provided sufficient margin to give confidence in a dose of < 250Gy as efficacious. First, the actual absorbed doses applied ranged from 150Gy to 289Gy, with many of the target insects treated at doses well below 250Gy with no adult emergence. Secondly, the next lowest dose tested by the authors at 125Gy suggests doses applied in practice likely ranged from 75-145Gy, with only 1.4% adult emergence. Accordingly, an intermediate dose between 125Gy and 250Gy would likely achieve the appropriate efficacy. The authors also reference another species in the genus, <i>C. ombrodelta</i>, as being more radiosusceptible, further supporting a generic dose of 250Gy.</p> <p>2. The proposed dose of 250Gy is considered to be conservative as it exceeds the dose required to achieve non-emergence for almost all studies and species tested in the literature. Further, significant overhead is applied in a commercial setting, with doses to commercial loads exceeding the target</p>
--	--	--	--	--	--

					<p>dose to account for variation in the distribution of dose in the chamber. For example, to meet the Dmin requirements closer to 300Gy for a 250Gy target Dmin.</p> <ol style="list-style-type: none"> 3. While there is sufficient evidence to support the extrapolation of a generic 250Gy Dmin dose to all Lepidoptera, larger scale confirmatory studies have primarily focused on Tortricidae with predominantly small scale studies being undertaken in Arctiidae, Carposinidae, Crambidae, Elachistidae, Gelechiidae, Gracillariidae, Lymantiidae, Noctuidae and Pyralidae. The restriction of scope to Tortricidae is sufficiently supported. 4. Existing schedules for irradiation of Tortricidae are already approved by the IPPC/APHIS at ≤250Gy including 200Gy for <i>Cydia pomonella</i>, 250Gy for <i>Cryptophlebia illepida</i> and <i>Cryptophlebia ombrodelta</i>, and 200-232Gy for <i>Grapholita molesta</i>. 5. The body of evidence used to support a generic dose for Tortricidae is consistent with that applied for the annex schedule approved for Tephritid fruit flies at 150Gy. 6. Other studies available in the literature do not contradict the proposed dose of 250Gy for Tortricidae eggs and larvae, but were not explicitly tabulated in Hallman <i>et al.</i> (2013) as they did not meet the minimum requirements for the authors analyses. <p>The TPPT considers that the research is sufficient, in terms of both coverage of species and numbers of treated insects, to support a generic dose of 250Gy for at least the family Tortricidae, and that the dose includes an appropriate margin of error to provide NPPOs with confidence in achieving efficacy for trade (accounting for non-emergence as the target treatment objective, dose overhead in commercial lots; and being sufficiently in excess of dosages reported in the literature for many Tortricidae species). For the few outlier studies identified with a reported dose of >250Gy (<i>P. punctiferalis</i>, <i>O. sacchari</i> and <i>C. illepida</i>), these are either external to Tortricidae, contradicted by other studies, or have sufficient margin in the methodology to suggest lower doses are efficacious. However, should new data become available to suggest otherwise, the</p>
--	--	--	--	--	---

					TPPT would review this information in context with the appropriateness of existing annex PTs.
4	G	(General Comment)	C	Costa Rica I agree with the draft. No comments <i>Category : SUBSTANTIVE</i>	Noted
5	G	(General Comment)	C	Paraguay Paraguay agrees with Cosave's comments <i>Category : TECHNICAL</i>	Noted
6	G	(General Comment)	C	Argentina We have no comments on this phytosanitary treatment <i>Category : SUBSTANTIVE</i>	Noted
7	G	(General Comment)	C	Slovenia Slovenia would like to formally endorse the EPPO comments submitted via the IPPC Online Comment System. <i>Category : TECHNICAL</i>	Noted
8	G	(General Comment)	C	OIRSA Sin comentarios trascendentales para este documento. <i>Category : SUBSTANTIVE</i>	Noted
9	G	(General Comment)	C	Barbados Barbados has no changes to make to this draft ISPM . <i>Category : SUBSTANTIVE</i>	Noted
10	G	(General Comment)	C	European Union The comments by the EU are provided without prejudice to the European Union food safety legislation imposing limitations on the acceptance of irradiated goods. <i>Category : SUBSTANTIVE</i>	Noted
11	G	(General Comment)	C	Mexico I support the document as it is and I have no comments <i>Category : SUBSTANTIVE</i>	Noted
12	G	(General Comment)	C	Uruguay We agree with the document as it is <i>Category : TECHNICAL</i>	Noted
13	G	(General Comment)	C	Qatar We don't have any comment <i>Category : SUBSTANTIVE</i>	Noted
14	G	(General Comment)	C	Malawi we agree with draft annex <i>Category : SUBSTANTIVE</i>	Noted
15	G	(General Comment)	C	Thailand Thailand has no objection on the proposed draft Irradiation treatment for Tortricidae on fruits. <i>Category : SUBSTANTIVE</i>	Noted
16	G	(General Comment)	C	Singapore Singapore is supportive of this. <i>Category : EDITORIAL</i>	Noted
DRAFT ANNEX TO ISPM 28: Irradiation treatment for Tortricidae on fruits (2017-011)					

17	1	DRAFT ANNEX TO ISPM 28: Irradiation treatment for Tortricidae on fruits (2017-011)	C	Nepal We don't have any comments to this document <i>Category : EDITORIAL</i>	Noted
18	1	DRAFT ANNEX TO ISPM 28: Irradiation treatment for Tortricidae on fruits (2017-011)	C	Viet Nam Viet Nam would like to support agreement with this draft <i>Category : SUBSTANTIVE</i>	Noted
19	24	The scope of phytosanitary treatments does not include issues related to pesticide registration or other domestic requirements for contracting parties' approval of treatments. Treatments adopted by the Commission on Phytosanitary Measures may not provide information on specific effects on human health or food safety, which should be addressed using domestic procedures before contracting parties approve a treatment. In addition, potential effects of treatments on product quality are considered for some host commodities before their	C	Panama The version in spanish change the word "Consideration" to the word "test". Its important to maintain the correlation between words in all the languages. <i>Category : TRANSLATION</i>	Considered but not incorporated. The word " <i>consideration</i> " is retained under [24], consistent with the english version fo the draft PT and previous PT annex schedules under ISPM 28. The intention is to simply highlight that the proposed schedule is determined to address quarantine/phytosanitary issues, with commodity quality issues to be considered by NPPOs separately in adopting proposed treatments. Explicit testing of quality parameters for the applied treatment is not a mandatory requirement here, but a commercial decision for export trade.

		international adoption. However, evaluation of any effects of a treatment on the quality of commodities may require additional consideration. There is no obligation for a contracting party to approve, register or adopt the treatments for use in its territory.			
Treatment schedule					
20	32	Minimum absorbed dose of 250 Gy to prevent emergence of viable adults from irradiated eggs and larvae of Tortricidae.	C	Egypt Referring to a scientific review would be a good credit for reliability of the data provided <i>Category : TECHNICAL</i>	Considered but not incorporated. The structure of the draft PT for Tortricidae is consistent with previous PT annex schedules under ISPM 28. The " <i>Treatment schedule</i> " section simply informs NPPOs of the treatment schedule parameters (dose, efficacy, treatment outcome, ISPM references and MAP restrictions) with the " <i>Other relevant information</i> " section providing a more detailed account of the supporting literature used by the TPPT in determining the schedule. In this case, paragraphs [38] to [40] address the commenters' issue as per the approach adopted under ISPM 28 previously.
21	33	There is 95% confidence that the treatment according to this schedule prevents the emergence of normal-looking <u>and fertile</u> adults from not less than 99.9949% of eggs and larvae of Tortricidae.	P	China The Adults should be abnormal-looking and sterile, so that the efficacy for phytosanitary treatment can be guaranteed. <i>Category : SUBSTANTIVE</i>	Considered but not incorporated. The draft notes that abnormal looking adults are considered non viable (see paragraph 32 and 33).
22	35	This treatment should not be applied to fruit	P	PPPO Modified Atmospheric Packaging (MAP) that ensure low oxygen conditions are banned by IPPC for irradiated produce.	Considered but not incorporated. Consistent with previous PT annex schedules under ISPM 28, the current position of the TPPT is that modified atmosphere conditions are not permitted

		<p>stored in a modified atmosphere because the modified atmosphere may affect the treatment efficacy.</p>		<p>But this doesn't seem to have enough scientific evidence, as per Follett & Neven 2018. <i>Category : TECHNICAL</i></p>	<p>for irradiation treatments as it may introduce artificial parameters which could adversely impact treatment efficacy at the prescribed dose. It is noted that this is a position actively undergoing further evaluation by the TPPT, but for Tephritids only – not for other pest groups at this stage. As is standard however, the TPPT will consider new information as appropriate, and make a detailed informed assessment of the relevance to existing and future Annex PT treatment schedules.</p>
<p>Other relevant information</p>					
23	40	<p>The TPPT also considered Arthur (2004), Arthur <i>et al.</i> (2016a, b), Batchelor <i>et al.</i> (1984), Bestagno <i>et al.</i> (1973), Burditt (1986), Burditt and Hungate (1989), Burditt and Moffitt (1985), Dentener <i>et al.</i> (1990), Faria <i>et al.</i> (1998), Follett (2008), Follett and Lower (2000), Follett and Snook (2012), Hallman (2004), Hallman <i>et al.</i> (2013), Hofmeyr <i>et al.</i> (2016a, b), Lester and Barrington (1997), Lin <i>et al.</i> (2003), Mansour (2003), Mansour and Al-Attar (2014), Nadal Nadel <i>et al.</i> (2018)</p>	P	<p>European Union Typo: see [65]. <i>Category : EDITORIAL</i></p>	<p>Incorporated</p>

		and Wit and van de Vrie (1986).			
24	40	The TPPT also considered Arthur (2004), Arthur <i>et al.</i> (2016a, b), Batchelor <i>et al.</i> (1984), Bestagno <i>et al.</i> (1973), Burditt (1986), Burditt and Hungate (1989), Burditt and Moffitt (1985), Dentener <i>et al.</i> (1990), Faria <i>et al.</i> (1998), Follett (2008), Follett and Lower (2000), Follett and Snook (2012), Hallman (2004), Hallman <i>et al.</i> (2013) , Hofmeyr <i>et al.</i> (2016a, b), Lester and Barrington (1997), Lin <i>et al.</i> (2003), Mansour (2003), Mansour and Al-Attar (2014), Nadal <i>et al.</i> (2018) and Wit and van de Vrie (1986).	P	European Union This reference is already included in [38] and [40] begins with: "The TPPT also considered...". <i>Category : EDITORIAL</i>	Modified. The draft PT has erroneously referenced Hallman <i>et al.</i> (2013) as the key piece of research the TPPT has used to determine the proposed PT efficacy. The text should in fact refer to Hallman (2004) which specifically tests <i>G. molesta</i> . Hallman <i>et al.</i> (2013) is a comprehensive review article the TPPT has also used, in conjunction with numerous other publications, to support the extrapolation to family level. Accordingly, [38] has been changed and [40] retains the reference to Hallman <i>et al.</i> (2013). However, in addressing the issue raised by the commenter, Hallman (2004) has been removed from [40] as it is the focus of [38] and [39].
25	40	The TPPT also considered Arthur (2004), Arthur <i>et al.</i> (2016a, b), Batchelor <i>et al.</i> (1984), Bestagno	P	EPP0 This reference is already included in [38] and [40] begins with: "The TPPT also considered...". Typo: see [65]. <i>Category : EDITORIAL</i>	Modified. The draft correctly cited Hallamn et al (2013) to support the proposed irradiaiton chedule for the Tortricidae. The draft PT has now included Hallman 2004 at paragrahh 39 to support the efficacy of the schedule based on the tolerant species tested within the Tortricidae.

		<p><i>et al.</i> (1973), Burditt (1986), Burditt and Hungate (1989), Burditt and Moffitt (1985), Dentener <i>et al.</i> (1990), Faria <i>et al.</i> (1998), Follett (2008), Follett and Lower (2000), Follett and Snook (2012), Hallman (2004), Hallman <i>et al.</i> (2013), Hofmeyr <i>et al.</i> (2016a, b), Lester and Barrington (1997), Lin <i>et al.</i> (2003), Mansour (2003), Mansour and Al-Attar (2014), Nadal <i>et al.</i> (2018) and Wit and van de Vrie (1986).</p>			
26	41	<p>Extrapolation of treatment efficacy to all fruits was based on knowledge and experience that radiation dosimetry systems measure the actual radiation dose absorbed by the target pest independent of host commodity, and</p>	P	<p>China We should focus on research on the radio-tolerance of the target pest, which is not affected by the host plants. <i>Category : SUBSTANTIVE</i></p>	<p>Considered but not incorporated. Consistent with previous irradiation PTs under ISPM 28, the purpose of [41] is to address commodity factors in determining the proposed schedule and estimated efficacy. It reflects the internationally accepted position that the efficacy of an irradiation dose applies to all fruits and vegetables given that dosimetry systems measure the actual dose absorbed by the target pest independent of the commodity. Its inclusion is separate to information considered by the TPPT for extrapolation of the proposed schedule to the Family Tortricidae which is factored into [40].</p>

		evidence from research studies on a variety of pests and commodities as listed in the references. It is recognized, however, that treatment efficacy has not been tested for all <u>potential fruit hosts-pest species</u> of the target <u>pestfamily</u> . If evidence becomes available to show that the extrapolation of the treatment to cover all fruit hosts of Tortricidae is incorrect, then the treatment will be reviewed.			
27	41	Extrapolation of treatment efficacy to all fruits was based on knowledge and experience that radiation dosimetry systems measure the actual radiation dose absorbed by the target pest independent of host commodity, and evidence from	C	Botswana agreed <i>Category : SUBSTANTIVE</i>	Noted

		<p>research studies on a variety of pests and commodities as listed in the references. It is recognized, however, that treatment efficacy has not been tested for all potential fruit hosts of the target pest. If evidence becomes available to show that the extrapolation of the treatment to cover all fruit hosts of Tortricidae is incorrect, then the treatment will be reviewed.</p>			
28	41	<p>Extrapolation of treatment efficacy to all fruits was based on knowledge and experience that radiation dosimetry systems measure the actual radiation dose absorbed by the target pest independent of host commodity, and evidence from research studies on a variety of pests</p>	C	<p>Malawi There is need to relook at this statement so that it is not challenged scientifically <i>Category : SUBSTANTIVE</i></p>	<p>Considered, but not incorporated. This wording is consistent with other approved irradiation PT's under ISPM 28. It is simply an acknowledgement that the proposed dose is based on an extrapolation to all host commodities, with the caveat that the proposed standard will be re-visited should new information be presented to support a higher Dmin dose.</p>

		and commodities as listed in the references. It is recognized, however, that treatment efficacy has not been tested for all potential fruit hosts of the target pest. If evidence becomes available to show that the extrapolation of the treatment to cover all fruit hosts of Tortricidae is incorrect, then the treatment will be reviewed.			
References					
29	59	Hofmeyr, H., Hofmeyr, M. & Slabbert, K. 2016a. Postharvest phytosanitary disinfestation of <i>Thaumatotibia leucotreta</i> (Lepidoptera: Tortricidae) in citrus fruit: Tolerance of eggs and larvae to ionizing radiation. Florida Entomologist, 99: 48–53.	P	European Union Moved after [60]: alphabetical order. Category : EDITORIAL	Incorporated

30	59	<p>Hofmeyr, H., Hofmeyr, M. & Slabbert, K. 2016a. Postharvest phytosanitary disinfestation of <i>Thaumatotibia leucotreta</i> (Lepidoptera: Tortricidae) in citrus fruit: Tolerance of eggs and larvae to ionizing radiation. <i>Florida Entomologist</i>, 99: 48–53.</p>	P	<p>EPP0 Moved after [60]: alphabetical order. Category : EDITORIAL</p>	Incorporated
31	60	<p>Hofmeyr, H., Hattingh, V., Hofmeyr, M. & Slabbert, K. 2016b2016a. Postharvest phytosanitary disinfestation of <i>Thaumatotibia leucotreta</i> (Lepidoptera: Tortricidae) in citrus fruit: Validation of an ionizing radiation treatment. <i>Florida Entomologist</i>, 99: 54–58. Hofmeyr, H., Hofmeyr, M. & Slabbert, K. 2016b. Postharvest</p>	P	<p>European Union Moved from [59]: alphabetical order. Category : EDITORIAL</p>	Incorporated

		phytosanitary disinfestation of <i>Thaumatotibia leucotreta</i> (Lepidoptera: Tortricidae) in citrus fruit: Tolerance of eggs and larvae to ionizing radiation. Florida Entomologist, 99: 48–53.			
32	60	Hofmeyr, H., Hattingh, V., Hofmeyr, M. & Slabbert, K. 2016a 2016a. Postharvest phytosanitary disinfestation of <i>Thaumatotibia leucotreta</i> (Lepidoptera: Tortricidae) in citrus fruit: Validation of an ionizing radiation treatment. <i>Florida Entomologist</i> , 99: 54–58. Hofmeyr, H., Hofmeyr, M. & Slabbert, K. 2016b 2016b. Postharvest phytosanitary disinfestation of <i>Thaumatotibia leucotreta</i>	P	EPPO Moved from [59]: alphabetical order. Category : EDITORIAL	Incorporated

		<u>(Lepidoptera: Tortricidae) in citrus fruit: Tolerance of eggs and larvae to ionizing radiation. Florida Entomologist, 99: 48-53.</u>			
--	--	---	--	--	--