Food and Agriculture Organization of the United Nations

International Plant Protection Convention

REPORT

Technical Panel on Phytosanitary Treatments

Virtual meeting
19-20 October 2021

IPPC Secretariat

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CONTENTS

1. Opening of the Meeting

1.1. Welcome by the IPPC Secretariat

[1] The International Plant Protection Convention (IPPC) Secretariat (hereafter referred to as "Secretariat") lead for the Technical Panel on Phytosanitary Treatments (TPPT) chaired the meeting and welcomed the following participants:

1. Mr David OPATOWSKI (TPPT Steward)
2. Mr Toshiyuki DOHINO (Japan)
3. Mr Walther ENKERLIN HOEFLICH (IAEA)
4. Mr Scott MYERS (USA)
5. Mr Michael ORMSBY (New Zealand)
6. Mr Matthew SMYTH (Australia)
7. Mr Eduardo WILLINK (Argentina)
8. Mr Daojian YU (China)
9. Mr Guy HALLMAN (Invited Expert)
10. Ms Janka KISS (IPPC Secretariat, lead)

[2] The full list of TPPT members and their contact details can be found on the International Phytosanitary Portal (IPP)[1].

1.2. Adoption of the agenda and election of the rapporteur

[3] The Secretariat introduced the agenda and it was adopted as presented in Appendix 1 to this report.

[4] Mr Michael ORMSBY was elected as the Rapporteur.

2. TPPT work programme – addressing comments from second consultation

[5] The TPPT addressed the comments submitted in 2021 during the second consultation for the following 5 phytosanitary treatments (PTs).

2.1 Irradiation treatment for Tortricidae on fruits (2017-011)

[6] Mr Matthew SMITH, the Treatment Lead introduced the responses to the comments and the revised draft treatment[2]. The TPPT discussed the major comments and the revisions proposed to the draft PT.

[7] Two comment expressed concern with the literature supporting such a broad treatment (all Tortricidea species) at 250 Gy considering that the available studies on irradiation treatment address only twelve Tortricidae species, and only the most economically important 5 species were verified with large-scale testing. The comment also suggested that safety margin be added to the recommended dose.

[8] The TPPT noted that one of the comments were made by the submitter of this proposal recommending the use of 250 Gy. They also noted that the TPPT discussed the amount of supporting information and found it suitable to support the treatment, especially considering that the commenter has an approved a generic irradiation treatment for Tortricidae (at 290 Gy; see USDA Treatment manual) based on the same amount of information in term of the number of species studied.

[9] The TPPT agreed that a safety margin should be added to generic treatments, and since all of the studies indicate that ~200 Gy could be sufficient for the species of Tortricidae studied, that extra safety margin has been added raising the dose to the recommended 250 Gy.

[1] TPPT membership list: https://www.ippc.int/en/publications/81655/

[2] 02_TPPT_2021_Oct, 2017-011

[10] Another comment expressed concern over the issue of non-viable survivors of the treatment that maybe found during inspection. They suggested that an independent verification of efficacy at inspection was needed for irradiation treatments as mortality is not expected; with all other treatments mortality is an independent verification of efficacy. The TPPT agreed that although this is a worthy objective, there is no viable independent verification of efficacy for irradiation. Verification of efficacy depends on the research and treatment implementation and this has been an accepted principle in the use of irradiation treatments commercially over the years.

[11] The draft remained unchanged except incorporating some editorial suggestions in placing references differently.

[12] The TPPT

(1) *approved* the responses to consultation comments on the Irradiation treatment for Tortricidae on fruits (2017-011) as "TPPT responses" to be presented to the Standards Committee (SC)

(2) *approved* the draft PT: Irradiation treatment for Tortricidae on fruits (2017-011) to be presented to the SC for approval for adoption

2.2 Cold treatment for *Bactrocera zonata* on *Citrus sinensis* (2017-013)

[13] Mr Toshiyuki DOHINO, the Treatment Lead introduced the responses to the comments, the Treatment Leads summary and the revised draft treatment[3]. The TPPT discussed the major comments and the revisions proposed to the draft PT.

[14] **Host commodity.** One comment suggested to include the stage and condition of the host fruit, but the TPPT didn't think it was necessary as it has not been done previously, and the treatments scope is limited to the efficacy of the treatment in a certain fruit.

[15] **Fruit core temperature**. Another comment requested to include that the core temperature had to be kept at the required temperature, not the air or the surface of the fruit, however this was already clearly included in paragraph 39 of the draft PT.

[16] **Efficacy**. Some comments queried about the calculation of the efficacy and the determination of the number of treated insects. The TPPT explained, that they evaluated in detail the data submitted by the authors as for Hallman et al. (2013). Based on the natural mortality rate of the control group of each replication, the number of test insects excluding the natural mortality of the treatment group of each replication was calculated. As a result, the total number of test insects in the treatment group was 35733 instead of 36820 in 37 replications. Therefore, the efficacy level was calculated to be 99.9916 with a 95% confidence level. The details of the calculation are reported in the 2019 July TPPT meeting report[4], Appendix 6.

[17] There was no change to the draft PT.

[18] The TPPT

(3) *approved* the responses to consultation comments on the Cold treatment for *Bactrocera zonata* on *Citrus sinensis* (2017-013) as "TPPT responses" to be presented to the SC

(4) *approved* the draft PT: Cold treatment for *Bactrocera zonata* on *Citrus sinensis* (2017-013) to be presented to the SC for approval for adoption

[3] 04_TPPT_2021_Oct, 05_TPPT_2021_Oct, 2017-013

[4] 2019 July TPPT meeting report: https://www.ippc.int/en/publications/87681/

2.3 Vapour heat - modified atmosphere treatment for *Cydia pomonella* and *Grapholita molesta* in fruit of *Malus pumila* and *Prunus persica* (2017-037/038)

[19] Mr Michael ORMSBY, the Treatment Lead introduced the responses to the comments, the Treatment Leads summary and the revised draft treatment[5]. The TPPT discussed the major comments and the revisions proposed to the draft PT.

[20] **Efficacy**. One comment was concerned that the efficacy level of the treatment is below the level required by their national requirements, and suggested to require more then 30 000 insects tested.

[21] The TPPT agreed that the level of efficacy required by countries for measures that may include treatments should reflect what that country has determined to be their appropriate level of protection (ALOP). While some countries 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 efficacy of the system as a whole including the treatment may be sufficient to meet the countries ALOP.

[22] The comment also suggested that the level of efficacy of the treatment schedule should be shown by each commodity. The TPPT considered that the draft treatment is for the pest and fruit types used in the research supporting the treatment. The TPPT did not consider it necessary to provide separate schedules for each of the fruit types supported by this treatment. For the efficacy calculation see Appendix 7 of the 2019 July TPPT Meeting Report[6].

[23] **Cold tolerance of populations**. The comment suggested to consider potential differences in the responses of different populations of pests to heat treatments, referencing the comparative research between populations of *Bactrocera dorsalis* from three different regions (China, Kenya, and Thailand) that concluded that differences were observed at sub-lethal doses, but not at the levels required for phytosanitary treatments. They considered that as *Cydia pomonella* is also widespread throughout the world and the tolerance of different population to methyl-bromide fumigation treatment varies, there maybe differences for heat treatments as well.

[24] The TPPT considered that 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 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 *Cydia pomonella* or *Grapholita molesta*.

[25] **Most tolerant life stage**. The comment queried the reason why the 4th instar larvae on apple fruits are considered to be the most tolerant stage

[26] The TPPT considered that the most tolerant life stage was determined from the life stage exposure trials on *Cydia pomonella* and *Grapholita molesta* on apples (Neven et al. 2006b) and peaches and nectarines (Neven et al. 2006c). Although there is only a small difference between life stage responses it was apparent that no life stages of the *Cydia pomonella* and *Grapholita molesta* on any of the fruit tested were *significantly* more tolerant to the treatment than 4th instar larvae of codling moth in apples. This is noted by the TPPT and deemed acceptable (see TPPT Report July 2019). On statistical analysis the TPPT found that there was no statistically significant difference in tolerance for most of the life stages associated with the fruit, and none were more tolerant the 4th instar larvae of codling moth in apples.

[5] 08_TPPT_2021_Oct, 10_TPPT_2021_Oct_Rev2, 2017-037/38

[6] 2019-07 TPPT Meeting Report: https://www.ippc.int/en/publications/87681/

[27] The TPPT also noted that the numbers in Neven et al. (2006b) Table 3 for the blackhead egg stage are in error, as the confidence intervals do not align with the LT figures (confidence intervals should bound the mean). The corrected table received from the submitter is below.

Table 1. Corrected results from Neven et.al. (2006b) of probit analysis of codling moth stages mortality in response to CATTS treatment of 12°C/h heating rate in Stone Fruit

Stage	LT50	CL 5%	CL 95%	LT90	CL 5%	CL 95%	LT99	CL 5%	CL 95%
1	1.99	1.59	2.34	2.71	2.4	3.46	3.19	2.78	4.24
2	1.92	1.36	2.33	2.72	2.36	3.64	3.23	2.77	4.54
3	1.04	0.1	1.63	2.49	2.12	3.44	3.22	2.71	4.79
4	2.24	2.08	2.41	2.77	2.59	3.05	3.14	2.9	3.52
5	2.01	1.74	2.26	2.61	2.37	3.06	3.01	2.7	3.63
WR	1.34	0.67	1.65	2.28	2.021	2.74	2.82	2.49	3.51
RR	1.36	0	1.85	2.47	2.09	3.42	3.09	2.61	4.54
BH	1.62	1.19	1.96	2.22	1.94	2.88	2.61	2.26	3.54

[28] The conclusion that no lifestrages were more tolerant than the 4th instar larvae is also supported by Yokoyama &Miller (1987) and Yokoyama et al., (1991)[7] who found 4th and 5th instar larvae were the most tolerant to heat. These references were also added to the darft PT.

[29] **Different fruit sizes**. The comment suggested that in the draft treatment schedule, even if the heat-up time is within 2.5 hours, the treatment process can be completed as long as the temperature of the fruit core reaches 44.5 ° C, and then the temperature can be maintained for 30 minutes. However, since the heat capacity varies depending on the size of fruits, the time to reach the specified fruit core temperature is different between the small size and the large size of fruits under the same internal temperature at the chamber.

[30] In actual commercial treatment, when fruits of a size smaller than the fruit size used in the studies the specified temperature (44.5 ℃ of fruits core) may be shorter than 2.5 hours even if the temperature and condition are the same at the chamber. In that case, even if it is maintained for 30 minutes after that, the total processing time is less than 3 hours, and there is a possibility that it does not finally reach the amount of heat and the exposure time of the modified atmosphere required to kill the target pests in the fruits thoroughly.

[31] The comment suggested it is necessary to adjust the maintenance time according to the length of the heat-up time so that the difference in fruit size does not affect the treatment result, i.e. the total treatment time should constantly keep 3 hours by adjusting the heat-up time and the maintenance time to each length.

[32] The TPPT considered the level of efficacy achieved by the schedule is mostly a result of the fruit being at 44.5°C for 30 minutes. However the TPPT could not be certain that the heat shock from the heating up period did not also play a role in treatment efficacy. As such the TPPT decided to include a maximum heating up period of 2.5 hours. Heating up periods achieve in less time than this would be expected to have achieved or exceeded the necessary "heat shock". The TPPT could not be certain, however, that heating up periods exceeding 2.5 hours would have achieved the necessary "heat

[7] **Yokoyama, V. Y., and G. T. Miller. 1987.** High temperature for control of oriental fruit moth (Lepidoptera: Tortricidae) in stone fruit. J. Econ. Entomol. 80: 641-645.
Yokoyama, V. Y., G. T. Miller, and R. V. Dowell. 1991. Response of codling moth (Lepidoptera: Tortricidae) to high temperature, a potential quarantine treatment for exported commodities. J. Econ. Entomol. 84: 528-531.

shock". The TPPT however agreed that the treatment should not last for less than 3 hours and thus added additional text to the treatment schedule to clarify that.

[33] **Implementation issues**. Another comment highlighted the difficulty of implementing the treatment, because the PT dies not provides much guidance on this aspect, and because there is not much commercial practice with the application of this kind of treatment or available facilities. The comment also highlights the detrimental nature of the treatment to the quality of apples in some cases.

[34] The TPPT noted that ISPM 28 annexes provide the minimum requirements necessary to achieve the stated level of efficacy. All operational details related to achieving those minimum requirements are left to other ISPMs and any associated guidance material. The TPPT felt that while it would be preferable to have commercial systems available to implement all approved treatments, the urgent need to identify alternative treatment options to Methyl bromide fumigation is also considered when reviewing treatment submissions. Many commercially available treatments are cost prohibitive while other less costly alternatives are available such as methyl bromide fumigation.

[35] They noted that almost all treatments cause some degree of damage to the product being treated and as noted by the comment, the "Other Relevant Information" section includes the following note on that: "The air humidity is lower at the beginning of the treatment to prevent condensation on the fruit and hence maintain fruit quality. To minimize effects on commodity quality, users should refer to Neven & Rehfield-Ray (2006) and Neven, Rehfield-Ray & Obenland (2006)". The commercial feasibility of a treatment is complicated by issues such as the availability of market acceptable alternative treatments, the value and competition of the product at market, and effect of the treatment on that value. Vapour heat treatment is the IPPC term used, and "high temperature forced air" treatment is subset of that.

[36] The TPPT noted that not all fruit varieties available in international trade can tolerate a treatment commonly used. They agreed that product tolerances need to be considered before use, as stated in the text of the draft annex: "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".

[37] **Treatment schedule**. The TPPT proceeded to discuss other comments that implied that the lack of minimum duration for the treatment (heat up and hold time) leaves space to deliver a shorter treatment (eg. if the treatment temperature is achieved quickly) then what the research shows to be efficacious. The TPPT noted that and added the requirement to "heat the fruit at least 3 hours".

[38] The TPPT also stated that the draft PT is for the pest and fruit types used in the research supporting the treatment. The TPPT did not consider it necessary to provide separate schedules for each of the fruit types supported by this treatment (apple and peach/nectarine).

[39] **Chamber temperature**. Another comment noted that the chamber temperature was specified at 46 ° C in the research paper but not in the draft PT. However the TPPT considered that the air temperature in the actual trials varied from 45°C, and was dependent on the required heating rate (related to fruit size etc.). As such the air temperature will vary based on fruit type and size. The TPPT thus focused on the minimum requirement to achieve and specified a minimum 44.5°C core temperature at a minimum 45°C air temperature.

[40] **Nitrogen**. Another comment noted that nitrogen is not used in the reference document, however, in the annex, nitrogen is included as part of the modified atmosphere, and queried about the reason. The TPPT explained that while the referenced documents do not reference nitrogen, the TPPT considered that to ensure positive or negative air pressure did not result from changing oxygen and carbon dioxide level, nitrogen (the other major constituent of air) rather than other gases may need to be added to maintain the balance.

[41] **Carbon dioxide capture**. Another comment asked further explanation on how to use carbon dioxide (raised to 15%±1%) in treatment to avoid the spillage into the atmosphere but the TPPT noted that

substantial guidance on the application of the treatment is outside the scope of this PT and would need to be provided in separate guidance material.

[42] **Heating rate**. One comment noted that the study of Neven et al., the heating rate was specified at 12°C per hour, and noted that if initial fruit core temperature is high, sufficient heat shock cannot be achieved because temperature rise rate is low. The TPPT replied, that for this reason no specific heating rate is included in the schedule as this will vary depending on fruit size. They considered that while some degree of "heat shock" is expected to play a part in the treatment efficacy, it is expected that the target temperature (44.5°C) plays the greater role. Hence the focus of the treatment schedule is on the target core temperature rather than the heating rate.

[43] **Efficacy**. One comment noted that the number of treated individuals specified in the draft PT do not coincide with those reported in the reference studies. The TPPT clarified that Neven & Rehfield-Ray (2006) estimated the mean number of insects treated at 31,331 and the efficacy calculation is available in the 2019 July TPPT meeting report[8].

[44] **References.** Some comments proposed to include other references, however the TPPT considered those unnecessary to establish the treatment schedule except for Yokoyama & Miller 1987 and Yokoyama *et al* 1991.

[45] The TPPT also reviewed the proposed changes to the draft and decided to specify teh minimum duration of the treatment at 3 hours, and add the above mentioned 2 references.

[46] The TPPT

(5) *approved* the responses to consultation comments on the Vapour heat - modified atmosphere treatment for *Cydia pomonella* and *Grapholita molesta* in fruit of *Malus pumila* and *Prunus persica* (2017-037/038) as "TPPT responses" to be presented to the SC

(6) *approved* the draft PT: Vapour heat - modified atmosphere treatment for *Cydia pomonella* and *Grapholita molesta* in fruit of *Malus pumila* and *Prunus persica* (2017-037/038) to be presented to the SC for approval for adoption

2.4 Irradiation treatment for *Sternochetus frigidus* (2017-036)

[47] Mr Walther ENKERLIN HOEFLICH, the Treatment Lead introduced the responses to the comments, and the revised draft treatment[9]. The TPPT discussed the major comments and the revisions proposed to the draft PT.

[48] **Number of treated insects**. One comment was concerned that the number of treated insets (2,274 adult female) is too low considering the irradiation is resulted in sterilization and inactivation not in mortality of target pest. They recommended a higher treatment dose to provide more margin of safety. The TPPT considered that although the level of efficacy achieved may be low for some countries, others may accept or use it as part of a systems approach to the management of pest risk, and the efficacy of the system as a whole including the treatment may be sufficient to meet the countries ALOP.

[49] **Target regulated article**. One comment noted that the title be aligned with other irradiation PTs and to delete "on *Mangifera indica"* from the title and elsewhere in the draft. The TPPT considered that the name of the target regulated article was added previously to the title (different to other irradiation treatments) because this pest is monofagous and only infests *Mangifera indica*. However it is recognized that irradiation treatments are accepted as efficacious on all the hosts of the target pest, so the TPPT agreed to align the title with other irradiation treatments.

[8] 2019-07 TPPT Meeting Report: https://www.ippc.int/en/publications/87681/

[9] 03_TPPT_2021_Oct, 2017-036

[50] **Live target pest**. One comment noted the text: "Because irradiation may not result in outright mortality, inspectors may encounter live but non-viable *Sternochetus frigidus* (eggs, larvae, pupae or adults) during the inspection process. This does not imply a failure of the treatment." and suggested that clear definition of when the treatment was or was not effective should be provided. The TPPT confirmed, that live target pests may be found after treatment, but that this should not result in the refusal to issue a phytosanitary certificate. Where mortality is not the required response, it is more likely that live target pests may persist in the treated consignment; in such cases, phytosanitary certification should be based on confirmation from the normal validation programme that the required treatment parameters are achieved for the specific commodity and treatment conditions concerned. Actions to be taken when live insects are found should be negotiated between the involved NPPOs.

[51] The TPPT then reviewed the draft PT and agreed to change the title and all related instances to the standard wording instead of mentioning specifically *Mangifera indica* as the target regulated article.

[52] The TPPT

(7) *approved* the responses to consultation comments on the Vapour heat - modified atmosphere treatment for Irradiation treatment for *Sternochetus frigidus* (2017-036) as "TPPT responses" to be presented to the SC

(8) *approved* the draft PT: Irradiation treatment for *Sternochetus frigidus* (2017-036) to be presented to the SC for approval for adoption

2.5 Irradiation treatment for *Zeugodacus tau* (2017-025)

[53] In the absence of Mr Peter LEACH, the TPPT reviewed the responses to the comments, and the revised draft treatment[10]. The TPPT discussed the major comments and the revisions proposed to the draft PT.

[54] **Research methodology**. One comment considered that he paper by Zhan et al. 2015 lacked details in methodology that were important to understanding the study and verifying the results. They queried about the whether the life stages of the test insects were verified prior to irradiation for the dose-response studies, if the replicates in the dose response studies were all irradiated at the same time, if dose mapping exercise was done, and whether the raw dosimetry data was available, and what the calculated uncertainty of the dosimetry system was.

[55] The TPPT noted that additional information from the submitter was received, and it provides more information on life history studies, dose mapping and the timing of experiments. In particular, the authors stated that the development rates of larval stages in these trials were similar to that of Singh *et al.* 2010 except that third instars were treated at 7 days rather than 8 days. The applicant did not undertake examinations of each life stage but did provide pictorial evidence that shows late third instars were present when the samples were irradiated 8 days after being infested.

[56] The authors have confirmed that the cups used in the dose response trials were all treated at the same time in the same chamber. While this is not standard practice the results obtained concluded correctly that the most tolerant life stage of fruit flies to irradiation is consistently was third instars which is the lifestage used in the confirmatory trials. It is generally accepted that the 3rd instar is the most radiotolerant life stage of fruit flies (excluding puparia and adults) (Hallman et al. 2010).

Regarding dose mapping, the submitter confirmed that the irradiator at the National Institute of Metrology Research in Beijing undertakes dose mapping at different distances and heights from the source every six months. Dose mapping records provided by the submitter show that the dose rates at ten locations 100 cm from the source ranged from 5.0 Gy/min to 6.3 Gy/min. providing a dose uniformity ration of 1.26. For the large-scale confirmatory trials conducted using gamma sources it is simply not possible to place all the fruit in the location receiving the maximum dose, nor is it

[10] 09_TPPT_2021_Oct, 2017-025

necessary. The absorbed dose in the trial fruit was measured and the maximum dose measured is the minimum dose that can be recommend in the treatment schedule. In trial 2 the Dmin was 65.3 Gy and the Dmax was 85Gy with a dose uniformity ratio of 1.3. The fact that no adult emergence was recorded at doses as low as 65.3 Gy provides confidence that the recommended treatment schedule of 85 Gy is robust.

[57] **Diversity of the colony**. The same comment was expressing concern with the diversity of the colony of *Zeugodacus tau* used in the experiments. The TPPT agreed that there are currently no prescriptive guidelines for the establishment of fruit fly colonies. General agreement is that colonies are more robust when they include insects from a wide range of geographical regions. But the TPPT is unaware of any scientific publications that clearly identifies that the size of the founding population or the number of locations flies are collected from prevents/reduces the impact of maintaining flies in laboratory cultures and if this does influence the radiotolerance of the flies. Furthermore the TPPT is aware of other internationally accepted phytosnitary treatments that are based on studies conducted with colonies collected once from one location.

[58] **Dose**. The submitter considered that doses of 72 Gy and 85 Gy are rather low compared to doses prescribed for other Bactrocera spp. The TPPT concurred with the comment Bactrocera seeming to be more tolerant than other genera. The aim of this current research was to determine the lowest dose that would control *Zeugodacus tau*.

[59] **Effects of modified atmosphere**. Another comment suggested to include the standard text used normally in irradiation treatments to warn the potential effect of the modified atmosphere to the treatment efficacy. However the TPPT clarified that since the CPM-15 (2021) agreed to remove the restriction to use modified atmosphere before irradiation of Tephritide fruit flies, the standard text was not to be included.

[60] **Live target pest**. One comment noted the text: “Because irradiation may not result in outright mortality, inspectors may encounter live but non-viable *Zeugodacus tau* (larvae or puparia) during the inspection process. This does not imply a failure of the treatment.” and suggested that clear definition of when the treatment was or was not effective should be provided. The TPPT confirmed, that live target pests may be found after treatment, but that this should not result in the refusal to issue a phytosanitary certificate. Where mortality is not the required response, it is more likely that live target pests may persist in the treated consignment; in such cases, phytosanitary certification should be based on confirmation from the normal validation programme that the required treatment parameters are achieved for the specific commodity and treatment conditions concerned. Actions to be taken when live insects are found should be negotiated between the involved NPPOs.

[61] The TPPT then reviewed the proposed modification of the draft PT, however they left the draft unchanged except for including “at 72 Gy or 85 Gy minimum absorbed dose” into the scope in order to ensure consistency across irradiation treatments.

[62] The TPPT

(9) *approved* the responses to consultation comments on the Irradiation treatment for *Zeugodacus tau* (2017-025) as “TPPT responses” to be presented to the SC

(10) *approved* the draft PT: Irradiation treatment for *Zeugodacus tau* (2017-025) to be presented to the SC for approval for adoption

3. Updates

3.1 New submissions:

Vapor heat treatment of dragon fruit (Selenicereus undatus (Haworth) D.R. Hunt) for Planococcus lilacinus (Cockerell) and

Cold treatment of 'Red Globe' grape (Rhamnales:Vitaceae) for Drosophila suzukii (Diptera:Drosophilidae)

[63] The TPPT discussed briefly the new submissions[11] and agreed to review and discuss the new submissions in detail at their next meeting.

4. Close of the Meeting

[64] The Secretariat thanked the TPPT members for their participation and closed the meeting.

[11] 06_TPPT_2021_Oct, 07_TPPT_2021_Oct

Appendix 1: Agenda

2021 OCTOBER VIRTUAL MEETING OF THE TECHNICAL PANEL ON PHYTOSANITARY TREATMENTS (TPPT)

AGENDA

	AGENDA ITEM	DOCUMENT NO.	PRESENTER
1.	Opening of the meeting		
1.1	Welcome by the IPPC Secretariat		KISS / ALL
1.2	Adoption of the agenda and election of the rapporteur	01_TPPT_2021_Oct	KISS / ALL
2.	TPPT work programme – addressing comments from second consultation	All submissions: https://www.ippc.int/en/work-area-pages/draft-phytosanitary-treatments-and-relevant-documents/	
2.1	Irradiation treatment for Tortricidae on fruits (2017-011), Priority 1 - Compiled comments - Draft PT	 02_TPPT_2021_Oct 2017-011	HALLMAN/ SMYTH
2.2	Cold treatment for *Bactrocera zonata* on Citrus *sinensis* (2017-013), Priority 2 - Compiled comments - Treatment Lead summary - Draft PT	 04_TPPT_2021_Oct 05_TPPT_2021_Oct 2017-013	DOHINO
2.3	Vapour heat - modified atmosphere treatment for *Cydia pomonella* and *Grapholita molesta* in fruit of *Malus pumila* and *Prunus persica* (2017-037/038), Priority 3 - Compiled comments - Treatment Lead summary - Draft PT	 08_TPPT_2021_Oct 10_TPPT_2021_Oct_Rev1 2017-037/38	ORMSBY
2.4	Irradiation treatment for *Sternochetus frigidus* (2017-036), Priority 2 - Compiled comments - Draft PT	 03_TPPT_2021_Oct 2017-036	ENKERLIN
2.5	Irradiation treatment for *Zeugodacus tau* (2017-025) Priority 2 - Compiled comments - Draft PT	 09_TPPT_2021_Oct 2017-025	LEACH
3.	Updates		
3.1	New submissions		ALL

	AGENDA ITEM	DOCUMENT NO.	PRESENTER
	- Vapor heat treatment of dragon fruit (Selenicereus undatus (Haworth) D.R. Hunt) for Planococcus lilacinus (Cockerell) - Cold treatment of 'Red Globe' grape (Rhamnales:Vitaceae) for Drosophila suzukii (Diptera:Drosophilidae)	06_TPPT_2021_Oct 07_TPPT_2021_Oct	
4.	Close of the meeting	-	KISS