2019 FIRST CONSULTATION

1 July – 30 September 2019

Compiled comments for Draft annex to ISPM 28: Phytosanitary Treatment for Cold treatment for Ceratitis capitata on Vitis vinifera (2017-023A)

Summary of comments

Name	Summary	SC responses
Cuba	Estamos de acuerdo con la propuesta de tratamiento, no hay comentarios al respecto.	ОК
European Union	Comments submitted by the European Commission on behalf of the European Union and its 28 Member States.	ОК
Malawi	Malawi support draft ISPM	OK
Singapore	Singapore has no issue with this DP which is available in spanish version.	ок
South Africa	The National Plant Protection Organisation of South Africa (NPPOZA) has no comments and therefore accepts this standard.	OK
Viet Nam	Vietnam agree with this draft	OK

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

FAO sequential number	Para	Text	т	Comment	SC response
1	G	(General Comment)	С	Mexico I support the document as it is and I have no comments Category : SUBSTANTIVE	OK
2	G	(General Comment)	С	Guyana Guyana does not have any comments at this time on the draft document provided, and therefore have no objections with it moving forward. <i>Category : SUBSTANTIVE</i>	OK
3	G	(General Comment)	С	Peru Perú ratifica los comentarios y sugerencias concordados a nivel del COSAVE. <i>Category : SUBSTANTIVE</i>	<u>CONSIDERED BUT NOT INCORPORATED</u> See COSAVE Comment-36 (Some adopted ISPM 28-PTs (PT 15, 16, 17, 18, 21, 25, 26, 27, 28, 29, 30, 31 and 32) have similar descriptions on varieties used in the mortality tests in the References)
4	G	(General Comment)	С	European Union There are currently other required cold treatments against Ceratitits capitata in use in international trade, which can be considered as equivalent to the ones currently proposed in the draft Annexes of ISPM N 28. Their effectiveness have been proven. Neither interception nor non-compliances of any type have	CONSIDERED BUT NOT INCORPORATED It is recognized that there may be alternative treatments for the same commodity applied in international trade, however these were not submitted via the open call for topics and as the TPPT applies the criteria outlined in ISPM 28, and is required to establish a stated level of efficacy, these

				ever been recorded, which guarantees the continuity of their use in the international trade. Details of those cold treatment schedules have been sent to the Secretariat. <i>Category : SUBSTANTIVE</i>	cannot be considered as annexes to ISPM 28 unless supporting data is submitted to corroborate the efficacy of these treatments. It is noted however, that there is no restriction to use these when agreed bilaterally.
5	G	(General Comment)	С	Indonesia Indonesia thinks that the failure to pupariate as the measure of mortality for the cold treatment successfulness can be an operational problem for the inspector (especially for the importing country). Therefore, Indonesia suggests to further study this phytosanitary treatment. <i>Category : SUBSTANTIVE</i>	MODIFIED The draft was modified and consistent with the adopted ISPM 28-PTs (PT 24, 25, 26, 30 and 31). The TPPT decided to mention the end point of the schedules clearly (TPPT report June 2018, para 36) in the"other relevant information" section. Failure to pupariate is considerd as an appropriate measure of mortality in this case. The detailed course of action when the live larvae are detected in import- inspection should be determined in the work plan under the bilateral agreement.
6	G	(General Comment)	С	Barbados Barbados has no additional comments to make on this draft. Category : EDITORIAL	ОК
7	G	(General Comment)	С	Slovenia Slovenia would like to formally endorse the EPPO comments submitted via the IPPC Online Comment System. Category : TECHNICAL	OK (see comments in 21 and 40)
8	G	(General Comment)	C	Bahrain no comment Category : TECHNICAL	ОК
9	G	(General Comment)	С	Israel Israel would like to formally endorse the EPPO comments submitted via the IPPC Online Comment System Category : SUBSTANTIVE	OK (see comments in 21 and 40)
10	G	(General Comment)	С	Venezuela Al comparar el documento, con la experiencia desarrollada en el ámbito nacional, se puede decir que se considera que las temperaturas propuestas para el tratamiento con frió de C. capitata en frutos de V. vinifera, a los tiempos de exposición señalados, son adecuados para alcanzar un nivel de eficacia adecuado de mortalidad de la plaga, siendo este una alternativa efectiva y alternativa a la fumigación con Bromuro de Metilo <i>Category : TECHNICAI</i>	OK

11	G	(General Comment)	C	Thailand Thailand has no objection on the proposed draft cold treatment for Ceratitis capitata on Vitis vinifera <i>Category : SUBSTANTIVE</i>	ОК
12	G	(General Comment)	С	Malawi Malawi supports the Draft Annex to ISPM 28 : Cold Treatment for Ceratitis capitata on Vitis vinifera (2017- 023A) Category : SUBSTANTIVE	ОК
13	G	(General Comment)	С	Botswana We are in agreement with the standard which is justified scientifically <i>Category : TECHNICAL</i>	ОК
14	G	(General Comment)	С	New Zealand New Zealand supports the draft standard. <i>Category : SUBSTANTIVE</i>	ОК
15	G	(General Comment)	С	Cuba Estamos de acuerdo con la propuesta de tratamiento. Category : TECHNICAL	ОК
16	G	(General Comment)	С	Guinea-Bissau I agree Category : TECHNICAL	ОК
DRAFT AN	NEX T	O ISPM 28: Cold treatment for Ceratitis c	apita	ta on Vitis vinifera (2017-023A)	
17	1	DRAFT ANNEX TO ISPM 28: Cold treatment for <i>Ceratitis capitata</i> on <i>Vitis</i> <i>vinifera</i> (2017-023A)	С	Viet Nam Vietnam agree with this draft <i>Category : SUBSTANTIVE</i>	OK
Scope of the	e treatm	ent			
18	23	Scope of the treatment	С	Eswatini Standard acceptable Category : SUBSTANTIVE	ОК
19	24	Este tratamiento describe la aplicación de frío a frutos de <i>Vitis</i> <i>vinifera</i> (uvas de mesa) para inducir la mortalidad de los huevos y larvas de <i>Ceratitis capitata</i> con la eficacia indicada ¹ .	С	Ecuador Se debe especificar que los tratamientos de temperaturas van dirigidos al centro de la pulpa y que los periodos son establecidos para los diferentes países importadores. <i>Category : TECHNICAL</i>	INCORPORATED See Comment-28 (fruit temperature → fruit core temperature)
Treatment of	lescripti	on			
20	31	Target regulated articlesFruitof Vitis vinifera-(table grapes)	Р	European Union For clarity, and for consistency with paragraph 24 of this draft and with the draft PTs 2017-022A (paragraph 30) and 2017-022B (paragraph 32). <i>Category : EDITORIAL</i>	INCORPORATED Revised draft PT.

21	31	Target regulated articlesFruitof Vitis viniferavinifera -(table grapes)	Ρ	EPPO For clarity, and for consistency with paragraph 24 of this draft and with the draft PTs 2017-022A (paragraph 30) and 2017-022B (paragraph 32). <i>Category : EDITORIAL</i>	INCORPORATED Revised draft PT.
22	31	Artículos reglamentados objeto del tratamiento Frutos de Vitis vinifera	С	Ecuador Especificar las condiciones de la fruta. <i>Category : TECHNICAL</i>	<u>CONSIDERED BUT NOT INCORPORATED</u> Target regulated articles are fresh fruit of Vitis vinifera, not dry fruit
Treatment s	schedule				
23	33	Protocolo 1: 16 días consecutivos a 1 °C o temperatura inferior	С	Ecuador Se debería especificar la humedad relativa para los tres protocolos. Cuál es la temperatura inferior debe existir un límite permitido. <i>Category : TECHNICAL</i>	<u>CONSIDERED BUT NOT INCORPORATED</u> Regarding cold treatment, all adopted ISPM 28- PTs (PT 16, 17, 18, 24, 25, 26, 27, 28 and 29) have no description on relative humidity during the treatment. The relative humidity in the cold treatment facility (land based cold treatment facilities, containers, ships) might be controlled due to the environmental and fruit conditions.
24	34	There is 95% confidence that the treatment according to this schedule prevents pupariation-mortality in not less than 99.9987% of eggs and larvae of <i>Ceratitis capitata</i> .	Ρ	China 1. The requirement for temperature treatment is "to achieve pest mortality (including devitalization of seeds as pests) at a specified efficacy" according to ISPM No.42. 2. There is a conflict between "prevention pupariation" from "mortality of eggs and larvae" in line 24. 3. The current phytosanitary procedures and regulations including ISPM No.42 will be changed if prevention pupariation is used as the criteria for evaluating treatment efficacy of the fruit flies. 4. The mortality rate should be taken as the treatment efficiency, otherwise, once the live larvae are detected in the port quarantine, the effectiveness of the treatment cannot be judged, which will lead to trade disputes. <i>Category : SUBSTANTIVE</i>	MODIFIED The draft was modified and consistent with the adopted ISPM 28-PTs (PT 24, 25, 26, 30 and 31). The TPPT decided to mention the end point of the schedules clearly (TPPT report June 2018, para 36) in the"other relevant information" section. Failure to pupariate is considerd as an appropriate measure of mortality in this case. The detailed course of action when the live larvae are detected in import- inspection should be determined in the work plan under the bilateral agreement.
25	36	There is 95% confidence that the treatment according to this schedule prevents pupariation mortality in not less than 99.9987% of eggs and larvae of <i>Ceratitis capitata</i> .	Ρ	China Category : SUBSTANTIVE	MODIFIED (see response in 24)
26	37	Protocolo 3: 20 días consecutivos a 3 °C o temperatura inferior	С	United States of America 1. Temperature fluctuation during the research. In the research data provided, it's common to see + 0.4 °C variation (above the temperature set) in fruit pulp temperatures between two or more consecutive readings. This temperature fluctuation could indicate	CONSIDERED BUT NOT INCORPORATED 1) Regarding the temperature fluctuation of fruit pulp temperatures between two consecutive readings with 12 hours intervals in the large scale

	problems with the research equipment or the probe placement.	trials at 1, 2, 3°C in De Lima (2007), there is no data with +0.4°C variation observed.
	2. Minor notes on research details. It would have been useful for the researchers to provide additional details on the following topics:	2-a) De Lima (2007) reported that the viability of egg was approximately 85-90%.
	 a. Colony health parameters such as percentage of larval pupation and of egg and pupal eclosion, fecundity of the flies, mean weight of the pupae, and sex ratio of the adults, to ensure that the experimental colony had no health issues that could have influenced the research results. b. Information on whether the colonies used in this experiment were replaced in the manner and at the frequency described by DeLima et al. (2007). c. Infestation rate per grape during the experiments, along with any comments on whether this infestation rate could have influenced the experimental results. d. Pictures and/or diagrams showing the experimental setup for the cold treatment, such as arrangement of cartons on the pallets in the cold treatment chamber, placement of probes within the stacks, etc. 	 2-b) De Lima (2007) reported "The Medfly colony was first established in April 1983 from stock collected in Carnarvon from citrus. The genetic fitness was maintained by adding wild flies to the colony in January 1987 and December 1989. Since 1991, wild flies have been obtained from 4-6 locations in the south west, and new colony produced every year from December to March". 2-c) The average number of pupae obtained per fruit in control was 12-16 in the large scale test in De Lima (2007), although the infestation rate is higher than the infestation rate in the field, it is considered that an appropriate method was used for the disinfestation test. 2-d) The pictures and diagrams showing the experimental setup were provided in the Appendix 6
	 Literature Cited: DeLima, C. P. F., A. J. Jessup, L. Cruickshank, C. J. Walsh, and E. R. Mansfield. 2007. Cold disinfestation of citrus (Citrus spp.) for Mediterranean fruit fly (Ceratitis capitata) and Queensland fruit fly (Bactrocera tryoni) (Diptera: Tephritidae). New Zealand Journal of Crop and Horticultural Science 35: 39-50. Gasparich GE, JG Silva, HY Han, BA Mcpheron,GJ. Steck, WS Sheppard. 1997. Population genetic structure of Mediterranean fruit fly (Diptera: Tephritidae) and implications for worldwide colonization patterns. Ann Entomol Soc Am 90: 790-797. Gasperi, G, M Bonizzoni, LM Gomulski, V Murelli, C Torti, AR Malacrida, CR Guglielmino. 2002. Genetic differentiation, gene flow and the origin of infestations of the medfly, Ceratitis capitate. Genetica 116: 125-135. He, M, DS Haymer. 1999. Genetic relationships of 	of De Lima (2007).
	populations and the origins of new infestations of the	

				Mediterranean fruit fly. Mol Ecol 8: 1247-1257. Malacrida AR, LM Gomulski, M Bonizzoni, S Bertin, G Gasperi, CR Guglielmino. 2007. Globalization and fruitfly invasion and expansion: the medfly paradigm. Genetica 131: 1-9. <i>Category : TECHNICAL</i>	
27	38	There is 95% confidence that the treatment according to this schedule prevents pupariation mortality in not less than 99.9986% of eggs and larvae of <i>Ceratitis capitata</i> .	Ρ	China <i>Category : SUBSTANTIVE</i>	MODIFIED (see response in 24)
28	39	For all three schedules, the fruit must reach the treatment temperature before treatment exposure time commences. The fruit <u>core</u> temperature should be monitored and recorded, and the temperature should not exceed the stated level throughout the duration of the treatment.	Ρ	Japan As defined in section 4.2 of ISPM 42, the fruit core temperature should be monitored during cold treatment, so add "core" to clarify the monitoring point. In TPs of cold treatment that have been adopted so far, "core" is not defined in their requirements. However, in TPs of vapor heat treatment (PT 21, 30- 32), "core" is defined in their requirements as defined in ISPM 42 (Section 4.2.3). Therefore, TPs of cold treatment that have been adopted so far need to be revised where necessary. <i>Category : SUBSTANTIVE</i>	INCORPORATED Revised draft PT. CONSIDERED BUT NOT INCORPORATED It was noted that some of the other cold treatments do not specify to measure temperatures at the core. The adopted cold treatments (PT 16, 17, 18, 24, 25, 26, 27, 28 and 29) were worded according to the research supporting them (depending on where the temperature was measured).
29	39	For all three schedules, the fruit must reach the treatment temperature before treatment exposure time commences. The fruit temperature should be monitored and recorded, and the temperature should not exceed the stated level throughout the duration of the treatment.	С	Egypt The temperature of the treatment schedule should be recorded in real time to guarantee the successfulness of the treatment commenced. <i>Category : TECHNICAL</i>	CONSIDERED BUT NOT INCORPORATED This is an ideal procedure and the present procedures used by many countries work without serious trouble.
30	39	En los tres protocolos, la fruta debe alcanzar la temperatura de tratamiento antes de que comience a registrarse el tiempo de exposición. Debería controlarse y registrarse la temperatura de la fruta, que no debería superar el	С	Ecuador Especificar el tipo y calibración de los sensores de temperatura. <i>Category : TECHNICAL</i>	CONSIDERED BUT NOT INCORPORATED The detail description if needed should be mentioned in the work plan under the bilateral agreement.

		nivel especificado en toda la			
		duración del tratamiento.			
Other releva	ant infor	mation		1	
31	41	Other relevant information	С	Uruguay It is recommended not to mention cultivars in this section, in order to avoid confusion when implementing the treatment schedule in different cultivars of Vitis vinifera. Detailed information on cultivars can be found in the references listed in "References" section. On the other hand, according to ISPM 28, a requirement for varietal testing should be based on evidence that the varietal differences impact treatment efficacy, and data should be provided to support the requirement. <i>Category : TECHNICAL</i>	CONSIDERED BUT NOT INCORPORATED Some adopted ISPM 28-PTs (PT 15, 16, 17, 18, 21, 25, 26, 27, 28, 29, 30, 31 and 32) have similar descriptions on varieties used in the mortality tests in the References.
32	42	Al evaluar este tratamiento, el Grupo técnico sobre tratamientos fitosanitarios consideró cuestiones relativas a los regímenes de temperaturas y el acondicionamiento térmico, teniendo en cuenta el trabajo de Hallman y Mangan (1997).	С	Ecuador Especificar que se el tratamiento en frío se lo debe realizar en contenedores auto-refrigerados, las características y condiciones del contenedor, <i>Category : TECHNICAL</i>	<u>CONSIDERED BUT NOT INCORPORATED</u> The detail description if needed should be mentioned in the work plan under the bilateral agreement.
33	43	The efficacy of schedules 1, 2 and 3 was calculated based on an estimated 223 523522, 227 190 and 217 8842, respectively, larvae treated with no survivors.	Р	Australia Clarification as per De Lima et al., 2017 (Table 2,pg312). <i>Category : EDITORIAL</i>	CONSIDERED BUT NOT INCORPORATED The TPPT calcurated the efficacy using the original data provided in De Lima (2007). The data is almost same shown in Table 2 in De Lima et al. (2017). 1°C: RG(67 827)+TS(78 104)+CS(77 592)=223 523 2°C: RG(78 190)+TS(73 875)+CS(75 125)=227 190 3°C: RG(76 255)+TS(73 386)+CS(68 240)=217 881
34	44	Schedules 1, 2 and 3 were based on the work of De Lima (2007) and De Lima <i>et al.</i> (2011) and were developed using the cultivars 'Red Globe', 'Crimson Seedless' and 'Thompson Seedless', and using failure to pupariate as the measure of mortality.	C	Argentina It is recommended not to mention cultivars in this section, in order to avoid confusion when implementing the treatment protocol in the different cultivars. For more information, see the references section. On the other hand, according to ISPM 28, the requirement for varietal tests must be based on evidence that varietal differences have implications for treatment effectiveness. <i>Category : SUBSTANTIVE</i>	<u>CONSIDERED BUT NOT INCORPORATED</u> Some adopted ISPM 28-PTs (PT 15, 16, 17, 18, 21, 25, 26, 27, 28, 29, 30, 31 and 32) have similar descriptions on varieties used in the mortality tests in the References.
35	44	Schedules 1, 2 and 3 were based on the work of De Lima (2007) and De Lima <i>et al.</i> (2011) and were	C	China Please explain why the results from Delima (2007) and Delima et al. (2011) are inconsistent with Hallman et al. (2019) for the most cold tolerant stage(s) of the	<u>CONSIDERED BUT NOT INCORPORATED</u> The TPPT cannot explain the inconsistencies in most cold-tolerant fly stage determined between De Lima et al. (2011) and Hallman et al. (2019). There

		developed using the cultivars 'Red Globe', 'Crimson Seedless' and 'Thompson Seedless', and using failure to pupariate as the measure of mortality.		Mediterranean fruit flies from Australia. The most tolerant stage(s) is an important basis for formulating phytosanitary standard and evaluating the treatment efficacy. References: De Lima, C.P.F. 2007. Cold treatment at 1 °C, 2 ° C and 3 °C of Australian table grapes (Vitis vinifera L.) infested with eggs and larvae of the Mediterranean fruit fly Ceratitis capitata (Wiedemann) Diptera: Tephritidae. South Perth, Australia, Department of Agriculture and Food Western Australia. 126 pp. De Lima, C.P.F., Jessup, A.J., Mansfield, E.R. & Daniels, D. 2011. Cold treatment of table grapes	are a number of differences between the two syudies that might account for the inconsistencies: different laboratories, researchers, infestation techniques, host fruits, rearing conditions, treatment schedules, end-points for defining mortality, and interpretations of results. Nevertheless, the TPPT carefully evaluated the data and results of DeLima et al. (2011) and finds that they support the treatment as proposed.
				 Daniels, D. 2011. Cold treatment of table grapes infested with Mediterranean fruit fly Ceratitis capitata (Wiedemann) and Queensland fruit fly Bactrocera tryoni (Froggatt) Diptera: Tephritidae. New Zealand Journal of Crop and Horticultural Science, 39 (2): 95– 105. Hallman G. J., Wang L. C., Uzel G. D., Cancio-Martinez E., Cáceres-Barrios C. E., Myers S. W., and Vreysen1 M. J. B. 2019. Comparison of Populations of Ceratitis capitata (Diptera: Tephritidae) from Three Continents for Susceptibility to Cold Phytosanitary Treatment and Implications for Generic Cold Treatments. Journal of Economic Entomology, 112(1):127-133, doi: https://doi.org/10.1093/jee/toy331 Category : SUBSTANTIVE 	
36	44	Schedules 1, 2 and 3 were based on the work of De Lima (2007) and De Lima <i>et al.</i> (2011) and were developed using the cultivars 'Red Globe', 'Crimson Seedless' and 'Thompson Seedless', and using failure to pupariate as the measure of mortality.	C	COSAVE Se recomienda no hacer mención a los cultivares en esta sección, a fin de evitar confusión cuando se implemente el protocolo de tratamiento en los distintos cultivares. Para mas información, se encuentra la sección de referencias. Por otro lado de acuerdo a la NIMF 28, la exigencia de pruebas varietales deben basarse en la evidencia de que las diferencias varietales tienen consecuencias para la eficacia del tratamiento. It is recommended not to mention cultivars in this section, in order to avoid confusion when implementing the treatment protocol in the different cultivars. For more information, see the references	CONSIDERED BUT NOT INCORPORATED Some adopted ISPM 28-PTs (PT 15, 16, 17, 18, 21, 25, 26, 27, 28, 29, 30, 31 and 32) have similar descriptions on varieties used in the mortality tests in the References.

				section. On the other hand, according to ISPM 28, the requirement for varietal tests must be based on evidence that varietal differences have implications for treatment effectiveness. <i>Category : TECHNICAL</i>	
37	44	Los protocolos 1, 2 y 3, que se basan en los trabajos de De Lima (2007) y De Lima <i>et al.</i> (2011), se elaboraron utilizando los cultivares 'Red Globe', 'Crimson Seedless' y 'Thompson Seedless' y utilizando la ausencia de desarrollo del pupario como medida de la mortalidad.	С	Ecuador Y si para el resto de cultivares no son las mismas temperaturas para el tratamiento? <i>Category : TECHNICAL</i>	<u>CONSIDERED BUT NOT INCORPORATED</u> The treatment schedule might be reviewed and reconsidered when evidence is found that the efficacy significantly decreases when the treatment is applied to a certain variety.
38	44	Los protocolos 1, 2 y 3, que se basan en los trabajos de De Lima (2007) y De Lima <i>et al.</i> (2011), se elaboraron utilizando los cultivares 'Red Globe', 'Crimson Seedless' y 'Thompson Seedless' y utilizando la ausencia de desarrollo del pupario como medida de la mortalidad.	С	Peru Se recomienda no hacer mención a los cultivares en esta sección, a fin de evitar confusión cuando se implemente el protocolo de tratamiento en los distintos cultivares. Para mas información, se encuentra la sección de referencias. Por otro lado de acuerdo a la NIMF 28, la exigencia de pruebas varietales deben basarse en la evidencia de que las diferencias varietales tienen consecuencias para la eficacia deltratamiento. <i>Category : TECHNICAL</i>	<u>CONSIDERED BUT NOT INCORPORATED</u> Some adopted ISPM 28-PTs (PT 15, 16, 17, 18, 21, 25, 26, 27, 28, 29, 30, 31 and 32) have similar descriptions on varieties used in the mortality tests in the References.
References					
39	49	De Lima C.P.F., Mansfield E.R., Poogoda S.R. 2017. International market access for Australian tablegrapes through cold treatment of fruit flies with a review of methods, models and data for fresh fruit disinfestation. Australian Journal of Grape and Wine Research 23: 306- 317.	Ρ	European Union This reference is not mentioned in the draft. <i>Category : EDITORIAL</i>	<u>CONSIDERED BUT NOT INCORPORATED</u> This reference is not mentioned in the draft but the TPPT has reviewed for making this draft PT.
40	49	De Lima C.P.F., Mansfield E.R., Poogoda S.R. 2017. International market access for Australian tablegrapes through cold treatment of fruit flies with a review of methods, models and data for fresh fruit disinfestation. Australian Journal of	Р	EPPO This reference is not mentioned in the draft. <i>Category : EDITORIAL</i>	<u>CONSIDERED BUT NOT INCORPORATED</u> This reference is not mentioned in the draft but the TPPT has reviewed for making this draft PT.

Grape and Wine Research 23: 306- 317.			
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