2009-109: Draft Annex to ISPM 28:2007 - Vapour heat treatment for *Bactrocera dorsalis* on *Carica papaya* var. *Solo*

Comm. no.	Para. no.	Comment type	Comment	Explanation	Country
1.	*G*	Editorial		It may be worth looking into this treatment applicability to other varieties of papaya.	United States of America
2.	*G*	Substantive	I support the document as it is and I have no comments		Lao People's Democratic Republic, Canada, Georgia, Nepal, Barbados, Dominica, Ghana, Belize, Australia
2.	*G*	Substantive	I support the document as it is and I have no comments		Burundi, Gabon
4.	*G*	Substantive		To allow this standard to suit its purpose, while treatment specifications are mentioned, it is recommended that teh standard also include a section ono thos situation that make a treatment invalid eg on of the probe fruit struggles to reach teh target core temperature and the treatment time has gone over the 3 hours. The standards may slso consider a section on pre-treatment activities (thermal mapping to determine cold spotes, thermo-tolerance studies etc) posing as a remider /check so that all the work need to be done rpiro is done and finalized as they are not considered in the current draft. Those details will aslo link ;in well when contracting parties develop their regulations for teh complete confidence required by the importing countries.	New Zealand
5.	*G*	Substantive	Japan appreciates and supports development of phytosanitary treatments as international standards that can be used by a wide range of countries. With the understanding that the standard treatments should meet the requirements described in section 3 of ISPM 28, especially versatility of the treatment e.g. application to a	According to the hot immersion test data submitted by the exporting countries when requesting export of their products to Japan, there is difference in Lethal time for 99% mortality (LT99) for all stages of Bactrocera cucurbitae between two countries. This result shows	Japan

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			wide range of countries, the proposed treatment schedule needs to be reviewed and verified taking into account the possible variation in heat tolerance of fruit fly population in different regions. In this context, available research data supporting existing treatment schedules should be collected from countries where *B. dorsalis* is present in order to verify the proposed treatment schedule achieves the stated efficacy in a wide range of countries. For this purpose, Japan is willing to provide the IPPC Secretariat with available research data which were submitted by exporting countries, subject to the approval of these countries. In addition, target regulated articles should be specified at cultivar level.	possible difference between fruit fly populations in terms of heat tolerance. LT99 of B. cucurbitae after hot water immersion at 45°C is as follows. LT99 of egg is 36.97 (country A) and 76.94 (Country B). LT99 of 1st instar is 30.98 (country A) and 63.31 (country B). LT99 of 2nd instar is 28.40 (country A) and 44.35 (country B). LT99 of 3rd instar is 12.35 (country A) and 15.55 (country B). LT99 is recalculated based on the raw data by Japan. With regard to differences in fruit variety, Yoshinaga et al. (2009) and Omura et al. (2014) suggested difference in mango variety had an effect on the mortality rate in vapour heat treatment. References: Masakuni Yoshinaga, Seiki Masaki and Toshiyuki Dohino. 2009. Vapor heat mortality tests on the eggs of the oriental fruit fly, Bactrocera dorsalis, infesting different sizes and varieties of fresh mango. Res. Bull. Pl. Prot. Japan No. 45: 41-47 Kazutaka Omura, Toshiyuki Dohino, Masahiro Tanno, Isao Miyazaki and Norihito Suzuki. 2014. Vapor Heat Mortality Tests on the Eggs of Oriental Fruit Fly, Bactrocera dorsalis , Infesting Different Fruit Shape of Fresh Mango.Res. Bull. Pl. Prot. Japan No. 50 : 1 -8	
6.	*G*	Technical	Disagree	This schedule was based on the research of Santos (1996), but eggs was not the most thermotolerant in this research. So it is not reasonable to develope the treatment schedule based on this research.	China
7.	*G*	Technical		The appropriate ED as an international standards should be more than 99.99. However, The value of ED is described at 99.86 in this draft and thus, this draft is needed to be amended that ED should be raised to over 99.99.	Korea, Republic of, NEPPO
8.	*G*	Technical		(1) According to Santos (1996) referred to the draft ISPM, the experiment was conducted using Dacus dorsalis in Philippine. However, "The Bactrocera dorsalis complex of fruit flies in Asia. Drew & Hancock (1994)" showed B. dorsalis is not present in Philippines. This inconsistency needs to be addressed. (2) Since references to the draft ISPM, Corcoran, R.J. (2001) and Santos, W. (1996), are not disclosed, it is difficult to	Japan

Comm. no.	Para. no.	Comment type	Comment	Explanation	Country
				technically examine the proposed treatment schedule. References to the proposed treatment schedules should be provided as far as possible for member countries' scrutiny.	
9.	*1*	Editorial	**Draft AnnNNex to ISPM 28:2007: Vvapour heat treatment for *Bactrocera dorsalis* on *Carica papaya* var. Solo*solo* (2009-109)**	ANNex to Annex; capital letter to "Vapour" and to "Solo"; should 'Solo' be in italics if it is a cultivar name?	EPPO, European Union, Georgia, Serbia
10.	*1*	Editorial	**Draft AnnNNex to ISPM 28:2007: vapour heat treatment for *Bactrocera dorsalis* on *Carica papaya* var. *solo* (2009-109)**	Edit	United States of America, Mexico
11.	*1*	Technical	**Draft ANNex to ISPM 28:2007: vapour heat treatment for *Bactrocera dorsalis* complex? on *Carica papaya* var. *solo* (2009-109)**	The draft standard should be clearer to address whether the pest of concern is referring to the Bactrocera dorsalis complex . If the basis is on the work of Santos in 1996, it would be good to verify if the species Santos worked on was in fact the complex in 1996 or actually a different Bactrocera species after the complex issue has been more defined. This is important as classification of the oriental fruit fly is more clearer now as compared to 1996. If the VHT has no differentiation in terms of efficacy for the different species, then it would best to indicate so in the standard for more clarity.	Singapore
12.	*1*	Translation	**Draft ANNex to ISPM 28:2007: vapour heat treatment for *Bactrocera dorsalis* on *Carica papaya* var. *solo* (2009-109)**	"Vapour heat treatment for Bactrocera dorsalis on Carica papaya var. solo" Should be translated into Sapnish as "Tratamiento con vapor caliente contra Bactrocera dorsalis en Carica papaya var. Solo"	OIRSA
13.	*2*	Editorial	**Status box** This is not an official part of the standard and it will be modified by the IPPC Secretariat after adoption. **Date of this document** 2014-04-23 **Document category** Draft Annex XX to ISPM 28:2007 **Current document stage** 2014-04 SC approved for MC	Edit	United States of America

Comm. no.	Para. no.	Comment type	Comment		Explanation	Country
			Major stages	2009 Vapour heat treatment for *Bactrocera dorsalis on Carica papaya* var. s~~S~~*olo* submitted 2010-07 TPPT reviewed treatment and requested additional information 2012-05 SC placed treatment on hold pending submission of data 2012-12 TPPT requested additional information 2013-02 TPPT sent Final notice letter to Submitter through Secretariat 2013-05 Submitter responded 2013-07 TPPT reviewed submitter response and recommended to SC for MC 2013-09 TPPT approved treatment schedule (virtual meeting) 2014-02 SC approved draft treatment for MC via e-decision		

Comm. no.	Para. no.	Comment type	Comment	Explanation	Country
			Treatment lead: 2009-01 Ms Alice BAXTER (ZA) 2012-12 Mr Guy HALLMAN (US) **Secretariat notes**: 2013-09 Formatted in accordance with new requirements 2013-09 Secretariat started using previously revised footnote relating treatment adoption 2014-04 Editor edited the text		
14.	*4*	Editorial	This treatment comprises the vapour heat treatment of fruit of *Carica papaya* var. Solo to result in the mortality of eggs and larvae (all ages) of *Bactrocera dorsalis* (oriental fruit fly) at the stated efficacy[1].	Cf Title	EPPO, European Union, Georgia, Serbia
15.	*4*	Editorial	This treatment comprises the vapour heat treatment of fruit of *Carica papaya* toresult in the mortality of eggs and larvae (all ages) of *Bactrocera dorsalis* ~~(oriental fruit fly)~~ at the stated efficacy[1].	The Secretariat should ensure that all treatments not include the common name because common names are varied across regions and across languages. In addition, common names have not been included in adopted standards.	United States of America
16.	*4*	Technical	This treatment comprises the vapour heat treatment of fruit of *Carica papaya* toresult in the mortality of eggs and larvae (all instars~~ages~~) of *Bactrocera dorsalis* (oriental fruit fly) at the stated efficacy[1].	More technically correct	United States of America
17.	*4*	Translation	This treatment comprises the vapour heat treatment of fruit of *Carica papaya* to result in the mortality of eggs and larvae (all ages) of *Bactrocera dorsalis* (oriental fruit fly) at the stated efficacy[1].	"This treatment comprises the vapour heat treatment of fruit of Carica papaya to result in the mortality of eggs and larvae (all ages) of Bactrocera dorsalis (oriental fruit fly) at the stated efficacy" should be translated into Spanish as "Este tratamiento consiste en el tratamiento con vapor caliente de frutos de Carica papaya para provocar la mortalidad de los huevos y larvas (de todas las edades) de Bactrocera dorsalis (mosca oriental de la fruta) con la eficacia indicada"	OIRSA

Comm. no.	Para. no.	Comment type	Comment	Explanation	Country
18.	6	Editorial	**Name of treatment** Vapour heat treatment for *Bactrocera dorsalis on Carica papaya* var. s~~S~~*olo*	Edit	United States of America
19.	6	Translation	**Name of treatment** Vapour heat treatment for *Bactrocera dorsalis on Carica papaya* var. *Solo*	"Vapour heat treatment" should be translated into Spanish as "tratamiento con vapor caliente"	OIRSA
20.	8	Editorial	**Treatment type** Physical (vapour heat ~~treatment~~)	Cf. PT 15 (annex 15 of ISPM 28).	EPPO, European Union, Georgia, Serbia
21.	8	Translation	**Treatment type** Physical (vapour heat treatment)	"Vapour heat treatmente" should be translated into Spanish as "tratamiento con vapor caliente"	OIRSA
22.	9	Editorial	**Target pest** *Bactrocera dorsalis* (Hendel) (Diptera: Tephritidae)~~(oriental fruit fly)~~	Common name already given in paragraph [4].	EPPO, European Union, Georgia, Serbia
23.	9	Editorial	**Target pest** *Bactrocera dorsalis* (Hendel) (Diptera: Tephritidae)~~(oriental fruit fly)~~	Ensure that the Sectretariat make these draft standards consistent with adopted standards (i.e. Species name, author, family/order information, no common name listed)	United States of America
24.	10	Editorial	**Target regulated articles** Fruit of *Carica papaya* (L.) var. *Solo* ~~(L.)~~	Place "(L.)" directly after "Carica papaya" (i.e. before "var. Solo"). Solo is the cultivar name and should not be italics.	EPPO, European Union, Georgia, Serbia
25.	10	Editorial	**Target regulated articles** Fruit of *Carica papaya (L.)* var. s~~S~~*olo* ~~(L.)~~	Linnaeus described the species, not the variety.	United States of America
26.	12	Substantive	Exposure in a certified vapour heat chamber:	Tghis will factor the crticial treatment certification issues whcih can include determining teh cold spots and the tryp of resistenace thermal device to be used etc.	New Zealand
27.	12	Translation	Exposure in a vapour heat chamber:	"Exposure in vapour heat chamber" should be translated into Spanish as "Exposición en una cámara de vapor caliente"	OIRSA
28.	13	Editorial	- at a minimum of 95% relative humidity	Dash missing.	EPPO, European Union, Georgia, Serbia
29.	13	Editorial	• at a minimum of 95% relative humidity;	For better understanding	OIRSA
30.	14	Editorial	- with air temperature increasing from room temperature to 47 °C	Dash missing.	EPPO, European Union, Georgia, Serbia

Comm. no.	Para. no.	Comment type	Comment	Explanation	Country
31.	*14*	Editorial	• with air temperature increasing from room temperature to 47 °C;	For better understanding	OIRSA
32.	*14*	Substantive	with air ???temperature increasing from room temperature to 47 °C	Chamber temp?? Also, this air temp might not translate to all VHT apparatuses. Horixontal or vertical airflow VHT machines may differ in extermnal vs internal furit pulp ramp up temps? Might be better to refer to minimum ramp times and temp, or fruit pulp temp only.	New Zealand
33.	*15*	Editorial	- for at least three hours or until fruit core temperature reaches 46 °C	1) Dash missing. 2) Or "- for at least three hours, until..."? (cf. PT 15, annex 15 of ISPM 28). The meaning of the two sentences is slightly different.	EPPO, European Union, Georgia, Serbia
34.	*15*	Editorial	• for at least three hours or until fruit core temperature reaches 46 °C;	For better understanding	OIRSA
35.	*15*	Substantive	for at least three hours or until fruit core??? temperature reaches 46 °C	Consistency between th use of cor and pulp temp?? Note the comments supplied under Part 1 for para 15 of HTFA for B. melanotus and B. xanthodes also apply.	New Zealand
36.	*15*	Technical	pre-heating for at least three hours or until fruit core temperature reaches 46 °C	More technically correct	United States of America
37.	*15*	Technical	~~for at least three hours or~~ until fruit core temperature reaches 46 °C	This period can be relative. The relevant thing is that the treatment meet its efficacy when the temperature in the pulp of the fruit reaches 46 ° C.	COSAVE, Uruguay, Chile, Brazil, Peru, Argentina
38.	*16*	Editorial	- followed by 70 minutes at a minimum of 95% relative humidity in an air temperature of 47 °C and with fruit pulp temperature at a minimum of 46 °C.	Dash missing.	EPPO, European Union, Georgia, Serbia
39.	*16*	Editorial	• followed by 70 minutes at a minimum of 95% relative humidity in an air temperature of 47 °C and with fruit pulp temperature at a minimum of 46 °C.	For better understanding	OIRSA
40.	*17*	Substantive	Once the treatment is complete fruit are air???-cooled.	Suggest removing the "air" as some systems use water cooling and this should be acceptable. There should be some parameters mentioned fo the cooling (temp, time etc) There is no mention here of recording interval time to be consistent withVHT for Carica papaya.	New Zealand
41.	*17*	Technical	Once the treatment is complete fruit are air-cooled.	Clarify whether this air cooling is cooled to ambient temperature or to a specified temperature, and whether or	United States of America

Comm. no.	Para. no.	Comment type	Comment	Explanation	Country
				not it should be cooled by ambient air or artificial means (air-conditioned or cooled). In addition, can hydro-cooling be substituted, and if so, under what conditions?	
42.	*18*	Editorial	The efficacy is: effective dose $(ED)_{99.86}$ at the 95% confidence level.	For better understanding	OIRSA
43.	*18*	Substantive	The efficacy is effective dose $(ED)_{99.86}$ at the 95% confidence level.	The efficacy dose (ED) 99.86 is apparently lower than other adopted phytosanitary treatments.	Japan
44.	*18*	Technical	The efficacy is effective dose $(ED)_{99.86}$ at the 95% confidence level.	We would like to request TPPT to re-check about percentage of effective dose (ED) because it is less than the probit 9 standard for quarantine treatment efficacy.	Thailand
45.	*18*	Translation	The efficacy is effective dose $(ED)_{99.86}$ at the 95% confidence level.	"The efficacy is effective dose (ED)99.86 at the 95% confidence level." should be translated into Spanish as "La eficacia es: dosis efectiva (DE)99.86 a un nivel de confianza de 95%"	OIRSA
46.	*19*	Substantive	**Other relevant information** **Specifications on the accuracy adn placement ofd temparature sensing devices at cool spots and teh frequency of monitoring may be reguried.**	This additional point could be considered for addition.	New Zealand