

2024 FIRST CONSULTATION 1 July – 30 September 2024

Compiled comments for Draft annex to ISPM 28: Combination of irradiation and modified atmosphere treatment for *Trogoderma granarium* (2023-032) - English


Participants

Name	Summary
Eswatini	The kingdom of Eswatini is fine with the draft standard
Gabon	Nous validons ce projet d'annexe à la NIMP 28.
Madagascar	Est-il impossible de choisir entre les deux traitements ?
Malawi	We support the Draft Annex to ISPM 28
Myanmar	Completed
South Africa	The draft annex is well written. Consider using the same referencing style and italicizing all scientific names.


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

S (Status) - A = Accepted, C = Closed, O = Open, W = Withdrawn, M = Merged

Para	Text	T	Comment
G	(General Comment)	C	Category : <i>SUBSTANTIVE</i> (65) Costa Rica (30 Sep 2024 11:24 PM) No comment
G	(General Comment)	C	Category : <i>SUBSTANTIVE</i> (64) Mexico (30 Sep 2024 7:10 PM) Paragraph 36: Potential implementation problems: -Considering the presentation of pest host commodities, which is generally in bulk/super sacks, this limits the efficiency and effectiveness of the application of irradiation treatment. -The cost related to the infrastructure for the implementation of a controlled atmosphere treatment may not be accessible in all countries.
G	(General Comment)	C	Category : <i>SUBSTANTIVE</i> (62) Belarus (30 Sep 2024 3:01 PM) The Republic of Belarus would like to formally endorse the EPPO comments submitted via the IPPC Online Comment System
G	(General Comment)	C	Category : <i>SUBSTANTIVE</i> (32) Japan (17 Sep 2024 4:58 PM) The reference supporting the draft standard (Zhao et al. (2021)) does not show the effectiveness of this standard against diapausing larvae and pupae. Literatures on treatment tests showing the effectiveness against diapausing larvae and pupae should be presented. In Zhao et al. (2021), only adults, mid-stage larvae, and older larvae of <i>Trogoderma granarium</i> were tested, and diapausing larvae and pupae were not tested. Therefore the effectiveness of the treatment

			<p>against these stages is not confirmed. In addition, Gao et al. (2004) mentions that diapausing larvae and pupae are more resistant to irradiation treatment exposure than order larvae, and Azab et al. (2013) reports that diapausing larvae are more resistant to gas replacement treatment than non-diapausing larvae.</p> <p>According to the Technical Panel on Phytosanitary Treatments (TPPT) meeting report in October 2023, the TPPT set the treatment conditions at 24°C or above and limited the treatment to stored products in order to eliminate the possibility of the presence of diapausing larvae. However, since it has been reported that the diapause may not be broken even at 25°C (Burges, 1963), it is possible that diapause larvae may survive under the proposed treatment conditions.</p> <p>In addition, Gao et al. (2004) has reported that eggs and young larvae are less resistant to irradiation treatment than late larvae.</p>
G	(General Comment)	C	<p>Category : <i>SUBSTANTIVE</i></p> <p>(61) Barbados (30 Sep 2024 11:33 AM)</p> <p>Barbados has no objections to this Draft annex.</p>
G	(General Comment)	C	<p>Category : <i>SUBSTANTIVE</i></p> <p>(53) Nigeria (28 Sep 2024 1:50 AM)</p> <p>NIGERIA SUPPORTS THE DRAFT STANDARD</p>
G	(General Comment)	C	<p>Category : <i>SUBSTANTIVE</i></p> <p>(52) Germany (27 Sep 2024 6:01 PM)</p> <p>Germany would like to formally endorse the EPPO comments submitted via the IPPC Online Comment System.</p>
G	(General Comment)	C	<p>Category : <i>TECHNICAL</i></p> <p>(51) Chile (27 Sep 2024 4:23 PM)</p> <p>Chile agrees with COSAVE comments</p>
G	(General Comment)	C	<p>Category : <i>TECHNICAL</i></p> <p>(48) Kenya (26 Sep 2024 10:58 AM)</p> <p>Kenya is in agreement with the draft standard</p>
G	(General Comment)	C	<p>Category : <i>SUBSTANTIVE</i></p> <p>(46) Guyana (25 Sep 2024 5:15 PM)</p> <p>Guyana supports the adoption of this draft annex.</p>
G	(General Comment)	C	<p>Category : <i>SUBSTANTIVE</i></p> <p> Mauritania</p> <p>(44) United Kingdom (24 Sep 2024 4:46 PM)</p> <p>The UK would like to formally endorse the EPPO comments submitted via the IPPC Online Comment System. EPPO have submitted these comments on behalf of the UK and as such they should be considered as UK national comments.</p>
G	(General Comment)	C	<p>Category : <i>SUBSTANTIVE</i></p> <p>(37) Switzerland (24 Sep 2024 12:19 PM)</p> <p>Switzerland would like to formally endorse the EPPO comments submitted via the IPPC Online Comment System</p>
G	(General Comment)	C	<p>Category : <i>TECHNICAL</i></p> <p>(36) Uruguay (21 Sep 2024 1:25 PM)</p> <p>Uruguay agrees with COSAVE comments</p>
G	(General Comment)	C	<p>Category : <i>SUBSTANTIVE</i></p> <p>(24) Mexico (6 Sep 2024 5:35 PM)</p> <p>Mexico supports the Draft ANNEX to ISPM 28: Combination of irradiation and modified atmosphere</p>

			treatment for <i>Trogoderma granarium</i> (2023-032)
G	(General Comment)	C	Category : <i>SUBSTANTIVE</i> (20) Senegal (29 Aug 2024 11:50 AM) We support the draft annex
G	(General Comment)	C	Category : <i>EDITORIAL</i> (15) South Africa (20 Aug 2024 12:20 PM) The draft annex is well written. Consider using the same referencing style and italicizing all scientific names.
G	(General Comment)	C	Category : <i>SUBSTANTIVE</i> (13) Zambia (19 Aug 2024 10:22 PM) Zambia supports the draft Annex
G	(General Comment)	C	Category : <i>TECHNICAL</i> (7) COSAVE (15 Aug 2024 12:45 AM) We agree with the document as it is
G	(General Comment)	C	Category : <i>TECHNICAL</i> (6) Lesotho (9 Aug 2024 3:34 PM) I think from the technical point of view, this is well packaged, there is no further comment.
G	(General Comment)	C	Category : <i>SUBSTANTIVE</i> (4) New Zealand (7 Aug 2024 11:31 PM) New Zealand supports the adoption of this annex
1	DRAFT ANNEX TO ISPM 28: Combination of irradiation and modified atmosphere treatment for <i>Trogoderma granarium</i> (2023-032)	C	Category : <i>SUBSTANTIVE</i> (63) Russian Federation (30 Sep 2024 5:18 PM) 'General comment': "The Russian Federation would like to formally endorse the EPPO comments submitted via the IPPC Online Comment System"
1	DRAFT ANNEX TO ISPM 28: Combination of irradiation and modified atmosphere treatment for <i>Trogoderma granarium</i> (2023-032)	C	Category : <i>SUBSTANTIVE</i> (56) Malawi (29 Sep 2024 10:50 AM) We support the Draft Annex to ISPM 28
1	DRAFT ANNEX TO ISPM 28: Combination of irradiation and modified atmosphere treatment for <i>Trogoderma granarium</i> (2023-032)	C	Category : <i>SUBSTANTIVE</i> (50) Myanmar (27 Sep 2024 9:37 AM) We support the Draft Annex to ISPM 28.
1	DRAFT ANNEX TO ISPM 28: Combination of irradiation and modified atmosphere treatment for	C	Category : <i>SUBSTANTIVE</i> (47) Myanmar (26 Sep 2024 6:54 AM) We support the adoption of this Annex to ISPM 28.

	<i>Trogoderma granarium</i> (2023-032)		
1	DRAFT ANNEX TO ISPM 28: Combination of irradiation and modified atmosphere treatment for <i>Trogoderma granarium</i> (2023-032)	C	<p>Category : <i>SUBSTANTIVE</i> (39) European Union (24 Sep 2024 1:00 PM) In paragraph 20, it specifies that the treatment is effective against all life stages. However, in paragraph 34, it only states that the treatment has been tested on larvae. It would be useful to provide justification for extrapolating the treatment from larvae to all other life stages including eggs.</p> <p>It is clear that for all PTs the tests should be carried out on the most tolerant stage (which has been determined beforehand). In this case, however, it was not clear and even though the TPPT report refers to diapausing larvae as less tolerant than non-diapausing larvae, it does not refer to eggs.</p> <p>Is there another reference that proves that the most tolerant stage (for irradiation) is the larvae and that eggs are the least tolerant?</p>
1	DRAFT ANNEX TO ISPM 28: Combination of irradiation and modified atmosphere treatment for <i>Trogoderma granarium</i> (2023-032)	C	<p>Category : <i>SUBSTANTIVE</i> (27) EPPO (13 Sep 2024 11:27 AM) In paragraph 20, it specifies that the treatment is effective against all life stages. However, in paragraph 34, it only states that the treatment has been tested on larvae. It would be useful to provide justification for extrapolating the treatment from larvae to all other life stages including eggs.</p> <p>It is clear that for all PTs the tests should be carried out on the most tolerant stage (which has been determined beforehand). In this case, however, it was not clear and even though the TPPT report refers to diapausing larvae as less tolerant than non-diapausing larvae, it does not refer to eggs.</p> <p>Is there another reference that proves that the most tolerant stage (for irradiation) is the larvae and that eggs are the least tolerant?</p>
1	<u>DRAFT ANNEX TO ISPM 28: PROYECTO DE ANEXO A LA NIMF 28: Combination of irradiation and modified atmosphere treatment for <i>Trogoderma granarium</i> (2023-032)</u>	P	<p>Category : <i>TECHNICAL</i>  Honduras (25) Honduras (8 Sep 2024 10:27 PM) Honduras dada la importancia economica del T. granarium apoya la formulacion de este anexo</p>
1	DRAFT ANNEX TO ISPM 28: Combination of irradiation and modified atmosphere treatment for <i>Trogoderma granarium</i> (2023-032)	C	<p>Category : <i>SUBSTANTIVE</i> (11) Malawi (16 Aug 2024 4:55 AM) We support the Draft Annex</p>
2	<u>Status box Canada supports this DRAFT ANNEX.</u>	P	<p>Category : <i>TECHNICAL</i> (45) Canada (24 Sep 2024 8:19 PM)</p>

12	2023-09 SC added <i>Combination of modified atmosphere and irradiation treatment for Trogoderma granarium</i> (2023-032) to the TPPT work programme, subsequently (in 2023-11) assigning it priority 1.	P	Category : EDITORIAL (22) Nepal (31 Aug 2024 9:08 AM)
19	Scope of the treatment	C	Category : TECHNICAL (38) United States of America (24 Sep 2024 12:32 PM) The replication is excellent and includes all life stages. The confirmatory trial had approximately 111,000 mixed stage insects. Some of the earlier work only used adults which we would find suspect because the adult khapra are very fragile and short lived. The only issue, as alluded to in the draft, is that one needs to be sure the insects are actually getting 200 gy in whatever commodity one may be treating. This shouldn't be a problem in well studied commodities, and wouldn't be difficult to determine in any commodity with regular distribution/texture. The treatment requires a prolonged modified atmosphere period of two weeks. In this respect it is even longer than phosphine treatment would be, but still would have some upside vs. phosphine with respect to food quality and worker safety.
19	Scope of the treatment	C	Category : SUBSTANTIVE Honduras (17) Guinea-Bissau (21 Aug 2024 10:24 AM) No comments
20	This treatment describes the irradiation at 200 Gy minimum absorbed dose, followed by modified atmosphere storage under hypoxic conditions of not more than 1% oxygen (O ₂), of stored products to result in the mortality of all life stages of <i>Trogoderma granarium</i> at the stated efficacy. ¹	C	Category : SUBSTANTIVE (57) Australia (30 Sep 2024 10:43 AM) In Zhao et al (2021) (cited in support of this proposed treatment), treatment tolerances were only tested for middle-stage larvae, late-stage larvae and adults (i.e., eggs, diapausing larvae and pupae were not included in the comparison). As late-stage larvae showed to be the most tolerant life stage (for irradiation, MA, and combination), only late-stage larvae were used in the treatment efficacy confirmatory trials. In contrary to Zhao et al (2021), Mansour (2016) indicated that adults of <i>T. granarium</i> are the most tolerant stage for irradiation treatment. Australia noted that Gao et al (2004) (also referred to in the draft annex) reported the dosage of 200 or less Gy inhibit the development and/or reproduction of all life stages of <i>T. granarium</i> and recommended 200 Gy as an effective irradiation dosage for this pest. Taking all these studies into consideration, it is uncertain if the proposed treatment result in the mortality of all life stages at the stated efficacy in paragraph 30. Nevertheless, Australia is comfortable to accept, in principle, that the proposed treatment for this draft annex is effective (sterility and/or mortality) for all life stages of <i>T. granarium</i> .
21	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	C	Category : TECHNICAL (19) Guinea-Bissau (21 Aug 2024 12:29 PM) no coments

	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. There is no obligation for a contracting party to approve, register or adopt the treatments for use in its territory.		
28	Treatment schedule	C	<p>Category : <i>TECHNICAL</i> (33) Japan (18 Sep 2024 9:34 AM) Regarding the minimum absorbed dose in this draft standard, the actual measured values of the X-ray irradiation in the confirmatory tests of Zhao et al. (2021) should be confirmed, and the higher absorbed doses of gamma radiation and X-ray should be reflected in the standard.</p> <p>The minimum absorbed dose of 200 Gy in this treatment schedule is based on the study by Zhao et al. (2021). According to this study, gamma radiation and X-ray are used for confirmatory tests. This study provides the method of measuring the absorbed dose for gamma radiation and the actual measured value, but does not explain the method of measuring the X-ray dose and notes that the uncertainty of X-rays is 5%.</p>
29	A minimum absorbed dose of 200 Gy, followed by modified atmosphere storage at not more than 1% O ₂ <u>and the balance maintained with added nitrogen (N₂)</u> for a minimum of 15 continuous days at or <u>above</u> 24 °C <u>or above</u> .	P	<p>Category : <i>TECHNICAL</i> (34) Japan (18 Sep 2024 10:15 AM) Modify to match the confirmatory test method in the reference (Zhao et al. (2021)). According to the reference, nitrogen was added to keep the oxygen concentration less than 1%.</p>
29	A minimum absorbed dose of 200 Gy, followed by modified atmosphere storage at not more than 1% O ₂ for a minimum of 15 continuous days at or above 24 °C.	C	<p>Category : <i>TECHNICAL</i> (21) Nepal (31 Aug 2024 9:06 AM) Treatment schedule A minimum absorbed dose of 200 Gy, followed by modified atmosphere storage at not more than 1% O₂ for a minimum of 15 continuous days at or above 24 °C. It may be miss leading (how many higher temperature than the 24 degree centigrade temperature?) Larval exposure to a 1% O₂ atmosphere for 14 or 15 days after a 200 Gy irradiation It might be longer duration. Better if we can explore shorter duration applicable results. Combination of Modified Atmosphere and Irradiation for the Phytosanitary Disinfestation of <i>Trogoderma granarium</i> Everts (Coleoptera: Dermestidae) - PMC (nih.gov)</p>
31	This treatment should be applied in accordance with the requirements of ISPM 18 (<i>Requirements for the use of irradiation as a phytosanitary measure</i>) and ISPM 44 (<i>Requirements for the use of</i>	C	<p>Category : <i>TECHNICAL</i> (40) European Union (24 Sep 2024 1:02 PM) Please note that the main component of the modified atmosphere treatment is carbon dioxide (CO₂), therefore for the evaluation of this method it is necessary to additionally specify the CO₂ concentration in the modified atmosphere. Further details are provided for in PT44, and there doesn't seem to be a reason why they should not be</p>

	<i>modified atmosphere treatments as phytosanitary measures</i>).		mentioned here.
31	This treatment should be applied in accordance with the requirements of ISPM 18 (<i>Requirements for the use of irradiation as a phytosanitary measure</i>) and ISPM 44 (<i>Requirements for the use of modified atmosphere treatments as phytosanitary measures</i>).	C	<p>Category : TECHNICAL (28) EPPO (13 Sep 2024 11:27 AM) Please note that the main component of the modified atmosphere treatment is carbon dioxide (CO₂), therefore for the evaluation of this method it is necessary to additionally specify the CO₂ concentration in the modified atmosphere.</p> <p>Further details are provided for in PT44, and there doesn't seem to be a reason why they should not be mentioned here.</p>
34	The efficacy of this schedule was calculated based on a total of 108 558 111 366 larvae of <i>Trogoderma granarium</i> treated with no survivors; the control survival was 97.49% in all confirmatory trials conducted.	P	<p>Category : TECHNICAL (35) Japan (18 Sep 2024 4:58 PM) 111,366 is the total number of tested insects in the 14- and 15-day irradiated treatments in Table 5 in Zhan et al. (2021), but natural mortality in the control at each iteration is not reflected in the number of insects tested in the treatment.</p>
34	The efficacy of this schedule was calculated based on a total of 111 366 <i>mature</i> larvae of <i>Trogoderma granarium</i> treated with no survivors; the control survival was 97.49% in all confirmatory trials conducted.	P	<p>Category : SUBSTANTIVE (54) China (29 Sep 2024 4:14 AM) All the treated insects in the confirmatory tests were mature larvae.</p>
34	The efficacy of this schedule was calculated based on a total of 111 366 larvae of <i>Trogoderma granarium</i> treated with no survivors; the control survival was 97.49% in all confirmatory trials conducted.	C	<p>Category : TECHNICAL (41) European Union (24 Sep 2024 1:03 PM) If the treatment schedule lasts at least 15 days, then should this number not be 101,366 (not taking into account the 2 first rows of the table in the report of Zhao et al.) ?</p>
34	The efficacy of this schedule was calculated based on a total of 111 366 larvae of <i>Trogoderma granarium</i> treated with no survivors; the control survival was 97.49% in all confirmatory trials conducted.	C	<p>Category : TECHNICAL (29) EPPO (13 Sep 2024 11:27 AM) If the treatment schedule lasts at least 15 days, then should this number not be 101,366 (not taking into account the 2 first rows of the table in the report of Zhao et al.) ?</p>
34	The efficacy of this schedule was calculated based on a total of 111 366 <i>late stage</i> larvae of <i>Trogoderma granarium</i>	P	<p>Category : SUBSTANTIVE (12) Thailand (19 Aug 2024 3:51 AM) To comply with the reference document.</p>

	treated with no survivors; the control survival was 97.49% in all confirmatory trials conducted.		
35	<p>Extrapolation of treatment efficacy to all stored products 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 and commodities. These include studies on the following pests and hosts: <i>Anastrepha fraterculus</i> (<i>Eugenia pyrifomis</i>, <i>Malus pumila</i> and <i>Mangifera indica</i>); <i>Anastrepha ludens</i> (<i>Citrus paradisi</i>, <i>Citrus sinensis</i>, <i>Mangifera indica</i> and artificial diet), <i>Anastrepha obliqua</i> (<i>Averrhoa carambola</i>, <i>C. sinensis</i> and <i>Psidium guajava</i>); <i>Anastrepha suspensa</i> (<i>Averrhoa carambola</i>, <i>C. paradisi</i> and <i>Mangifera indica</i>), <i>Bactrocera tryoni</i> (<i>C. sinensis</i>, <i>Solanum lycopersicum</i>, <i>Malus pumila</i>, <i>Mangifera indica</i>, <i>Persea americana</i> and <i>Prunus avium</i>), <i>Cydia pomonella</i> (<i>Malus pumila</i> and artificial diet), <i>Grapholita molesta</i> (<i>Malus pumila</i> and artificial diet), <i>Pseudococcus jackbeardsleyi</i> (<i>Cucurbita</i> sp. and <i>Solanum tuberosum</i>) and <i>Tribolium confusum</i> (<i>Triticum aestivum</i>, <i>Hordeum vulgare</i> and <i>Zea mays</i>) (Bustos <i>et al.</i>, 2004; Gould and von Windeguth, 1991; Hallman, 2004a, 2004b, 2013; Hallman and Martinez, 2001; Hallman <i>et al.</i>, 2010; Jessup <i>et al.</i>, 1992; Mansour, 2003; Tunçbilek and Kansu, 1996; von Windeguth, 1986; von Windeguth and Ismail, 1987; Zhan <i>et al.</i>, 2016). It is</p>	C	<p>Category : <i>TECHNICAL</i> (59) Australia (30 Sep 2024 10:46 AM) Australia considers extrapolation to all stored products that are hosts for <i>T. granarium</i> is reasonable and agrees if future evidence becomes available to indicate this extrapolation may not be appropriate for any of host commodities, the treatment should be reviewed.</p>

	recognized, however, that treatment efficacy has not been tested for all potential hosts of the target pest. If evidence becomes available to show that the extrapolation of the treatment to cover all hosts of this pest is incorrect, the treatment will be reviewed.		
35	Extrapolation of treatment efficacy to all stored products 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 and commodities. These include studies on the following pests and hosts: <i>Anastrepha fraterculus</i> (<i>Eugenia pyrifomis</i> , <i>Malus pumila</i> and <i>Mangifera indica</i>); <i>Anastrepha ludens</i> (<i>Citrus paradisi</i> , <i>Citrus sinensis</i> , <i>Mangifera indica</i> and artificial diet), <i>Anastrepha obliqua</i> (<i>Averrhoa carambola</i> , <i>C. sinensis</i> and <i>Psidium guajava</i>); <i>Anastrepha suspensa</i> (<i>Averrhoa carambola</i> , <i>C. paradisi</i> and <i>Mangifera indica</i>), <i>Bactrocera tryoni</i> (<i>C. sinensis</i> , <i>Solanum lycopersicum</i> , <i>Malus pumila</i> , <i>Mangifera indica</i> , <i>Persea americana</i> and <i>Prunus avium</i>), <i>Cydia pomonella</i> (<i>Malus pumila</i> and artificial diet), <i>Grapholita molesta</i> (<i>Malus pumila</i> and artificial diet), <i>Pseudococcus jackbeardsleyi</i> (<i>Cucurbita</i> sp. and <i>Solanum tuberosum</i>) and <i>Tribolium confusum</i> (<i>Triticum aestivum</i> , <i>Hordeum vulgare</i> and <i>Zea mays</i>) (Bustos <i>et al.</i> , 2004; Gould and von Windeguth, 1991; Hallman, 2004a, 2004b, 2013; Hallman and Martinez, 2001; Hallman	C	Category : EDITORIAL (58) Australia (30 Sep 2024 10:45 AM) Please make formatting of genus and species names consistent.


	<i>et al.</i> , 2010; Jessup <i>et al.</i> , 1992; Mansour, 2003; Tunçbilek and Kansu, 1996; von Windeguth, 1986; von Windeguth and Ismail, 1987; Zhan <i>et al.</i> , 2016). It is recognized, however, that treatment efficacy has not been tested for all potential hosts of the target pest. If evidence becomes available to show that the extrapolation of the treatment to cover all hosts of this pest is incorrect, the treatment will be reviewed.		
35	Extrapolation of treatment efficacy to all stored products 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 and commodities. These include studies on the following pests and hosts: <i>Anastrepha fraterculus</i> (<i>Eugenia pyriformis</i> , <i>Malus pumila</i> and <i>Mangifera indica</i>); <i>Anastrepha ludens</i> (<i>Citrus paradisi</i> , <i>Citrus sinensis</i> , <i>Mangifera indica</i> and artificial diet), <i>Anastrepha obliqua</i> (<i>Averrhoa carambola</i> , <i>C. sinensis</i> and <i>Psidium guajava</i>); <i>Anastrepha suspensa</i> (<i>Averrhoa carambola</i> , <i>C. paradisi</i> and <i>Mangifera indica</i>), <i>Bactrocera tryoni</i> (<i>C. sinensis</i> , <i>Solanum lycopersicum</i> , <i>Malus pumila</i> , <i>Mangifera indica</i> , <i>Persea americana</i> and <i>Prunus avium</i>), <i>Cydia pomonella</i> (<i>Malus pumila</i> and artificial diet), <i>Grapholita molesta</i> (<i>Malus pumila</i> and artificial diet), <i>Pseudococcus jackbeardsleyi</i> (<i>Cucurbita</i> sp.	C	<p><i>Category : EDITORIAL</i> (43) European Union (24 Sep 2024 1:18 PM) The following editorials are proposed for the text:</p> <p>1), 2) and 3): "C." -> "Citrus": For consistency with the other adopted PTs (see for example PT 42 and PT 45).</p> <p>4) "Solanum lycopersicum" and 5) "Triticum aestivum": To be put in alphabetical order.</p> <p>Edited text below:</p> <p>Extrapolation of treatment efficacy to all stored products 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 and commodities. These include studies on the following pests and hosts: <i>Anastrepha fraterculus</i> (<i>Eugenia pyriformis</i>, <i>Malus pumila</i> and <i>Mangifera indica</i>); <i>Anastrepha ludens</i> (<i>Citrus paradisi</i>, <i>Citrus sinensis</i>, <i>Mangifera indica</i> and artificial diet), <i>Anastrepha obliqua</i> (<i>Averrhoa carambola</i>, <i>C. sinensis</i> and <i>Psidium guajava</i>); <i>Anastrepha suspensa</i> (<i>Averrhoa carambola</i>, <i>C. paradisi</i> and <i>Mangifera indica</i>), <i>Bactrocera tryoni</i> (<i>C. sinensis</i>, <i>Solanum lycopersicum</i>, <i>Malus pumila</i>, <i>Mangifera indica</i>, <i>Persea americana</i> and <i>Prunus avium</i>), <i>Cydia pomonella</i> (<i>Malus pumila</i> and artificial diet), <i>Grapholita molesta</i> (<i>Malus pumila</i> and artificial diet), <i>Pseudococcus jackbeardsleyi</i> (<i>Cucurbita</i> sp. and <i>Solanum tuberosum</i>) and <i>Tribolium confusum</i> (<i>Triticum aestivum</i>, <i>Hordeum vulgare</i> and <i>Zea mays</i>) (Bustos <i>et al.</i>, 2004; Gould and von Windeguth, 1991; Hallman, 2004a, 2004b, 2013; Hallman and Martinez, 2001; Hallman <i>et al.</i>, 2010; Jessup <i>et al.</i>, 1992; Mansour, 2003; Tunçbilek and Kansu, 1996; von Windeguth, 1986; von Windeguth and Ismail, 1987; Zhan <i>et al.</i>, 2016). It is recognized, however, that treatment efficacy has not been tested for all potential hosts of the target pest. If evidence becomes available to show that the extrapolation of the treatment to cover all hosts of this pest is incorrect, the treatment will be reviewed</p>

	and <i>Solanum tuberosum</i>) and <i>Tribolium confusum</i> (<i>Triticum aestivum</i> , <i>Hordeum vulgare</i> and <i>Zea mays</i>) (Bustos <i>et al.</i> , 2004; Gould and von Windeguth, 1991; Hallman, 2004a, 2004b, 2013; Hallman and Martinez, 2001; Hallman <i>et al.</i> , 2010; Jessup <i>et al.</i> , 1992; Mansour, 2003; Tunçbilek and Kansu, 1996; von Windeguth, 1986; von Windeguth and Ismail, 1987; Zhan <i>et al.</i> , 2016). It is recognized, however, that treatment efficacy has not been tested for all potential hosts of the target pest. If evidence becomes available to show that the extrapolation of the treatment to cover all hosts of this pest is incorrect, the treatment will be reviewed.		
35	<u>Extrapolation of treatment efficacy to all stored products 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 and commodities. These include studies on the following pests and hosts: <i>Anastrepha fraterculus</i> (<i>Eugenia pyriformis</i>, <i>Malus pumila</i> and <i>Mangifera indica</i>); <i>Anastrepha ludens</i> (<i>Citrus paradisi</i>, <i>Citrus sinensis</i>, <i>Mangifera indica</i> and artificial diet), <i>Anastrepha obliqua</i> (<i>Averrhoa carambola</i>, <i>Citrus sinensis</i> and <i>Psidium guajava</i>); <i>Anastrepha suspensa</i> (<i>Averrhoa carambola</i>, <i>Citrus paradisi</i> and <i>Mangifera indica</i>), <i>Bactrocera tryoni</i> (<i>Citrus sinensis</i>, <i>Malus pumila</i>, <i>Mangifera indica</i>, <i>Persea americana</i>, <i>Prunus avium</i> and <i>Solanum</i></u>	P	<p>Category : EDITORIAL</p> <p>(30) EPPO (13 Sep 2024 11:27 AM)</p> <p>1), 2) and 3): "C." -> "Citrus": For consistency with the other adopted PTs (see for example PT 42 and PT 45).</p> <p>4) "Solanum lycopersicum" and 5) "Triticum aestivum": To be put in alphabetical order.</p>

<p><u><i>lycopersicum</i></u>), <i>Cydia pomonella</i> (<i>Malus pumila</i> and artificial diet), <i>Grapholita molesta</i> (<i>Malus pumila</i> and artificial diet), <i>Pseudococcus jackbeardsleyi</i> (<i>Cucurbita</i> sp. and <i>Solanum tuberosum</i>) and <i>Tribolium confusum</i> (<i>Hordeum vulgare</i>, <i>Triticum aestivum</i> and <i>Zea mays</i>) (Bustos <i>et al.</i>, 2004; Gould and von Windeguth, 1991; Hallman, 2004a, 2004b, 2013; Hallman and Martinez, 2001; Hallman <i>et al.</i>, 2010; Jessup <i>et al.</i>, 1992; Mansour, 2003; Tunçbilek and Kansu, 1996; von Windeguth, 1986; von Windeguth and Ismail, 1987; Zhan <i>et al.</i>, 2016). It is recognized, however, that treatment efficacy has not been tested for all potential hosts of the target pest. If evidence becomes available to show that the extrapolation of the treatment to cover all hosts of this pest is incorrect, the treatment will be reviewed. Extrapolation of treatment efficacy to all stored products 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 and commodities. These include studies on the following pests and hosts: <i>Anastrepha fraterculus</i> (<i>Eugenia pyriformis</i>, <i>Malus pumila</i> and <i>Mangifera indica</i>); <i>Anastrepha ludens</i> (<i>Citrus paradisi</i>, <i>Citrus sinensis</i>, <i>Mangifera indica</i> and artificial diet); <i>Anastrepha obliqua</i> (<i>Averrhoa carambola</i>, <i>C. sinensis</i> and <i>Psidium guajava</i>); <i>Anastrepha suspensa</i> (<i>Averrhoa</i></p>		
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	<p><i>earambola</i>, <i>C. paradisi</i> and <i>Mangifera indica</i>), <i>Bactrocera tryoni</i> (<i>C. sinensis</i>, <i>Solanum lycopersicum</i>, <i>Malus pumila</i>, <i>Mangifera indica</i>, <i>Persea americana</i> and <i>Prunus avium</i>), <i>Cydia pomonella</i> (<i>Malus pumila</i> and artificial diet), <i>Grapholita molesta</i> (<i>Malus pumila</i> and artificial diet), <i>Pseudococcus jackbeardsleyi</i> (<i>Cucurbita</i> sp. and <i>Solanum tuberosum</i>) and <i>Tribolium confusum</i> (<i>Triticum aestivum</i>, <i>Hordeum vulgare</i> and <i>Zea mays</i>) (Bustos <i>et al.</i>, 2004; Gould and von Windeguth, 1991; Hallman, 2004a, 2004b, 2013; Hallman and Martinez, 2001; Hallman <i>et al.</i>, 2010; Jessup <i>et al.</i>, 1992; Mansour, 2003; Tunçbilek and Kansu, 1996; von Windeguth, 1986; von Windeguth and Ismail, 1987; Zhan <i>et al.</i>, 2016). It is recognized, however, that treatment efficacy has not been tested for all potential hosts of the target pest. If evidence becomes available to show that the extrapolation of the treatment to cover all hosts of this pest is incorrect, the treatment will be reviewed.</p>		
35	<p>Extrapolation of treatment efficacy to all stored products 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 and commodities. These include studies on the following pests and hosts: <i>Anastrepha fraterculus</i> (<i>Eugenia pyriformis</i>, <i>Malus pumila</i> and <i>Mangifera indica</i>); <i>Anastrepha ludens</i> (<i>Citrus paradisi</i>, <i>Citrus sinensis</i>,</p>	C	<p>Category : EDITORIAL (14) South Africa (20 Aug 2024 12:18 PM) suggest that this be presented in a table format. Whereby you could list the references along with the researcher's tested doses.</p>

	<p><i>Mangifera indica</i> and artificial diet), <i>Anastrepha obliqua</i> (<i>Averrhoa carambola</i>, <i>C. sinensis</i> and <i>Psidium guajava</i>); <i>Anastrepha suspensa</i> (<i>Averrhoa carambola</i>, <i>C. paradisi</i> and <i>Mangifera indica</i>), <i>Bactrocera tryoni</i> (<i>C. sinensis</i>, <i>Solanum lycopersicum</i>, <i>Malus pumila</i>, <i>Mangifera indica</i>, <i>Persea americana</i> and <i>Prunus avium</i>), <i>Cydia pomonella</i> (<i>Malus pumila</i> and artificial diet), <i>Grapholita molesta</i> (<i>Malus pumila</i> and artificial diet), <i>Pseudococcus jackbeardsleyi</i> (<i>Cucurbita</i> sp. and <i>Solanum tuberosum</i>) and <i>Tribolium confusum</i> (<i>Triticum aestivum</i>, <i>Hordeum vulgare</i> and <i>Zea mays</i>) (Bustos <i>et al.</i>, 2004; Gould and von Windeguth, 1991; Hallman, 2004a, 2004b, 2013; Hallman and Martinez, 2001; Hallman <i>et al.</i>, 2010; Jessup <i>et al.</i>, 1992; Mansour, 2003; Tunçbilek and Kansu, 1996; von Windeguth, 1986; von Windeguth and Ismail, 1987; Zhan <i>et al.</i>, 2016). It is recognized, however, that treatment efficacy has not been tested for all potential hosts of the target pest. If evidence becomes available to show that the extrapolation of the treatment to cover all hosts of this pest is incorrect, the treatment will be reviewed.</p>		
36	Potential implementation issues	C	<p>Category : <i>SUBSTANTIVE</i> (60) Australia (30 Sep 2024 10:47 AM) There are some implementation challenges associated with the proposed treatment. For example: -The research paper (Zhao et al 2021), cited in supporting the proposed treatment, was carried out on small scale of commodities, sufficient to support the adequate numbers of insects for a Probit 9 efficacy. It is uncertain if the treatment will be suitable for large volumes of host commodities (e.g. bulk grains). -Specific expertise and facility/equipment are required for both components (irradiation and MA) of this proposed treatment. -The use of irradiation on products for human consumption need to undergo safety assessments and be</p>

			<p>approved. In Australia and New Zealand, the 200 Gy is within the dosage of irradiation approved for use on fresh fruit and vegetables, herbs and spices.</p> <p>Australia is comfortable to support, in principle, the proposed treatment as a phytosanitary treatment for <i>T. granarium</i> associated with stored products that are hosts of this pest. This will provide an additional treatment option for some industries/export countries, particularly where methyl bromide fumigation and/or heat treatment cannot be used and/or is not suitable for use. However, considering potential implementation challenges indicated above, the use of this proposed treatment as a phytosanitary measure for <i>T. granarium</i> will be approved on a case-by-case basis, subject to confirmation on, including but not limited to, treatment facilities, standard operating procedures, etc.</p>
36	Potential implementation issues	C	<p><i>Category : SUBSTANTIVE</i> (23) Mexico (6 Sep 2024 5:33 PM)</p> <p>Consideration should be given to the fact that the presentation of pest host commodities moving internationally (bulk/big sacks) may limit the efficiency and effectiveness of irradiation treatment application.</p> <p>Consideration should be given to the cost associated with the infrastructure for the implementation of a controlled atmosphere treatment that may not be accessible in all countries.</p>
37	<u>This section is not part of the standard. The Standards Committee in May 2016 requested the Secretariat to gather information on any potential implementation issues related to this draft. Please provide details , proposals and any reseache documents on how to address these potential implementation issues.</u> This section is not part of the standard. The Standards Committee in May 2016 requested the Secretariat to gather information on any potential implementation issues related to this draft. Please provide details and proposals on how to address these potential implementation issues.	P	<p><i>Category : SUBSTANTIVE</i> (18) Guinea-Bissau (21 Aug 2024 10:58 AM)</p>
37	This section is not part of the standard. The Standards Committee in May 2016 requested the Secretariat to gather information on any potential implementation issues related to this draft. Please provide details and proposals on how to address these potential	C	<p><i>Category : TECHNICAL</i>  Congo, DR (1) Nigeria (22 Jul 2024 12:13 PM)</p> <p>Considering the large quantity of export of most of these commodities, how effective will this treatment regime be? For small quantities very effective but for heavy/large tonnage, the effectiveness may be doubt.</p>

	implementation issues.		
38	References	C	Category : EDITORIAL (55) China (29 Sep 2024 4:15 AM) The format of references is not uniform

2024 FIRST CONSULTATION 1 July – 30 September 2024**Compiled comments for Draft annex to ISPM 28: Combination of irradiation and modified atmosphere treatment for *Trogoderma granarium* (2023-032)
- Spanish****T** (Type) - B = Bullet, C = Comment, P = Proposed Change, R = Rating**S** (Status) - A = Accepted, C = Closed, O = Open, W = Withdrawn, M = Merged

Para	Text	T	Comment
G	(General Comment)	C	Category : <i>TECHNICAL</i> (5) Uruguay (9 Aug 2024 2:41 PM) Sin comentarios
1	PROYECTO DE ANEXO DE LA NIMF 28: COMBINACION DEL TRATAMIENTO DE IRRADIACION Y EL TRATAMIENTO EN ATMOSFERA MODIFICADA CONTRA <i>TROGODERMA GRANARIUM</i> (2023-032)	C	Category : <i>TECHNICAL</i> (8) Colombia (15 Aug 2024 9:45 PM) Para los nombres científicos, el género siempre se escribe con la primera letra mayúscula y la especie en minúscula. No es correcto usar la mayúscula sostenida para nombres científicos.
12	2023-09: El Comité de Normas (CN) añadió el tema Combinación del tratamiento en atmósfera modificada y el tratamiento de irradiación contra <i>Trogoderma granarium</i> <i>Combinación del tratamiento en atmósfera modificada y el tratamiento de irradiación contra <i>Trogoderma granarium</i></i> (2023-032) al programa de trabajo del Grupo técnico sobre tratamientos fitosanitarios (GTTF) y posteriormente (2023-11) le asignó prioridad 1.	P	Category : <i>EDITORIAL</i> (10) Colombia (15 Aug 2024 10:14 PM) Se sugiere verificar el uso adecuado de la cursiva
12	2023-09: El Comité de Normas (CN) añadió el tema <i>Combinación del tratamiento en atmósfera modificada y el tratamiento de irradiación contra <i>Trogoderma granarium</i></i> (2023-032) al programa de trabajo del Grupo técnico sobre tratamientos fitosanitarios (GTTF) y posteriormente (2023-11) le asignó prioridad 1.	C	Category : <i>EDITORIAL</i> (2) Ecuador (30 Jul 2024 3:48 PM) Nombre científico de la plaga sin cursiva
36	Esta sección no es parte de la norma. En el mayo de 2016 el Comité de Normas pidió a la secretaría de la CIPF para reunir información sobre los posibles problemas de implementación relacionados con este proyecto. Le rogamos indicar los detalles y propuestas sobre cómo hacer frente a estos posibles problemas de implementación.	P	Category : <i>EDITORIAL</i> (9) Colombia (15 Aug 2024 9:48 PM) Se sugiere eliminar las palabras indicadas para una mejor lectura
36	Esta sección no es parte de la norma. En el mayo de 2016 el Comité de Normas pidió a la secretaría de la CIPF para reunir información sobre los posibles problemas de implementación relacionados con este proyecto. Le rogamos indicar los detalles y propuestas sobre cómo hacer frente a estos posibles problemas de implementación.	C	Category : <i>TECHNICAL</i> (3) Ecuador (30 Jul 2024 3:50 PM) Problema de implementación si no se cierra a un producto empacado, la NIMF 28 habilita a que los tratamientos de irradiación puedan ser realizados a productos a granel y como uno de sus requisitos establece el etiquetado del producto.

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Compiled comments for Draft annex to ISPM 28: Combination of irradiation and modified atmosphere treatment for *Trogoderma granarium* (2023-032)

- French

T (Type) - B = Bullet, C = Comment, P = Proposed Change, R = Rating
S (Status) - A = Accepted, C = Closed, O = Open, W = Withdrawn, M = Merged

Para	Text	T	Comment
G	(General Comment)	C	Category : <i>SUBSTANTIVE</i> (49) Benin (26 Sep 2024 1:38 PM) Pas de commentaire