



2007-101A: Draft sulphuryl fluoride fumigation of insects in debarked wood

Comm no.	Para no.	Comment type	Comment	Explanation	Country
1.	G	Editorial	The arrangement of Table 2 needs to be corrected.	If Table 2 is corrected, the figures in Table 1 then agree with the Table 2 figures.	New Zealand
2.	G	Editorial		It may be appropriate to consider combining the most stringent aspects of both document 2007- 101B) and document 2007- 101A) in order to avoid confusion . The technical panel should pay attention to spacing between words (e.g. paragraph 6, 7 & 9 etc.) throughout the document. However, we have noted the final stage in the “Major stages” (paragraph 2, which states the following: “2014-11 SC agreed to split Sulphuryl fluoride fumigation of wood packaging material (2007-101) into two separate topics: Sulphuryl fluoride fumigation of insects in debarked wood (2007-101A) and Sulphuryl fluoride fumigation of nematodes and insects in debarked wood (2007-101B).”	South Africa
3.	G	Substantive	I support the document as it is and I have no comments		Georgia, Nepal, Mexico, Congo, Barbados, Philippines, Belize, Guyana, Ghana
4.	G	Substantive	Clarification required that this treatment has only been proven to be effective against the three insect species.	Although the body of the text explains this treatment is for 3 insects, the name and scope of this treatment are potentially misleading to NPPOs. Sulphuryl fluoride fumigation of insects in debarked wood suggests that that the treatment is effective against all insects associated with debarked wood.	Australia
5.	G	Technical	1. Considering that this treatment only mention general effectiveness against other pests and any efficacy data is given for them based in the efficacy of the treatment for the 3 species (Anoplophora glabripennis, Anobium punctatum and Arhopalus tristis) will be appropriate to control them, we would like to request to TPPT to provide some indication of this efficacy for example for Siricidae spp.	See comment.	Brazil, COSAVE, Paraguay, Argentina, Peru, Uruguay, Chile

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			<u>2. Paragraph 19 provide that “the measured temperature of the product or the ambient air (whichever is lower) is used to calculate the SF dose, and must be at least 15 °C (including at the wood core) throughout the duration of the treatment.” We would like to request the TPPT to clarify the reasons for mentioning this temperature at the wood core throughout the treatment, taking into account the operative difficulties this requirement could cause. For other fumigation treatments only the ambient temperature is recorded throughout the treatment.</u> ✘		
6.	1	Editorial	DRAFT SULPHURYL FLUORIDE FUMIGATION OF DEBARKED WOOD AGAINST INSECTS IN DEBARKED WOOD (2007-101A)	It's the wood that is treated, not the insects. The treatment is performed against insects that may be present in the wood.	EPPO, Austria, Norway
7.	1	Editorial	DRAFT SULPHURYL FLUORIDE FUMIGATION FOR OF INSECTS INON DEBARKED WOOD (2007-101A)	To be consistent with other approved treatments.	Brazil, COSAVE, Paraguay, Argentina, Peru, Uruguay, Chile
8.	1	Substantive	PROYECTO DE FUMIGACIÓN DE INSECTOS EN MADERA DESCORTEZADA CON FLUORURO DE SULFURILO PARA REDUCIR EL RIESGO DE LA INTRODUCCION DE INSECTOS (2007-101A)	Clarifica el título, porque lo que se fumiga es la madera para evitar los insectos	Costa Rica
9.	1	Technical	DRAFT SULPHURYL FLUORIDE FUMIGATION OF DEBARKED WOOD AGAINST INSECTS IN DEBARKED WOOD (2007-101A)	It's the wood that is treated, not the insects. The treatment is performed against insects that may be present in the wood.	European Union, Austria
10.	1	Translation	DRAFT SULPHURYL FLUORIDE FUMIGATION OF INSECTS IN DEBARKED WOOD (2007-101A)	Translation into Spanish should be “FUMIGACIÓN CON FLUORURO DE SULFURILO CONTRA INSECTOS EN MADERA DESCORTEZADA”	Brazil, COSAVE, Paraguay, Argentina, Peru, Uruguay, Chile
11.	4	Editorial	This treatment describes applies to the fumigation of debarked wood using sulphuryl fluoride (SF) to reduce the risk of introduction and spread of pest insects ¹ .	Suggested edit is for consistency between PTs. Suggest using "describes" rather than "applies to" or "comprises"	Canada
12.	4	Editorial	This treatment applies to the fumigation of debarked wood using sulphuryl fluoride (SF) to reduce the risk of introduction and spread of pest insects ¹ .	Insect pest reads better than pest insect. Footnote should be placed at the end of the page.	Jamaica
13.	4	Editorial	This treatment applies to the fumigation of debarked wood using sulphuryl fluoride (SF) to reduce the risk of introduction and spread of insect pests insects ¹ .	Editorial correction.	Brazil, COSAVE, Paraguay, Argentina, Peru, Uruguay,

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					Chile
14.	4	Substantive	This treatment applies to the fumigation of debarked wood using sulphuryl fluoride (SF) to reduce the risk of introduction and spread of pest insects ¹ .	According to ISPM 5, definition of a pest encompasses insects, nematodes, and pathogens etc. Hence, the word "pest" could be excluded.	Singapore
15.	4	Substantive	This treatment applies to the fumigation of debarked wood using sulphuryl fluoride (SF) to reduce the risk of introduction and spread of <i>Anaplophora glabripennis</i> , <i>Anobium punctatum</i> and <i>Arhopalus tristis</i> pest insects ¹ .	Whilst this treatment could be effective against other insects, the efficacy data only supports the inclusion of three species and this should be made clear in the scope of the treatment.	Australia
16.	4	Substantive	This treatment applies to the fumigation of debarked wood using sulphuryl fluoride (SF) to reduce the risk of introduction and spread of pest insects ¹ .	Because of the uniqueness and testing of wood-boring pests, we should explain the use of extrapolation in this standard, with an emphasis on the harmonization nature of ISPMs. This could be a footnote. Treatments for wood are aiming at significantly reducing various insect pests in the pathway rather than achieving mortality at a probit 9 level (which is common for fruit flies). To avoid the confusion, this explanation might be necessary within the draft.	United States of America
17.	4	Technical	This treatment applies to the fumigation of debarked wood using sulphuryl fluoride (SF) to reduce the risk of introduction and spread of pest insects ¹ .	Add a footnote here (or elsewhere in this draft) that the wood is debarked and therefore does not contain the eggs, and the standard is not aiming at the effectiveness against the eggs (the eggs are laid in the bark).	United States of America
18.	6	Editorial	Name of treatment Sulphuryl fluoride fumigation of debarked wood against insects in debarked wood	It's the wood that is treated. The treatment is performed against insects that may be present in the wood	EPPO, Austria, Norway
19.	6	Editorial	Name of treatment Sulphuryl fluoride fumigation of pest insects in debarked wood	especially for wood pest insect	Indonesia
20.	6	Editorial	Name of treatment Sulphuryl fluoride fumigation of for insects pests ion debarked wood	To be consistent with other approved treatments.	Brazil, COSAVE, Paraguay, Argentina, Peru, Uruguay, Chile
21.	6	Substantive	Name of treatment Sulphuryl fluoride fumigation of <i>Anoplophora glabripennis</i> , <i>Anobium punctatum</i> and <i>Arhopalus tristis</i> insects in debarked wood	Needed clarification that this treatment is known to be effective for the three listed species and not all insects.	Australia
22.	6	Substantive	Name of treatment Sulphuryl fluoride fumigation of insects in debarked wood [is this product still recommended for use?]	there is a concern that this product may be phased out soon.	Kenya
23.	6	Technical	Name of treatment Sulphuryl fluoride fumigation of debarked wood against insects in debarked wood	It's the wood that is treated. The treatment is performed against insects that may be present in the wood.	European Union, Austria

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24.	7	Editorial	Active ingredient Sulphuryl fluoride (also known as sulfuryl fluoride, sulphur dioxide difluoride, sulphuryl difluoride, <u>Sulfur dioxide difluoride</u> , <u>Sulfuryl difluoride</u>)	Additional names for which Sulphuryl fluoride.	Jamaica
25.	9	Substantive	Target pests Wood-borne life stages of insects, including <i>Anoplophora glabripennis</i> (Motschulsky), <i>Anobium punctatum</i> (De Geer) and <i>Arhopalus tristis</i> (Fabricius)	Is this relevant to only these particular species or extrapolated to other species in these families? See US comment from paragraph 4. When the role of ISPMs and harmonization is as suggested in the comment above is explained, then extrapolation is addressed and no additional data is needed for other insects. Common concern that we experience is the understanding of the nature of the treatments in relation to the broad range of organisms, rather than only those that are mentioned in paragraph 9, for example.	United States of America
26.	9	Substantive	Target pests Wood-borne life stages of insects, including <i>Anoplophora glabripennis</i> (Motschulsky), <i>Anobium punctatum</i> (De Geer) and <i>Arhopalus tristis</i> (Fabricius)	Why were these wood borne stages of insects singled out.	Jamaica
27.	9	Translation	Target pests Wood-borne life stages of insects, including <i>Anoplophora glabripennis</i> (Motschulsky), <i>Anobium punctatum</i> (De Geer) and <i>Arhopalus tristis</i> (Fabricius)	Wood-borne life stages of insects should be translate into Spanish as "estados de desarrollo de insectos en la madera"	Brazil, COSAVE, Paraguay, Argentina, Peru, Uruguay, Chile
28.	10	Technical	Target regulated articles Debarked wood not exceeding 20 cm in cross-section and 60% moisture content	Debarked wood not exceeding 10 cm across the radius. Penetration depth of SF must be determined. The gas will penetrate the lumber from any angle therefore in determining the penetration depth of SF it would be more feasible to quantitatively establish "a not exceeding limit" from the radius to the outer section of the lumber. A protocol or guidelines to determine moisture content must be developed. This must include the sample quantity.	Jamaica
29.	12	Editorial	Fumigation of debarked wood not exceeding 20 cm in cross-section and 60% moisture content in accordance with a schedule that achieves the minimum concentration-time (CT) product <u>(CT)</u> over 24 hours at the temperature and final residual concentration specified in Table 1.	consistent with draft revision of Annex 1 and Annex 2 to ISPM 15	Indonesia
30.	12	Substantive	Fumigation of debarked wood not exceeding 20 cm in cross-section and 60% moisture content in accordance with a schedule that achieves the minimum concentration-time (CT) product over 24 hours at the temperature and final residual concentration specified	Transparency requires for calculation for determining the CT. There are multiple ways to determine the CT products, and the headspace fumigant monitoring will influence the resulting CT product. We highly recommend that the calculation used to establish the CT product be defined with additional provisions to be used when the target CT product is not achieved by the end of	United States of America

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			in Table 1.	the treatment period.	
31.	12	Technical	Fumigation of debarked wood not exceeding 20 cm in cross-section and 60% moisture content in accordance with a schedule that achieves the minimum concentration-time (CT) product within a single 24 hour periods at the temperature and final residual concentration specified in Table 1.	For clarity of what is required.	EPPO
32.	12	Technical	Fumigation of debarked wood not exceeding 20 cm in cross-section and 60% moisture content in accordance with a schedule that achieves the minimum concentration-time (CT) product within a single 24 hour periods at the temperature and final residual concentration specified in Table 1. <u>The minimum temperature of the wood and its surrounding atmosphere must not be less than 15 degrees.</u>	For clarity of what is required.	European Union
31.	12	Technical	Fumigation of debarked wood not exceeding 20 cm in cross-section and 60% moisture content in accordance with a schedule that achieves the minimum concentration-time (CT) product within a single 24 hour periods at the temperature and final residual concentration specified in Table 1.	For clarity of what is required.	Austria, Norway
34.	13	Editorial	Table 1. Minimum concentration-time (CT) product over 24 hours for debarked wood fumigated with sulphuryl fluoride	for writing efficiency	Indonesia
35.	13	Technical	Table 1. Minimum concentration-time (CT) product over <u>within a single</u> 24 hours <u>period</u> for debarked wood fumigated with sulphuryl fluoride	To be more precise about what is required.	EPPO, European Union, Austria, Norway
36.	13	Technical	Table 1. Minimum concentration-time (CT) product over 24 hours for debarked wood fumigated with sulphuryl fluoride <u>The CT product and dosage in tables are much higher than references.</u>	(1) At 15.6°C and above, sulphuryl fluoride treatment for <i>Anoplophora glabripennis</i> at dose of 104 g/m ³ , CT product of 1095 g.-h/m ³ is recommended. (2) The dose that can full control of <i>Arhopalus tristis</i> egg is 120 g/m ³ . Reference: Zhang Z. 2006. Use of sulphuryl fluoride as an alternative fumigant to methyl bromide in export log fumigation. <i>New Zealand Plant Protection</i> , 59: 223-227.	China
37.	13	Technical	Table 1. Minimum concentration-time (CT) product over 24 hours <u>[need to state the specific time]</u> for debarked wood fumigated with sulphuryl fluoride	24hours is too open	Kenya

Comm. no.	Para. no.	Comment type	Comment	Explanation	Country															
38.	14	Editorial	<table border="1"> <thead> <tr> <th>Temperature (°C)</th> <th>Minimum CT product (g·h/m³)</th> <th>Minimum concentration (g/m³)</th> </tr> </thead> <tbody> <tr> <td>15 °C and above</td> <td>3 200</td> <td>93</td> </tr> <tr> <td>20 °C and above</td> <td>2 300</td> <td>67</td> </tr> <tr> <td>25 °C and above</td> <td>1 500</td> <td>44</td> </tr> <tr> <td>30 °C and above</td> <td>1 400</td> <td>41</td> </tr> </tbody> </table>	Temperature (°C)	Minimum CT product (g·h/m ³)	Minimum concentration (g/m ³)	15 °C and above	3 200	93	20 °C and above	2 300	67	25 °C and above	1 500	44	30 °C and above	1 400	41	For consistency with ISPM 15.	EPPO, European Union, Austria, Norway
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Temperature	Minimum CT product (g·h/m ³)	Minimum concentration (g/m ³)																				
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			25 °C and above	<p>treatment schedule at 15.6°C and above in Barak et al. (2006) can be used as 20°C and above. At 25°C and above, we used the dose that calculated at 21.1°C in Barak et al. (2006), and the minimum concentration (g/m³) at hour was predicted according to Bonifacio L. (2014) and the pattern between treatment schedule at ≥15°C and ≥20°C.</p>																																									
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Temperature	Minimum CT product (g·h/m ³)	Minimum concentration (g/m ³)																		
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44.	16	Editorial	<ul style="list-style-type: none"> <i>Anoplophora glabripennis</i> (larvae and pupae) to not less than 99.99683%² 	Footnote should be at the end of the page.	Jamaica															
45.	17	Technical	<ul style="list-style-type: none"> <i>Anobium punctatum</i> [include common name](all life stages) to not less than 99.7462% 	scientific clarification	Kenya															
46.	18	Technical	<ul style="list-style-type: none"> <i>Arhopalus tristis</i>[include common name] (all life stages) to not less than 99%. 	scientific clarification	Kenya															
47.	19	Editorial	The measured temperature of the product (including at the wood core) or the ambient air (whichever is lower) is used to calculate the SF dose, and must be at	Text better placed.	EPPO, European Union, Austria, Norway															

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			least 15 °C (including at the wood core) throughout the duration of the treatment.						
48.	19	Substantive	The measured temperature of the product or the ambient air (whichever is lower) is used to calculate the SF dose, and must be at least 15 <u>or 20</u> °C (including at the wood core) throughout the duration of the treatment.	The minimum temperature of the wood in the draft revision annex to ISPM 15 is defined at 20C, while this draft annex to ISPM 28 is defined at 15C. The corrected temperature should be clarified.	Thailand				
49.	20	Substantive	National plant protection organizations shall ensure that the above requirement is followed by those involved in the application of SF under this treatment.	This sentence is not needed and inconsistent with other treatment Annexes.	EPPO, European Union, Austria, Norway				
50.	20	Technical	National plant protection organizations shall ensure that the above requirement is followed by those involved in the application of SF under this treatment.	This is not part of the treatment.	Brazil, COSAVE, Paraguay, Argentina, Peru, Uruguay, Chile				
51.	22	Editorial	One example of a schedule that achieves the minimum required CT product for debarked wood treated with SF is shown in Table 2.	for writing efficiency	Indonesia				
52.	23	Editorial	Table 2. Example of a treatment schedule that achieves the minimum required concentration-time (CT) product for debarked wood treated with sulphuryl fluoride (SF):	No full stop at the end of the title.	EPPO, European Union, Austria, Norway				
53.	23	Editorial	Table 2. Example of a treatment schedule that achieves the minimum required concentration-time (CT) product for debarked wood treated with sulphuryl fluoride (SF).	for writing efficiency	Indonesia				
54.	23	Technical	Table 2. Example of a treatment schedule that achieves the minimum required concentration-time (CT) product for debarked wood treated with sulphuryl fluoride (SF). <u>The CT product and dosage in tables are much higher than references.</u>	1. At 15.6°C and above, sulphuryl fluoride treatment for Anoplophora glabripennis at dose of 104 g/m ³ , CT product of 1095 g.-h/m ³ is recommended. 2. The dose that can full control of Arhopalus tristis egg is 120 g/m ³ . Reference: Zhang Z. 2006. Use of sulphuryl fluoride as an alternative fumigant to methyl bromide in export log fumigation. New Zealand Plant Protection, 59: 223-227.	China				
55.	24	Editorial	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center; vertical-align: middle;">Mea n temp eratu re (°C)</td> <td style="text-align: center; vertical-align: middle;">Mini mu m targ et CT dos age</td> <td style="text-align: center; vertical-align: middle;">SF dos e* (g/ m³)</td> <td style="text-align: center; vertical-align: middle;">Minimum concentration (g/m³) at hour:</td> </tr> </table>	Mea n temp eratu re (°C)	Mini mu m targ et CT dos age	SF dos e* (g/ m ³)	Minimum concentration (g/m ³) at hour:	The width of columns need to be adjusted.	EPPO, European Union, Austria, Norway
Mea n temp eratu re (°C)	Mini mu m targ et CT dos age	SF dos e* (g/ m ³)	Minimum concentration (g/m ³) at hour:						

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61.	25	Editorial	<p>* Initial doses may need to be higher in conditions of high sorption or leakage.</p>	1) Only one asterisk is needed. 2) Capital at the beginning of the sentence.	EPPO, European Union, Austria, Norway																																																												

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62.	25	Editorial	* initial initial doses may need to be higher in conditions of high sorption or leakage.	Removal additional *	Jamaica
63.	25	Technical	* * initial doses may need to be higher <u>[should include the range]</u> in conditions of high sorption or leakage.	clarification	Kenya
64.	26	Editorial	The Technical Panel on Phytosanitary Treatments based its evaluation of this treatment for <i>A. glabripennis</i> on the research reported by Barak <i>et al.</i> (2006).	this statement may be more appropriate as reference, whether it should be included?	Indonesia
65.	27	Editorial	The general effectiveness of this treatment against other pests has been supported by Barak <i>et al.</i> (2010), Binker <i>et al.</i> (1999), Ducom <i>et al.</i> (2003), La Fage <i>et al.</i> (1982), Mizobuchi <i>et al.</i> (1996), Osbrink <i>et al.</i> (1987), Soma <i>et al.</i> (1996, 1997), Williams and Sprengel (1990) and Zhang (2006).	this statement is more appropriate as reference, whether it should be included?	Indonesia
66.	28	Substantive	References	The US highly recommends that the all documents (supplemental information, calculations, references, CT schedules, TPPT meeting notes relevant to the particular draft, etc.) be publicly available on the IPP during member consultation period so that all reviewers can access this information. This would allow for the least ambiguous and most technically relevant review.	United States of America
67.	29	Technical	Barak, A., Myers, S. & Messenger, M. 2010. Sulphuryl fluoride treatment as a quarantine treatment for emerald ash borer (Coleoptera: Buprestidae) in ash logs. <i>Journal of Economic Entomology</i> , 103(3): 603–611.	This is incorrect - Myers was not an author. Correct authors were: Alan V. Barak, Matthew Messenger, Paul Neese, Ellen Thoms, and Ivich Fraser. The paper refers to barked wood and shows egg survival. However, above we commented that debarking removes eggs. Is it valid to retain this reference because it was confusing to some reviewers?	United States of America
68.	31	Technical	Binker, G., Binker, J., Fröba, G., Graf, E. & Lanz, B. 1999. Laboratory study on <i>Anobium punctatum</i> , number 130377/A and 403972 (bioassay 11–15), unpublished, Binker Materialschutz, Germany. <i>In Inclusion of active substances in Annex I to Directive 98/8/EC</i> : Assessment report: Sulphuryl fluoride, PT8, Appendix IV (List of studies), p. 29, September 2006.	The US was unable to obtain a copy of this reference.	United States of America
69.	32	Editorial	Ducom, P., Roussel, C. & Stefanini, V. 2003. Efficacy of sulphuryl fluoride on European house borer eggs, <i>Hylotrupes bajulus</i> (L.) (Coleoptera: Cerambycidae), Laboratoire National de la Protection des	Four typos: missing "e" at the end of "Cerambycidae", "d" to be replaced by "d" twice, and a space is missing before "33150".	EPPO, European Union, Austria, Norway

Comm no.	Para no.	Comment type	Comment	Explanation	Country
			Végétaux, Station d'Etude des Techniques de fumigation et de Protection des Denrées Stockées, Chemin d'Artigues - 33150 Cenon, France. contract research project. In <i>Inclusion of active substances in Annex I to Directive 98/8/EC</i> : Assessment report: Sulphuryl fluoride, PT8, Appendix IV (List of studies), p. 31, September 2006.		
70.	32	Technical	Ducom, P., Roussel, C. & Stefanini, V. 2003. Efficacy of sulphuryl fluoride on European house borer eggs, <i>Hylotrupes bajulus</i> (L.) (Coleoptera: Cerambycida), Laboratoire National de la Protection des Végétaux, Station d'Etude des Techniques de fumigation et de Protection des Denrées Stockées, Chemin d'Artigues - 33150 Cenon, France. contract research project. In <i>Inclusion of active substances in Annex I to Directive 98/8/EC</i> : Assessment report: Sulphuryl fluoride, PT8, Appendix IV (List of studies), p. 31, September 2006.	The US was unable to obtain a copy of this reference.	United States of America
71.	33	Technical	La Fage, J.P., Jones, M. & Lawrence, T. 1982. A laboratory evaluation of the fumigant, sulphuryl fluoride (Vikane), against the Formosan termite <i>Coptotermes formosanus</i> Shiraki. International Research Group on Wood Protection (IRGWP) Thirteenth Annual Meeting, Stockholm, May 1982. Stockholm, IRGWP Secretariat.	The US was unable to obtain a copy of this reference.	United States of America
72.	41	Substantive	Footnote 2: The minimum level of mortality achieved by the treatment for this species has been estimated by extrapolation from a model fitted to the experimental data.	Footnote 2 said: The minimum level of mortality achieved by the treatment for this species has been estimated by extrapolation from a model fitted to the experimental data. We think it is important to base these level of mortality on large scale data not on experimental data. Because the level of mortality will affect on the efficiency of the treatment. Taking into consideration that most countries looking now for an effective alternative to methyl bromide.	Bahrain