



2007-114: Draft Heat treatment of wood using dielectric heating

Comm no.	Para no.	Comment type	Comment	Explanation	Country
1.	G	Editorial		Remove numbers in front of paragraphs 4, 6-10, 12-13, and 15-17 as they don't belong in the document and they are in the wrong order.	Canada
2.	G	Substantive	I support the document as it is and I have no comments		China, Australia, New Zealand, Nepal, Mexico, Congo, South Africa, Barbados, Philippines, Belize, Ghana, Guyana
3.	G	Technical		Access to references is difficult. 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. Reference 23: There is a lack of supporting references on effectiveness on pathogens and fungi. Therefore, the U.S. recommends including Kayimbi Mendha Tubajika, Jonh Jack Jonawiak, Ronald Mack, Kelli Hoover. 2007. Efficacy of radio frequency treatment and its potential for control of sapstain and wood decay fungi on red oak, poplar, and southern yellow pine wood species (emailed separately to the IPPC Secretariat on 27 November 2015).	United States of America
4.	3	Editorial	Scope of the treatment	Revisit numbering of paragraph.	Jamaica
5.	4	Editorial	1. This treatment comprises the dielectric ¹ heating of wood to reduce the likelihood of introduction and spread of pine wood nematode (<i>Bursaphelenchus xylophilus</i> (Steiner & Buhrer) Nicke) and those pest insects and wood decay fungi likely to be associated with wood in international trade ² .	* for writing consistency * especially for wood decay fungi	Indonesia

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6.	4	Editorial	1. This treatment describes comprises the dielectric ¹ heating of wood to reduce the likelihood of introduction and spread of <i>Bursaphelenchus xylophilus</i> and those pest insects and fungi likely to be associated with wood in international trade ² .	Suggested edit is for consistency between PTs. Suggest using "describes" rather than "applies to" or "comprises"	Canada
7.	4	Editorial	1. This treatment comprises the dielectric ¹ heating of wood to reduce the likelihood of introduction and spread of <i>Bursaphelenchus xylophilus</i> and those pest insects insect pests and fungi likely to be associated with wood in international trade ² .	Insect pest reads better.	Jamaica
8.	4	Editorial	1. This treatment comprises the dielectric ¹ heating of wood to reduce the likelihood of introduction and spread of <i>Bursaphelenchus xylophilus</i> and those pest insects and fungal pests likely to be associated with wood in international trade ² .	Editorial correction	COSAVE, Argentina, Peru, Brazil, Uruguay, Chile, Paraguay
9.	4	Substantive	This treatment comprises the dielectric ¹ heating of wood to reduce the likelihood of introduction and spread of <i>Bursaphelenchus xylophilus</i> and those pest insects and fungi likely to be associated with wood in international trade ² .	According to ISPM 5, the definition of pests include insects and pathogens etc. Hence, the word "pest" could be excluded.	Singapore
10.	4	Technical	1. This treatment comprises the dielectric ¹ heating of wood to reduce the likelihood of introduction and spread of <i>Bursaphelenchus xylophilus</i> , <i>Anoplophora glabripennis</i> and those other pest insects, nematodes and fungi likely to be associated with wood in international trade ² .	1. ALB should be mentioned as treatment efficacy at Probit 9 level against it was a requirement before dielectric heating could be added to ISPM 15. 2. PWN is not the only target nematode.	EPPO, European Union, Austria, Norway
11.	4	Technical	1. This treatment comprises the dielectric ¹ heating of wood to reduce the likelihood of introduction and spread of <i>Bursaphelenchus xylophilus</i> and those pest insects and fungi	We suggest to include references to the appendix that were lost in the original ISPM 15. Also in another appendix, add a list of specific organisms that were originally targeted by ISPM 15	United States of America

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			wood boring insects likely to be associated with wood in international trade ² .		
12.	9	Editorial	1. Target pests Wood-borne life stages of insects, fungi and pine wood nematode (<i>Bursaphelenchus xylophilus</i> (Steiner & Buhner) Nickle) (Nematoda: Aphelenchoididae)	for writing consistency	Indonesia
13.	9	Technical	1. Target pests Wood-borne life stages of insects, fungi and <i>Bursaphelenchus xylophilus</i> (Steiner & Buhner) Nickle (Nematoda: Aphelenchoididae)	Target pests of this treatment should be excluded fungi due to the reference documents are not sufficient to specify its validity.	Thailand
14.	9	Technical	1. Target pests Wood-borne life stages of insects, fungi and <i>Bursaphelenchus xylophilus</i> (Steiner & Buhner) Nickle (Nematoda: Aphelenchoididae)	Make a global change to remove fungi	United States of America
15.	9	Translation	6. Target pests Wood-borne life stages of insects, fungi and <i>Bursaphelenchus xylophilus</i> (Steiner & Buhner) Nickle (Nematoda: Aphelenchoididae)	Wood-borne life stages of insects should be translate into Spanish as “estados de desarrollo de insectos en la madera”	COSAVE, Argentina, Peru, Brazil, Uruguay, Chile, Paraguay
16.	12	Editorial	8. Where the application of heat is undertaken using dielectric heating (e.g. microwaves or radio waves), wood must be heated to achieve a minimum temperature of 60 °C for the duration of 1 minute throughout the profile of the wood.	Mislabelling of paragraph number.	Singapore
17.	12	Substantive	1. Where the application of heat is undertaken using dielectric heating (e.g. microwaves or radio waves), wood must be heated to achieve a minimum temperature of 60 °C for the minimum duration of 1 minute throughout the profile of the wood.	1 minute is the minimum, but the temperature may be maintained for a longer time.	EPPO, European Union, Austria, Norway
18.	12	Substantive	7. Where the application of heat is undertaken using dielectric heating (e.g. microwaves or radio waves),	consistent with draft revision of Annex 1 and Annex 2 to ISPM 15	Indonesia

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			<p>wood must be heated to achieve a minimum temperature of 60 °C for the duration of 1 minute throughout the profile of the wood.</p> <p><u>8. To ensure that entire wood is heated, temperature sensors should be inserted into wood core.</u></p> <p><u>9. To monitor and ensure that entire wood is heated, temperature sensors and recording equipments are calibrated.</u></p> <p>-</p>		
19.	12	Substantive	7. Where the application of heat is undertaken using dielectric heating (e.g. microwaves or radio waves), wood must be heated to achieve a minimum temperature of 60 °C for the duration of 1 minute throughout the profile of the wood.	using source to dielectric heating for example microwaves or radio waves are very expensive ,futile economical and with limited capacity	Bahrain
20.	12	Technical	1. Where the application of heat is undertaken using dielectric heating (e.g. microwaves or radio waves), wood must be heated to achieve a minimum temperature of 60 °C for the duration of 1 minute throughout the profile of the wood <u>(including its surface)</u> .	Useful specification, in line with ISPM 15	Norway
21.	12	Technical	1. Where the application of heat is undertaken using dielectric heating (e.g. microwaves or radio waves), wood must be heated to achieve a minimum temperature of 60 °C for the duration of 1 minute throughout the profile <u>(including its surface)</u> of the wood.	Text in brackets added to be consistent with annex 1 of ISPM 15.	COSAVE, Argentina, Peru, Brazil, Uruguay, Chile, Paraguay
22.	13	Editorial	1. This treatment schedule achieves no less than a 99.99683% level of mortality for all life stages of <i>B. xylophilus</i> at the 95% confidence level, and it is effective against those pest <u>all life stages of nematodes and wood boring i</u>	For clarity	United States of America

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			nsects and fungi listed in this standard likely to be associated with wood in international trade.		
23.	13	Editorial	1. This treatment schedule achieves no less than a 99.99683% level of mortality for all life stages of <i>B. xylophilus</i> at the 95% confidence level, and it is effective against those pest insects and fungal pests likely to be associated with wood in international trade.	Editorial correction	COSAVE, Argentina, Peru, Brazil, Uruguay, Chile, Paraguay
24.	13	Substantive	This treatment schedule achieves no less than a 99.99683% level of mortality for all life stages of <i>B. xylophilus</i> at the 95% confidence level, and it is effective against those pest insects and fungi likely to be associated with wood in international trade.	According to ISPM 5, the definition of pests include insects and pathogens etc. Hence, the word "pest" could be excluded.	Singapore
25.	15	Editorial	<u>10.</u> The Technical Panel on Phytosanitary Treatments based its evaluation of this treatment for <i>B. xylophilus</i> on the research reported by Hoover <i>et al.</i> (2010) and Janowiak <i>et al.</i> (2014). As insects have been found to be generally more susceptible to heat than pine wood nematodes are, the level of efficacy for insects will be equivalent to or higher than that for nematodes.	Mislabelling of paragraph number.	Singapore
26.	15	Technical	9. The Technical Panel on Phytosanitary Treatments based its evaluation of this treatment for <i>B. xylophilus</i> on the research reported by Hoover <i>et al.</i> (2010) and Janowiak <i>et al.</i> (2014). As insects have been found to be generally more susceptible to heat than pine wood nematodes are, the level of efficacy for insects will be equivalent to or higher than that for nematodes.	General comment: Although this paragraph refers to the fact that insects are generally more susceptible to heat than PWN, it would be interesting to know if it would apply to all insects, e.g. Emerald Ash Borer or Bronze Birch Borer.	EPPO, European Union, Austria, Norway
27.	15	Technical	9. The Technical Panel on Phytosanitary Treatments based its evaluation of this treatment for <i>B. xylophilus</i> on the research reported by Hoover <i>et al.</i> (2010) and Janowiak <i>et al.</i> (2014). As insects have been found to be generally more susceptible to heat than pine wood nematodes are, the level of efficacy for	Regarding Janowiak et al (2014) - Does this reference describe specific tests of insects and nematodes or only refer to depths of penetration of radio waves/frequency?	United States of America

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			insects will be equivalent to or higher than that for nematodes.		
28.	15	Technical	1. The Technical Panel on Phytosanitary Treatments based its evaluation of this treatment for <i>B. xylophilus</i> on the research reported by Hoover <i>et al.</i> (2010) and Janowiak <i>et al.</i> (2014). As insects have been found to be generally more susceptible to heat than pine wood nematodes are, the level of efficacy for insects will be equivalent to or higher than that for nematodes <i>B. xylophilus</i> .	This treatment have been tested only on <i>B. xylophilus</i>	COSAVE, Argentina, Peru, Brazil, Uruguay, Chile, Paraguay
29.	16	Editorial	1. The effectiveness of this treatment against other pest insects and <u>wood decay</u> fungi has been supported by Fleming <i>et al.</i> (2003, 2004), Henin <i>et al.</i> (2008), NAPPO (2013), Soma <i>et al.</i> (2002, 2003), Tomminen and Nuorteva (1992) and Tomminen <i>et al.</i> (1991).	for writing consistency	Indonesia
30.	16	Editorial	1. The effectiveness of this treatment against other pest insects and <u>fungial pests</u> has been supported by Fleming <i>et al.</i> (2003, 2004), Henin <i>et al.</i> (2008), NAPPO (2013), Soma <i>et al.</i> (2002, 2003), Tomminen and Nuorteva (1992) and Tomminen <i>et al.</i> (1991).	Editorial correction	COSAVE, Argentina, Peru, Brazil, Uruguay, Chile, Paraguay
31.	16	Substantive	The effectiveness of this treatment against other pest insects and fungi has been supported by Fleming <i>et al.</i> (2003, 2004), Henin <i>et al.</i> (2008), NAPPO (2013), Soma <i>et al.</i> (2002, 2003), Tomminen and Nuorteva (1992) and Tomminen <i>et al.</i> (1991).	According to ISPM 5, the definition of pests include insects and pathogens etc. Hence, the word "pest" could be excluded.	Singapore
32.	16	Substantive	1. The effectiveness of this treatment against other pest insects and fungi has been supported by Fleming <i>et al.</i> (2003, 2004), Henin <i>et al.</i> (2008), NAPPO (2013), Soma et al. (2002, 2003) , Tomminen and Nuorteva	This reference is not for the study on dielectric heating but for the study on sulphuryl fluoride fumigation.	Japan

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			(1992) and Tomminen <i>et al.</i> (1991).		
33.	16	Technical	1. The effectiveness of this treatment against other pest insects and fungi has have been supported by Fleming <i>et al.</i> (2003, 2004), Henin <i>et al.</i> (2008), NAPPO (2013), Soma <i>et al.</i> (2002, 2003), Tomminen and Nuorteva (1992) and Tomminen <i>et al.</i> (1991).	The references listed in this paragraph do not seem to address fungi. Please verify.	United States of America
34.	17	Editorial	12. Because some sources of dielectric heating will result in limited initial heat penetration, further time may be required to allow heat diffusion through the wood after exposure to dielectric heating in order to achieve the treatment schedule throughout the profile of the wood.	This paragraph is confusing. Please rephrase it.	United States of America
35.	17	Substantive	1. Because some sources of dielectric heating will result in limited initial heat penetration, further sufficient time may be required to should be allowed for heat diffusion through the wood after exposure to dielectric heating in order to achieve the treatment schedule throughout the profile of the wood.	The text was confusing because it appeared to relate to a time limitation for the treatment to be undertaken.	EPPO, European Union, Austria, Norway
36.	17	Substantive	12. Because some sources of dielectric heating will result in limited initial heat penetration, further time may be required to allow heat diffusion through the wood after exposure to dielectric heating in order to achieve the treatment schedule throughout the profile of the wood.	It would be advisable to indicate a time range.	Singapore
37.	17	Technical	1. Because some sources of dielectric heating will result in limited initial heat penetration, further time may be required to allow heat be <u>specific on the further time also on extension time</u> diffusion through the wood after exposure to dielectric heating in order to	clarification.	Kenya

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			achieve the treatment schedule throughout the profile of the wood.		
38.	17	Technical	1. Because some sources of dielectric heating will result in limited initial heat penetration, further time may be required to allow heat diffusion through the wood after exposure to dielectric heating in order to achieve the treatment schedule throughout the profile <u>(including its surface)</u> of the wood.	Text in brackets added to be consistent with annex 1 of ISPM 15.	COSAVE, Argentina, Peru, Brazil, Uruguay, Chile, Paraguay
39.	23	Technical	Janowiak, J., Dubey, M., Hoover, K., Mack, R., Elder, P. 2014. Comparative study of radio frequency (RF) and microwave (MW) heating of wood in compliance with ISPM 15 phytosanitary treatment. <i>Presentation to the 2014 meeting of the International Forest Quarantine Research Group. Rome, 2014.</i> 35 pp.	There is a need to make a reference to the official publication of the scientific results (taking into account possible scientific revisions) of the comparative study on RF and MW in order to support the treatment schedule especially for RF. Also there is a need to ensure the technical scientific bases/reference for the heat treatment using DH. J.-M. Henin (reviewer) informed NPPO that the scientific article is currently under review before official publication (probably published this year. Currently no information from publisher on publication time is available.	EPPO, European Union, Austria, Norway
40.	25	Substantive	Soma, Y., Goto, M., Naito, H., Ogawa, N., Kawakami, F., Hirata, K., Komatsu, H. & Matsumoto, Y. 2003. Effects of some fumigants on mortality of pine wood nematode, <i>Bursaphelenchus xylophilus</i> infecting wooden packages. 3. Mortality and fumigation standards for pine wood nematode by methyl bromide. <i>Research Bulletin of the Plant Protection Service Japan</i>, 39: 7-14.	This reference is not for the study on dielectric heating but for the study on sulphuryl fluoride fumigation.	Japan
41.	26	Substantive	Soma, Y., Naito, H., Misumi, T., Tsuchiya, Y., Mizobuchi, M., Matsuoka, I., Kawakami, F., Hirata, K. & Komatsu, H. 2002. Effects of some fumigants on pine wood nematode, <i>Bursaphelenchus xylophilus</i> infecting wooden packages. 2. Mortality of pine wood nematode by methyl bromide tent fumigation. <i>Research Bulletin of the Plant Protection Service Japan</i>, 38: 13-19.	This reference is not for the study on dielectric heating but for the study on sulphuryl fluoride fumigation.	Japan
42.	29	Editorial	Footnote 4: Dielectric heating is based on the alternating electrical field of the electromagnetic wave emitted by the dielectric radiation source (e.g.	Replace Footnote with Endnote or place document at the end of page for footnote. The same applies to Footnote 2.	Jamaica

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			<p>microwave or radio wave). Chemical compounds with asymmetric charge distribution, so called dipole characters (e.g. water), tend to orientate along this electrical field and oscillate with the electrical field (e.g. 2.45 MHz causes 2.45 million oscillations per second). The friction generated through this process converts electrical energy into heat energy.</p>		