

# Revision of the dielectric heating section of Annex 1 to ISPM 15 (2006-010B)

IPPC Member Consultation

1 July to 30 November

2015

# ISPM 15: Regulation of Wood Packaging Material in Int'l Trade

## Structure of ISPM 15:

### -REQUIREMENTS:

1. Basis for Regulation
2. Regulated Wood Packaging Material
3. Phytosanitary Measures for Wood Packaging Material
  - 3.1 Approved phytosanitary measures
  - 3.2 **Approval of new or revised treatments**
  - [...]
- 4.2 Application and use of the mark
- [...]

**ANNEX 1: Approved treatments associated with wood packaging material**

ANNEX 2: The mark and its application

# ISPM 15: Regulation of Wood Packaging Material in Int'l Trade

## Structure of ISPM 15:

### 3.2 Approval of new or revised treatments

- As new technical information becomes available:
  - existing treatments may be reviewed and modified
  - and new alternative treatments and/or treatment schedule(s) may be adopted by CPM

# Requirements for Phytosanitary Treatments under ISPM 15

## SC 2008 November :

Para. 105: SC agreed the following criteria should be used when considering treatment suitability for inclusion in ISPM 15:

- All treatments ... for inclusion in ISPM 15 should be evaluated for **equivalence to the current ISPM 15 methyl bromide treatment** in the following manner:
- It must be demonstrated in compliance with ISPM 28 and to be at least 99.99683% effective against *Anoplophora glabripennis* (Asian longhorn beetle) and *Bursaphelenchus xylophilus* (Pinewood nematode) or appropriate surrogates.

# Current PTs under ISPM 15

- **Heat treatment** using a conventional steam or dry kiln heat chamber
- **Heat treatment** using dielectric heating (DH)
- **Methyl bromide** treatment

*Note: these are currently the only approved treatments under ISPM 15*

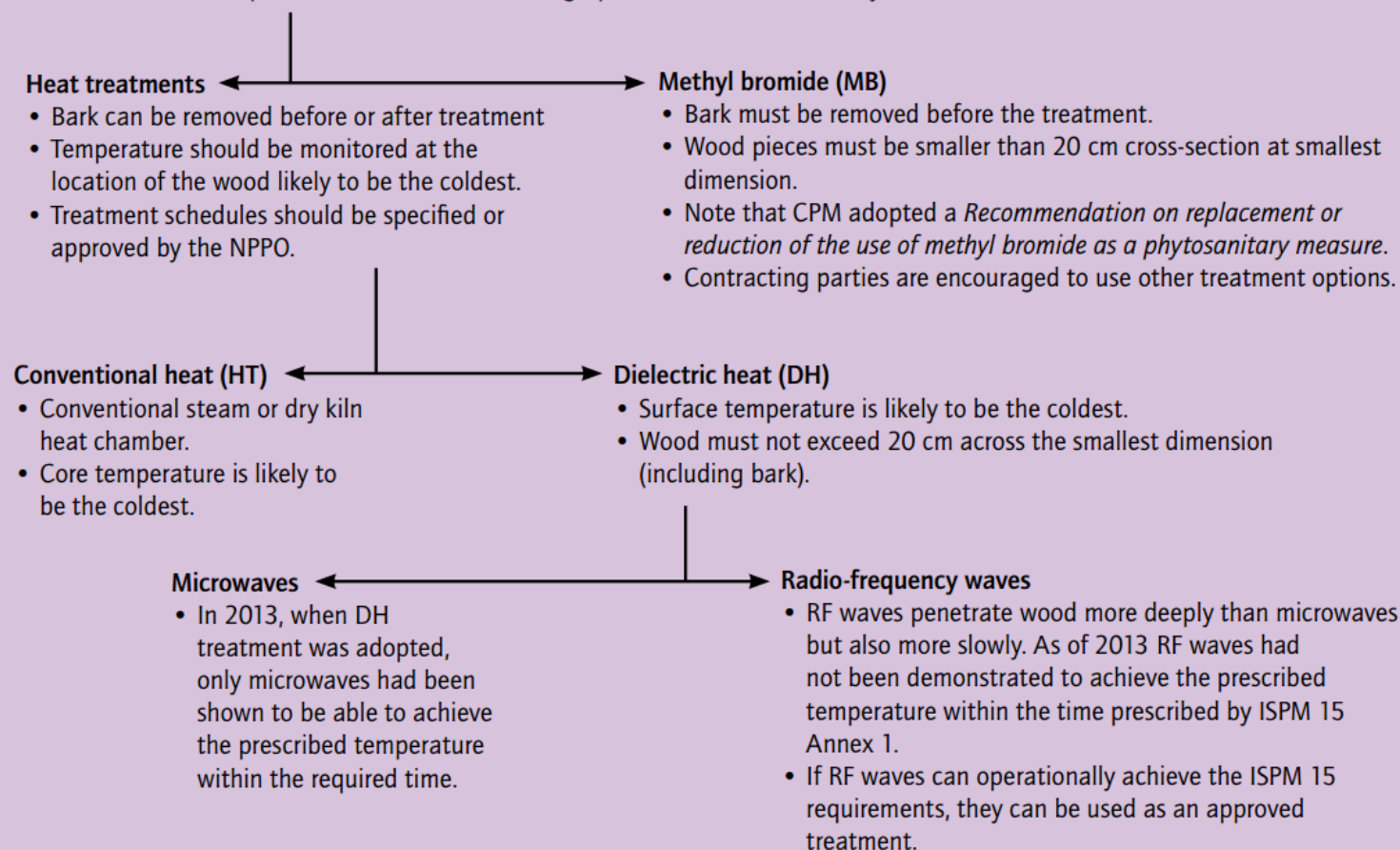


Source: Factsheet on “Dielectric heating as a treatment for wood packaging material” (Phyosanitary Resources webpage: <http://www.phyosanitary.info/information/factsheet-dielectric-heating-treatment-wood-packaging-material>)

## Treatment options for wood packaging material

### Treatment options

- These options apply to units of wood packaging material or to pieces of wood that are to be made into wood packaging material.
- Regardless of the type of treatment, wood packaging material must be made of debarked wood.
- See ISPM 15 for all specific treatment details; this graphic is for information only.



# BACKGROUND

## What is dielectric heating?

Dielectric heating is the process in which a high-frequency alternating electric field, or radio wave or microwave electromagnetic radiation heats a *dielectric material*.

*Dielectric material*: A dielectric material is an electrical insulator that can be polarized by an applied electric field.

# BACKGROUND

## New research\*\* on DH treatment of wood available in 2014:

- Reviewed by IFQRG (*Int'l Forestry Quarantine Research Group*; liaison organisation with IPPC)
- Forwarded to TPFQ (*Technical Panel on Forest Quarantine*)
- Topic of amendments to ISPM 15 recommended by SC
- Added to IPPC work programme (LOT) by CPM-11
- Draft amendments to ISPM 15 approved by SC for member consultation in 2015 (1 July – 30 Nov.)

\*\* Described in the IFQRG 2014 meeting report:

<https://www.ippc.int/en/liason/organizations/internationalforestryquarantineresearchgroup/>

Direct link to the study:

[https://www.ippc.int/static/media/files/publications/en/2014/11/15/janoviak\\_et\\_al.\\_rf\\_mw\\_comparison\\_ppt.pdf](https://www.ippc.int/static/media/files/publications/en/2014/11/15/janoviak_et_al._rf_mw_comparison_ppt.pdf)





# General Considerations

- The proposed revision is part of work to adopt feasible treatments for WPM, to replace use of methyl bromide (MB)
- CPM-3 (2008): adopted IPPC recommendation on *Replacement or reduction of the use of MB as a phytosanitary measure*



# General Considerations

Current requirements of dielectric heating treatment in Annex 1 to ISPM 15 :

- 20 cm size limit for the treated wood
- 30 min. time limit for the heat-up period
- Microwaves mentioned as the main source of dielectric heating



# General Considerations

New scientific data shows that:

- Radio frequency (RF) is effective as DH treatment and should be listed alongside microwaves (MW) in ISPM 15
- Current restrictions of DH in Annex 1 to ISPM 15 can be removed:
  - size limit: RF can effectively penetrate beyond the 20 cm limit; also MW can penetrate to greater depth with more ramp-up time; wood of any size can be heated to prescribed temperature
  - heat-up period: prescription of 30-min. interval no longer adequate as ramp-up times may vary with increased wood thickness
  - emphasis on MW: RF heating is uniform, consistent and fast, especially for larger dimensions.

# Drafting Issues

Changes in the draft include:

- Adding radio waves as a new option for DH treatment of wood packaging material
- Removing the current limitation for the maximum size of wood (20 cm in cross-section)
- Removing the current limitation for the heat-up time (30 minutes from the start of the treatment)

# Drafting Issues

Changes in the draft include:

- Deleting the Footnote text referring to the maximum size of wood
- Deleting the Footnote text referring to the heat-up time



# Other relevant information

The efficacy of the target temperature and exposure time of the dielectric heating treatment (60°C for 1 minute) is supported by research and has not changed



# Thank you!

