Requirements for the use of modified atmosphere treatments as a phytosanitary measure (2014-006)

IPPC Second consultation
1 July to 30 September 2019

IPPC Secretariat
2019 IPPC Regional Workshop
Background

- Call for topics in 2013: proposals for the development of requirements for phytosanitary treatments
- Added the topic in April 2014 (Priority1)
- approved Specification 62 (Requirements for the use of modified atmosphere treatments as phytosanitary measures)
- First draft
- Draft revision
- Approval for first consultation
- Review of comments
- Approval for 2nd consultation
General Considerations

Reason for the ISPM:

- Modified atmosphere treatment is used for other purposes than as phytosanitary measure
- Modified atmosphere treatment could be a good alternative phytosanitary treatment
- Then technical guidance including specific guidance on the application and verification is essential for the proper application of the treatment.
Modified Atmosphere Treatments

- Altering ambient atmospheric gas concentrations:
  - Increase in the carbon dioxide content
  - Reduction in the oxygen content,
  - Or both

- To create an atmosphere lethal to target pests, without the introduction of a toxic agent (fumigation).

- Lethal atmosphere should be maintained for the duration specified, e.g. by application in gas tight enclosure/packaging or by controlled addition of more gases during treatment.

- Treatment parameters are: gas concentration, temperature and humidity
Methods for modifying atmospheres

Gas concentrations may be modified by:

• **changing the proportion of O\(_2\) and CO\(_2\)** by adding a gas (such as CO\(_2\) or nitrogen) and maintaining this atmosphere

• **converting O\(_2\) to CO\(_2\)** by combustion of a hydrocarbon

• hermetic or semi-hermetic storage in which the **respiration** of the commodity and organisms infesting it deplete the level of O\(_2\) and increase the level of CO\(_2\)

• **partial vacuum**, which lowers concentrations of all atmospheric gases proportionally
Treatment unit for Modified atmosphere: (air in the enclosure is replaced by low-oxygen air)
Inside of a Modified atmosphere treatment enclosure:
General Considerations

Purpose of the draft ISPM

Provide *requirements* for modified atmosphere treatments

Provide *guidance* on main operational requirements, including verification, for modified atmosphere treatments

Ensure that treatments are applied *effectively*
Major drafting issues

1. To explain in an understandable way what a modified atmosphere treatment is and how it may be applied.

2. Modified atmosphere treatment is undertaken by treatment providers or the NPPO in a treatment facility.

3. Treatment providers should be authorized by the NPPO in the country in which the treatment is conducted or initiated. This authorization normally includes approval of both treatment facilities and treatment providers.
4. Consistency issues with other draft ISPMs on treatment requirements: This is the third (out of 5) treatment requirement standards to go to consultation.

5. Relevant consultation comments from ISPM 42 (*Requirements for the use of temperature treatments as phytosanitary measures*) and ISPM 43 (*Requirements for the use of fumigation as a phytosanitary measure*) have already been incorporated.
Implementation issues

• Development of treatment schedules. There are currently no approved modified atmosphere treatments, among the annexes to ISPM 28
• CPs are invited to submit proposals for modified atmosphere treatments in the ongoing call for phytosanitary treatments.

→ Call for Phytosanitary treatments: https://www.ippc.int/en/core-activities/standards-setting/calls-treatments/.
Contact us

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