CODE OF AGRICULTURAL PRACTICE

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Requirements for heat treatment of wood and wood packaging materials (WPM)

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Foreword

This Code of Agricultural Practice was developed by the Project Committee on Heat Treatment of Wood and Wood Packaging Materials established by SIRIM Berhad and the Department of Agriculture.

This Code of Agricultural Practice was developed with the following objectives:

a) to serve as a guideline for implementation of Malaysia Heat Treatment Accreditation Scheme (MAHTAS); and

b) to ensure heat treatment services offered by heat treatment providers in Malaysia are in accordance with International Standards for Phytosanitary Measures, Regulation of Wood Packaging Material in International Trade (ISPM 15).

This standard will be reviewed periodically to ensure that it reflects current needs and conditions. Users and other interested parties may submit comments on the contents of this standard for consideration in future versions.

Compliance with this standard does not by itself grant immunity from legal obligations.

Requirements for heat treatment of wood and wood packaging materials (WPM)

1. Scope

This Code of Agricultural Practice specifies requirements for the application of heat for quarantine treatment or pest eradication of any consignment of wood or wood packaging material. Hot air, dry heat, steam or vapour heat that is used for heating may be generated from kilns, autoclaves, or any other method of heat generation.

This code is intended to be used by the Department of Agriculture, Malaysia in implementing the Malaysia Heat Treatment Accreditation Scheme (MAHTAS).

2. Normative references

The following normative references are indispensable for the application of this code. For dated references, only the edition cited applies. For undated references, the latest edition of the normative reference (including any amendments) applies.

ISPM 15, *Regulation of Wood Packaging Material in International Trade*

3. Terms and definitions

For the purposes of this standard, the following terms and definitions apply.

3.1 ambient temperature

Temperature of the air within the treatment enclosure.

3.2 commodity

Wood or wood packaging material to be treated.

3.3 core temperature

Temperature at the centre of the thickest piece of the commodity or its substitute.

3.4 dry heat

Hot air that is forced into the enclosure to heat the commodity.

3.5 enclosure

Physical container or chamber either permanent, temporary or mobile that is used for performing heat treatment.

3.6 facility

Heat treatment system including storage.

3.7 heat treatment

Process of heating the commodity to achieve a minimum core temperature of 56 ºC for a minimum continuous duration of 30 min.

3.8 heat treatment certificate

Documentation certifying that the heat treatment process has been conducted in accordance with the required treatment parameters.

3.9 heat treatment provider

Owner of the certified facility(ies) under the heat treatment scheme.

3.10 humidity

The amount of water vapour in the air expressed as a percentage.

3.11 hygrometer

Equipment used to measure humidity.

3.12 registrant

Successful applicants and registered under the scheme.

3.13 secretariat

Plant Biosecurity Division of the Department of Agriculture, Malaysia which is responsible for the operation of the Malaysia Heat Treatment Accreditation Scheme covering receipt of application, granting of approval, issuance of the certification, on-going surveillance and renewal of certification.

3.14 scheme

Malaysia Heat Treatment Accreditation Scheme (MAHTAS) established by the Department of Agriculture, Malaysia.

3.15 target temperature

Temperature that is to be achieved during heat treatment process.

3.16 thermocouple

Temperature sensor that is used to measure the temperature during heat treatment process.

3.17 treatment exposure period

Period for which the specified treatment temperature is to be continuously maintained.

4. Malaysia Heat Treatment Accreditation Scheme (MAHTAS) certification

4.1 Certification Committee

4.1.1 The committee shall be chaired by the Director of Plant Biosecurity Division and members shall consist of the heads of all sections in the Division. In the event of the chairman being unable to chair the meeting, he/she shall appoint the Deputy Director of Plant Biosecurity Division to chair the meeting.

4.1.2 A quorum of four members, which shall consist of the Chairman, the Secretary and at least two members or their representatives, shall be available for the meeting to proceed.

4.1.3 The committee shall meet at least once in three months to give decision on;

a) new certification and renewal of certification; and

b) suspension and termination of certification.

4.2 Technical Committee

4.2.1 The chairman shall be appointed by the Director of Plant Biosecurity Division and members shall consist of the heads of all sections in the Division.

4.2.2 A quorum of five members which shall include the Chairman, the Secretary and at least three members shall be available for the meeting to proceed.

4.2.3 The committee shall meet at least once in three months to review audit reports submitted by auditors for the purpose of evaluating compliance of applicants for certification with requirements of the scheme. The committee shall make appropriate recommendations to Certification Committee based on its evaluations.

4.3 Implementation of scheme at state-level

The Head of the Plant Biosecurity Division in each state shall be responsible for monitoring the implementation of the scheme in the state.

4.4 Secretariat

The Secretariat, as described in 3.12, shall be responsible for the overall implementation of MAHTAS covering:

a) Management of meetings of the Certification Committee and Technical Committee;

b) Ensuring that the advisory and audit stage (i.e. compliance audit, review audit and surveillance audit) are carried out efficiently within the stipulated time frame;

c) Preparation of annual work plan for audits;

d) Assigning advisors for the advisory stage (new application) and auditors for audits;

e) Monitoring and ensuring that corrective actions for nonconformities raised during audits are carried out and completed; and

f) Promotion of the Malaysia Heat Treatment Accreditation Scheme (MAHTAS).

4.5 Advisors and auditors

4.5.1 The Director of Plant Biosecurity Division shall appoint advisors and auditors from among DOA officers who have good knowledge in heat treatment facility and procedure, and are technically competent to carry out the functions and responsibilities i.e. officers who have attended training in auditing and in the provision of MAHTAS advisory services.

4.5.2 Assignment of an auditor or advisor shall be made by the Secretariat for new applications or applications for renewal.

4.5.3 An officer shall not be assigned as an advisor and auditor to the same applicant.

4.6 Registrant

4.6.1 Registrant shall understand and fulfil the requirements of MAHTAS.

4.6.2 The registrant shall maintain appropriate records and procedure that has been predetermined as being necessary for the effectiveness of the heat treatment.

4.7 Certification process

4.7.1 The MAHTAS certification process, as shown in the flowchart in Annex A, shall consist of four stages as follows.

a) Application;

b) Advisory;

c) Audit; and

d) Approval.

4.7.2 Application

4.7.2.1 New application and application for renewal shall be made by submitting a complete MAHTAS Application Form (MAHTAS 1) to the Secretariat together with a copy of business registration. The Secretariat may notify the applicant/registrant on the acceptance of MAHTAS 1 within ten working days.

4.7.2.2 Application for renewal shall be submitted to the secretariat six months before MAHTAS certification expired.

4.7.3 Advisory

4.7.3.1 The advisory shall be carried out by advisor(s) as described in 4.5.1. The advisor(s) shall be assigned to new applicant to ensure that audit criteria are met. Advisory Stage shall be completed within 6 months from the date of assignment.

4.7.3.2 Advisor recommendation shall be submitted to the Secretariat within two weeks after final visit. The Secretariat shall notify the respective advisor within one week after receival of advisor recommendation.

4.7.4 Audit

4.7.4.1 The audit shall be carried out by auditors as described in 4.5.1.

4.7.4.2 Compliance and review audits shall be carried out by at least two auditors, who are not previously the advisor to the applicant/registrant.

4.7.4.3 New applicant which has been issued nonconformity(ies) during compliance audit shall not be considered for approval and shall be returned to advisory stage.

4.7.4.4 Registrant who fails to make correction on major nonconformity issued in surveillance or review audit shall not be considered for approval.

4.7.4.5 Compliance audit shall be carried out to new applicant after completion of advisory stage.

4.7.4.6 Audit report shall be submitted to the Secretariat within two weeks after audit. The Secretariat shall inform the applicant/registrant on the audit findings, including any nonconformity.

4.7.5 Approval

4.7.5.1 The audit report shall be tabled to the Technical Committee for compliance evaluation and recommendation to Certification Committee based on the evaluations.

4.7.5.2 Certificate of Registration shall be given to the approved new and renewal registrant. The certification shall be valid for two years.

4.7.6 Surveillance and renewal

4.7.6.1 Surveillance audits shall be carried out to registrant at least once in every two years to ensure continuous compliance of the scheme criteria.

4.7.6.2 Review audit shall be carried out for certification renewal.

4.7.7 Withdrawal

The registrant can apply for withdrawal from the scheme by submitting an Application for Withdrawal Letter to the Secretariat.

5. Heat treatment requirements

5.1 General

5.1.1 All heat treatment providers including related facilities shall comply with applicable legal requirements (e.g. approval letter or license from relevant authorities as required) with evidence available on request.

5.1.2 The heat treatment process shall be considered as complete and successful when all the prescribed treatment requirements have been fulfilled.

5.2 Heat source

5.2.1 Any heat source that is capable of producing heat such that the required core temperature is reached and maintained for the duration of the specified treatment may be used.

5.2.2 The heat source shall not have any adverse effect on the commodity under treatment.

5.3 Heat treatment enclosure

5.3.1 Any enclosure that is used to conduct heat treatment shall be designed and operated to ensure that the specified temperature and if required, humidity is achieved and maintained for the duration of the treatment.

5.3.2 If there are more than one heat treatment enclosures in the facility, they shall be individually identified (e.g. using a unique number or colour coding).

5.4 Measuring equipment

5.4.1 Thermocouple, capable of measuring to an accuracy of 0.5 °C over the required temperature range for the treatment, unless a greater degree of accuracy is required to meet the requirements of the importing country.

5.4.2 Hygrometer, capable of measuring to an accuracy of 5 % humidity over the required range for the treatment, unless a greater degree of accuracy is required to meet the requirements of the importing country.

5.4.3 Temperature and humidity recorder or data logger, capable of recording the required information accordingly.

5.5 Heat treatment process

5.5.1 The heat treatment provider shall perform heat treatment according to this standard and/or any other requirements of the importing country.

5.5.2 Temperature mapping (homogeneity test) to determine the hottest and coldest spot(s) in the enclosure (with and without commodity) shall be done annually and recorded.

5.5.3 Based on the temperature mapping, thermocouples shall be located at the hottest and coldest spots, and at other relevant locations based on the loading configuration of the commodity during heat treatment.

5.5.4 The commodity shall be arranged in such a way that it does not obstruct inlets, circulation and outlets of heat in the enclosure to enhance heat flow.

5.5.5 A thermocouple shall be inserted into a hole drilled at the centre of the thickest part of the commodity. Any holes drilled to place the thermocouple shall be sealed with appropriate material to prevent interference in temperature measurement by convection or conduction.

5.5.6 If the thermocouple is not suitable to be inserted in the commodity, a substitute may be used. The thermocouple shall be inserted at the centre of the substitute. The substitute shall be larger in dimensions, be of the same material and having similar density as the commodity.

5.5.7 Heat treatment shall be considered as complete once the core temperature of all thermocouples has reached 56 °C and is maintained for 30 min, unless other temperature range has been specified by the importing country.

NOTE. Where substitute is used, the core temperature of the substitute is considered the same with the core temperature of the commodity.

5.5.8 The thermocouple and/or hygrometer readings should be recorded every 30 min until the specified core temperature in clause 5.5.7 is reached. Once the specified core temperature is reached, the reading shall be recorded every 2 min for a minimum duration of 30 min.

5.5.9 Readings from each of the thermocouples and hygrometers shall be uniquely distinguished (e.g. use of unique number or colour coding) to enable traceability and for rectification of any problem. All readings shall be retained and shall be available upon request.

5.5.10 Treated commodity shall be suitably identified and kept at least 5 m apart from untreated commodity.

5.5.11 Sample of Heat Treatment Certificate issued by the provider is as in Annex B.

6. Calibration of equipment

6.1 Measuring equipment shall be calibrated once a year by an accredited company/a laboratory accredited under the National Laboratory Accreditation Scheme (SAMM) operated by the Department of Standards Malaysia.

6.2 All certificates of calibration shall be retained and shall be made available upon request.

7. Waste management

Waste shall be handled and disposed in a manner that does not attract or allow the breeding or spread of pests.

8. Training

The heat treatment providers shall maintain their personnel competency through regular updates and trainings.

9. Control of documented information

9.1 Documented information required by the scheme and by this document shall be controlled to ensure that it is:

a) properly authorised and issued;

b) available and suitable for use, where and when it is needed; and

c) adequately protected (e.g. from loss of confidentiality, improper use or loss of integrity).

9.2 The following documented information shall be retained and made available upon request:

a) calibration records;

b) heat treatment procedures and/or work instructions;

c) diagram of the enclosure;

d) temperature mapping;

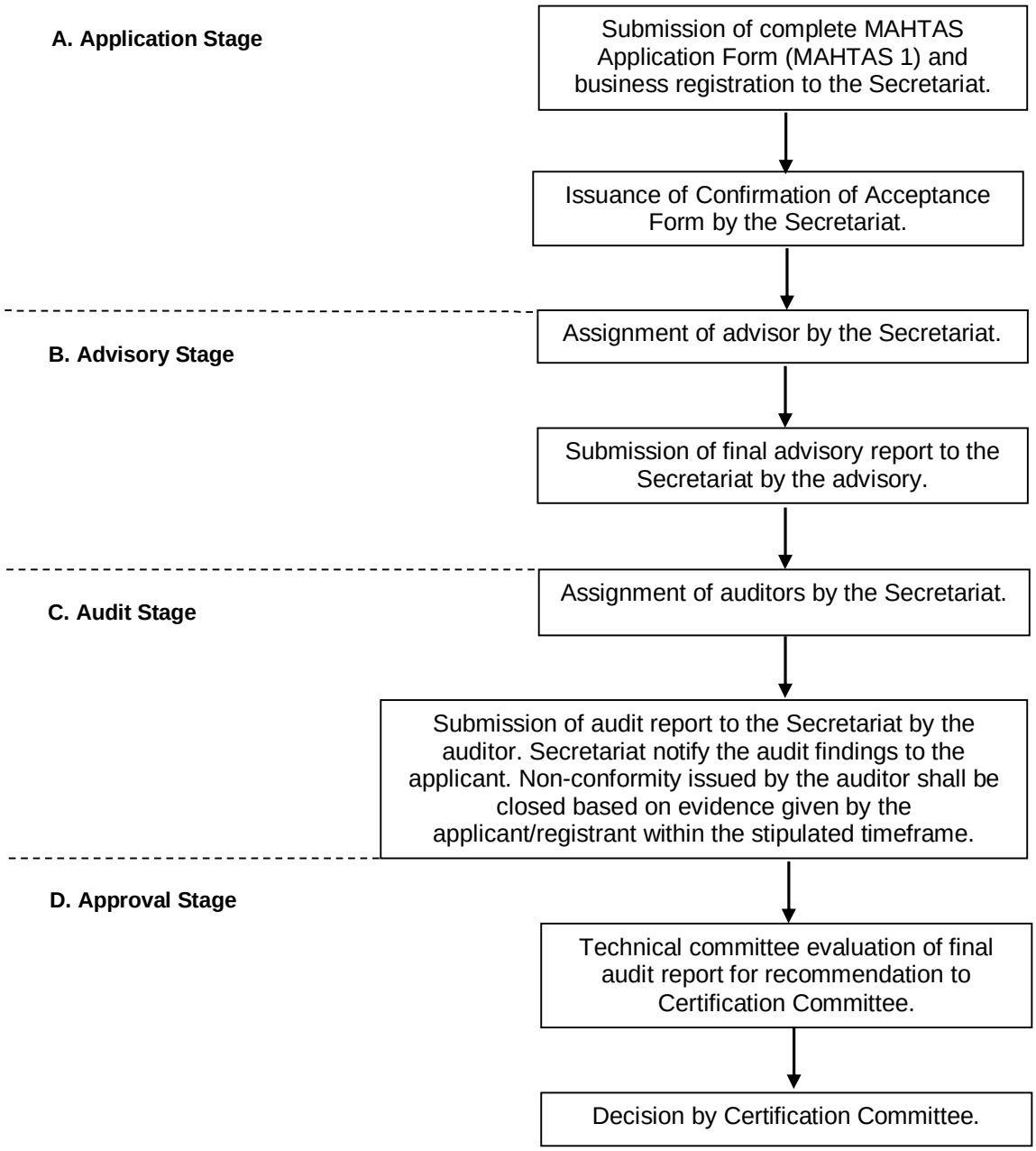
e) pest control programme and records;

f) staff training records; and

g) copy of the heat treatment certificate issued.

Annex A
(normative)

Flowchart of Malaysia Heat Treatment Accreditation Scheme (MAHTAS) Certification



NOTES:

1. New application involve A, B, C and D.
2. Application for renewal involve A, C and D.
3. Review and surveillance audit involve C and D.

Annex B
(informative)

Sample of Heat Treatment Certificate

HEAT TREATMENT CERTIFICATE

Certificate number: | **DOA Registration number:**

TARGET OF TREATMENT DETAILS

Name of Consignment: .....

Consignment link: .....

Official documents:…..

Amount of consignment: .....

Country of origin:..... Port of loading:…… Country of destination:…….

Name and address of exporter/customer:	Name and address of importer:
.....	.....
.....	.....
.....	.....

TREATMENT DETAILS

Date treatment completed:
...../ ...../
.....

Place of treatment:……

Core temperature(°C): .....

Exposure period (h):……

Humidity rate (%) (where applicable):.....

Treatment method:……...

DECLARATION

By signing below, I, the accredited treatment provider responsible, declare that these details are true and correct, and the treatment has been carried out in accordance with the required heat treatment schedule.

ADDITIONAL DECLARATIONS

.....

.....

....
Signature Date

....
Name of treatment provider MAHTAS Number

Company stamp

Bibliography

[1] ICCBA (International Cargo Cooperative Biosecurity Arrangement), *Heat treatment methodology*, *Version 3*

[2] ISPM 5:1997, *Glossary of phytosanitary terms*. Rome, IPPC, FAO

[3] ISPM 15:2009, *Regulation of wood packaging materials in international trade*

Acknowledgements

Project Committee on Heat Treatment of Wood and Wood Packaging Materials comprises representatives from the following organisations:

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