Australian Government
Department of Agriculture, Fisheries and Forestry

AQIS QUARANTINE TREATMENTS AND FUMIGANTS

Part A
General Information

Version 2

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AQIS
AUSTRALIAN QUARANTINE AND INSPECTION SERVICE

DEPARTMENT OF AGRICULTURE, FISHERIES AND FORESTRY

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PREFACE

The vision of the Australian Quarantine and Inspection Service (AQIS) is to contribute to:

- protection of Australia's agricultural production, consumers and environment through efficient AQIS inspection systems;
- protection of human health and the health of the Australian flora and fauna through effective quarantine systems; and
- maintenance of market access worldwide for Australian exports, including provision of efficient AQIS certification systems.

Treatments applied for quarantine purposes are part of managing the risk of introducing exotic pests and diseases

Depending on the commodities being imported and their production circumstances, AQIS may accept treatments performed:

- offshore (at the point of production or exportation in other countries); or
- onshore (at the point of arrival in Australia at an AQIS approved premises).

AQIS currently has a number of programs that include treatments performed offshore. Keeping potential quarantine risks offshore is a key focus for AQIS, although in some circumstances the only treatment option for certain consignments is treatment on arrival. AQIS will endeavor to consider alternative proposals that advocate equivalence in requirements for both on and offshore treatments.

ACKNOWLEDGMENTS

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- Jonathan Banks of the Commonwealth Scientific and Industrial Research Organisation Stored Grain Research Laboratory;
- Jan van S Graver of the Commonwealth Scientific and Industrial Research Organisation Stored Grain Research Laboratory;
- Peter Meadows of Peter Meadows Consulting Pty Ltd; and
- Hart Krtschil, Chairman of the AQIS Industry Cargo Consultative Committee (AICCC).

PART A - GENERAL INFORMATION ON ALL QUARANTINE TREATMENTS

1 Purpose

This document aims to:

- Clearly outline the minimum AQIS standards that apply to treatments
- Give treatment providers, both in Australia and overseas, the necessary information to understand AQIS requirements to effectively treat consignments for import into Australia

The information in this document covers AQIS's quarantine requirements only and is current on the date of issue. AQIS will update this information periodically. Anyone with a role in quarantine treatments should ensure that they have the most up-to-date information (refer to APPENDIX A1: AQIS Contact Details).

For current information you may contact AQIS directly or access the AQIS website.

NOTE

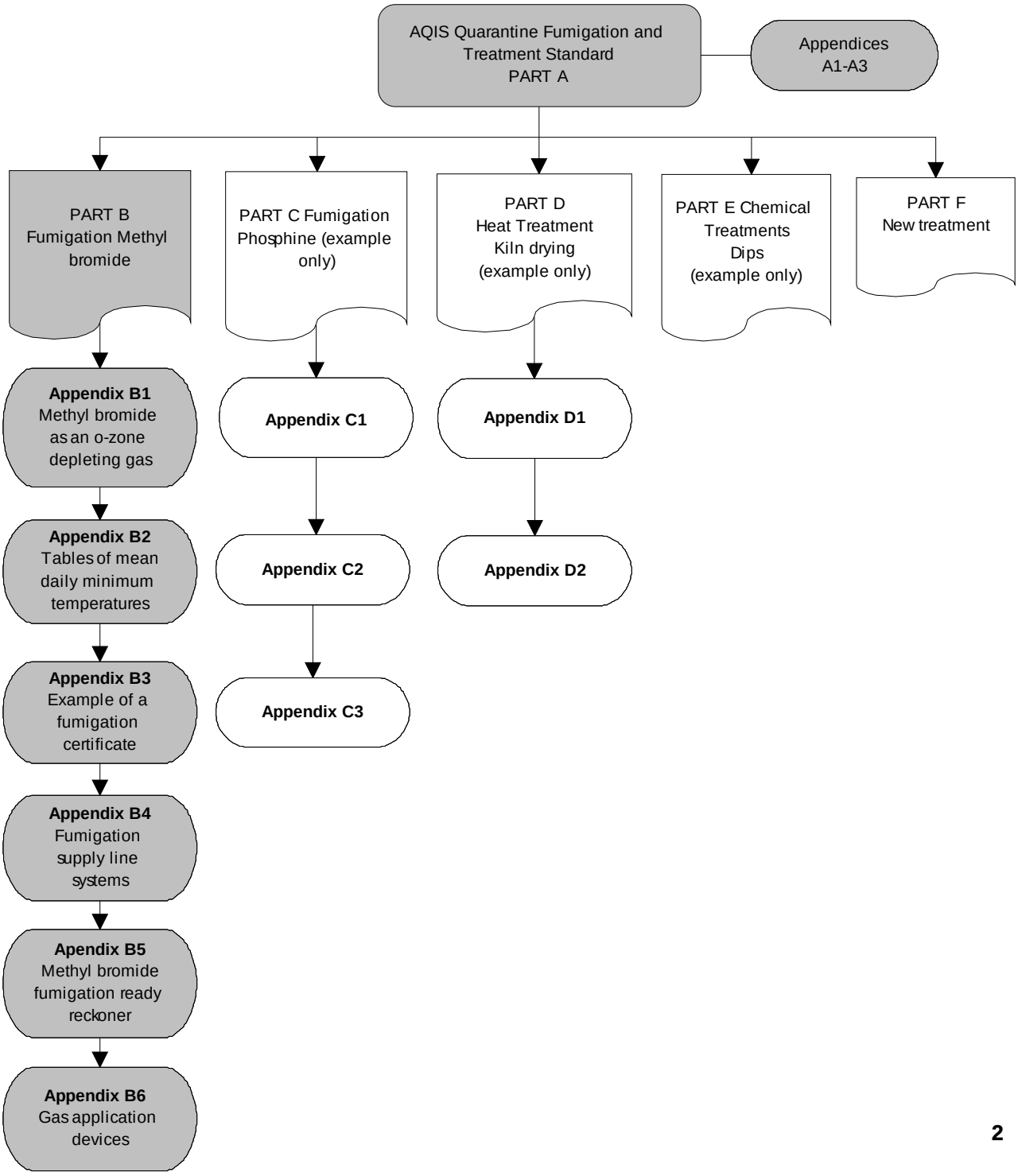
Australia may have import restrictions, in addition to conditions for quarantine and imported foods that are administered by other agencies. These agencies may include the Australian Customs Service, the Therapeutic Goods Administration, Environment Australia and State departments of agriculture. Importers must ensure that they are aware of these conditions and that they can comply with them **before** importing goods.

2 Structure and use of this document

This document has a modular format. Treatment providers will only need the 'parts' of the manual relevant to the treatment(s) they are performing.

Part A of the document is relevant and refers to, all AQIS quarantine treatments, the responsibilities of all parties involved in those treatments. Subsequent parts of the manual contain the AQIS standards for specific treatments. AQIS intends to add further parts, as guidelines for other treatments become available.

The following flow chart outlines the structure of the *AQIS Quarantine Fumigation and Treatment Guidelines*. For example, methyl bromide fumigators would only need Part A, its direct appendices, and all of Part B, and its appendices (i.e. all the shaded boxes).



3 Quarantine requirements for imported goods

Australia has specific requirements for importing particular products to reduce the risk of introducing potentially hazardous pests and diseases.

In the case of some higher risk goods (such as grains, timber, wooden articles, animal products and fresh fruit and vegetables) treatment is often the most effective way importers can meet quarantine requirements.

Examples of treatments used for some commodities include heat treatment, kiln drying, irradiation and methyl bromide fumigation. Each treatment has specific applications, strengths, weaknesses and levels of effectiveness. In some cases there is more than one treatment that will achieve the required results, while in other cases there may be only one effective approved treatment. AQIS approves all treatments based on scientific assessment of their effectiveness and appropriateness. New treatments are researched and approved on a situation-to-situation basis.

Depending on the quarantine risk status of the imported goods, import requirements can vary greatly. For current import requirements, refer to the Import CONditions database (ICON).

4 Responsibility for quarantine treatments

The treatment process, and its success or failure, is the responsibility of the:

- person or organisation requesting the treatment service (client)
- buyer, exporter or importer of the consignment to be treated
- treatment provider (e.g. fumigator)
- transport contractor(s)
- regulatory agencies that set the standards for the conduct of the treatment

To ensure that a treatment provider can complete the treatment successfully everyone involved should:

- understand their individual responsibilities
- comply with all relevant guidelines, industry codes and national and international requirements

4.1 Clients and their responsibilities

AQIS considers the client to be the person or organisation requesting the treatment from the treatment provider. This could include the owner of the commodity, an agent, a warehouse manager or an agent acting on behalf of a buyer, an exporter or an importer. The client should:

- choose a treatment provider who holds recognised, approved and currently valid certification (where appropriate) in the country where the treatment is being performed

- inform the treatment provider, before commencing the treatment, of the AQIS requirements
- advise the treatment provider of any other factors that may affect the treatment of the consignment (e.g. what the product end use is or any specific market requirements)
- ensure that sufficient time is available to perform the treatment to meet AQIS standards
- inform the transport contractor of any relevant information concerning the consignment (e.g. if the consignment has been fumigated)

4.2 Treatment providers and their responsibilities

The treatment provider should:

- hold current valid certification (where relevant)
- be capable of performing the relevant treatment according to AQIS requirements
- advise the client how to prepare the commodity for effective treatment
- ask the client whether there are any specific conditions attached to the treatment of the consignment
- advise the client how much time is required for the treatment to be undertaken successfully
- advise the client of any circumstances that could make the treatment impossible or unsuccessful (e.g. if the consignment is packaged or stored in a manner which will prevent a successful treatment, or where there is insufficient time to perform the treatment using the required exposure periods)
- complete the appropriate treatment certificate
- provide trained treatment personnel who are supervised by at least one competent 'treatment provider in charge'
- make available all of the necessary equipment for accurate performance of the treatment and any other relevant equipment (e.g. equipment for measuring fumigant levels in the workspace and the fumigation enclosure)

4.3 Transport contractors and their responsibilities

The transport contractor may include freight agents and road, rail or sea transporters. Transport contractors should:

- obtain from their client and the treatment provider any relevant information concerning the consignment. For example, if the consignment has been fumigated, what fumigant was used, when the fumigation was performed and the duration of the aeration period
- be aware that the cargo has recently been treated
- understand the hazards associated with in-transit treatments (where applicable)
- comply with local, national and international regulations concerning transportation of treated consignments (where applicable)

It is particularly important for transport providers to be aware of the responsibilities involved in handling and transporting consignments that have been recently fumigated, or may still be desorbing a fumigant.

4.4 Regulatory agencies and their role in treatments

Regulatory agencies may include any local, national and international agencies with an interest in the way a treatment is performed. They have an important role in:

- setting national guidelines that establish safe working environments where treatment providers can perform effective treatments (e.g. through legislation, regulation and licensing)
- establishing international requirements for treatments that are practical, safe and effective and can be undertaken with confidence by treatment providers
- establishing standards for specialised treatment applications, and enforcing quality assurance programs to ensure they are maintained
- ensuring that treatment providers meet the requirements for performing safe and effective treatments
- making information available, such as national and international legislation, industry codes, and requirements for certification, to help raise treatment provider awareness of the standard of competence at which they must work
- providing training and certification to allow treatment providers to achieve, maintain and demonstrate their ability to work at an established standard of competence

4.5 Other interested parties

The list of interested parties outlined previously is not intended to be exhaustive. Other parties may have an interest in the performance of treatments for AQIS quarantine purposes. For example in some countries it is necessary to inform the police and the nearest hospital prior to some treatments. It is important that every time a treatment provider is planning a treatment for AQIS quarantine purposes that all parties, not just the treatment provider, are fully involved in the overall process.

5 Offshore and onshore treatment of imported goods

For some commodities AQIS allows importers to have their consignments treated either offshore (overseas) or onshore (in Australia). For other specific commodities, AQIS will only accept treatments performed on arrival. When considering offshore treatment, clients should check with AQIS to ensure that offshore treatment is valid for their specific commodities.

Sanctions against the treatment provider may be applied where there is evidence that the treatment or certification have not been completed in accordance with AQIS requirements.

5.1 Offshore treatment

AQIS considers offshore treatments to be an important part of managing potential quarantine risks. The effective treatment of some commodities prior to export to Australia is an increasingly important part of this approach to quarantine.

AQIS will only accept offshore treatments if performed by a treatment provider that can meet AQIS requirements.

A correctly completed treatment certificate must accompany any consignment treated offshore.

AQIS may conduct inspections of goods accompanied by a treatment certificate. If AQIS officers detect infestation during an inspection AQIS will consider the consignment as not having been treated effectively.

Where AQIS finds a consignment to be contaminated or infested, the consignment will require appropriate remedial action. This may include full inspection, re-treatment re-export or destruction depending on the nature of the contamination, infestation and commodity.

For further information on AQIS acceptance and clearance of consignments that have been treated offshore please contact AQIS directly (Refer to APPENDIX A1: AQIS Contact Details).

5.2 Onshore treatments - goods not accompanied by a treatment certificate

Goods subject to quarantine may arrive in Australia without a valid treatment certificate. In some cases the importer must have these consignments treated on arrival by an AQIS approved method. In other instances the importer may choose between having the consignment fully inspected (by AQIS) and/or treated. If the consignment is infested or contaminated with materials of quarantine concern it must then be treated in an AQIS accepted manner.

6 Treatment of exported goods

Many countries require particular goods exported from Australia to be treated prior to shipment in order to satisfy their own quarantine requirements. As a result, AQIS is often requested to issue certification (under the International Plant Protection Convention) for certain consignments endorsing that quarantine requirements, such as fumigation, have been met.

7 General information

A list of definitions of terms used throughout this document is given in Appendix A2 - Definitions.
Conversion from metric to imperial measures is given in Appendix A3 – Conversion Tables.

APPENDIX A1: AQIS contact details

For information on AQIS's import conditions Email, fax or phone the appropriate area in AQIS. The following link provides contact details (including phone and fax numbers, email and postal addresses) for AQIS programme areas and AQIS regional offices. This link is updated regularly.

General Contact details

AQIS Contacts

AQIS Canberra

Phone numbers

Freecall (within Australia): 1800 020 504
Switchboard: +61 2 6272 3933

Email

Import Clearance: import.clearance@aqis.gov.au
ICON (Import CONditions database): ICON.Admin@aqis.gov.au

Fax numbers

Import Clearance: +61 2 6272 5888

Postal address

AQIS
GPO Box 858
Canberra ACT 2601
Australia

APPENDIX A2: Definitions

Term/acronym	Definition
Ambient temperature	Temperature of the air immediately surrounding the fumigation enclosure.
Container (also freight container)	Standardised transportation units intended to be suitable for transporting a variety of cargo. Containers used for fumigation must be totally enclosed and weather proof, having a rigid roof, rigid side walls and a floor, having at least one wall equipped with doors.
Chloropicrin	A strong-smelling chemical commonly added to the odourless methyl bromide to indicate whether the gas is present.
Dosage	The calculated amount of fumigant applied to a fumigation enclosure to treat a consignment. Usually expressed as mass of chemical per volume of treated space, e.g. g/m^3.
Dunnage	Materials used for supporting or protecting consignments during transportation.
Fumigant	A chemical, which at a particular temperature and pressure can exist in a gaseous state in sufficient concentration and for sufficient time to be lethal to insects and other pests.
Fumigation	Application of a fumigant to a fumigation enclosure to eradicate pests.
Fumigation certificate	Documentation certifying that a fumigation treatment has been undertaken in compliance with AQIS requirements.
Fumigation enclosure	Any space or area designed to contain fumigant for the purposes of fumigation. Examples include containers, gas-proof sheets sealed to an impermeable floor with sandbags, and purpose built structures.
Fumigation sheets	Gas impervious material (generally made from vinyl, rubber, coated nylon or polyethylene) capable of creating a temporary fumigation enclosure (also known as tarps or tarpaulins).
Gas Equilibrium	At the commencement of fumigation, where the gas concentrations at each monitoring point are within ±15% of each other and all are at or above the target level. AQIS only accepts that a fumigation exposure has started AFTER it has been demonstrated that equilibrium has been achieved in accordance with these requirements.
Hazard area	Any area in proximity to a fumigation enclosure into which fumigant may escape in hazardous concentrations as determined by local legislation relevant to fumigation practice in the location in which the treatment is performed.

Normal Air Pressure (NAP)	Standard, natural atmospheric (air) pressure (10^5Pa)
Pallet	A platform used to support cargo during shipment generally of standard dimensions to allow for easy stacking. Pallets used in shipping are generally made of timber, plywood, metal, plastic or moulded fibreboard.
Permeability	The rate at which a substance (such as methyl bromide) flows through a material (such as a fumigation sheet).
Pest	Any animal, plant or other organism that may pose a threat to the community or the natural environment.
Phytotoxic	Poisonous to plants.
Quarantine pest	A pest of potential economic and/or environmental importance to an area where it is not yet present, or is present but not widely distributed and being officially controlled.
Sand snakes	Sand filled tubes approximately 1m long used as weights to hold tarpaulins in place during sheet fumigations.
Sheet fumigation	A process whereby a gastight enclosure is created by covering/enclosing the objects to be fumigated under a gas proof sheet, which is sealed to a gastight floor (generally using sand or water snakes). Also known as “tarpaulin treatment”.
Skid	Support placed under cargo to make it easier to manoeuvre. Generally consists of two pieces of timber placed under cargo to allow a forklift to raise or slide the cargo.
Sorption	The uptake of a fumigant by any material being treated with a fumigant. This may be reversible (unchanged fumigant may be released on airing) or irreversible (leading to residues of fumigant or breakdown of products in the commodity).
Tarpaulins	See fumigation sheets.
Sampling Line (fumigation)	A relatively small diameter tube used to withdraw a sample of air within a fumigation enclosure for testing.
Supply Pipe (fumigation)	A relatively large diameter pipe or hose used to supply fumigant to a fumigation enclosure.
Timber (also known as lumber)	A term of commerce for wood, either as logs or sawn units.
Uniform gas distribution	See gas equilibrium
Water snakes	Water filled tubes used as weights to hold tarpaulins in place during sheet fumigations. These perform the same function as sand snakes. Water snakes are much longer and wider than sand snakes.

Appendix A3: Conversion tables

Temperature

To convert temperature described in degrees Celsius (ºC) to degrees Fahrenheit (ºF), first multiply the number of degrees Celsius by 9, then divide the result by 5, and finally add 32.

Converting degrees Celsius to degrees Fahrenheit

$$= \frac{9°C}{5} + 32$$

To convert temperature described in degrees Fahrenheit (ºF) to degrees Celsius (ºC), first subtract 32 from the number of degrees Fahrenheit, then multiply the result by 5, and finally divide by 9.

Converting degrees Fahrenheit to degrees Celsius

$$= \frac{5(°F-32)}{9}$$

Distance

METRIC	IMPERIAL
10 millimetres (mm) = 1 centimetre	12 inches = 1 foot
100 centimetres (cm) = 1 metre	3 feet = 1 yard

1 inch = 2.54 centimetres
1 centimetre = .3937 inches

Volume

1 cubic foot = 0.02832 cubic metres (m^3)
1 cubic metre (m^3) = 35.31467 cubic feet

Mass

METRIC	IMPERIAL
1000 grams (g) = 1 kilogram (kg)	16 ounces = 1 pound

1 pound = 0.453592 kilograms
1 kilogram = 2.204622 pounds

NOTE
References throughout this document using the symbol g/m^3 means “grams per cubic metre”.