

Import Health Standard
Commodity Sub-class: Fresh Fruit/Vegetables
Mangosteen, (*Garcinia mangostana*) from Thailand

ISSUED

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Endorsement

Import health standards for plants and plant products imported into New Zealand are a requirement under the Biosecurity Act 1993 and are prepared by the Ministry of Agriculture and Forestry.

This standard was endorsed by the Chief Technical Officer, Pre-Clearance, MAF Biosecurity New Zealand on 15 February 2006.

Debbie Pearson
Director Pre-Clearance
(acting under delegated authority)

Review and amendment

New Zealand MAF import health standards are subject to periodic review and amendment. The next planned review for this standard is 2009.

New Zealand import health standards covering plants and plant products are updated and republished as necessary with the most recent version published on the MAF web site.

Distribution

Import health standards relating to plants and plant products are distributed by the New Zealand Ministry of Agriculture and Forestry. They are made available for public access on the New Zealand Ministry of Agriculture and Forestry web site:

<http://www.biosecurity.govt.nz/imports/plants/index.htm>

INTRODUCTION

SCOPE

This import health standard describes the requirements to be met to enable biosecurity clearance to be given for fresh mangosteen (*Garcinia mangostana*) imported into New Zealand from Thailand. For the purpose of this import health standard, fresh fruit of *Garcinia mangostana* can include the calyx, but no leaf material is permissible.

REFERENCES

Biosecurity Act 1993

Requirements for the establishment of pest free areas 1996. ISPM Publication No. 4, FAO, Rome.

Requirements for the establishment of pest free places of production and pest free production sites 1999. ISPM Publication No. 10, FAO, Rome.

Glossary of phytosanitary terms 2002. ISPM Publication No. 5, FAO, Rome.

Risk analysis for quarantine pests including analysis of environmental risks 2003. ISPM Publication No. 11 (Rev. 1), FAO, Rome.

New Revised Text of the International Plant Protection Convention, November 1997. FAO, Rome.

MAF Plants Biosecurity Pest Risk Assessment Standard (26 September 2001).

MAF Plants Biosecurity Standard 152.02: Importation and Clearance of Fresh Fruit and Vegetables into New Zealand (July 2002).

DEFINITIONS ABBREVIATIONS AND ACRONYMS

Biosecurity clearance	A clearance under section 26 of the New Zealand Biosecurity Act 1993 for the entry of goods into New Zealand.
Biosecurity New Zealand	Biosecurity New Zealand is the division of the Ministry of Agriculture and Forestry (MAF) that has the lead role in preventing the importation of unwanted pests and diseases, and for controlling, managing or eradicating them should they arrive.
Certificate	An official document, which attests to the phytosanitary status of any consignment affected by phytosanitary regulations [FAO, 1990].

Commodity	A type of plant, plant product, or other article being moved for trade or other purpose [FAO, 1990; ICPM Amendments, April 2001].
Consignment	A quantity of plants, plant products and/or other articles being moved from one country to another and covered, when required, by a single phytosanitary certificate (a consignment may be composed of one or more commodities or lots) [FAO, 1990; ICPM Amendments, April 2001].
Establishment	Perpetuation, for the foreseeable future, of a pest within an area after entry [FAO, 1990; revised FAO, 1995; IPPC, 1997; formerly established]
High impact pest	High impact pests are regulated pests that if introduced into New Zealand would have a major effect on the production (including access to overseas markets) of plants and plant products and/or the environment.
Import health standard	A document issued under section 22 of the Biosecurity Act 1993 that specifies “... <i>the requirements to be met for the effective management of risks associated with the importation of risk goods before those goods can be imported, moved from a biosecurity control area or a transitional facility, or given a biosecurity clearance</i> ”.
Infestation of a consignment	Presence in a commodity of a living pest of the plant or plant product concerned. Infestation includes infection [CEPM, 1997; revised CEPM 1999].
Inspection	Official visual examination of plants, plant products or other regulated articles to determine if pests are present and/or to confirm compliance with phytosanitary regulations [FAO, 1990; revised FAO, 1995; formerly Inspect].
International Plant Protection Convention	International Plant Protection Convention, as deposited with FAO in Rome in 1951 and as subsequently amended [FAO, 1990].
IPPC	Abbreviation for the International Plant Protection Convention.

International Standard for Phytosanitary Measures	An international standard adopted by the Conference of FAO, the Interim Commission on Phytosanitary Measures or the Commission on Phytosanitary Measures established under the IPPC [CEPM, 1996; revised CEPM, 1999].
Introduction	The entry of a pest resulting in its establishment [FAO, 1990; revised FAO, 1995; IPPC, 1997]
ISPM	Abbreviation for International Standard on Phytosanitary Measures.
Lot	The number of units of a single commodity identifiable by its homogeneity of composition, origin, etc., forming part of a consignment. [FAO, 1990].
MAF	Ministry of Agriculture and Forestry. Acronym for the Ministry of Agriculture and Forestry which is the New Zealand national plant protection organisation.
National Plant Protection Organisation	Official service established by Government to discharge the functions specified by the IPPC. [FAO, 1990; formerly Plant Protection Organization (National)]
NPPO	Abbreviation for National Plant Protection Organisation.
Official	Established, authorized or performed by a National Plant Protection Organization [FAO, 1990].
Pest	Any species, strain or biotype of plant, animal or pathogenic agent injurious to plants or plant products [FAO, 1990; revised FAO, 1995; IPPC, 1997] Note: For the purpose of this standard “pest” includes an organism sometimes associated with the pathway, which poses a risk to human or animal or plant life or health (SPS Article 2).
Pest free area	An area in which a specific pest does not occur as demonstrated by scientific evidence and in which, where appropriate, this condition is being officially maintained [FAO, 1995].

Pest free production site	A defined portion of a place of production in which a specific pest does not occur as demonstrated by scientific evidence and in which, where appropriate, this condition is being officially maintained for a defined period and that is managed as a separate unit in the same way as a pest free place of production [ISPM Pub. No. 10, 1999]
Phyosanitary certificate	A certificate patterned after the model certificates of the IPPC [FAO 1990].
Phyosanitary certification	Use of phytosanitary procedures leading to the issue of a phytosanitary certificate [FAO, 1990].
Phyosanitary measure	Any legislation, regulation or official procedure having the purpose to prevent the introduction and/or spread of pests, or to limit the economic impact of regulated non-quarantine pests [FAO, 1995; revised IPPC, 1997; ISC, 2001]
Quarantine pest	A pest of potential economic importance to the area endangered thereby and not yet present there, or present but not widely distributed and (is) being officially controlled [FAO, 1990; revised FAO, 1995; IPPC 1997].
Regulated pest	A quarantine pest or a regulated non-quarantine pest [IPPC, 1997] A pest of potential economic importance to New Zealand and not yet present there, or present but either not widely distributed and being officially controlled, or a regulated non-quarantine pest, or having the potential to vector another regulated pest into New Zealand.
Treatment	Officially authorized procedure for the killing or removal of pests or rendering pests infertile or for devitalization [FAO, 1990, revised FAO, 1995; ISPMNo. 15, 2002; ISPM No. 18, 2003].
Viable	Capable of maintaining life, or able to live in a particular environment and able to procreate.

OUTLINE OF REQUIREMENTS

This import health standard outlines the requirements that must be met prior to shipment, in-transit and on arrival in New Zealand for fresh mangosteens imported from Thailand.

This standard is replicated at the following Internet address:

<http://www.biosecurity.govt.nz/imports/plants/index.htm>

NEW ZEALAND LEGISLATIVE REQUIREMENTS AND INTERNATIONAL OBLIGATIONS

All New Zealand import health standards are based upon risk analyses, which may assess either a commodity or a pest/pathway combination. New Zealand's legislative requirements and international obligations are taken into account when conducting risk analyses and applying the findings in the development of import health standards. The principal document for all New Zealand import health standards relating to plants and plant products is the Biosecurity Act (1993), whilst the international obligations derive principally from the guidelines on risk analysis developed under the auspices of the Interim Commission on Phytosanitary Measures (now the Commission on Phytosanitary Measures) operating within the framework of the International Plant Protection Convention, and the World Trade Organisation Agreement on the Application of Sanitary and Phytosanitary Measures.

IMPORT HEALTH STANDARD: FRESH FRUIT/VEGETABLES – MANGOSTEEN (*Garcinia mangostana*) FROM THAILAND.

1 Official contact point (New Zealand National Plant Protection Organisation)

The official contact point in New Zealand for overseas NPPOs is the Ministry of Agriculture and Forestry. All communication pertaining to this import health standard should be addressed to:

Manager, Biosecurity Standards
Ministry of Agriculture and Forestry
PO Box 2526
Wellington
NEW ZEALAND

Fax: 64-4-819 0662
E-mail: PlantImports@maf.govt.nz
<http://www.biosecurity.govt.nz>

2 General conditions for the importation of all plants and plant products

Plants and plant products are not permitted entry into New Zealand unless an import health standard has been issued in accordance with Section 22 of the Biosecurity Act 1993. Should plants or plant products, for which no import health standard exists, be intercepted by New Zealand MAF, the importer will be offered the option of reshipment or destruction of the consignment (at their expense).

The NPPO of the exporting country is requested to inform New Zealand MAF of any change of address.

The NPPO of the exporting country is required to inform New Zealand MAF of any newly recorded pests which may infest/infect any commodity approved for export to New Zealand.

Pursuant to the Hazardous Substances and New Organisms Act 1996, proposals for the deliberate introduction of new organisms (including genetically modified organisms) as defined by the Act should be referred to the Environment Risk Management Authority, PO Box 131, Wellington or e-mail: info@ermanz.govt.nz

[Note: In order to meet the Environmental Risk Management Authority's requirements the scientific name (i.e. genus and species) of the commodity must be included in the phytosanitary certificate.]

3 Explanation of pest categories

New Zealand MAF categorises pests associated with plants and plant products into regulated and non-regulated pests. Measures to prevent the establishment of regulated pests in New Zealand are developed in accordance with the appropriate FAO ISPMs and other relevant international standards.

Regulated pests are those pests for which actions would be undertaken if they were intercepted/detected. As well as quarantine pests, these include new organisms as defined by the Hazardous Substances and New Organisms Act 1996, pests that may pose a risk to human or animal health or to the environment, vectors of associated quarantine pests, and virulent strains (not present in New Zealand) of non-regulated pests and contaminants. Non-regulated pests are those pests for which actions would not be undertaken if they were intercepted/detected.

Pests (including weeds) associated with each commodity will appear on a separate pest list which will be attached to each import health standard as an Appendix.

4 Application of measures

A number of different measures may be applied to pests based on the outcome of pest risk analyses. Required measures may include:

- Surveillance for pest freedom
- Testing prior to export for regulated pests which cannot be readily detected by inspection (e.g. viruses on propagating material)
- Specific pre-shipment pest control activities to be undertaken by the supply country's contracting party
- The application of a pre-shipment treatment
- Inspection of the export consignment
- Issuance of a phytosanitary certificate which attests to the phytosanitary status of a consignment
- Treatment on arrival in New Zealand

5 General conditions for fresh fruit/vegetables for consumption

Only clean, inert/synthetic material may be used for the protection, packaging and shipping of fresh fruit/vegetables.

A completed phytosanitary certificate issued by the exporting country's NPPO must accompany all consignments of fresh fruit and vegetables exported to New Zealand.

New Zealand MAF will inspect all consignments of fresh fruit and vegetables and their associated packaging to verify that New Zealand's phytosanitary requirements have been met. All consignments shall be practically free of soil and other extraneous matter.

Where it has been determined through pest risk assessment that high impact pests are associated with a particular commodity more specific phytosanitary measures must be met. In most circumstances these phytosanitary measures will need to be met prior to arrival of the commodity in New Zealand.

6 Specific conditions for mangosteens (Commodity Sub-Class: Fresh Fruit/Vegetables) from Thailand.

6.1 PRE-SHIPMENT REQUIREMENTS

6.1.1 Inspection of the consignment

New Zealand MAF requires that the Thailand NPPO sample and visually inspect the consignment according to official procedures for all the regulated pests specified by New Zealand MAF and ensure that it conforms with New Zealand's current import requirements. A phytosanitary certificate should not be issued if live regulated pest(s) are detected, unless the consignment is treated in order to eliminate these. If pests are found which are not listed in the import health standard, the Thailand NPPO must establish their regulatory status. This information is available in MAF's "Biosecurity Organisms Register for Imported Commodities" <http://www.biosecurity.govt.nz/pests-diseases/registers-lists/boric/>

If a pest is not listed in this register, the Thailand NPPO must contact MAF (see Section 1) to establish the regulatory status of the pest.

6.1.2 Testing of the consignment

Testing of the consignment prior to export to New Zealand for regulated pests which are not visually detectable (viz. fungi and bacteria) is not generally required for fresh mangosteens from Thailand.

6.1.3 Phytosanitary measures for high impact pests

The strength of phytosanitary measures will generally be greater for high impact pests than for other regulated pests, reflecting the greater risks associated with these pests. In most circumstances phytosanitary measures for high impact pests will need to be met prior to arrival of the commodity in New Zealand, and phytosanitary certification will need to attest to this accordingly.

New Zealand MAF accepts that mangosteen fruit is only a host of the high impact fruit flies specified in the pest list when physical damage of the fruit has taken place to such an extent as to allow the fruit flies to oviposit directly into the flesh of the fruit. Therefore, fruit for export to New Zealand must be commercially produced and without damage to the rind or skin. Refer to Appendix 2 for details of these agreed phytosanitary measures.

New Zealand MAF requires, where applicable, the Thailand NPPO to undertake appropriate pest control activities for the other (non-fruit fly) high impact pests prior to the commodity arriving in New Zealand.

NOTE: “appropriate pest control activities” is a broad term that is inclusive of a range of phytosanitary measures. Examples of these measures are pest free areas, physical exclusion (such as bagging of fruit), chemical treatments etc.

6.1.4 Documentation

Phytosanitary certificate: Required.

Import permit/Authorisation to import: Exempt under Gazette Notice: No. AG12, 13 July 1995.

6.1.5 Phytosanitary certification

A completed phytosanitary certificate issued by the Thailand NPPO must accompany all mangosteen consignments exported to New Zealand.

Before a phytosanitary certificate is issued, the Thailand NPPO must be satisfied that the following activities required by New Zealand MAF have been undertaken.

The mangosteens have:

- (i) been visually inspected in accordance with appropriate official procedures and found to be free from any regulated pests

AND

- (ii) undergone appropriate pest control activities that are effective against:

Bactrocera carambolae

Bactrocera dorsalis

Bactrocera papayae

Note: pest control activities are to comply with relevant health and safety requirements and food standards.

6.1.6 Additional declarations to the phytosanitary certificate

If satisfied that the pre-shipment activities have been undertaken, the Thailand NPPO must confirm this by providing the following additional declarations to the phytosanitary certificate:

- (i) This is to certify that the mangosteens described herein have been inspected according to appropriate official procedures and are considered to be free from the quarantine pests specified by New Zealand MAF and to conform with the current phytosanitary requirements of New Zealand MAF, including those for regulated non-quarantine pests.;

NOTE: This additional declaration is not required if the phytosanitary certificate issued by the Thailand NPPO is in accordance with the model phytosanitary certificate annexed to the revised (1997) text of the FAO IPPC.
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AND

- (ii) This is to certify that the mangosteens in this consignment have undergone appropriate pest control activities that are effective against those regulated high impact pests specified by NZ MAF.

6.2 TRANSIT REQUIREMENTS

The mangosteens must be packed and shipped in a manner to prevent possible post-inspection/treatment infestation and/or contamination by regulated pests. Where a consignment is split or has its packaging changed while in another country (or countries) *en route* to New Zealand, a "Re-export Certificate" is required. Where a consignment is held under bond as a result of the need to change conveyances and is kept in the original shipping container, a "Re-export Certificate" is not required.

6.3 INSPECTION ON ARRIVAL IN NEW ZEALAND

New Zealand MAF will check the accompanying documentation on arrival to confirm that it is correct and reconciles with the actual consignment.

New Zealand MAF requires, with 95% confidence, that not more than 0.5% of the units in a consignment are infested with visually detectable, regulated pests. To achieve this, New Zealand MAF will sample and inspect 600 units with an acceptance level of zero infested units (or equivalent), from the (homogeneous) lot.

6.4 BIOSECURITY/QUARANTINE DIRECTIVE

The consignment may be directed to a New Zealand MAF-approved facility for further treatment if required.

6.5 TESTING FOR REGULATED PESTS

New Zealand MAF may, on the specific request of the Chief Technical Officer, test the consignment for regulated pests.

6.6 ACTIONS UNDERTAKEN ON THE INTERCEPTION/DETECTION OF PESTS/CONTAMINANTS

If regulated pests, extraneous plant material (excluding the calyx of the fruit) or trash are intercepted/detected with the commodity, or associated packaging, the following actions will be undertaken as appropriate (depending on the pest identified):

- Re-sorting (specific conditions apply) of the consignment
- Reshipment of the consignment
- Destruction of the consignment
- Treatment for those pests where an efficacious treatment is available
- The suspension of trade on the detection of high impact pests for which specific pre-arrival phytosanitary measures are required. Suspension of trade will continue until the cause of the non-compliance has been identified and corrective actions have been implemented to the satisfaction of New Zealand MAF

If an organism is intercepted/detected that is not on the pest list (appended to this document), the consignment will be held (or equivalent) until an assessment is undertaken to determine the organism's regulatory status and appropriate measures developed if required.

Consignments that are contaminated with extraneous plant material and/or trash in the 600 unit sample will result in the consignment being held until an assessment has been made in comparison with the risk of importing the part(s) of the plant species concerned.

6.7 BIOSECURITY CLEARANCE

If regulated pests are not detected, or are successfully treated following interception/detection biosecurity clearance will be given.

6.8 AUDIT OF OFFSHORE MEASURES

NZ MAF reserves the right to audit all processes that are undertaken offshore, including phytosanitary measures for high impact pests.

6.9 FEEDBACK ON NON-COMPLIANCE

The Thailand NPPO will be informed by New Zealand MAF's Chief Technical Officer of the interception (and treatment) of any regulated pests, "unlisted" pests, or non-compliance with measures specified in this import health standard.

7 Contingencies Following Biosecurity Clearance

Should a regulated pest be detected subsequent to biosecurity clearance, New Zealand MAF may implement a management programme (official control programme) in accordance with Part V of the Biosecurity Act 1993 and Part 5 of the Biosecurity Amendment Act 1997.

Appendix 1 Pest List Commodity Sub-class: Fresh Fruit/Vegetables *Garcinia mangostana* from Thailand

Scientific name	Organism type	Common name	Quarantine status	Measures to prevent introduction	Actions on interception
<i>Corticium koleroga</i>	fun	thread blight	Regulated	1a & 1b	1 &/or 2
<i>Leuconectria clusiae</i> (anamorph <i>Gliocephalotrichum bulbilium</i>)	fun	gliocephalotrichum fruit rot	Regulated	1a & 1b	1 &/or 2
<i>Phytophthora palmivora</i>	fun	black rot	Regulated	1a & 1b	1 &/or 2
<i>Aspidiotus destructor</i>	ins	coconut scale	Regulated	1a & 1b	1 &/or 2
<i>Bactrocera carambolae</i>	ins	carambola fruit fly	Regulated #	3	3
<i>Bactrocera dorsalis</i>	ins	oriental fruit fly	Regulated #	3	3
<i>Bactrocera papayae</i>	ins	papaya fruit fly	Regulated #	3	3
<i>Coccus viridis</i>	ins	soft green scale	Regulated	1a & 1b	1 &/or 2
<i>Dolichoderus sp.</i>	ins	black ant	Regulated	1a & 1b	1 &/or 2
<i>Dysmicoccus neobrevipes</i>	ins	grey pineapple mealybug	Regulated	1a & 1b	1 &/or 2
<i>Eudocima fullonia</i>	ins	fruit-piercing moth	Regulated	1a & 1b	1 &/or 2
<i>Eudocima salamina</i>	ins	fruit-piercing moth	Regulated	1a & 1b	1 &/or 2
<i>Oecophylla smaragdina</i>	ins	green tree ants	Regulated	1a & 1b	1 &/or 2
<i>Ophiusa coronata</i>	ins	fruit-piercing moth	Regulated	1a & 1b	1 &/or 2
<i>Orgyia postica</i>	ins	cocoa tussock moth	Regulated	1a & 1b	1 &/or 2
<i>Paracoccus interceptus</i>	ins	mealybug	Regulated	1a & 1b	1 &/or 2
<i>Planococcus citri</i>	ins	citrus mealybug	Regulated	1a & 1b	1 &/or 2
<i>Planococcus minor</i>	ins	passionvine mealybug	Regulated	1a & 1b	1 &/or 2
<i>Pseudococcus cryptus</i>	ins	citrus mealybug	Regulated	1a & 1b	1 &/or 2
<i>Pulvinaria psidii</i>	ins	guava scale	Regulated	1a & 1b	1 &/or 2
<i>Scirtothrips dorsalis</i>	ins	castor thrips	Regulated	1a & 1b	1 &/or 2
<i>Scirtothrips oligochaetus</i>	ins	mangosteen thrips	Regulated	1a & 1b	1 &/or 2
<i>Selenothrips rubrocinctus</i>	ins	cacao thrips	Regulated	1a & 1b	1 &/or 2
<i>Technomyrmex butteli</i>	ins	black ant	Regulated	1a & 1b	1 &/or 2
<i>Botryosphaeria rhodina</i> (anamorph <i>Lasiodiplodia theobromae</i>)	fun	diplodia fruit rot	Non regulated	.	NA
<i>Glomerella cingulata</i> (anamorph <i>Colletotrichum gloeosporioides</i>)	fun	anthracnose	Non regulated	.	NA
<i>Rhizopus stolonifer</i>	fun	fruit rot	Non regulated	.	NA
<i>Drosophila melanogaster</i>	ins	vinegar fly	Non regulated	.	NA
<i>Brevipalpus californicus</i>	mit	citrus flat mite	Non regulated	.	NA
<i>Polyphagotarsonemus latus</i>	mit	yellow tea mite	Non regulated	.	NA
<i>Tetranychus urticae</i>	mit	two-spotted spider mite	Non regulated	.	NA

identifies a regulated high impact pest for which additional offshore measures are required.

Measures to prevent entry & establishment	<ul style="list-style-type: none"> . No measures as pest non regulated 1a Visual inspection of produce and associated packaging 1b Consignment must be free from extraneous material – pests are associated with other plant parts (e.g., leaves, stems, flowers) and/or soil. However, the fruit can have the calyx attached. 2a Undergone appropriate pest control activities 2b Pest free area (based on official detection survey) 3 Agreed offshore fruit fly treatment 4 Approved generic treatment
Actions on interception	<ul style="list-style-type: none"> NA No actions as pest is non regulated 0 No action due to low risk pathway 1 Removal of trash – pests are associated with other plant parts (e.g., leaves, stems, flowers) and/or soil 2 Treat, reship or destroy 2a Treat, reship or destroy. Suspend pathway 3 Reship or destroy. Suspend pathway

Appendix 2 Pre-arrival phytosanitary measures for high impact fruit flies associated with mangosteens in Thailand

1. Scope

New Zealand, as a country free from harmful species of fruit fly (Diptera: Tephritidae), requires exporting countries to implement official phytosanitary measures for those species of fruit flies identified as potentially having a major effect on the production (including access to overseas markets) of plants and plant products and/or the environment, should they be introduced to New Zealand.

Mangosteens have been demonstrated to be a conditional host of the high impact fruit flies *Bactrocera carambolae*¹, *Bactrocera dorsalis*² and *Bactrocera papayae*³, and accordingly, appropriate phytosanitary measures must be implemented to mitigate the risk of these species being introduced into New Zealand in association with this commodity.

New Zealand MAF and the Thailand NPPO have agreed to the use of conditional [non-]host status of Mangosteens to these high impact fruit flies.

2. Treatment (equivalent) specification

Mangosteen fruit must be tree harvested at the mature stage. The fruit must be commercially produced, and without damage (cracks, punctures, bruising etc) to the skin of the fruit.

3. Treatment (equivalent) monitoring

All fruit will be visually examined in the packhouse for signs of damage to the skin. Any fruit showing signs of damage will be rejected for export.

4. Product security

Following packing, the integrity and security of all fruit must be maintained.

¹ Intarakumheng, R., Phankum, S., and Unahawutti, U. (2004). Carambola Fruit Fly (Diptera: Tephritidae) Host Status of Mangosteen [a report submitted to the Taiwan Bureau of Animal and Plant Health and Quarantine]. Plant Quarantine Research Group – Thailand Department of Agriculture. Bangkok.

² Unahawutti, U. and Oonthonglang, P. (2003). Laboratory Study on the Possible Attack of the Oriental Fruit Fly (Diptera: Tephritidae) on Mangosteens. Plant Quarantine Research Group – Thailand Department of Agriculture. Bangkok.

³ Leach, P.L. (1997). Determination the Susceptibility of Mangosteen, *Garcinia mangostana* L., to Infestation by papaya Fruit Fly, *Bactrocera papayae* Drew and Hancock (Diptera: Tephritidae) [an internal report]. Queensland Department of Primary Industries. Cairns