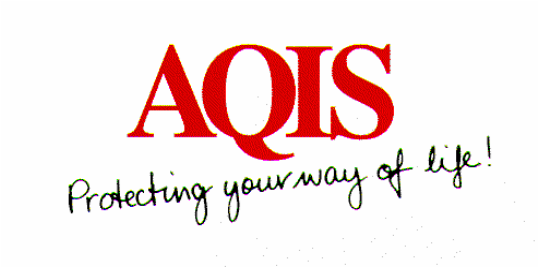
DRAFT

SPECIFIC COMMODITY UNDERSTANDING

CONDITIONS FOR THE EXPORT OF HIGH-HEALTH OLIVE PLANTS FROM ISRAEL AND ITALY TO AUSTRALIA



Draft Specific Commodity Understanding
29 June 2000

CONDITIONS FOR THE EXPORT OF HIGH-HEALTH OLIVE PLANTS FROM ISRAEL AND ITALY TO AUSTRALIA

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CONDITIONS FOR THE EXPORT OF HIGH-HEALTH OLIVE PLANTS FROM ISRAEL AND ITALY TO AUSTRALIA

This arrangement is made between the Australian Quarantine and Inspection Service (AQIS) of the Department of Agriculture, Fisheries and Forestry and the National Plant Protection Organisation (NPPO)[1] of the exporting country.

1. SCOPE

(i) This Specific Commodity Understanding (SCU) sets the phytosanitary conditions applying to the export of high-health olive plants (tissue cultures, cuttings, rooted plants) from NPPO-approved sources in Israel or Italy to Australia.

(ii) All varieties of olive (*Olea europaea* L.) are covered by this SCU.

(iii) AQIS reserves the right to suspend the importation of olive plants in the event that:

(a) Australia's phytosanitary requirements are not met, or

(b) The exporting country's pest and disease status changes due to the introduction and establishment of any pests and diseases of quarantine concern to Australia, providing the circumstances warrant such action.

2. VARIATIONS TO SCU

(i) AQIS may vary any or all of the conditions described in this SCU in consultation with the exporting country's NPPO, or suspend the SCU in the event that circumstances or information warrant such action.

(ii) AQIS retains the right to implement any inspection, treatment or other risk management procedures it deems necessary to protect Australia's plant, animal and human health and the environment.

(iii) The NPPO may delegate testing and inspections to regional government quarantine authorities, but the NPPO remains responsible for certification, auditing, communication with AQIS, ensuring national consistency, and compliance with the conditions set out in this SCU.

3. QUARANTINE PESTS

Definition of 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 being officially controlled (International Plant Protection Convention, 1997).

3.1. Arthropod pests

The quarantine arthropod pests of olives for Australia are listed in Table 1.

[1] Plant Protection Service (PPIS) of the Ministry of Agriculture, Israel; ***OR*** Servizio Fitosanitario, Direzione Generale delle Politiche Agricole ed Agroindustriali Nazionali (DGPAAN), Ministero delle Politiche Agricole e Forestali, Italy.

3.2. Diseases

(i) The quarantine diseases of olives for Australia are listed in Table 2.

(ii) The economic significance of virus and virus-like diseases and phytoplasmas for olive production is not fully understood and, therefore, the pathogens have all been categorised as quarantine pests at the present time. The nepoviruses have been considered quarantine pests because they either are not present or not well established in most parts of Australia, or their taxonomic status is uncertain. Further, many are currently considered as quarantine pests for other plant species, particularly for vegetatively propagated horticultural plants.

3.3. Other pests

AQIS may determine that other pests (including other invertebrates) and diseases are quarantine pests for Australia if they pose a significant threat to other crops or the environment. The presence of other pests of potential quarantine concern may require appropriate treatment as determined by AQIS.

3.4. Undertaking by the NPPO on pest status

The NPPO will notify AQIS immediately if any new quarantine pests are detected in their country.

3.5. Review of quarantine pest lists

AQIS, in consultation with the NPPO, will review the quarantine status of pests and diseases listed in Tables 1 and 2, respectively, and any other additional pests and diseases, if circumstances warrant such a review.

4. ACCEPTABLE CATEGORY OF PLANTS AND QUANTITY RESTRICTIONS

(i) Only high-health olive plants derived from high-health, pathogen tested olive mother trees and produced in accordance with the requirements of this SCU are eligible for export to Australia. Mother tree and export plant requirements are set out under sections 5 and 6.

(ii) The NPPO will send to AQIS documentation of location and registration of all nurseries and quarantine houses involved in the production and export of olive plants produced under the SCU. AQIS will not allow importation under the conditions of this SCU of plants from nurseries that are not listed in the documentation.

(iii) Plants from every new source will be audited on arrival by AQIS.

(iv) The quantities of plants being exported to Australia will be limited by the availability of AQIS field inspection personnel and technical support for pest and disease detection and diagnosis.

5. MOTHER TREE REQUIREMENTS

5.1. Location and registration

(i) All mother tree plantings must be approved by the NPPO to ensure that the integrity and disease status of mother trees will be maintained.

(ii) Each mother tree must be labelled with the variety and date of planting.

(iii) The mother trees must be located within range of quarantine supervision and inspection by the NPPO specialists as required.

(iv) The mother trees will be isolated by a minimum distance of 500 metres from any other olive trees, or grown in an insect-proof glasshouse for a minimum, continuous period of one year immediately prior to sourcing cuttings from them for the production of export plants.

(v) In the event that a quarantine disease is detected in a mother tree, the NPPO must advise AQIS of the detection, the location of the mother trees, details of surrounding mother trees and pathogen testing details.

(vi) The NPPO will retain documentation on location, registration, inspection and pathogen indexing of mother trees for examination by AQIS when required.

5.2. Cultural requirements

(i) Mother trees must be spaced to enable inspection of the trees by the NPPO.

(ii) Mother trees must be maintained in good health and relatively free from weeds and endemic pests and diseases so as not to impede inspection by the NPPO for quarantine pests and diseases.

(iii) The NPPO will impress upon the manager(s) that it is essential that cutting tools (secateurs, knives, etc.) must be thoroughly cleaned and disinfected by a method approved by the NPPO before using these on a mother tree to avoid potential infection of mother trees with graft-transmissible diseases.

(iv) All mother trees must be treated with a copper based spray for control of olive knot disease after frost, hail, physical damage or as needed.

5.3. Inspection and testing

(i) The following pest and disease testing procedures should be observed for mother trees (relevant sections of this procedure will also be used by AQIS during audit testing of imported plants and plants growing in open quarantine in Australia if required).

5.3.1 Insect and disease inspections

(i) All mother trees will be inspected visually by an NPPO-approved entomologist and plant pathologist familiar with symptoms of the pests and diseases of quarantine concern to Australia (Tables 1 & 2).

(ii) The mother trees will be inspected visually for freedom from quarantine pests and diseases at about four-month intervals for a minimum period of one year. The final inspection will be at the time of harvesting cuttings for establishing export plants.

(iii) Trees exhibiting disease symptoms must be tested by the NPPO-approved plant pathologist and results of all tests must be kept by the NPPO and copies sent to AQIS for checking.

(iv) Virus infected olive plants are usually symptomless with the exception that olive latent 1 virus causes mild fasciations and apical bifurcations of twigs and leaves of cultivar Paesana. Strawberry latent ringspot virus is associated with deformations of leaves (narrowing, twisting and bunching), fruits and stones of cultivar Ascolana.

(v) The most common symptoms of olive knot disease (*Pseudomonas savastanoi* pv. *savastanoi*) are galls or knots on leaves, branches, trunks and roots. Initially the

galls are green and have a smooth surface, but later turn dark and rough. Bacteria are present in the galls and ooze may form in wet conditions. Further information on the disease symptoms and other aspects of the disease are available in "Panagopoulos, C. G. 1993. Olive knot disease in Greece. EPPO Bulletin 23: 417-422", including colour plates 5 to 8 at page 544 (ibid.).

5.3.2. Virus testing

(i) All mother trees will be tested initially, and then 10% of trees tested annually for quarantine viruses by an NPPO-approved plant pathologist familiar with these techniques. The detailed requirements for virus testing are described in Appendix 1.

OR

All mother trees will be tested initially, and then 10% of trees will be tested for quarantine viruses every 5 years, if nematological analysis of soil samples indicates that the mother tree block is free of virus-vector nematodes of the genus *Xiphinema* (to a probability of 0.05). Soil samples will be collected in late spring before deep tillage, and 10 composite samples will be taken per hectare, each comprising 5 samples collected at random from throughout the block.

(ii) In the event that a quarantine virus is detected in a mother tree, none of the plants derived from that tree will be eligible for export to Australia. The NPPO will immediately suspend exports from this mother tree and notify AQIS.

5.3.3 Olive knot testing

(i) Olive knot bacteria (*Pseudomonas savastanoi* pv. *savastanoi*) can be present on leaf surfaces and in stems of symptomless olive plants. A minimum ten percent (10%) of mother trees will be tested annually for olive knot bacteria by an NPPO-approved plant pathologist familiar with these techniques. The detailed requirements for olive knot testing are described in Appendix 2.

OR

An alternative to active testing for olive knot bacteria is to spray all mother trees with a copper based fungicide at least twice during the growing season in spring and autumn, and after frost, hail or physical damage (including after pruning and removal of cuttings).

(ii) If olive knot disease is detected in a mother tree block, none of the trees concurrently growing in that block can be used to source export plants for Australia. The NPPO will immediately suspend exports from this mother tree block and notify AQIS. The NPPO must take corrective action and treat the mother trees, if they are to be used again for growing export plants.

5.4. Reporting

(i) The NPPO will provide AQIS with the results and date of all tests undertaken on the mother trees, and the nursery location, date and results of tests on export plants. Documentation must be included with the first consignment of export plants from each new source.

(i) The NPPO will suspend exports to Australia under the conditions of this SCU from nurseries that have failed to comply with sections 5.1, 5.2 and 5.3 and notify AQIS immediately.

6. EXPORT PLANT REQUIREMENTS

(i) The NPPO will ensure that only high-health plants derived from approved mother trees, in accordance with section 5 are exported to Australia. Export plants may include any of the following categories and each will be considered separately:

- tissue culture plants;
- cuttings (including grafted); or
- rooted plants (including rootstocks and grafted plants).

(ii) All consignments of plants in all of the above categories will be inspected by AQIS on arrival in Australia, and will require 12 months in post-entry quarantine. Tissue cultures will be removed from their containers (de-flasked) for growing on in post-entry quarantine.

(iii) The NPPO will ensure that during pre-export handling, storage, packing and transport, all necessary precautions will be taken to prevent infestation and infection with pests and diseases.

(iv) If any live invertebrate pest is found during inspection on arrival in Australia, all plants in the consignment will be treated, destroyed or re-exported. If no live invertebrate pests are found, all of the plants will be dipped in an insecticide/miticide.

6.1. Tissue culture plants

(i) Under the supervision of the NPPO, cuttings must be taken from approved mother trees and transferred to a tissue culture laboratory which has been registered by the NPPO.

(ii) Small shoots 1-2 cm in length will be taken from the cuttings and sterilised in 1.0% sodium hypochlorite for 10-15 minutes.

(iii) Small tips or meristems approximately 0.5-2 mm in size will be aseptically removed and placed into sterile media suitable for propagation of olive plants.

(iv) Media must be clear and must not contain antibiotics or other substances that may inhibit expression of disease symptoms.

(v) Each tissue culture vial will be individually labelled with the variety and the date of propagation in culture. Export tissue culture plants must be kept separate from tissue culture plants for domestic production.

(vi) Once tissue culture plants have formed roots, they are inspected for contamination by the NPPO and shipped to Australia.

6.2. Cuttings (including grafted)

(i) Under the supervision of the NPPO, cuttings for export will be taken directly from approved mother trees.

(ii) Every export cutting in the consignment will be visually inspected by an NPPO-approved entomologist and plant pathologist familiar with olive pests and diseases and other quarantinable matter such as soil and weeds. Inspections must be carried out in well lit areas with a minimum light intensity of 600 lux. Cuttings should be placed between the source of light on one side and a white background on the other because insects and mites are easier to see against a white background.

(iii) A representative sample of a minimum of 50 cuttings must be examined using a microscope (40 X) with a cold light source for the presence of live insects, mites and insect or mite eggs before exporting cuttings to Australia.

(iv) If a quarantine pest or disease is found during inspection of export cuttings by the NPPO, the whole consignment will not qualify for export to Australia and the NPPO will suspend exports from the affected source to Australia and notify AQIS immediately. Records of all pests and diseases detected during pre-shipment inspections must be kept by the NPPO for audit by AQIS.

(v) To facilitate clearance by AQIS in Australia, if any live insects, mites or nematodes other than the quarantine pests listed in Table 1 are found during these inspections, all plants should be given appropriate treatment to eliminate the pests.

(vi) To minimise olive knot infection, all cuttings will be dipped in a solution containing 4 gm/L of copper oxychloride and wetting agent for 30 minutes, before export.

6.3. Rooted plants (including rootstocks and grafted plants)

(i) Rooted plants will be established from cuttings or seeds taken directly from approved mother trees.

(ii) To minimise the risk of introducing olive knot bacteria into the quarantine house, all cuttings will be dipped in a solution containing 4 gm/L of copper oxychloride and wetting agent for 30 minutes.

(iii) To minimise the risk of introducing insect- and mite-infested cuttings into the quarantine house, the cuttings should be inspected for freedom from pests. If any live insects or mites are found during these inspections, all cuttings should be given appropriate treatment to eliminate the pests.

(iv) Rooted plants will be grown for a minimum period of 3 months in a quarantine house that has been registered by the NPPO and meets the requirements detailed in Appendix 3.(v) The export plants must be grown on raised benches and in soil-less potting media, eg., perlite or vermiculite. The potting medium should be able to be easily removed without root damage, to facilitate inspection.

(vi) All export plants will be inspected visually by an NPPO-approved entomologist and plant pathologist familiar with olive pests and diseases. Visual inspections of export plants will be conducted monthly for a minimum period of 3 months and thereafter until the plants are exported. Every export plant in a consignment will be thoroughly inspected not more than one week before shipping the consignment or sealing all the relevant export plants in insect-proof containers.

(vii) A representative sample of a minimum of 50 plants must be examined using a microscope (40 X) with a cold light source for the presence of live insects, mites, nematodes and insect eggs just prior to exporting plants to Australia.

(viii) If a quarantine pest or disease is found during pre-shipment inspection of export plants by the NPPO, the whole consignment will not qualify for export to Australia and the NPPO will notify AQIS immediately. Records of all pests and diseases detected during pre-shipment inspections must be kept by the NPPO for audit by AQIS.

(ix) To facilitate clearance by AQIS in Australia, if any live insects, mites or nematodes other than the quarantine pests listed in Table 1 are found during these inspections, all plants should be given appropriate treatment to eliminate the pests.

7. PHYTOSANITARY CERTIFICATE AND ADDITIONAL DECLARATIONS

(i) A Phytosanitary Certificate issued by the NPPO must accompany every consignment and bear the following additional declarations:

(a) "The mother trees were inspected, sampled and tested in the manner specified in the SCU between the NPPO and AQIS dated 2000 and found free from quarantine pests and diseases, including viruses and olive knot bacteria (*Pseudomonas savastanoi* pv. *savastanoi*)."

AND

(b) "All export plants (tissue cultures, cuttings or rooted plants) in the consignment were produced from NPPO-approved mother trees and treated in the manner specified in the SCU between the NPPO and AQIS dated 2000."

(ii) Each consignment of export plants will be clearly and securely labelled "FOR EXPORT TO AUSTRALIA". The variety name and total number of plants must be inserted in the Phytosanitary Certificate or provided in an attachment to the Phytosanitary Certificate.

8. REVIEW BY AQIS OF PEST AND DISEASE DETECTION REPORTS SUBMITTED BY THE NPPO

AQIS will review information provided by the NPPO and if necessary take appropriate action (including suspension of imports) to address the SCU requirements.

Signed on the day of in the year
(in English language)

....

For Australian Quarantine and Inspection Service

For National Plant Protection Organisation (Plant Protection Service (PPIS) of the Ministry of Agriculture, Israel, ***OR*** Servizio Fitosanitario, Direzione Generale delle Politiche Agricole ed Agroindustriali Nazionali (DGPAAN), Ministero delle Politiche Agricole e Forestali, Italy)

APPENDIX 1. REQUIREMENTS FOR VIRUS TESTING

(i) Actively growing leaves and/or flowers from several sections of each mother tree will be collected in spring when the virus titre should be sufficiently high for reliable detection.

(ii) Ten leaves or flowers will be randomly selected from each mother tree and tested for viruses by sap-inoculations on herbaceous indicators.

OR:

Leaves and flowers may be tested for viruses using polymerase chain reaction (PCR) or molecular hybridization.

(iii) Samples from up to 5 trees may be bulked together for virus testing.

(iv) Leaves will be crushed in a mortar containing 20 ml of chilled 0.05 M phosphate buffer pH 7.0 plus 2.5% nicotinic acid.

(v) Indicator plants will be placed overnight in a dark area before inoculation. Indicator plants will be dusted with 300-600 μm carborundum powder and leaf sap gently inoculated onto the leaf surface of 5 to 8 plants of the following indicators:-

Chenopodium quinoa

C. amaranticolor

Nicotiniana benthamiana

(vi) After inoculation, the leaves should be rinsed immediately with water to remove excess buffer which may cause phytotoxicity.

(vii) Inoculated plants will be maintained at 20°C and examined over 3-4 weeks for symptoms. Positive controls should be included in the tests, but if this is not feasible then an endemic nepovirus, or viruses, known to produce symptoms on the indicator plant species may be used. When olive viruses are used as positive controls, indexing must not be carried out in quarantine houses containing export plants, and sufficient precautions should be followed to prevent escape of exotic viruses.

(viii) The quarantine viruses produce the following symptoms on indicator plants.

Virus	**Symptoms on *Chenopodium amaranticolor* and *C. quinoa***
Arabis mosaic nepovirus	Chlorotic local lesions and systemic chlorotic mottle
Cherry leaf roll nepovirus	Chlorotic and necrotic primary lesions, systemic mottle, distortion and necrosis
Olive latent ringspot nepovirus	Necrotic local lesions and systemic mottle
Olive latent 1 sobemovirus	Necrotic rings, systemic mosaic and leaf crinkle
Strawberry latent ringspot virus	Chlorotic or necrotic local lesions, systemic mosaic and mottling
	Symptoms on *Nicotiana benthamiana*
Olive latent 2 ourmiavirus	Necrotic rings, systemic mosaic and leaf crinkle

(viii) Any suspect symptoms developing on the herbaceous indicators should be tested using ELISA and Immuno-Sorbent Electron Microscopy (ISEM) subject to availability of reliable antisera and probes from reputable sources. The particle morphology of the quarantine viruses is given below:

Virus	**Particle Morphology**
Arabis mosaic nepovirus	Isometric *c*. 30 nm diameter
Cherry leaf roll nepovirus	Isometric *c*. 28 nm diameter
Olive latent 1 sobemovirus	Isometric *c*. 30 nm diameter
Olive latent 2 ourmiavirus	Quasi isometric to bacilliform
Olive latent ringspot nepovirus	Isometric *c*. 28 nm diameter
Strawberry latent ringspot virus	Isometric *c*. 30 nm diameter

APPENDIX 2. REQUIREMENTS FOR OLIVE KNOT TESTING

(i) From each individual mother tree, 6 leaves are randomly selected and cut into small pieces approx. 1-2 mm^2. Samples from up to 5 trees may be bulked together for bacterial testing.

(ii) The leaf pieces are placed into a sterilised 100 ml Erlenmeyer flask containing 50 ml sterile 0.05 M phosphate buffer, pH 7.0, and shaken at room temperature for 2 hrs.

(iii) A loopful of the above concentrate is aseptically streaked onto semi-selective medium (see below). A 1.0 ml sample of the concentrate is serially diluted to 10^{-3} in phosphate buffer and a loopful of each dilution (ie. 10^{-1}, 10^{-2} & 10^{-3}) is streaked onto three Petri dishes containing semi-selective medium.

(iv) Plates are incubated at 26°C for 3-6 days. *Pseudomonas savastanoi* pv. *savastanoi* strains usually produce a weak, blue green fluorescence when placed under a long wave length (approximately 366 nm) UV light source. Colonies that fluoresce are tentatively considered to be *P. savastanoi* pv. *savastanoi.*

(v) Semi-selective medium for isolating *P. savastanoi* pv. *savastanoi* from asymptomatic olive leaves:

10 g agar
0 g sucrose
10 ml glycerol
2.5 mg Difco casamino acids
1.96 g dipotassium phosphate trihydrate
0.4 g magnesium sulphate heptahydrate
0.4 g sodium dodecyl sulphate.
1000 ml distilled water

(i) Colonies that resemble *P. savastanoi* pv. *savastanoi* (Gram -ve, slow growing, grey-white, smooth, glistening, raised and circular or slightly irregular to undulate colonies) are streaked onto Kings B medium and grown at 26°C for 48 hrs.

(ii) All *P. savastanoi* pv. *savastanoi* strains are oxidase negative and this can be confirmed by placing a small amount of the purified bacteria onto an oxidase strip.

(iii) There is an ELISA available that can identify *Pseudomonas savastanoi* pv. *savastanoi,* but it cannot reliably distinguish between the different pathovars. Despite this limitation, the ELISA test should be completed on colonies that fluoresce and are oxidase negative.

(iv) *P. savastanoi* pv. *savastanoi* can be identified based on the carbon source utilization profiles using the Biolog® microplate system. Some isolates of *P. savastanoi* pv. *savastanoi* from olive, oleander and ash can be distinguished by their genomic profiles using restriction fingerprinting and SDS-PAGE electrophoresis. Fatty acid analysis using the MIDI-FAME® system can also be used, but like Biolog® has its limitations.

(x) Despite the limitations of these testing techniques, if the bacteria fluoresce, are oxidase negative and are positive in the ELISA, Biolog and/or MIDI-FAME tests, it is reasonable to assume that the bacterium is *Pseudomonas savastanoi* pv. *savastanoi*.

APPENDIX 3. REQUIREMENTS FOR QUARANTINE HOUSES

1. Registration/Compliance

(i) The location and structure of quarantine houses must be approved by the NPPO.

(ii) The quarantine house must be located within range of quarantine supervision and inspection by NPPO specialists as required.

(iii) The NPPO will approve and register each quarantine house to ensure the integrity and pest and disease-free status of export plants. In addition, the NPPO will carry out random audit checks on approved quarantine houses to monitor precautions to prevent mixing of export plants with non-export plants and to prevent infestation with quarantine pests and diseases. The NPPO will retain documentation on audit checks for examination by AQIS when required. The NPPO will suspend exports from quarantine houses that fail to comply with these conditions.

(iv) The NPPO will provide AQIS with a list of the approved quarantine houses, sources and mother trees. The list must be updated as new approvals are granted, and AQIS advised immediately.

(v) The quarantine house must have affixed on or near its entrance a sign (in English and the national language), "APPROVED OLIVE QUARANTINE HOUSE, NO ADMISSION WITHOUT PERMISSION BY AN AUTHORISED OFFICER". This is to be interpreted that the entry of any personnel is prohibited except with the approval from the Director of the NPPO, or another NPPO officer authorised by the Director of the NPPO. The sign will look like the one shown below.

APPROVED OLIVE QUARANTINE HOUSE

NO ADMISSION

WITHOUT PERMISSION BY AN AUTHORISED OFFICER

_____

(INSERT HERE THE TRANSLATION OF THE ABOVE)

(vi) It is important that on each occasion that plants are inspected in a quarantine house, the NPPO officers should also examine the facility for any sign of damage or deterioration. This is of particular importance where synthetic meshes have been used.

(vii) Where a facility is deemed to be insecure and adequate repairs cannot be carried out immediately, the plant material present in that facility must be ordered to a secure NPPO-approved quarantine house until all repairs have been cleared by an approved NPPO officer.

2. Structure and cultural practices

(i) The quarantine house must be a separate unit used only for growing high-health olive plants derived from cuttings harvested from pathogen-tested approved mother trees.

(ii) The quarantine house is to be a properly constructed, insect-proof house with an insect-proof double door entrance porch or "airlock". The entrance porch or "airlock" must be of sufficient area to permit the entry of people and equipment with one door being closed at all times.

(iii) The entrance porch must have a foot bath containing a disinfectant approved by the NPPO and a sink, preferably with an elbow tap or a foot-operated pedal tap, at a convenient location inside or near the porch. Paper towels, detergent and clean long-sleeve coats or overalls shall be kept in the entrance porch or at another appropriate location. Every person entering the quarantine house will wear a long-sleeve coat or overalls, wash their hands with detergent and disinfect footwear by walking through the foot bath provided in the entrance porch.

(iv) The floor of the quarantine enclosure and the "airlock", including entrance strip (about 1 to 2 meters) to the "airlock" must be of concrete or similar material. The cladding must be durable and affixed in an insect-proof manner.

(v) All doors and doorways into the quarantine area are to be properly constructed and fitted with appropriate seals on top, bottom and sides. The doors are to be provided with locks and handles that enable them to be opened and closed from either side.

(vi) All openings in a quarantine house must be covered with permanently fixed gauze with a maximum aperture of 0.5 mm or 500 micron square or diameter. Whilst metal gauze is preferred, synthetic meshes may be used. Synthetic meshes can be approved provided they retain the aperture dimensions below the maximum permissible limit when affixed in place. For this reason welded mesh is preferred to woven mesh types.

(vii) The quarantine house will be kept clean and free from unpasteurised soil, insects, mites, snails, weeds and non-approved plants. Equipment (ie., cutting tools, etc.) in the quarantine house will be disinfected, in a manner approved by the NPPO, before using on cuttings or plants originating from different mother trees.

Table 1. Olive Arthropod Pests of Quarantine Concern to Australia

ACARINA	Eriophyidae	*Aceria oleae*	(Nalepa)	Olive gall mite	Leaf	Israel	3,17
ACARINA	Eriophyidae	*Aceria olivi*	Zaher and Abou-Awad		Leaf, fruit	Mediterranean region	17
ACARINA	Eriophyidae	*Aculops benakii*	Hatzinikolis	Olive yellow spot mite	Leaf	Mediterranean region	15,17
ACARINA	Eriophyidae	*Aculus olearius*	Castagnoli		Leaf, fruit	Mediterranean region, Italy	8, 17
ACARINA	Eriophyidae	*Ditrymacus athiasella*	Keifer		Leaf, fruit	Mediterranean region, Italy	17, 8, 35
ACARINA	Eriophyidae	*Oxycenus maxwelli*	Keifer		Leaf, fruit	Mediterranean region, Italy	17, 8, 42
ACARINA	Eriophyidae	*Oxycenus niloticus*	Zaher and Abou-Awad		Leaf, fruit	Mediterranean region	17
ACARINA	Eriophyidae	*Oxypleurites maxwelli*	Keifer			Italy	42
ACARINA	Eriophyidae	*Tegolophus hassani*	Keifer	Olive rust mite	Leaf	Mediterranean region	15,17
ACARINA	Eriophyidae	*Tegonotus oleae*	Natcheff		Leaf, fruit	Mediterranean region	17
ACARINA	Tenuipalpidae	*Brevipalpus oleae*	Baker		Leaf	Morocco	15
ACARINA	Tenuipalpidae	*Brevipalpus olearius*	Sayed		Bark	Egypt, Italy	15, 33
ACARINA	Tenuipalpidae	*Brevipalpus olivicola*	Pagazzano & Castagnoli		Bark, branches	Italy	34
ACARINA	Tenuipalpidae	*Hystripalpus* spp.			Leaf, fruit	Mediterranean region	17
ACARINA	Tenuipalpidae	*Pentamerisumus erythreus*	Ewing		Leaf, fruit	Mediterranean region	17
ACARINA	Tenuipalpidae	*Raoiella macfarlanei*	Printchard and Baker		Leaf, fruit	Mediterranean region	17
ACARINA	Tenuipalpidae	*Tenuipalpus caudatus*	Duges.		Leaf, fruit	Mediterranean region	17
ACARINA	Tydeidae	*Orthotydeus calabrus*	Castagnoli, 1984			Italy	7
COLEOPTERA	Bostrychidae	*Apate monachus*	Fab.	Black giant bostrychid	Stem	Tropical Africa, the West Indies, the Mediterranean Basin, Israel	3, 4, 17
COLEOPTERA	Buprestidae	*Anthaxia dimidiata*	Thnb.			Italy	11, 44
COLEOPTERA	Curculionidae	*Otiorrhynchus armadillo*	Rossi				24
COLEOPTERA	Curculionidae	*Otiorrhynchus cribricollis*	Gyllenhal	Oziorrinco			24
COLEOPTERA	Curculionidae	*Otiorrhynchus lugens*	German				24

COLEOPTERA	Curculionidae	*Otiorrhynchus mastix*	Olivier				24
COLEOPTERA	Curculionidae	*Otiorrhynchus ghiliani*	Fairmaire	Oziorrinco dell'edera			24
COLEOPTERA	Curculionidae	*Rhynchites cribripennis*	Desbr.			Eastern Mediterranean region	17
COLEOPTERA	Scolytidae	*Hylesinus oleiperda*	Fabr.	Olive bark beetle		Israel, Italy	3,17, 28
COLEOPTERA	Scolytidae	*Leperisinus fraxini*	Panzer	Ilesino grigio-bruno dell'olivo			24
COLEOPTERA	Scolytidae	*Phloeotribus oleae*	Fab.	Olive bark beetle	Stem	Israel	3
COLEOPTERA	Scolytidae	*Phloeotribus scabrabeoides*	Bern.	Olive bark beetle	Stem	Mediterranean region	17
DIPTERA	Cecidomyidae	*Dasineura oleae*	F. Löew	Olive leaf midge	Leaf	Israel	3,17
DIPTERA	Cecidomyidae	*Prolasioptera berlesiana*	(Paoli)	Olive fruit midge	Fruit	Israel, Italy	3, 19
DIPTERA	Cecidomyidae	*Thomasiniana oleisuga*	(Targ.)	Olive bark midge	Stem	Italy, Spain, France, Israel, probably occurs throughout the Mediterranean region	3
DIPTERA	Cecidomyiidae	*Resseliella oleisuga*		Bark-sucking midge		Italy	5
DIPTERA	Tephritidae	*Bactrocera oleae*	(Gmelin)	Olive fruit fly	Leaf	Israel, Italy	3, 14, 17, 22, 30
HEMIPTERA	Aleyrodidae	*Aleurolobus olivinus*	Silvestri	Olive whitefly	Leaf	Cyprus, France, Greece, Israel, Italy, Spain	3,17, 23
HEMIPTERA	Asterolecaniidae	*Pollinia pollini*	Costa			Mediterranean region, Italy	17, 20
HEMIPTERA	Cicadellidae	*Macrosteles quadripunctulatus*	(Kirschbaum)		Leaf	Northern Europe, Israel	3
HEMIPTERA	Cixiidae	*Hyalesthes obsoletus*	Sforza	Planthopper	Vector of phytoplasmata	Italy, Spain, France, Mediterranean basin	43
HEMIPTERA	Coccidae	*Philippia folicularis*	Targ.–Tozz.			Mediterranean region	17
HEMIPTERA	Coccidae	*Lichtensia viburni*	Signoret			Mediterranean region, Italy	17, 21, 38
HEMIPTERA	Coccoidea	*Prociphilus oleae*	Leach ex Risso			Italy	41

HEMIPTERA	Coddoidea	*Filippia follocularis (Euphilippia olivina Berl. & Silv.)*	Targ.-Tozz.			Italy	21, 37
HEMIPTERA	Diaspididae	*Aspidiotus camelliae*	Signoret	Greedy scale	Leaf	Israel, USA, probably world-wide	3, 6
HEMIPTERA	Diaspididae	*Epidiaspis leperii*	Signoret	Italian red scale		Mediterranean region	17
HEMIPTERA	Diaspididae	*Getulaspis bupleuri*	Marchal				17
HEMIPTERA	Diaspididae	*Lepidosaphes destefanii*	Leon.				17
HEMIPTERA	Diaspididae	*Leucaspis riccae*	Targ.–Tozz.	White olive scale	Leaf	Israel	3,17
HEMIPTERA	Diaspididae	*Mytilococcus ulmi*	L	Cocciniglia virgola dell'olmo e dei fruttiferi			24
HEMIPTERA	Diaspididae	*Quadraspidiotus lenticularis*	Lind.	Scale			17
HEMIPTERA	Diaspididae	*Quadraspidiotus maleti*	Vayss	Scale			17
HEMIPTERA	Diaspididae	*Unaspis euonymi*	(Comstock)	Euonymus scale	Leaf	All temperate regions of the world except Australia	16
HEMIPTERA	Flatidae	*Metcalfa pruinosa*	Say			Italy	9
HEMIPTERA	Miridae	*Calocoris trivialis*	Costa				24
HEMIPTERA	Pseudococcidae	*Pseudococcus comstocki*	(Kuwana)	Comstock mealybug	Leaf	Asia, USA	16
HEMIPTERA	Psyllidae	*Euphyllura olivina*	(Costa)	Olive psylla	Leaf	Israel, Italy	3, 40
LEPIDOPTERA	Cossidae	*Cossus cossus*	L.	Goat moth	Stem	W. Europe, Japan	13, 26
LEPIDOPTERA	Cossidae	*Paropta johannes*	Stgr.	Carpenter worm moth	Stem	Israel	3
LEPIDOPTERA	Cossidae	*Paropta paradoxa*	Herr.- Schaeff.	Carpenter worm moth	Stem	Israel	3
LEPIDOPTERA	Cossidae	*Zeuzera pyrina*	(L.)	Leopard moth	Stem	Israel, Italy, W. Europe, Japan, USA	3, 13, 17, 22, 27
LEPIDOPTERA	Gracillariidae	*Metriochroa latifoliella*	Milliere	Ecofillembio dell'olivo			24
LEPIDOPTERA	Noctuidae	*Agrotis segetum*	Schiff.	Turnip moth	Leaf	Europe, Africa, Asia, Israel	3
LEPIDOPTERA	Pyralidae	*Euzophera pinguis*	Hw.	Tignola rodiscorza dell'olivo e del frassino			24, 45
LEPIDOPTERA	Pyralidae	*Euzophera semifumeralis*	(Walker)	American plum borer	Shoot	USA	16

LEPIDOPTERA	Pyralidae	*Palpita unionalis*	(Hübn.)		Leaf	Mediterranean basin, Italy	10, 17, 22
LEPIDPOTERA	Tortricidae	*Cacoecimorpha* (*Cacoecia*) *pronubana*	(Hb.)	Carnation leaf roller		Italy	39
LEPIDOPTERA	Yponomeutidae	*Prays oleae*	Bern.	Olive kernel borer	Leaf, flower, fruit	Israel, Spain, Italy	3, 17 22, 26
LEPIDOPTERA	Yponomeutidae	*Zelleria oleastrella*			Bud, leaf		6
THYSANOPTERA	Phlaeothripidae	*Liothrips oleae*	Costa	Olive thrips	Leaf, fruit	Israel, Mediterranean region, Italy	3,17, 22
THYSANOPTERA	Thripidae	*Frankliniella occidentalis*	(Pregande)	Western flower thrips		Italy	25

Synonyms: *Aceria oleae = Eriophyes oleae; Aspidiotus camelliae = Hemiberlesia rapax*; *Bactrocera oleae = Dacus oleae; Dasyneura oleae = Perrisia oleae*; *Lichtensia vilburni = Filippia oleae = Philippia oleae*; *Liothrips oleae = Phlaeothrips oleae; Metriochroa latifoliella = Oecophyllembius latifoliellus*; *Oxycenus maxwelli = Oxypleurites maxwelli; Palpita unionalis = Margaronia unionalis; Prays oleae = Prays oleellus*; *Prolasioptera berlesiana = Perrisia oleae; Philippia folicularis = Euphilippia olivina*

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Table 2. Olive Diseases of Quarantine Concern to Australia

Pathogen	Disease	Reference
Bacteria		
Pseudomonas savastanoi pv. *savastanoi*	olive knot	7, 16, 17
Pseudomonas savastanoi pv. *fraxini*	ash strain	10, 12
Ralstonia solanacearum	bacterial wilt	3
Fungi		
Camarosporium dalmatica	brown spot / brown rot	15
Capnodium elaeophilum	sooty mould	15
Cylindrosporium olivae	leaf spot	15
Cytospora oleina	canker, dieback	15
Elsinoe oleae	olive scab	15
Fomes fomentarius	wood rot	15
Fomes fulvus	wood rot	15
Fomes salicinus	wood rot	15
Fomes torulosus	wood rot	15
Fomes yucatonensis	wood rot	15
Macrophoma dalmatica	fruit rot	15
Massariella oleae	bark canker	15
Massariella zambettakiana	bark canker?	15
Omphalotus olearius	wood rot	15
Phoma incompta	stem blight	15
Phyllosticta oleae	phyllosticta leaf spot	15
Phymatotrichopsis omnivora (teleomorph *Sistotrema brinkmannii*)	Texas root rot	17
Polyporus biennis	wood rot	15
Polyporus oleae	wood rot	15
Septoria oleae	leaf spot	15
Septoria oleagina	leaf spot	15
Septoria serpentaria	leaf spot	15
Sphaeropsis dalmatica	stem gall	15
Sphaeropsis oleae	stem gall	15
Xylaria sicula	root rot	15
Zukalia purpurea	black mildew or leaf spot	15
Viruses		
Arabis mosaic nepovirus	Arabis mosaic	7, 9, 17, 18
Cherry leaf roll nepovirus	cherry leaf roll	5, 9, 19
Olive latent 1 sobemovirus	olive latent	7, 8, 9, 20
Olive latent 2 ourmiavirus	olive latent	4, 7, 8, 9
Olive latent ringspot nepovirus	olive latent ringspot	7, 9, 20
Strawberry latent ringspot virus	strawberry latent ringspot	4, 9, 14
Nematodes		
Helicotylenchus oleae	spiral nematode	11
Helicotylenchus neopaxilli	spiral nematode	11
Phytoplasma		
Stolbur group phytoplasma	olive witches' broom	6
Diseases of unknown aetiology		
Infective yellowing	infective yellowing	2
Leaf malformation (not a virus)	leaf malformation	2
Olive yellow mottling and decline (virus?)	yellow mottling and decline	22

Partial paralysis (virus?)	Partial paralysis	2
Sickle leaf	Sickle leaf	2

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