IMPORT OF *OLEA* (OLIVE) PLANTS

Technical Paper

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AGRICULTURE, FISHERIES AND FORESTRY - AUSTRALIA

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BACKGROUND

Olive nursery stock can be imported into Australia from all countries and must undergo a period of post-entry quarantine. Conditions exist for non-approved sources in all countries and approved sources in Israel and Italy under Specific Commodity Understandings (SCUs).

Biosecurity Australia reviewed the existing SCUs (SCU-2 and SCU-4, import of high health olive plants from Israel and Italy respectively) during 2000-2001 and combined them into a single SCU. The revised documents have been sent to Israel and Italy for signature but have not been finalised. Israel has not responded and Italy has raised concerns over the pre-export testing requirements.

The process for developing import conditions and approving sources has evolved since the preparation of these SCUs. Import conditions for nursery stock will preferably now be based on a technical document outlining the quarantine concerns including pest lists, documentation on approved sources and their procedures, recommendations from Biosecurity Australia on accreditation of specific sources and appropriate text for ICON. This will require generic import requirements (in place of the requirements in an SCU), consideration of the pest status of each country requesting access and development of additional conditions where appropriate.

Discussion on the development of an SCU for high health olive plants from Spain started in 1998 with a request for accreditation of a nursery. Plant Biosecurity initiated an assessment of the request in late 2001 and visited the nursery in Spain in May 2002.

Status of existing conditions and SCUs

The existing conditions for olive cuttings/rooted plants from non-approved sources and for tissue cultures should remain in place. Active testing for olive knot should be added to the post-entry quarantine procedure for cuttings/rooted plants.

The existing approved sources in Italy and Israel may remain accredited as an interim measure but this should be reviewed following the AQIS accreditation of the approved source in Spain. The existing conditions under the current SCUs for olive nursery stock from approved sources in Italy and Israel should remain in place until this time. Plant Biosecurity will then contact the NPPOs of Italy and Israel regarding extension of the generic requirements identified in this review to nurseries in these countries in place of the SCUs. This will include a review of the pest lists contained in the SCUs and preparation of separate lists for each country.

Key changes to import conditions

A range of changes were made during the review of the original SCUs and the assessment of the application for access for plants from Spain.

- Initially all mother trees are to be tested for quarantine viruses and olive knot then 10% will be tested annually. This requirement may be reviewed over time based on results from annual testing and any audit testing done by AFFA.

- Reference is made to the NPPO, regional quarantine agency or approved expert for various activities, rather than just the NPPO. This is to reflect the different administrative arrangements that apply in some exporting countries.

- The pre-export and on-arrival inspection requirements have been changed to a minimum of 600 plants per consignment (plus on-arrival audit at the discretion of the pathologist)
- Specific requirements for quarantine houses in Spain have been developed.
- The wording of the additional declarations on the phytosanitary certificates has been simplified.
- Point (vii) in Appendix 1 has been slightly re-worded.

Summary

Requirements for the importation of olive nursery stock from approved sources and revised generic import conditions have been prepared based on accreditation of nurseries, active testing of mother trees, inspection and certification of plants, post-entry quarantine in Australia and audit testing of all new sources. Import conditions for non-approved sources have not been changed.

Tissue cultures are not included in the revised conditions for approved sources due to lack of interest in importing this material and concerns raised by the Spanish NPPO that this material is genetically unstable.

The "Revised requirements for the importation of olive nursery stock from approved sources" section is a revised version of the text previously included in the SCU and is relevant to all countries. This information should be provided for information to any new countries requesting access.

The "Generic import conditions for olive nursery stock from approved sources" section contains recommended text for ICON for olive nursery stock from approved sources in all countries. This essentially updates the existing conditions for approved sources in Italy and Israel (C9220/C9221) to cover all countries.

Facilities applying for approval to supply olive nursery stock need to demonstrate that the pre-export conditions (or equivalent) can be met and importers applying to import the material need to demonstrate that the on-arrival and PEQ conditions (or equivalent) can be met. Audit testing is to be conducted for all new approved sources and, in addition, at the discretion of the AQIS Plant Pathologist.

Based on the proposal for all approved sources, production facilities for olive nursery stock should be approved for a 2-year period. The facility and the NPPO should be contacted near the end of this period to confirm interest in extending the approval and any changes to procedures.

REVISED REQUIREMENTS FOR THE IMPORTATION OF OLIVE NURSERY STOCK FROM APPROVED SOURCES

SCOPE

(i) All varieties of olive (*Olea europaea* L.) are covered by these conditions.

(ii) AFFA 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 status changes due to the introduction and establishment of any pests of quarantine concern to Australia, providing the circumstances warrant such action.

(iii) For the purposes of these requirements, a consignment is defined as a quantity of homogenous high health olive plants covered by a single phytosanitary certificate and from a single approved source.

VARIATIONS TO CONDITIONS

(i) AFFA may vary any or all of the conditions described in these conditions in consultation with relevant NPPOs, or suspend these conditions in the event that circumstances or information warrant such action.

(ii) AFFA 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) NPPOs may delegate testing and inspections to authorities accredited by them, but the NPPO remains responsible for certification, auditing, communication with AFFA, ensuring national consistency, and compliance with the import conditions.

QUARANTINE PESTS

The pests of quarantine concern are to be determined for each country wishing to gain approval for particular nurseries. This is to be based on the pest list provided by the NPPO and literature reviews conducted by AFFA. The lists are open to review as new information becomes available. The NPPO is to notify AFFA immediately if any new quarantine pests of relevance to *Olea europaea* are detected in their country.

Import conditions in addition to the generic conditions may be required depending on the pest status of the country.

ACCREDITATION OF NURSERIES AND ACCEPTABLE PLANTS

(i) Only high-health olive plants derived from high-health, pathogen tested olive mother trees and produced in accordance with these requirements are eligible for import into Australia. Mother tree and import plant requirements are set out below.

(ii) Nurseries must be accredited by AQIS to export olive plants to Australia under these

requirements. Nurseries are to apply to AQIS for accreditation either directly or through their NPPO. The application will be assessed by AQIS and Biosecurity Australia in collaboration with the NPPO as required.

(iii) AFFA will provide documentation to the NPPO of all nurseries that are accredited to supply olive plants. The nursery is to liase with the NPPO (or relevant regional plant health agency) for the arrangement and completion of the pre-export inspection and certification requirements.

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

QUANTITY RESTRICTIONS

The quantities of plants being imported into Australia will be limited by the availability of AQIS field inspection personnel and technical support for pest detection and diagnosis.

MOTHER TREE REQUIREMENTS

Location and registration

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

(ii) Each mother tree from which cuttings or rooted plants destined for Australia are sourced must be identifiable.

(iii) The mother trees must be located within an area serviced by the NPPO, regional quarantine agencies or NPPO -approved experts.

(iv) The mother trees must be isolated by a minimum distance of 500 metres from any other olive trees that are not of the equivalent or higher grade of health, 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 AFFA of the detection, the location of the mother tree, details of surrounding mother trees and pathogen testing details.

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

Cultural requirements

(i) Mother trees must be spaced to enable inspection.

(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 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 mechanically-transmissible diseases.

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

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 AFFA during audit testing of imported plants and plants growing in open quarantine in Australia if required).

Insect and disease inspections

(i) All mother trees must be inspected visually by the NPPO, regional quarantine agency or NPPO-approved experts.

(ii) The mother trees must 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 a NPPO -approved plant pathologist and results of all tests must be kept by the NPPO and copies sent to AFFA on-request.

Virus testing

(i) All mother trees must be tested initially for quarantine viruses and then 10% of trees will be tested annually. This requirement may be reviewed over time based on results from annual testing. Testing must be done by an NPPO -approved plant pathologist familiar with these techniques. Virus testing is to be done using the procedure described in Appendix 1 or procedures as agreed to between AFFA and the NPPO.

(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 import into Australia. The NPPO must immediately suspend exports from this mother tree and notify AFFA.

Olive knot testing

(i) All mother trees must be tested initially for olive knot (*Pseudomonas savastanoi* pv. *savastanoi*) and then 10% of trees will be tested annually. This requirement may be reviewed over time based on results from annual testing and any audit testing conducted on-arrival by AFFA. Testing must be done by an NPPO-approved plant pathologist familiar with these techniques. Testing for olive knot is to be done using the procedure described in Appendix 2 or procedures as agreed to between AFFA and the NPPO.

(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 must immediately suspend exports from this mother tree block and notify AFFA. The NPPO must take corrective action and treat the mother trees if they are to be used again for growing export plants.

Reporting

(i) On request, the NPPO must provide AFFA 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.

(ii) The NPPO must suspend export to Australia from nurseries that have failed to comply with the requirements for mother trees (location and registration, cultural requirements, inspection and testing) and notify AFFA immediately.

REQUIREMENTS FOR PLANTS DESTINED FOR AUSTRALIA

(i) The NPPO must ensure that only high-health plants derived from registered mother trees are exported to Australia. Export plants may include cuttings (including grafted) or rooted plants (including rootstocks and grafted plants).

(ii) The NPPO or regional quarantine agency must ensure that during pre-export handling, storage, packing and transport, all necessary precautions will be taken to prevent infestation by pests.

Note: *All consignments of olive cuttings or rooted plants will be inspected by AFFA on arrival in Australia, and will require 12 months in post-entry quarantine.*

Note: *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.*

Cuttings

(i) Cuttings for export must be taken directly from registered mother trees.

(ii) A minimum of 600 cuttings per consignment are to be visually inspected by the NPPO, regional quarantine agency or NPPO-approved expert. For consignments of less than 600 cuttings, all cuttings are to be inspected. Inspections must be carried out in a well lit area. The 600 cuttings are to include samples from all mother trees used to prepare the consignment. The cuttings are to be visually inspected (including tapping the cutting over a white surface to dislodge contaminating arthropods or other material) for live insects, disease symptoms (particularly galls) and any other material of quarantine concern.

(iii) A representative same of a minimum of 60 of the cuttings must be examined using a microscope (40 X) for the presence of live insects, mites and arthropod eggs prior to export.

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

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

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

Rooted plants

(i) Rooted plants must be established from cuttings taken directly from registered mother trees.

(ii) To minimise the risk of introducing olive knot bacteria into the quarantine house, all cuttings must 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 an 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 or regional quarantine agency and meets the requirements detailed in Appendix 3 or equivalent.

(v) The export plants must be grown on raised benches and in soil-less potting media, eg, perlite or vermiculite. To facilitate inspection the potting medium should be able to be easily removed without damaging the roots.

(vi) The export plants must be inspected visually by the NPPO, regional quarantine agency or NPPO-approved expert monthly during the minimum period of 3 months in the quarantine house.

(vii) A minimum of 600 rooted plants per consignment are to be visually inspected by the NPPO, regional quarantine agency or NPPO-approved expert prior to export. For consignments of less than 600 plants, all plants are to be inspected. Inspections must be carried out in a well lit area and not more than one week before either shipping the consignment or sealing the consignment in insect-proof containers The 600 plants are to include samples from all mother trees used to prepare the consignment. The plants are to be visually inspected (including tapping the plants over a white surface to dislodge contaminating arthropods or other material) for live insects, disease symptoms (particularly galls) and any other material of quarantine concern.

(viii) A representative sample of a minimum of 60 of the plants must be examined using a microscope (40 X) for the presence of live insects, mites and arthropod eggs prior to export.

(ix) If a quarantine pest or disease is found during pre-shipment inspection of export plants the whole consignment will not qualify for import into Australia and the NPPO will notify AFFA immediately. Records of all pests and diseases detected during pre-shipment inspections must be kept the NPPO or regional quarantine agency and copies sent to AFFA on-request.

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

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 of the plants in the consignment were inspected and tested in the manner required by AQIS and found free from quarantine pests including viruses and *Pseudomonas savastanoi* pv. *savastanoi.*"

AND

(b) "The plants in the consignment were produced and inspected in the manner required by AQIS and found free from quarantine pests."

(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.

APPENDIX 1. REQUIREMENTS FOR VIRUS TESTING

Mother trees are to be tested for viruses using the procedure described below or using a procedure as agreed to between AFFA and the NPPO. The NPPO is to provide written details of the procedure to AFFA.

(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), ELISA, molecular hybridization or other testing of equivalence.

(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 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 using olive viruses 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

(ix) 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

Mother trees are to be tested for *Pseudomonas savastanoi* pv. *savastanoi* (olive knot) using the procedure described below or using a procedure as agreed to between AFFA and the NPPO. The NPPO is to provide written details of the procedure to AFFA.

(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
30 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

(vi) 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.

(vii) 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.

(viii) *P. savastanoi* pv. *savastanoi* can be identified using ELISA, PCR and 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.

(ix) Despite the limitations of these testing techniques, bacteria that fluoresce, are oxidase negative and are positive in the ELISA, PCR, Biolog and/or MIDI-FAME tests are considered to be *Pseudomonas savastanoi* pv. *savastanoi*.

APPENDIX 3. REQUIREMENTS FOR QUARANTINE HOUSES

The requirements for the greenhouses (quarantine houses) used for the production of rooted plants are to be determined based on the pest status of the country. Once the requirements are determined, quarantine houses in the particular country must meet those requirements or demonstrate equivalence. Requirements are given below for nurseries in Italy/Israel and for nurseries in Spain. The requirements for Italy/Israel are those included in the revised SCUs for these countries. The requirements for Spain were developed after assessing the pest status of this country. The requirements for Italy/Israel (or other countries) could be reviewed in the future following a detailed risk assessment for each country.

Requirements for quarantine houses in Italy and Israel

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 means 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.

Requirements for quarantine houses in Spain

1. Registration/Compliance

(i) The location and structure of quarantine houses must be registered with the NPPO.

(ii) The quarantine house must be located within range of quarantine supervision and inspection by the NPPO or regional quarantine agency 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 or regional

quarantine agency 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. The NPPO or regional quarantine agency will retain documentation on audit checks for examination by AFFA when requested. The NPPO or regional quarantine agency will suspend exports from quarantine houses that fail to comply with these conditions.

(iv) The NPPO will provide AFFA with a list of the approved quarantine houses when requested. The list must be updated as new approvals are granted.

(v) The quarantine house must have affixed on or near its entrance a sign with words (in the national language) with the meaning of "APPROVED OLIVE QUARANTINE HOUSE, NO ADMISSION WITHOUT PERMISSION". Access to the plants for export to Australia is to be limited to personnel directly working with the plants and familiar with the quarantine requirements.

2. Structure and cultural practices

(i) The plants for export to Australia must be segregated from other plants within the house (for example, on separate raised benches, no splash from irrigation).

(ii) The plants must be grown on raised benches and in soil-less potting media (for example, perlite or vermiculite, new pots and potting media are to be used. The benches and other structures (for example, poly-tunnels) are to be cleaned prior to being used for the establishment of new plants.

(iii) The quarantine house is to be a commercially constructed greenhouse that protects the plants from the environment (for example, wind, rain or hail).

(iv) The quarantine house will be maintained in a hygienic manner (for example, clean and free from unpasteurised soil, insects, mites, snails and weeds). Equipment (for example cutting tools) in the quarantine house will be disinfected, in a manner approved by MAPA, before using on cuttings or plants originating from different mother trees.

GENERIC IMPORT CONDITIONS FOR OLIVE NURSERY STOCK FROM APPROVED SOURCES

The following conditions should apply to olive nursery stock from countries with approved sources:

- C#### (other than tissue cultures from approved sources, equivalent to C9220/C9221),
- C7300 (general conditions for nursery stock,
- C8627 (tissue cultures) and
- C8853 (other than tissue cultures from non-approved sources).

C### is covers equivalent information to C9220/C9221 and the existing "Procedures and conditions for the import of high health olive plants produced under the Specific Commodity Understanding (SCU)" document with the following changes:

- Deleted points e) and f) from 1. Prior to importing plants.
- Revised wording of 2. Phytosanitary certification and additional declarations.
- Deleted reference to the SCU throughout.
- Revised inspection sampling rate and procedure in ii) and pesticide treatment in vi) under Quarantine Procedure in 3. On-arrival inspection and treatment procedures.
- Minor re-wording to x) and xi) under 6. PEQ handling and treatment procedures.

Condition C#### Import Procedures and Conditions for the Import of Olive Plants from Approved Sources

The following requirements and conditions apply to high health olive plants produced under the AQIS "Requirements for the importation of olive nursery stock from approved sources". The following nurseries are approved to export plants to Australia under these requirements:

Insert nursery name and address

1. PRIOR TO IMPORTING PLANTS

Importer's Responsibilities

a) Importer must be in receipt of a valid Import Permit prior to importing any plants.

b) Import Permits will only be issued from AQIS Canberra Office.

c) Prior to entering into commercial contracts or importing any plants, importers are advised to contact their local Australian Quarantine and Inspection Service (AQIS) Office and obtain approval for the proposed quarantine sites and to discuss all arrangements for the importation and inspection of consignments.

d) Advance notice (of at least 7 days) of impending consignments must be given to AQIS so that

AQIS can ensure that resources are available for inspections.

e) Importer must comply with all quarantine instructions.

2. PHYTOSANITARY CERTIFICATE AND ADDITIONAL DECLARATIONS

Importer's Responsibilities

a) Each consignment must be accompanied by Phytosanitary Certificate from the NPPO containing the following declarations:

> "The mother trees of the plants in the consignment were inspected and tested in the manner required by AQIS and found free from quarantine pests including viruses and *Pseudomonas savastanoi* pv. *savastanoi*."
>
> AND
>
> "The plants in the consignment were produced and inspected in the manner required by AQIS and found free from quarantine pests."

3. ON-ARRIVAL INSPECTION AND TREATMENT PROCEDURES

Importer's Responsibilities

a) A Quarantine Entry must be lodged for each consignment.

b) All consignments and accompanying documentation must be presented to AQIS for inspection and verification.

Quarantine Procedures

i) The documentation must be carefully examined to ensure that it reconciles with the consignment and to verify that the conditions have been met.

ii) AQIS reserves the right to audit consignments for the presence of quarantine pests. A minimum of 10 plants must be selected by the quarantine officer from the consignment and forwarded to the AQIS Plant Pathologist for virus and olive knot testing at the importer's expense.

iii) A minimum of 600 plants per consignment are to be visually inspected. For consignments of less than 600 plants, all plants are to be inspected. The plants are to be visually inspected using standard AQIS procedures (including tapping the plants over a white surface to dislodge contaminating arthropods or other material) for live insects, disease symptoms (particularly galls) and any other material of quarantine concern. Growth media (eg. perlite, vermiculite, rockwool, etc.) must be removed to enable a thorough examination of the roots. At least 10% of the sample is to be microscopically examined for the presence of live insects, mites and arthropod eggs.

Note: Rockwool may be difficult to remove without damaging roots and as a result, importers should be advised to consider not using it.

iv) Any disease symptoms are to be referred to the AQIS Plant Pathologist or an AQIS-approved plant pathologist for identification at the importer's expense.

v) If any live insects or mites or other invertebrates are detected the entire consignment must be either fumigated with methyl bromide (T9060), destroyed or re-exported at the importer's expense. Any interceptions are to ne referred to an AQIS Entomologist or an AQIS-approved entomologist for identification.

vi) If no live insects or mites or other animals are detected, all plants in the consignment must be immersed for 30 seconds in a freshly prepared pesticide mixture consisting of Carbaryl, (0.1% active ingredient), Maldison (0.1% active ingredient) and white oil (1% active ingredient) (T9292). Pending NRA approval, a mixture consisting of 100mg/L imidacloprid plus 1% by volume EcoOil can be used.

Note: The importer is responsible for purchasing all chemicals and for dipping the plants using general procedural recommendations under respective legislation for safe and effective use of these pesticides. This process is to be conducted under quarantine supervision.

Following removal from the dip, the plants must be allowed to dry naturally. The plants must not be washed prior to the dip mixture drying.

vii) The AQIS Inspecting officer must ensure that results of inspections are recorded on the Quarantine Entry and that interception forms are completed for any live insects or disease symptoms detected.

viii) All used packaging material must be collected, retained and destroyed by an AQIS-approved method.

4. TRANSFER OF PLANTS FROM AQIS OFFICE TO AQIS-APPROVED PREMISES/OPEN QUARANTINE SITE

Quarantine Procedures

i) A Quarantine movement authority (either a Quarantine Entry or a PI1044 form) must be issued authorising the movement of the plants to the AQIS-approved premises or open quarantine site where the plants are to perform quarantine.

ii) Plants must be transported in a secure manner in an enclosed vehicle from the AQIS inspection depot to the AQIS-approved quarantine premises or open quarantine site.

iii) On arrival at the AQIS-approved premises or open quarantine site the plants are to be unpacked within the designated 'quarantine area'. All residues and unwanted plant material must be collected and retained for disposal by an AQIS-approved method.

5. CRITERIA FOR OPEN QUARANTINE SITES AND FACILITIES

Premises are to be located within range of quarantine supervision and inspection of plants by specialists as required, nominally 100km. Applications from establishments located outside this area will be subject to approval by the Regional Manager in conjunction with AQIS Canberra Office.

The criteria are dependent on whether the plants are to be grown in an open quarantine site (ie. field planting) or at an AQIS-approved facility (eg. screenhouse/shadehouse). The requirements for each are as follows:

5.1. Open Quarantine Sites (ie. field plantings)

i) Each open quarantine site to be used for the purposes of growing imported olive plants must be approved by AQIS.

ii) The open quarantine site must be isolated by at least 500 metres from other olive plantings.

iii) The open quarantine site must be clearly defined and sign-posted as a 'Quarantine Area'.

iv) Access to the quarantine area is to be limited to those persons required to work in the area. Members of the public are not permitted entry.

v) The importer is responsible for demonstrating to AQIS that adequate security arrangements are in

place to prevent the unauthorised removal or interference with imported plants. As a general guide, AQIS accepts that if the larger premise on which the quarantine area is located is secure, then it is not necessary to fence the quarantine area.

Where there is a danger of plants being removed or interfered with by unauthorised persons, the importer is to ensure that all reasonable measures (eg. fencing, screening, etc.) are taken to secure the quarantine area.

5.2. Screenhouses/shadehouses or other similar structures

i) Each facility/structure to be used for the purposes of growing imported olive plants must be approved by AQIS. Screenhouses/shadehouses must consist entirely of screencloth so as to allow the unrestricted movement of air through the facility. (Note: These facilities do not have to be insect proof.)

ii) The facility/structure must be clearly sign-posted as a 'Quarantine Area'. Access to the quarantine area is to be limited to those persons required to work in the area. Members of the public are not permitted entry.

iii) The importer is responsible for demonstrating to AQIS that adequate security arrangements are in place to prevent the unauthorised removal or interference with imported plants. As a general guide, AQIS accepts that if the larger premise on which the quarantine area is located is secure, then it is not necessary to fence the quarantine area.

Where there is a danger of plants being removed or interfered with by unauthorised persons, the importer is to ensure that all reasonable measures (eg. fencing, screening, locks etc.) are taken to secure the quarantine area.

iv) The AQIS-approved facility/structure must be used solely for the purposes of post-entry quarantine growth of imported olive plants.

v) The approved facilities/structures must be isolated by at least 500 metres from other olive plantings.

vi) Hygiene at the facilities is to be maintained at all times so as not to impede any inspection of plants.

6. POST-ENTRY QUARANTINE HANDLING AND TREATMENT PROCEDURES

Importer's Responsibilities

a) Importer is responsible for maintaining accurate records of all imported plants including:

- Quarantine Entry and Import Number

- number of plants imported and their dates of importation

- inspection dates

- treatment details

- deaths of plants

- movement and location of all plants

- release dates

b) These records must be kept and produced to AQIS upon request.

c) Importer remains responsible and accountable to AQIS for the plants until they have been released from quarantine.

d) Importer is responsible for all AQIS charges and for arranging all necessary inspections while plants are under quarantine.

e) Importer is responsible for developing and implementing a stock control system to keep track of all plants while they are under quarantine. This system must be discussed and agreed upon with the local AQIS office.

Quarantine Procedures

i) Plants must be grown under quarantine for a minimum period of 12 months in either:

- an AQIS-approved screenhouse/shadehouse (or other similar structure approved by AQIS); or

- at an AQIS-approved open quarantine site.

NOTE: Requirements for each were outlined in Section 5 above.

ii) Imported plants must be grown in the AQIS-approved 'quarantine area(s)' at all times. Plants are not to be removed from these areas without AQIS-approval. No other plants other than those performing post-entry quarantine are to be kept in the AQIS-approved quarantine areas.

iii) In the initial stage of post-entry quarantine, plants may be grown in an AQIS-approved closed facility (eg. glasshouse) for the purposes of establishing plants. After the plants have been sufficiently established, they must then be transferred to an AQIS-approved open quarantine site or screenhouse/shadehouse for the commencement of the 12 months post-entry quarantine growth. (Plants must be grown in an environment that exposes them to weather conditions to enable any disease symptom expression to occur. Glasshouses and other similar closed facilities generally do not provide environments conducive for the expression of diseases such as olive knot.)

iv) Each consignment of plants grown in the approved premises must be separated and clearly labelled with the variety name and import date. The method of identifying each consignment must be decided and agreed upon in consultation with AQIS. There must be sufficient spacing between rows to enable inspection of the plants by AQIS.

v) Imported plants must be maintained in good health and relatively free from weeds and endemic pests and diseases so as not to impede inspection for any quarantine diseases.

vi) All plants must be treated with a nematicide (T9280) under AQIS supervision within two weeks of planting. This requirement does not apply to plants imported as unrooted cuttings.

vii) Fungicides (except copper-based sprays) can be used with the prior approval of AQIS.

viii) Bactericides (eg. copper-based formulations) are not to be used on the plants as they may suppress the development of olive knot disease symptoms.

ix) Any plant(s) that die while in quarantine are to be retained for inspection by AQIS. Where applicable, soil and pots containing dead plants are to be collected and retained for inspection by AQIS. Following prior approval from AQIS, all dead plants, soil and pots must be disposed of by an AQIS-approved method.

x) Pruning of plants may only occur with prior approval from AQIS. Pruning will only be approved provided that AQIS is satisfied that such actions will not mask any disease symptoms. All residue material (ie pruned branches) is to be collected and retained for disposal by an AQIS-approved method.

xi) Propagation of plants will not be permitted while they are under quarantine.

xii) AQIS will suspend approval of premises that have failed to comply with these conditions.

7. POST-ENTRY QUARANTINE INSPECTIONS

Quarantine Procedures

i) An AQIS inspector or an AQIS-approved plant pathologist must inspect all imported plants for freedom from quarantine diseases at monthly intervals in the first three months and at three monthly intervals thereafter. Inspections should be timed such that the final inspection is within one week of releasing plants from quarantine.

ii) AQIS will ensure that the plant pathologist or inspector is familiar with symptoms of olive diseases of quarantine concern to Australia.

iii) The following sampling plan is to be used to determine the number of plants to be selected for detailed examination.

a) Plants grown in an open quarantine site (ie. Field plantings): A transect is to be established through the plantings in such a way as to randomly select a minimum of 600 plants for detailed examination for the presence of any disease symptoms. A different transect is to be established on each occasion that plants are to be inspected.

b) Plants grown in pots within a screenhouse/shadehouse (or other approved facility): A minimum samples of 600 plants is to be randomly selected from the consignment for detailed examination for the presence of disease symptoms.

iv) The inspecting officer must record the results of all inspections.

iv) Plants exhibiting disease symptoms must be referred to the AQIS Plant Pathologist or to an AQIS-approved plant pathologist for identification. All disease interceptions must be reported to AQIS Canberra office for further advice on the action to be taken.

v) In the event that a quarantine disease is suspected or confirmed, the AQIS Canberra office is to be advised immediately.

vi) All inspections and disease identifications are at the expense of the importer.

vii) AQIS reserves the right to collect samples of imported plants for the purpose of auditing for the presence of disease.

ix) In the event that a quarantinable pest/disease is detected and provided the circumstances warrant such action, AQIS may order the destruction of plants in the quarantine area.

8. RELEASE FROM QUARANTINE

Quarantine Procedures

i) Following 12 months growth in an AQIS-approved screenhouse/shadehouse (or other similar structure approved by AQIS) or at an AQIS-approved open quarantine site, and provided no quarantine pest or disease is found, plants may be released from quarantine.

ii) Plants that have been grown in pots in a screenhouse/shadehouse (or other approved structure) must be removed from the 'quarantine area' and placed in another area at least 500m from any other olive plants that may be under quarantine.

iii) The importer may request a pre-release inspection 14 days prior to anticipated date of release to pre-empt any disease issues before the final release inspection.

PESTS OF OLIVES IN EXPORTING COUNTRIES AND THOSE OF QUARANTINE CONCERN TO AUSTRALIA

The original SCUs for Italy and Israel included pests of olives in the European/Mediterranean region that were of potential quarantine concern to Australia. These lists were revised during the review of the SCUs based on stakeholder comments but were not developed for specific countries (Tables 1 & 2). Pest lists specifically for Spain were developed as part of the assessment of the request for accreditation of the Spanish nursery (Tables 3 & 4).

Tables 3 and 4 are based on pest lists provided by the Spanish NPPO and literature searches undertaken by Biosecurity Australia. Many species listed in Tables 1 and 2 are not included in Tables 3 and 4 as there were no records of their occurrence in Spain. In addition, *Pseudomonas savastanoi* pv. *fraxini* (ash strain) was removed as it is not considered to be the causal agent of olive knot. Two nematodes (*Helicotylenchus oleae* and *H. neopaxilli*) were removed as they are not associated with the pathway (as the rooted plants/cuttings are not produced in soil).

Table 5 lists the pests provided in the application from the Spanish nursery for accreditation.

Equivalent tables to Tables 3 and 4 would need to be produced if nurseries in additional countries applied for accreditation. These would be based on information provided by the NPPO and literature searches conducted by Biosecurity Australia. Similarly, specific tables are required for Israel and Italy before the generic conditions could be extended to these countries.

Table 1. Examples of Olive Arthropod Pests of Quarantine Concern to Australia

This table was prepared for the combined SCU for Israel and Italy based on the original separate SCUs. It lists examples of olive pests of quarantine concern to Australia based on information available at the time of release of the SCU. Distribution primarily relates to the Mediterranean region.

Order	Family	Species	Author	Common name	Plant part affected	Distribution	Ref.
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	*Pentamerismus erythreus*	Ewing		Leaf, fruit	Mediterranean region	17
ACARINA	Tenuipalpidae	*Raoiella macfarlanei*	Printchard and Baker		Leaf, fruit	Mediterranean region	17

Order	Family	Species	Author	Common name	Plant part affected	Distribution	Ref.
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, 32
COLEOPTERA	Curculionidae	*Otiorhynchus armadillo*	Rossi				24
COLEOPTERA	Curculionidae	*Otiorhynchus cribricollis*	Gyllenhal	Oziorrinco			24
COLEOPTERA	Curculionidae	*Otiorhynchus lugens*	German				24
COLEOPTERA	Curculionidae	*Otiorhynchus mastix*	Olivier				24
COLEOPTERA	Curculionidae	*Otiorhynchus ghiliani*	Fairmaire	Oziorrinco dell'edera			24
COLEOPTERA	Curculionidae	*Caenorhinus cribripennis*	Desbr.			Eastern Mediterranean region	17
COLEOPTERA	Meloidae	*Lytta vesicatoria*	(Linneaus)	Blister beetle, Spanish fly	flowers	Italy	1
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

Order	Family	Species	Author	Common name	Plant part affected	Distribution	Ref.
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	Phytoplasm a vector	Italy, Spain, France, Mediterranean basin	36
HEMIPTERA	Coccidae	*Philippia follicularis*	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	Coccoidea	*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

Order	Family	Species	Author	Common name	Plant part affected	Distribution	Ref.
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	Pseudococcidae	*Peliococcus cycliger*	(Leonardi)		Branches, bark	Algeria, France, Italy, Spain, Tunisia	2, 12
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

Order	Family	Species	Author	Common name	Plant part affected	Distribution	Ref.
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, 31
LEPIDOPTERA	Pyralidae	*Euzophera semifuneralis*	(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
ORTHOPTERA	Tettigonidae	*Phaneroptera nana*	Fieber	Bush cricket	leaves	Italy	18
THYSANOPTERA	Phlaeothripidae	*Liothrips oleae*	Costa	Olive thrips	Leaf, fruit	Israel, Mediterranean region, Italy	3,17, 22
THYSANOPTERA	Thripidae	*Frankliniella occidentalis*	(Pergande)	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. Examples of Olive Diseases of Quarantine Concern to Australia

This table was prepared for the combined SCU for Israel and Italy based on the original separate SCUs. It lists examples of olive pests of quarantine concern to Australia based on information available at the time of release of the SCU.

Pathogen	Disease	Reference
Bacteria		
Pseudomonas savastanoi pv. *savastanoi*	olive knot	7, 16, 17
Pseudomonas savastanoi pv. *fraxini*	ash strain	10, 12
Fungi		
Camarosporium dalmatica (Thűm.) Zachos & Tzav. –Klon *(*syn. *Macrophoma dalmatica* (Thűm.)*)*	brown spot / brown rot	15
Cytospora oleina	canker, dieback	3
Massariella oleae	bark canker	15
Phoma incompta Sacc. & Mart.	stem blight	15
Phymatotrichopsis omnivora (Duggar) Hennebert (teleomorph *Sistotrema brinkmannii* (Bres.) J. Eriksson)	Texas root rot	17, 26
Sphaeropsis dalmatica	stem gall	25
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

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.

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Table 3. Arthropod pests of quarantine concern for olive plants from Spain

Scientific name	Common name	Plant part affected	Present in Spain
ACARINA			
Aceria oleae (Nalepa) [Eriophyidae] Syn. *Eriophyes oleae*	Olive gall mite	Leaf	Yes (NPPO, 2002)
COLEOPTERA			
Apate monachus Fab. [Bostrychidae]	Black borer, twig borer	Stem	Yes (CABI, 2001)
Anoxia villosa (Fabricius, 1781)	White grubs	Stem	Yes (NPPO, 2002)
Hylesinus fraxini Fabr. [Scolytidae]		Stem	Yes (CABI, 2001)
Hylesinus oleiperda Fabr. [Scolytidae]	Olive bark beetle	Stem	Yes (CABI, 2001)
Melolontha melolontha Linnaeus, 1758	White grubs	Stem	Yes (NPPO, 2002)
Phloeotribus scarabeoides Bern. [Scolytidae] Syn. *Phloeotribus oleae* Fab.	Olive bark beetle	Stem	Yes (NPPO, 2002; CABI, 2001)
DIPTERA			
Clinodiplosis oleisuga	Bark gnat	Bark (eggs beneath the bark)	Yes (application from Spanish nursery)
HEMIPTERA			
Euphyllura olivina (Costa) [Psyllidae]	Olive psyllid	Leaf	Yes (CABI, 2001)
LEPIDOPTERA			
Agrotis segetum Schiff. [Noctuidae]	Turnip moth	Leaf	Yes (CABI, 2001)
Cacoecimorpha pronubana (Hb.) [Tortricidae]	Carnation leaf roller		Yes (CABI, 2001)
Euzophera pinguis Hw. [Pyralidae]			Yes (NPPO, 2002)
Prays oleae Bern. [Yponomeutidae] Syn. *Prays oleellus*	Olive moth	Leaf, flower, fruit	Yes (NPPO, 2002; CABI, 2001)
Zeuzera pyrina (L.) [Cossidae]	Leopard moth	Stem	Yes (NPPO, 2002; CABI, 2001)

Scientific name	**Common name**	**Plant part affected**	**Present in Spain**
THYSANOPTERA			
Frankliniella occidentalis (Pergande) [Thripidae]	Western flower thrips		Yes (CABI, 2001)
Liothrips oleae Costa [Phlaeothripidae] Syn. *Phlaeothrips oleae*	Olive thrips	Leaf, fruit	Yes (application from Spanish nursery)

Table 4. Diseases of quarantine concern for olive plants from Spain

Pathogen	Disease	Present in Spain
Bacteria		
Pseudomonas savastanoi pv. *savastanoi*	olive knot	Yes (NPPO, 2002)
Viruses		
Arabis mosaic nepovirus	Arabis mosaic	To be included in testing requirements for nurseries
Cherry leaf roll nepovirus	cherry leaf roll	To be included in testing requirements for nurseries
Olive latent 1 sobemovirus	olive latent	To be included in testing requirements for nurseries
Olive latent 2 ourmiavirus	olive latent	To be included in testing requirements for nurseries
Olive latent ringspot nepovirus	olive latent ringspot	To be included in testing requirements for nurseries
Strawberry latent ringspot virus	strawberry latent ringspot	To be included in testing requirements for nurseries
Diseases of unknown aetiology		
Infective yellowing	infective yellowing	?
Leaf malformation (not a virus)	leaf malformation	?
Olive yellow mottling and decline (virus?)	yellow mottling and decline	?
Partial paralysis (virus?)	Partial paralysis	?
Sickle leaf	Sickle leaf	?

CABI (2001) Crop Protection Compendium. CAB International.

NPPO (2002). Pest list provided by the Spanish NPPO.

Table 5 Pests listed in the application for accreditation for the Spanish nursery

Scientific name	Common name	Present in Australia	Plant part affected	On pathway	Comments
ARTHROPODS					
Aceria oleae	Olive gall mite	No	Leaves	Yes	Spanish nursery – has not been found in their cultures to date.
Cacoecia pronubana Syn *Cacoecimorpha pronubana*	Carnation leaf roller, carnation tortrix	No (CIE, 1975)	Leaves, flowers	Yes	Spanish nursery – polyphagous lepidopteran pest that may cause large losses in olives. They maintain sex pheromone traps to control flights, mainly occur in summer. The traps are located outside of the greenhouse as they are highly attractive.
Clinodiplosis oleisuga		No	Bark	Yes	Spanish nursery – low probability of finding this insect in young plants as it is a bark parasite.
Euzophera pinguis		No	Shoots, wood	Yes	Spanish nursery – as for *Z. pyrina* as this is a wood parasite.
Liothrips oleae	Olive thrips	No	Shoots	Yes	Spanish nursery – easily recognisable in young shoots of adult plants. Insect flights can be followed by installing chromatic traps in the greenhouse.
Prays oleae	Olive kernel borer, olive moth	No (CIE, 1961)	Fruit, leaves	Yes	Spanish nursery – can control flights of this insect by using traps with sex pheromones inside the greenhouses used for mother plants and production.
Saissetia oleae	Olive scale	Yes (CABI, 2001)	-	-	Spanish nursery – can be easily detected in adult plants through the periodical visual inspection.
Zeuzera pyrina	Leopard moth	No (CIE, 1973)	Shoots, wood	Yes	Spanish nursery – highly improbable to find in the plants as semi-herbaceous cuttings are used that the larvae can not lodge in.
PATHOGENS					
Bacteria					
Pseudomonas savastanoi	Olive knot	No	Whole plant	Yes	Spanish nursery – symptoms can be detected visually, if any doubt can be tested for by an official lab. Discussed during May 2002 visit that active testing was required. Agreement that the plant health authority would initiate the testing.
Fungi					
Cycloconium oleaginum		Yes (APDD, 2002)	-	-	Spanish nursery – symptoms can be detected visually. When there is a high risk of infection due to certain temperature and humidity can carry out early detection with NaOH.
Verticillium dahliae		Yes (on olive and other hosts) (APPD, 2002)	Whole plant	Yes	Spanish nursery – symptoms can be detected visually, if any doubt can be tested for by an official lab.

Scientific name	Common name	Present in Australia	Plant part affected	On pathway	Comments
Viruses					
Arabis mosaic virus	ArMV	Y (VIDE)	Systemic	Yes	Spanish nursery – initial plants actively tested 2x per year by plant health service.
Cherry leaf roll virus	CLRV	Y (VIDE)	Systemic	Yes	Spanish nursery – initial plants actively tested 2x per year by plant health service.
Olive latent ringspot virus	OLRV	N (VIDE)	Systemic	Yes	Spanish nursery – initial plants actively tested 2x per year by plant health service.
Olive latent virus 1	OLV-1	N (VIDE)	Systemic	Yes	Spanish nursery – initial plants actively tested 2x per year by plant health service.
Olive latent virus 2	OLV-2	N (VIDE)	Systemic	Yes	Spanish nursery – initial plants actively tested 2x per year by plant health service.
Strawberry latent ringspot virus	SLRV	Y (VIDE)	Systemic	Yes	Spanish nursery – initial plants actively tested 2x per year by plant health service.
Phytoplasmas					
phytoplasmas		?	Systemic	Yes	Spanish nursery – initial material tested for absence of phytoplasmas using nested PCR.

APDD (2002) Australian Plant Disease Database.

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EXISTING IMPORT CONDITIONS FOR OLIVE NURSERY STOCK

All countries excluding Italy and Israel

C7381, C7382, C7300

Italy

C8627, C9220, C8852, C7300

Israel

C8627, C9221, C8853, C7300

C7100	Import Conditions and Requirements for Seeds for Sowing - All Species
C7300	Nursery Stock - All Species - General Conditions
C7381	Juglans spp. and Olea spp. - Tissue Cultures
C7382	Juglans spp. and Olea spp. - Other than Tissue Cultures
C8627	Olea spp. (Olives) - Tissue Cultures
C8852	Olea spp (Olives) - Non-accredited sources, Italy - other than tissue cultures
C8853	Olea spp. (Olives) - Non-accredited Sources - Other than Tissue Cultures
C9220	Import Procedures and Conditions for the Import of High Health Olive Plants Produced Under the SCU-4 for Italy
C9221	Import Procedures and Conditions for the Import of High Health Olive Plants Produced Under the SCU-2 from Israel