

◆ **EPPO Standards** ◆

SCHEMES FOR THE PRODUCTION OF HEALTHY PLANTS FOR PLANTING

NURSERY REQUIREMENTS

PM 4/7(2) English



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APPROVAL

EPPO Standards are approved by EPPO Council. The date of approval appears in each individual standard.

REVIEW

EPPO Standards are subject to periodic review and amendment. The next review date for this set of EPPO Standards is decided by the EPPO Working Party on Phytosanitary Regulations.

AMENDMENT RECORD

Amendments will be issued as necessary, numbered and dated. The dates of amendment appear in each individual standard (as appropriate).

DISTRIBUTION

EPPO Standards are distributed by the EPPO Secretariat to all EPPO Member Governments. Copies are available to any interested person under particular conditions upon request to the EPPO Secretariat.

SCOPE

EPPO Schemes for the Production of Healthy Plants for Planting are intended to be used by NPPOs or equivalent authorities, in their capacity as bodies responsible for the design of systems for the production of healthy plants for planting, for the inspection of such plants proposed for certification, and for the issue of appropriate certificates.

REFERENCES

OEPP/EPPO (1991) Recommendations made by EPPO Council in 1990: general scheme for the production of certified pathogen-tested vegetatively propagated ornamental plants. *Bulletin OEPP/EPPO Bulletin* **21**, 757.

OEPP/EPPO (1992) Recommendations made by EPPO Council in 1981: certification of virus-tested fruit trees, scions and rootstocks. *EPPO Technical Documents* **1013**, 42-43.

OEPP/EPPO (1993) Recommendations made by EPPO Council in 1992: scheme for the production of classified vegetatively propagated ornamental plants to satisfy health standards. *Bulletin OEPP/EPPO Bulletin* **23**, 735-736.

DEFINITIONS

Basic material

Propagation-stock material from all but the last stage of propagation stock, satisfying the recommended certification standards and certified for sale. According to the number of stages of propagation stock, there may be several grades of basic material.

Candidate nuclear stock

Any plant that may become or may be propagated to produce nuclear stock. Testing for specified pests is required before the plant can be accepted as nuclear stock. Until testing is complete and negative, the plant remains candidate nuclear stock.

Certification scheme

System for the production of vegetatively propagated plants for planting, intended for further propagation or for sale, obtained from nuclear stock after several propagation stages under conditions ensuring that stated health standards are met. The filiation of the material is recorded throughout the scheme.

Certified material

Propagating material from the last stage of propagation stock, satisfying the recommended certification standards and certified for sale. In the case of plants that are sold grafted onto rootstocks, the rootstocks must also be at least of the last stage of propagation stock, and the plants must be held under approved conditions between grafting and sale. Certified material may, according to the plant concerned, be referred to more specifically as, for example, certified plants, certified cuttings, certified bulbs, etc.

Classification scheme

System for the production of vegetatively propagated plants for planting, intended for further propagation or for sale, obtained from selected candidate material after one or several propagation stages under conditions ensuring that stated health standards are met. Different classes may be defined according to the inspections and tests used, the tolerance levels applied and the precautions taken. The filiation of classified material is not considered.

Filiation

The line of descent by vegetative propagation from a defined parent plant.

Nuclear stock

Plants individually tested by the most rigorous procedure in a certification scheme and found free from specified pests. All such plants must be maintained at all times under strict conditions ensuring freedom from infection. According to the crop concerned, plants propagated from nuclear-stock material may remain nuclear stock provided that they do not leave the nuclear-stock conditions. In the case of plants that are maintained by grafting onto rootstocks, the rootstocks must also be nuclear stock.

Nuclear-stock material

Propagating material derived from nuclear stock, which may be further propagated without change of ownership, or certified for sale as prebasic material.

Prebasic material

Nuclear-stock material, satisfying the recommended certification standards and certified for sale.

Propagation stock

Plants derived from nuclear stock, propagated and maintained under conditions ensuring freedom from infection. Pathogen freedom is checked by appropriate procedures. Propagation may be done in a number of successive stages under different approved conditions. The plants are then known as propagation stock I, propagation stock II, etc. There may be several generations within each of these stages, provided that the plants do not leave the approved conditions. The number of stages and/or generations allowed within propagation stock is generally limited and will depend on the crop concerned. In the case of propagating material which is maintained by grafting on a rootstock, the rootstock should be at least of the corresponding stage of propagation stock.

Propagation-stock material

Propagating material derived from propagation stock, which may be further propagated without change of ownership, or certified for sale as basic or certified material, according to the stage of propagation stock concerned.

OUTLINE OF REQUIREMENTS

EPPO Schemes for the Production of Healthy Plants for Planting describe the steps to be followed for the production of vegetatively propagated planting material of a particular cultivated plant, whose health status is attested by an official certificate. Certification and classification represent distinct alternative approaches to the production of healthy planting material. In a typical certification scheme, the certified material is descended by not more than a fixed number of steps from individual plants each of which is tested and found free from pests, and is then maintained and propagated under rigorous conditions excluding recontamination. In a classification scheme, the classified material is descended by one or more steps from material which, as a population, meets certain health standards and is maintained and propagated under conditions minimizing recontamination. In both cases, however, health status is attested by an official certificate. Which of the approaches is appropriate for a given cultivated plant depends on considerations of cost and resources, health status required, practical possibilities for testing, rate of recontamination, value of the final material.

EPPO Schemes for the Production of Healthy Plants for Planting give details on the selection, growth and maintenance of the candidate material, and on the propagation of this material in several stages under conditions ensuring that stated health standards are met. Appropriate checks on specified pests are specified throughout the scheme. Information is provided, as necessary, on relevant pests, cultural practices, inspection and testing methods, recommended certification standards.

Schemes for the production of healthy plants for planting

NURSERY REQUIREMENTS

Specific scope

This standard describes the requirements for establishments participating in certification of fruit or ornamental crops.

Specific approval and amendment

First approved in September 1992.
Revision approved in September 2000.

The following general conditions are recommended as requirements for establishments (including micropropagation establishments) intending to propagate fruit or ornamental crops for certification.

- 1 Establishments participating in certification schemes should be officially registered (this will normally be with the official authority of the country where the nursery is situated, but may be with the official authority of another country) as capable of satisfying the technical and isolation requirements for the category of stock concerned and, as appropriate, of respecting the hygiene guidelines for certification schemes (Appendix I).
- 2 Establishments applying for registration should supply the following information: name under which trade is conducted, postal address, telephone and fax numbers, e-mail address, address(es) of premises on which propagation is to be done (if different from above).
- 3 Establishments should declare each year in advance the species and the type of plants to be entered for certification.
- 4 Establishments should designate one member of staff to have overall responsibility for certification and to be the first point of contact on all certification matters. This person's name should be stated and any subsequent changes notified to the certifying authority.
- 5 Establishments should conform with the certification regulations in force, permit official access to all types of crops on the premises and facilitate inspections and sampling at any reasonable time.
- 6 Establishments should keep records for the crops covered by certification schemes, which should include:
 - an up-to-date inventory of the fruit or ornamental crops, as appropriate, on the premises.
 - details of plants brought onto the premises and their origin.
 - details of all sales or disposals, including quantity and destination of the material.

- information on all tests and inspections performed as required by the certification scheme, including, for example, date and method of sampling, date of test, test method, result¹. This concerns any tests performed by the nursery staff and those performed by specialized laboratories on their behalf (see 7 below).

- details of applications of plant protection products.

- occurrence of pests and diseases and any action taken.

The establishment should store the records for a minimum period after preparation (according to the plant concerned) and should make them available for official inspection on request at any reasonable time.

- 7 Establishments should either be capable of carrying out prescribed tests on plant material or should subcontract the tests to a competent laboratory. In either case, the certification authority should approve the testing facilities.

APPENDIX I

Hygiene guidelines for certification schemes for candidate nuclear stock, nuclear stock and propagation stocks

These guidelines provide a checklist of measures which may be needed to grow plants of candidate nuclear stock, nuclear stock or propagation stock. Official authorities should select those which are relevant for individual crops under certification, according to the pests concerned.

¹ Records of tests and inspections performed by the official authority are normally held by the authority. Nurseries may sometimes require this information, for example to be provided to authorities of other countries to which they export.

For plants grown in glasshouse/gauzehouse

General hygiene

- Glasshouse with a double door to the outside.
- Separate glasshouse compartments constructed to exclude the relevant arthropod vectors, to keep nuclear and propagation stock isolated from other plants (essential for nuclear stock, recommended for propagation stock).
- Suitable labelling of glasshouse compartments for the status of the material.
- Lockable doors.
- New introductions quarantined in a separate glasshouse.
- Uncontaminated water supply (recirculating water should not be used unless it has been efficiently decontaminated).
- Floors clean.
- Broad-spectrum disinfectant in footbath or mat.
- Materials and tools disinfected, and used only for the crop concerned.
- Hands and implements disinfected before each operation.
- Implements disinfected between cuttings, or groups of cuttings, depending on the stage of propagation.
- Staff to wear clean, disinfected, soil-free rubber footwear and clean overalls.
- No smoking allowed.
- No visitors allowed (candidate material and nuclear stock).
- A list of important dos and don'ts displayed.

Soil or growing medium

- For herbaceous plants, new or sterilized soil-free growing medium. For woody plants, a sterilized soil-based medium may be needed.

Growing containers

- New or disinfected growing containers (expanded polystyrene renewed each time).
- New or disinfected packaging for transporting plants.
- Capillary mats replaced after each crop.

Storage (of propagation material)

- Adequate storage facilities for unrooted cuttings, bulbs, rooted plants or other propagation material in the cold and dark.

Planting

- Growing containers isolated from the ground (for candidate material and nuclear stock and, if required, also for propagation stock).
- Individual containers required for nuclear stock and preferred for propagation stock. Trays of several plants may be used, but all such plants should be rejected if disease is found.
- Cross-contamination avoided during dipping treatments.
- Each cultivar (or clone) correctly labelled.
- Each cultivar (or clone) clearly separated from others.
- Plants (or bulbs) not touching each other (in candidate nuclear stock and preferably in nuclear stock).

During the growing season

- Regular sustained pest control (including pathogens and weeds) with alternation of plant protection products to ensure effective control.
- No plant protection products used which could mask the symptoms of the pathogens specified in the certification scheme.
- Avoidance of splashing during watering.
- In general, avoidance of wounding plants.
- Flowers removed before opening.

For plants grown in the field

General hygiene

- Uncontaminated water supply (recirculating water should not be used unless it has been efficiently decontaminated). Avoidance of fields where drainage water may enter.
- Materials and tools disinfected, and used only for the crop concerned.

Soil or growing medium

- Previous cropping considered with respect to the risk of soil-borne infection.
- Soil tested and found free from the nematode vectors specified in the scheme (if appropriate).

Growing containers

- New or disinfected packaging for transporting plants.

Storage (of propagation material)

- Adequate storage facilities for unrooted cuttings, bulbs, rooted plants or other propagation material in the cold and dark.

Planting

- Cross-contamination avoided during dipping treatments.
- Each cultivar (or clone) correctly labelled.
- Each cultivar (or clone) clearly separated from others.
- Sufficient isolation from potential sources of infection.

During the growing season

- Regular sustained pest control (including pathogens and weeds) with alternation of plant protection products to ensure effective control.
- No plant protection products used which could mask the symptoms of the pathogens specified in the certification scheme.
- In general, avoidance of wounding plants.
- Flowers removed before opening.