

## NT PLANT QUARANTINE & BIOSECURITY GUIDANCE NOTE

### NUMBER 2b – HANDLING INCOMING PLANTS AND QUARANTINE AREAS – FOR GARDENS OF SIGNIFICANT PLANT COLLECTIONS AND THE PLANT CONSERVATION PROGRAMME

---

Further to the general advice given in Guidance Note Number 2, this guideline provides additional advice for any specialist projects that may require a higher degree of security for reasons such as the heritage value of the garden, the value of the plant material being handled, the wide forward distribution plant material from the site. It is suggested that potential users, such as the Plant Conservation Programme consider this guidance and tailor it to suit their specific needs.

#### 1.0 Risk assessment of material entering the site

Resources are limited, therefore, completion of a brief risk assessment before material enters the site will help to determine the level of risk posed by the material and the appropriate level of quarantine required to manage that risk.

Here are a few questions to ask:

(a) *What is the type of plant material?*

- Whole plants (e.g. large old specimen plants) have a higher risk of carrying pests and diseases than small cuttings or seed because they have a greater potential to harbour pests and diseases in their branches, roots and associated soil.
- Wherever possible acquire material that carries the lowest risk, for example micro-propagated material ought to be free from disease (e.g. from the Duchy College programme).

(b) *What is the source of material?*

- Find out what are the common pests and diseases that may affect the particular host plant. This may help to determine an appropriate period of quarantine. A useful guide to common pests and diseases is the RHS Pests and Diseases - Authors: Pippa Greenwood & Andrew Halstead (Dorling Kindersley ISBN 9781405319690).
- Contact the place of origin of the material to find out what pest and disease problems occur there.

(c) *What is the final destination of the material?*

- Consider the heritage value of plants and collections at the final destination of the material.

- Some material may be unsuitable for a particular site or may require restrictions on where it should be planted.

## 2.0 Quarantine facility

### 2.1 Location

- Preferably, isolation facilities should be distinctly separate and sited away from other growing areas, e.g. in a separate glasshouse or polytunnel.
- If this is not possible, a separate area within a glasshouse or even a single bench can be adapted for use e.g. line benches with plastic sheeting, or use large plastic trays to create mini-system that reduces the spread of fungal pathogens to other batches through contaminated water.

### 2.2 Structure

- Preferably, a permanent, weatherproof, watertight glasshouse with a sealed solid concrete floor (which can be easily disinfected and provides a barrier to prevent entry of ground water, soil, nematodes or fungal pathogens soil or ground water impervious to water).
- Depending on the risks identified with the material in question, other structures such as polytunnels can be used.
- **Ideally, all doors should have water-tight sills, be fitted with appropriate rubber or brush seals and should be lockable.**
- Windows and air vents should be either permanently sealed shut, or be fitted with mesh screens or filters of an appropriate size.
- Gaps between panes of glass should be sealed, e.g. with silicone.

### 2.3 Security

- Access should be restricted to a few nominated staff.
- The entrance door should be locked to prevent illegal entry and minimise the risk of vandalism.

### 2.4 Layout

- Having a separate vestibule or entry section to the glasshouse is advisable, to allow changes of clothing, disinfection of footwear etc. before entering or leaving the quarantine facility.
- Wherever possible, the various facilities in which the material is to be handled (including waste disposal) should be in relatively close proximity to each other in order to reduce the likelihood of escape during transfer.

### 2.5 Drainage

- Minimise and contain water run-off to prevent the spread of pathogens from the site.
- In specially-designed facilities, this is achieved by a dedicated quarantine drainage system where all drainage is discharged into a holding tank where it can be sterilised (e.g. heat or ultraviolet treatment) or periodically pumped out and the water disposed of by an authorised contractor. Facilities may include silt traps to filter out solid debris, which can then be disposed of safely.

- If dedicated drainage is not available then any normal drainage within the facility must be blocked off and watering controlled in order to prevent run-off or overspill.

### 3.0 Hygiene

#### 3.1 *People (staff, volunteers, contractors and visitors)*

- It is recommended that people working in propagation areas wear appropriate protective clothing (e.g. coveralls), to prevent transfer of pests and diseases.
- Coveralls should be clearly marked and left within the lobby/vestibule on exit from the facility.
- They should be cleaned regularly.
- Require that people (staff, contractors and visitors) disinfect their hands with a propriety alcohol gel before entering the quarantine area and again on departure.
- People handling high value propagation material should also disinfect their hands with a propriety alcohol gel between handling new batches of material. Alternatively, they should wear disposable gloves which should be changed before handling new batches of material.
- Require that everyone (staff, contractors and visitors) clean and disinfect their footwear before entering and when leaving the quarantine area:
- At the entrance, provide a washing bowl filled with soapy and a long-bristle brush for people remove soil and debris from their footwear, and a disinfectant:
  - “Jet 5” is recommended for general purpose.
  - “Cleankill Sanitising Spray” is recommended specifically against pathogens such as *Phytophthora ramorum* that produce difficult to kill thick-walled resting spores.
- Replace the soapy water at least once a day or more frequently if it is visibly contaminated with soil and debris.
- Try to ensure that people follow a sequence of moving from ‘clean’ to ‘dirty’ areas but not back again!

#### 3.2 *Benches, plant pots, trays, trolleys etc.*

- Benches should be brushed clean of debris between batches of plants.
- Capillary matting should be brushed clean of debris and should be disinfected with ‘Jet 5’ between batches of plants. Covering the matting with a protective layer such as “Mypex” will help to protect it from wear and tear, and with careful cleaning and disinfection, the matting may last 5 years or more.
- Use clean new pots, trays etc. for new batches of plants.
- Before reusing any pots or trays, they must be brushed free from all organic matter, washed in soapy water and disinfected.
- It is inadvisable to reuse wooden canes as they may be difficult to sterilise completely and can aid transmission of such pests as root mealy bug and fungal pathogens. They also act as over-wintering sites for common pests, such as red spider mite.

#### 3.3 *Tools (e.g. pruning knives, secateurs, saws, hoses, lances, dustpans, brooms, bins etc.)*

- Use dedicated tools in the propagation area to prevent cross-contamination.
- All equipment should be clearly marked to prevent it being removed mistakenly or ‘borrowed’ for use in other growing areas.

- Clean and sterilise tools, such as secateurs, knives and saws, between cuts, and especially between different plants.
- Dip or spray them with alcohol and flame or wipe after use to prevent damage.

### 3.4 *Weed control*

- Control weeds in and around the quarantine/propagation house because weeds may harbour many pests and diseases.

### 3.5 *Pest control*

- There should be effective control of glasshouse pests.

### 3.6 *Soil*

- Collect any soil and growing medium received with new batches of material.
- Bag the soil and dispose of it safely (see paragraph 6).

## 4.0 **Growing conditions**

- There should be physical isolation of the material from other plants within the facility.
- Space plants adequately to ensure they are not touching.
- Avoid plants being in direct contact with the ground.
- Plants should be grown in trays to contain run-off and prevent spread of pathogens between plants or batches on the same bench.
- Watering must be controlled in order to prevent any unnecessary run-off or overspill.

## 5.0 **Monitoring**

- **Plants should be held for an appropriate length of time within the containment facility. The length of time the plants are held for should be based on the periods required for development of the pests and diseases which may be associated with the plant material.**
- **It is advisable to inspect the plants daily for signs of pests and disease.**
- **Avoiding the use of fungicides or insecticides should be considered as this will allow pest and disease symptoms to become visible.**
- **Place yellow sticky traps among batches of new material to trap and monitor any emerging pests.**
- Where available, make use of diagnostic test kits to identify certain pathogens (e.g. *Phytophthora* species; see NT Guidance Note 3).

## 6.0 **Waste management**

- Bins should be provided to collect all plant waste, plant debris and any packing material that may be infested.
- Waste should be placed in bags and sealed before removal from the compartment of the facility, to avoid the risk of spreading infestations to wider areas.
- Destroy the waste either by composting e.g. in a closed vessel composter, by burning, or by deep burial as non-hazardous waste at a local authority approved landfill site.

## 7.0 Links for further information

- Disinfectants [http://intranet/intranet/i-bid-feature/i-h\\_s-feature/i-h\\_s\\_hs\\_atoz/i-h\\_s-coshh.htm](http://intranet/intranet/i-bid-feature/i-h_s-feature/i-h_s_hs_atoz/i-h_s-coshh.htm), then click on 'Gardens, Woods and Countryside (revised April 2008)'; "Jet 5" (No. 022); "Cleankill Sanitising Spray" (No. 240).
- One hand gel product ("Spirigel" by Ecolab) is already available to NT staff on the Catering COSHH List (Ref.039) and a Model Assessment is therefore already available on NT Intranet/H&S pages (see [http://intranet/intranet/i-bid-feature/i-h\\_s-feature/i-h\\_s\\_hs\\_atoz/i-h\\_s-coshh/i-h\\_s-coshh\\_models\\_catering\\_newpage-9.htm](http://intranet/intranet/i-bid-feature/i-h_s-feature/i-h_s_hs_atoz/i-h_s-coshh/i-h_s-coshh_models_catering_newpage-9.htm)).

**Acknowledgement:** Guidelines on Legislation, Import Practices and Plant Quarantine for Botanic Gardens and Kindred Institutions. By Helen Long, Fiona Inches & Katie Treseder; Edited by Judith Cheney; Published by PlantNetwork 2006.

## Conservation Directorate Guidance Note Information

**Authors:** Dr David Slawson  
FERA  
Head of Pest and Disease identification programme  
The Food and Environment Research Agency

**Guidance Note No.**

**Date of issue:** November 2008