

APPENDIX 9

Biosecurity Measures for Nurseries

April 2007

In the course of daily work, nursery personnel are frequently required to visit a number of different nurseries sites, greenhouses, fields, and facilities. These actions could potentially provide a pathway for transferring quarantine organisms from one work site to another during the work day. It should also be recognized that even if a single work site is visited per day, precautions must be taken to avoid contaminated clothing and equipment from being used at a new site the following day. Further, visitors to these same facilities present the same risks and additionally could vector disease-causing-organisms from other sites.

Biosecurity measures must be taken by nurseries and be required of nursery personnel and visitors to avoid and mitigate the spread of *P. ramorum*. The biosecurity measures described here are the minimum measures to be taken by the nursery.

Communications

All nursery personnel should be trained and visitors informed of these biosecurity requirements that have been put in place by the facility. As new scientific data and technology is learned, the facility needs to update their biosecurity requirements and retrain their personnel.

Vehicles

Vehicles can become contaminated with soil; a primary vector for quarantine pests. The following guidelines seek to reduce the likelihood of this pathway.

Avoidance:

Once at the inspection site, if possible, the vehicle should only be driven and parked on paved, concrete or gravel areas to avoid contact with soil and organic matter. Visitors should consider requesting a facility employee to drive them to their designated location with one of the nursery's vehicles. Loading of nursery stock onto other than the nursery's vehicles should be done in an area with concrete or asphalt pad located near the gate and not in the interior of the nursery.

Cleaning:

Interior of nursery vehicles should be cleaned to ensure no build-up of soil, debris or other items.

Where it is not possible to avoid the vehicle going onto the fields, the vehicle must be

driven to the edge of the facility where the tires, wheel wells and accessible areas of the undercarriage of the vehicle must be cleaned of soil and organic matter with a brush or a water hose followed by a spray down with a suitable disinfectant. In situations where the undercarriage has been coated with soil it is recommended that after cleaning and disinfecting at the work site an effort be made to go through a car wash that has the ability to clean the undercarriage before proceeding to another work site. If a car wash is not available, avoid driving onto the next work site. To ensure the entire surface of the tires are cleaned it will also be necessary to move the vehicle forward a foot or so to permit cleaning of the portion of the tire in contact with the ground.

The tires (or other parts in contact with the soil or plants, such as the bed of trucks) of vehicles must be cleaned of loose soil and plant debris and disinfested with the appropriate labeled products before leaving the infested site. Any efficacious product labeled for use on non-porous surfaces may be used on tires or vehicle undercarriages.

A portion of the vehicle must be designated as a “clean area” where clean work supplies and equipment can be kept. A designated “dirty area” of the vehicle such as the trunk of the car or a specified enclosed area of a truck bed must also be identified for use to hold double bagged clothes or dirty equipment that require cleaning. In situations where pool vehicles are used, the work site should adopt a set procedure for all personnel.

Nursery Personnel

Nursery personnel routinely come in contact with potentially contaminated soil, plants and organic matter and this requires the personnel to address a number of biosecurity measures. If the inspection site has distinct levels of biosecurity for different areas in the nursery, it is necessary to be aware of this situation. Work should always be completed working from the areas of lowest to highest risk.

Access:

Access to infested areas and hold areas should be limited, as much as possible, to personnel and employees. Everyone entering and leaving the nursery site must scrape off loose pieces of soil into the destruction block. Those working with, or in contact with suspected infested material (including plants), must wash hands using soap or approved disinfectant immediately after completion of task. There are no products currently labeled for use on porous materials for *Phytophthora* control.

- Personnel should not have access to production areas of the nursery after entering the destruction block on the same day.
- A disinfectant foot bath should be placed and used by personnel entering and exiting the quarantine area and entering and exiting the destruction block at the infested nursery site, where the movement of soil or plant debris on footwear is likely. The foot bath must be filled with fresh disinfectant at least on a daily basis or more frequently if contaminated with dirt or debris, in accordance with label directions.

Use of disposable shoe covers may be used in lieu of a footbath, if disposed of immediately upon exiting from the quarantine area or destruction block. The disposable shoe covers must be placed in bags and incinerated or deep-buried.

- Do not visit other nursery sites in potentially contaminated work clothing and footwear.

Boots:

Rubber boots which can be disinfected should be worn and if they are not available disposable boot covers must be worn over work boots in any infested or possibly infested area. The rubber boots must be disinfected on arrival, even if this has been done at the time of departure from the last work site. At the conclusion of the inspection, the boots must be cleaned of soil and disinfected prior to placing into the vehicle area designated as a “clean area”. Dispose of used boot covers by double bagging and place into the designated “dirty area” of the vehicle for proper disposal. After removing boot covers, the soles of the work boots must be inspected for soil and if present, must be cleaned of soil and treated with disinfectant.

Hands:

Thoroughly wash hands with soap and water before entering and after leaving the work site. Follow these four simple steps to keeping hands clean.

- Wet hands with warm running water.
- Add soap, and then rub hands together, making a soapy lather. Do this away from the running water for at least 20 seconds, being careful not to wash the lather away. Wash the front and back of hands, as well as between fingers and under nails.
- Rinse hands under warm running water. Let the water run back into the sink, not down the elbows. Turn off the water with a paper towel and dispose in a proper receptacle.
- Dry hands thoroughly with a clean towel

If a hand washing station is not available, antiseptic rubs/gels/rinses (containing a minimum of 70% ethyl alcohol and left on for 10 - 15 minutes) must be used. Follow these basic steps for using antiseptic rubs/gels/rinses.

- Remove soil from hands.
- If hands are wet, dry as much as possible.
- Apply enough disinfectant (amount about the size of a quarter) onto hands to

cover all areas, including under the nails. Use a rubbing motion to evenly distribute the disinfectant product for about 15 seconds.

If antiseptic rubs/gels/rinses are used, avoid formulations with moisturizers as they leave a gummy residue. Disposable gloves may be used, however they have the tendency to rip and become uncomfortably wet after a short period. Rubber gloves which withstand more abuse than disposable gloves have the same drawbacks as disposable gloves, however will be more practical when handling materials that are sharp or jagged. If rubber gloves are used in cold weather it is recommended to purchase rubber gloves with cotton or acrylic liners. Both disposable and/or rubber gloves must be double bagged after use if working in an infested area and placed into the “dirty area” of the vehicle for disposal or cleaning. If on-site disposal of the gloves are available this option should be chosen. After disposal of gloves, hands must be washed or sanitized. To avoid cross contamination, disinfection of hands must take place after handling any plants or other contaminated matter in the infested area.

Equipment

Any equipment used (pruners, measuring tapes, clipboards, pens, etc.) at a work site must be disinfected prior to leaving the work site. Where practical, equipment should be disinfected as frequently as possible at each work site. Where equipment must leave the work site for disinfection it must be double bagged and place in the designated “dirty area” of the vehicle.

Visitors:

- Access to infested areas and hold areas should be limited, as much as possible, to personnel and employees. Everyone entering and leaving the nursery site must scrape off loose pieces of soil into the destruction block. Those working with, or in contact with suspected infested material (including plants), must wash hands using soap or approved disinfectant immediately after completion of task. There are no products currently labeled for use on porous materials for *Phytophthora* control.
- A disinfectant foot bath should be placed and used by all entering and exiting the nursery site. These should be placed at all entrances and exits. The foot bath must be filled with fresh disinfectant at least on a daily basis or more frequently if contaminated with dirt or debris, in accordance with label directions.