

**Oregon**  
**Grower Assisted Inspection Program**  
**Mitigation Manual for**  
**Regulated**  
***Phytophthora* species**

**This manual is for a fictitious nursery. The information for each GAIP manual will be unique and may or may not contain the information used in this manual.**

**Version: 1**  
**Effective Date: [January/1/2008](#)**  
(Last updated: [August/14/2008](#))

**ABC Nursery**  
**123 Main Street**  
**Anytown, Oregon 12345-6789**  
**Oregon Grower Assisted Inspection Program**  
**Mitigation Manual Status**

<b>Status</b> Original Revision Cancelled	<b>Document revision number</b>	<b>Effective date</b>	<b>Description of revisions made</b>
Original	Original	1/1/08	N/A
Revision	1	2/27/08	CCP identified; new procurement process added
Revision	2	3/1/08	Roles and Responsibilities; staff completed and passed online course.
Revision	3	4/28/08	BCP added; neighbor planted multiple <i>Rhododendron spp.</i> in landscape.
Revision	4	8/14/08	Roles and Responsibilities; new Plant Health Care Supervisor

**ABC Nursery**  
**Oregon Grower Assisted Inspection Program**  
**Cooperative Agreement**

- I. This Cooperative Agreement, by and between the Oregon Department of Agriculture (“Department”) and ABC Nursery (“Cooperator”), specifies the terms and conditions that must be met by the Cooperator to participate in the Oregon Grower Assisted Inspection Program (GAIP) administered by the Department. Except as provided herein, this agreement will supersede any prior agreement or understanding that the Department and the Cooperator have had regarding the subject matter herein.
- II. Incorporated documents: The Cooperator understands and agrees that this cooperative agreement consists not only of this document (including the mitigation manual), but includes and incorporates references to the following laws, rules, and statutes.
  - a. ORS 570.105 through 570.200
  - b. ORS 570.305 through 570.375
- III. This agreement shall become effective on the date all necessary signatures have been obtained and will terminate five (5) years from said date. The agreement may be renewed at this time. This agreement may be terminated at any time by mutual consent and upon receiving 30-days written notice. The Department may terminate this agreement in whole or in part upon notice to the Cooperator if any of the following should occur:
  - a. The Department fails to receive sufficient funding, appropriations, or expenditure limitations for the GAIP to continue.
  - b. Federal or State laws or regulations are modified or interpreted in such a way that law prohibits the work outlined in this agreement.
  - c. The Department determines the Cooperator is not in compliance with the practices and procedures outlined in the Cooperator’s mitigation manual or has failed to take the corrective actions necessary to remain in compliance.
    - i. Major non-compliance issues: The Department has identified three critical control points (CCP) that must be addressed within the Cooperator’s mitigation manual: irrigation water, soil and potting media, and incoming plant material. These CCPs have been identified as the greatest risk for introducing or spreading regulated *Phytophthora* species in nurseries. Non-compliance with a best cultural practice or standard operating procedure that addresses any or all of these CCPs will result in a major violation and immediate suspension of the nursery from the GAIP. Should the nursery take corrective action(s) that successfully addresses the issue(s) of non-compliance, the nursery may be reinstated into the GAIP at the Department’s discretion.

- ii. Minor non-compliance issues: The Department will issue a letter of warning for minor issues of non-compliance.
  - 1. First offense: The nursery will be given the opportunity to correct the non-compliance and then be subject to a follow-up audit.
  - 2. Second offense; The nursery will be issued a Final Warning, notifying them that their participation in GAIP will be held in abeyance until the non-compliance has been corrected.
  - 3. Third offense: The nursery will be officially suspended from the GAIP. Should the nursery take corrective action(s) that successfully addresses the issue(s) of non-compliance, the nursery may be reinstated into the GAIP at the Department's discretion.

IV. This agreement constitutes the entire agreement between the Department and the Cooperator regarding participation in the GAIP. The Cooperator by the signature below of its authorized representative hereby acknowledges that he/she has read this agreement, understands it, and agrees to be bound by its terms and conditions. Furthermore, the person signing the agreement warrants and represents that he/she has the full right, power, and authority to execute this agreement on behalf of ABC Nursery.

V. Signatures:

**ABC Nursery:**

**Oregon Department of Agriculture:**

John Smith  
Signature

\_\_\_\_\_  
Signature

JOHN SMITH  
Print Name

\_\_\_\_\_  
Print Name

ABC Nursery Manager  
Title

State Plant Regulatory Officer

January 8, 2008  
Date

\_\_\_\_\_  
Date

## **ABC Nursery**

### **Statement of Commitment**

- I. **ABC Nursery** acknowledges that we are signing a Cooperative Agreement with the Oregon Department of Agriculture indicating our commitment to participating in the Oregon Grower Assisted Inspection Program (GAIP).
- II. We agree to develop and annually review this document hereinafter referred to as our GAIP mitigation manual, and make any appropriate changes. In the event of any production or procurement process changes, personnel changes affecting responsible parties, best cultural practice (BCP) or standard operating procedure (SOP) changes, or any other change affecting the GAIP mitigation manual requirements we agree to revise our manual as needed to keep it current.
- III. We are committed to using BCPs or SOPs to meet the Oregon nursery industry's three goals for GAIP.
  - a. Prevent the introduction and spread of regulated *Phytophthora* species on *Rhododendron* and *Camellia* plants.
  - b. Meet or exceed USDA Animal and Plant Health Inspection Service (APHIS) standards for shipping *Rhododendron* and *Camellia* plants potentially infected with regulated *Phytophthora* species.
  - c. Assure that exported *Rhododendron* and *Camellia* plants are essentially free from non-regulated aerial *Phytophthora* species.
- IV. We agree to have at least one staff member complete the Oregon State University *Phytophthora* online course (<http://ecampus.oregonstate.edu/phytophthora>) and receive a certificate of mastery. We agree to complete this task before or at the signing of this document.
- V. **ABC Nursery** agrees to keep records for auditing purposes that include exact values whenever possible for each BCP, or SOP described in the mitigation manual. These records will be kept for at least 24-months.
- VI. We agree to correct any deviations from the BCPs and SOPs described in our GAIP mitigation manual. If we are found to not be in compliance with the mitigation manual, we understand a notice of non-compliance will be issued and, depending upon the severity of the non-compliance, our participation in the GAIP may be put in abeyance or suspended until the non-conformity is corrected.

VII. [ABC Nursery](#) understands that the specific information in our GAIP mitigation manual is considered confidential and will not be shared with any other affiliation except for the Oregon Department of Agriculture. Any other distribution of our GAIP mitigation manual to a third party will be at the discretion of ABC Nursery.

VIII. We understand that we may terminate our participation in the Oregon GAIP at any time. In order to terminate this agreement, written notice must be given to the Oregon Department of Agriculture.

Attention: State Plant Regulatory Officer  
635 Capitol St NE  
Salem, OR 97301-2532

IX. We at [ABC Nursery](#) understand that our GAIP mitigation manual is subject to annual review by the Oregon Department of Agriculture and other experts to ensure the BCPs and SOPs described in the manual mitigate the risk of introducing or spreading regulated *Phytophthora* species such as the federally quarantined pest *P. ramorum* on *Rhododendron* and *Camellia* nursery stock.

## **ABC Nursery**

### **Roles and Responsibilities**

- I. **ABC Nursery** staff involved with the development and implementation of the BCPs and SOPs described in our GAIP mitigation manual.
  - a. Nursery Manager - ABC Nursery, 123 Main Street, Anytown, OR 12345-6789.  
Oversees all documentation and issues relating to BCPs and SOPs. Ensures sources of plant material are from certified nurseries. Reviews all shipping manifests for HAP.
  - b. Nursery Manager - ABC Nursery, 123 Main Street, Anytown, OR 12345-6789.  
Coordinator of staff training, and certification for *Phytophthora*. Documents all training. Revises mitigation manual as changes occur. Designs nursery layout with irrigation manager.
  - c. Propagation Coordinator - ABC Nursery, 123 Main Street, Anytown, OR 12345-6789.  
Supervises all propagation procedures. Orders and controls inventory for all chemicals and bio-security supplies relating to *Phytophthora*. Disease scouting.
  - d. Propagation Lead - ABC Nursery, 123 Main Street, Anytown, OR 12345-6789.  
Ensures proper sanitation procedures are followed in propagation area. Monitors footbath stations. Disease scouting.
  - e. Production Coordinator - ABC Nursery, 123 Main Street, Anytown, OR 12345-6789.  
Supervises all production procedures. Coordinates staff training on proper sanitation practices. Keeps container storage area clean. Orders new pots, trays, and flats and coordinates sanitation of used containers.
  - f. Production Lead - ABC Nursery, 123 Main Street, Anytown, OR 12345-6789.  
Ensures proper sanitation procedures are followed in production area. Orders potting media. Keeps media storage areas clean. Enforces bio-security in production area. Organizes cull pile location and burns.
  - g. Irrigation Manager - ABC Nursery, 123 Main Street, Anytown, OR 12345-6789.  
Scouts for water needs and schedules irrigation. Plans nursery layout with management. Checks chemical levels in recycling ponds. Oversees drain and pipe maintenance.

## **ABC Nursery**

### **Roles and Responsibilities continued**

- h. Lead Spray Technician - ABC Nursery, Anytown, OR 12345-6789.  
Ensures that no fungicides are applied on incoming HAP for 60 days.  
Coordinates weed control program. Works with Plant Health Care Supervisor for any applications.
- i. Plant Health Care Supervisor - ABC Nursery, 123 Main Street, Anytown, OR 12345-6789.  
Scouts nursery beds and property perimeter for signs and symptoms of disease. Assigns weekly duties. Works with Lead Spray Technician for any applications.
- j. Loading Dock Supervisor - ABC Nursery, 123 Main Street, Anytown, OR 12345-6789.  
Monitors deliveries and scouts for disease symptoms on HAP. Ensures loading area is clean. Checks delivery vehicles for cleanliness.

*See appendix I for staff names*

- II. Oregon Department of Agriculture staff involved with oversight and administration of the GAIP.
  - a. Nursery and Christmas tree Program Manager, Oregon Department of Agriculture - Plant Division, 635 Capitol St NE, Salem, OR 97301-2532.  
Provides administrative oversight for the GAIP program.
  - b. Plant Health Program Supervisor, Oregon Department of Agriculture – Commodity Inspection Division, 635 Capitol St NE, Salem, OR 97301-2532  
Provides official testing for regulated *Phytophthora* species and State expertise on plant health issues.
  - c. Nursery Auditor, Oregon Department of Agriculture - Plant Division, 635 Capitol St NE, Salem, OR 97301-2532.  
Provides assistance for the GAIP to nurseries, oversees program.

## **ABC Nursery**

### **Critical Control Points in Procurement and Production Processes**

This section requires either a written description, or a flow chart.

If the nursery writes a written description keep the descriptions for Procurement, Propagation and Production as simple as possible.

The next section -Best Cultural Practices and Standard Operating Procedures is where nurseries will explain the procedures the nursery has in place for the GAIP.

#### ***Written description example***

##### **I. Procurement processes for *Rhododendron*, *Camellia*, and HAP nursery stock.**

- *Rhododendron*, *Camellia* and HAP are only purchased from nurseries certified free of *Phytophthora ramorum*.
- Plants arrive to nursery by delivery trucks and are offloaded onto loading dock #1.
- The plants are examined for disease symptoms or signs before delivery person leaves property.
- Plants are moved into designated greenhouses and/or nursery beds.

##### **II. Production processes (including propagation) for *Rhododendron*, *Camellia*, and HAP nursery stock.**

###### **Propagation**

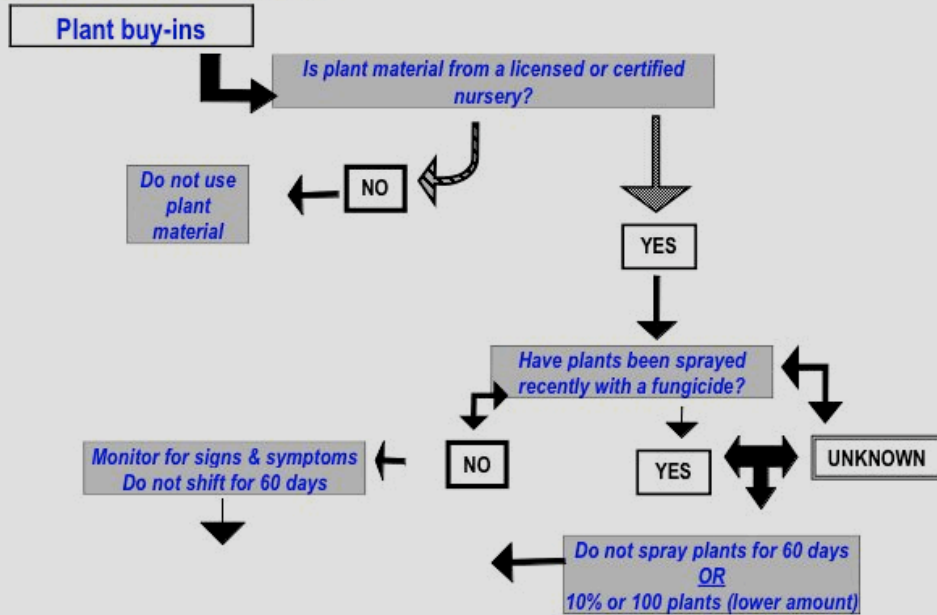
- Cuttings are taken from propagation stock block located on nursery, or from designated greenhouses.
- Cuttings are placed into propagation greenhouse.
- Only new or sanitized containers and flats are used on HAP material.
- When plants are rooted they are moved to production area A.

###### **Production**

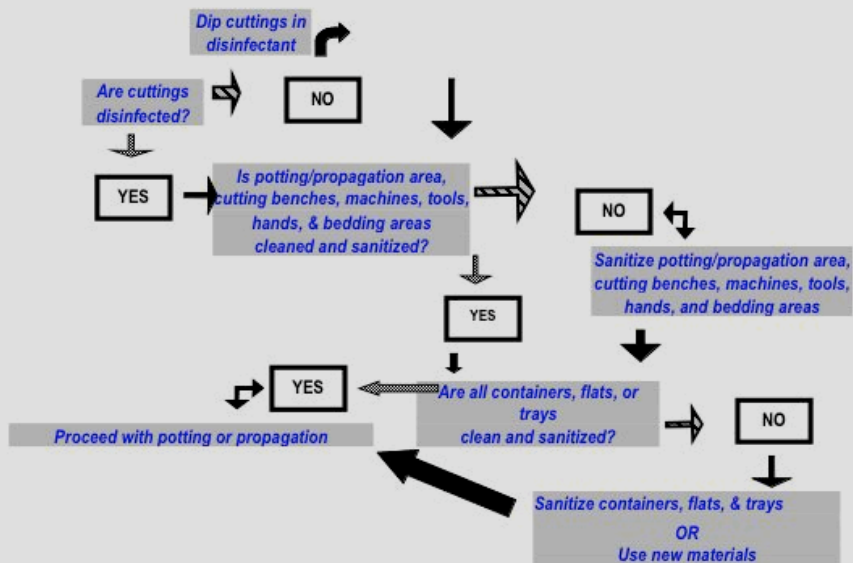
- HAP with sufficient root growth from production area A are canned into #1 pots.
- Only new pots are used on shifted plants.
- After canning, plants are moved to production area B for rooting period.
- Plants are pulled for customer orders when sufficient rooting has been achieved.

**(Flowchart)**

The following is an example flow chart stating procedures to follow when high-risk plant material is received from another nursery. Nurseries may have several flow charts for other areas such as production or propagation.



**Production and Propagation**



## ABC Nursery

### Best Cultural Practices and Standard Operating Procedures

This section is where the nursery will explain the procedures they have in place to mitigate the spread of *Phytophthora spp.* The mandated Critical Control Points are Plant Buy-ins, Water Management, Soil/Media, and Used Containers. Any Potential Pathways should be listed behind the Critical Control Points. Monitoring procedures must be in place for each Critical Control Point and any Potential Pathways.

#### CCP: Plant buy-ins

- a. *Rhododendron*, *Camellia*, and any HAP material will only be purchased from nurseries certified free of *Phytophthora ramorum*.
- b. Plant material will be visually inspected for any signs and symptoms of disease. If disease is suspected immediately contact a supervisor and the following procedure will occur:
  - a. Plants will not be accepted or,
  - b. Plants will be tested with a field ELISA kit.
  - ii. If the field kit shows a positive result for *Phytophthora spp.*, the plants will be quarantined and the sample sent to a certified *P. ramorum*-testing lab.
  - iii. If the sample is positive for *P. ramorum* the following will occur:
    - a. The Oregon Department of Agriculture will be notified.
    - b. Plants will remain quarantined until nursery receives further instruction.
- c. Vehicles will be inspected for any soil debris on undercarriage before entering loading dock area. If necessary the undercarriage will be sanitized with an approved USDA disinfectant.
  - i. Loading dock will be cleaned of all debris before and after deliveries.
  - ii. All debris collected will be bagged, and moved to cull pile for proper disposal.

#### SOP Monitoring:

1. A notebook documenting monitoring procedures will be kept in the shipping office.
2. A copy of the shipping manifest for HAP material will be placed into the notebook.
3. Staff members conducting inspections for plant material, and vehicles will sign, date, and document any problems on the shipping manifest.
4. Any debris collected for cull pile will be documented in notebook.
5. The Loading Dock Supervisor will inspect the notebook every two weeks to ensure proper procedures are being followed.
6. Should the logbook show non-compliance for the CCP, the nursery will retrain staff members involved on the correct process for plant buy-ins.

#### CCP: Water management

- a. Original water is from a municipal source. Extra run-off is directed to a recycling pond through drain tiles. The recycling pond will be tested monthly for *Phytophthora* species per the USDA Water Sampling Protocol using *Rhododendron* Leaf Baits and a field ELISA kit.

- b. Should the ELISA test show a positive for *Phytophthora* spp., the remaining *Rhododendron* leaf bait sample will be sent in to a certified *P. ramorum*-testing lab.
- c. If the sample is positive for *P. ramorum* the following will occur:
  - i. The Oregon Department of Agriculture will be notified.
  - ii. Pond will not be used for any watering.
  - iii. The pond will undergo chemical treatment to eradicate the pathogen. The treatment used will be decided upon after consultation with the ODA.
  - iv. Plants that have been most recently watered from the recycling pond will be surveyed for *Phytophthora* symptoms for the next 2-weeks. If needed, symptomatic plants will be tested with a field ELISA kit and samples from positive plants sent into a certified *P. ramorum*-testing lab.

### **SOP Monitoring:**

1. A notebook for water management will be used to record documentation. The notebook will contain records of water source, ELISA test results (including negative), and any lab samples sent in. Staff members will sign, and date any activity that has been conducted in regards to water management.
2. The Production manager will review the notebook the first of every month. Should the logbook show non-compliance, action will be taken by the following:
  - Water management
    - If water source records are missing, staff members will be retrained on where to find the information.
  - Leaf baits and ELISA testing
    - Staff members will be retrained on leaf baiting process and ELISA kit testing.

### **CCP: Soil/Media**

- a. Potting media will be stored on a concrete pad.
- b. Soil testing records will be provided from media supplier.
- c. Before entering storage area all vehicles and footwear will be properly sanitized using an approved USDA disinfectant.
- d. Equipment and tools used for soil media will not be removed from potting area, and will be sanitized using an approved USDA disinfectant before and after all potting is conducted.

### **SOP Monitoring:**

1. A notebook documenting soil media sanitation will be kept in potting area.
2. Testing records from the vendor will be placed into notebook as information is received.
3. Supervisors are responsible for documenting and training staff members on proper sanitation practices.
4. Sanitation of equipment and tools will be documented, initialed, and dated by staff members.
  - i. If a sanitation violation occurs the Department of Agriculture will be contacted for further instruction on soil testing procedures.

5. The Production Manager will inspect the notebook each Friday to ensure proper procedures are being followed.
6. Should the logbook show non-compliance for the CCP, the nursery will retrain staff members involved on the correct procedures for Soil media.
7. If *Phytophthora ramorum* is found on the nursery all potting will cease and plants recently potted will be quarantined and observed for signs and symptoms of *Phytophthora* for 60 days.

### **CCP: Container sanitation**

- a. Only new containers will be used for HAP material
- b. New containers will be stored on a concrete pad away from any used containers.

### **SOP Monitoring:**

1. The current APHIS List of Hosts and Plants Associated with *Phytophthora ramorum* will be kept in the potting area notebook
2. A copy of the HAP material to be canned will be placed in the notebook. The supervisor on duty will date and initial that HAP has been placed into new containers.
3. The Production Manager will inspect the notebook each Friday to ensure the APHIS list of Hosts and Plants Associated with *Phytophthora ramorum* is current, and to ensure proper container sanitation procedures are being followed.
4. Should the logbook show non-compliance for the CCP, the nursery will retrain staff members involved on the correct process for container selection.
5. Any plant material canned into used containers will be immediately quarantined and monitored for 60 days.
  - i. If any signs or symptoms of disease appear, a field ELISA kit will be used. If the field kit shows a positive result for *Phytophthora spp.*, the plants will be quarantined and a sample sent to a certified *P. ramorum*-testing lab.
  - ii. If the sample is positive for *P. ramorum* the following will occur:
    - a. The Oregon Department of Agriculture will be notified.
    - b. Plants will remain quarantined until nursery receives further instruction.

### **Potential pathway:** Footwear, clothing, hands, nursery equipment, pallets, benches, beds, and tools

- a. Before any plant material is propagated or canned, all staff members must ensure all of the above has been sanitized using an approved USDA disinfectant.
- b. Check off sheets will be kept in propagation and production areas to ensure staff is following sanitation practices.
- c. Appropriate supervisors will review check off sheets on each Friday to ensure staff members are cleaning the above.
- d. Should the check off sheets show non-compliance for the potential pathway, the nursery will retrain staff members involved on the correct sanitation practices.

# Appendix I

## Roles and Responsibilities

I (a)	John Smith	<i>Phytophthora</i> course passed January 1, 2008
(b)	Jane Smith	<i>Phytophthora</i> course passed January 1, 2008
(c)	Ann Williams	<i>Phytophthora</i> course passed January 1, 2008
(d)	Jason Miller	<i>Phytophthora</i> course passed January 1, 2008
(e)	Michael Jones	<i>Phytophthora</i> course passed January 1, 2008
(f)	Mary Black	<i>Phytophthora</i> course passed March 1, 2008
(g)	Bill Johnson	
(h)	Bob White	
(i)	Amy Larson	<i>Phytophthora</i> course passed June 5, 2008
(k)	Sam Brown	