

Best Management Practices for the California Nursery Industry for Sudden Oak Death (SOD) Biosecurity (Revised 10-20-03; K. Suslow, K. Kosta, G. Raabe, S. Cohen) (Draft Revision 5-05)

These Best Management Practices (BMPs) are designed to control or eliminate the diseases caused by *Phytophthora ramorum* (*P. ramorum*).

See also Oregon State University's ["Nursery guidelines for the Exclusion and management of *Phytophthora ramorum* in Nurseries."](#)

The control of *P. ramorum* spread is based on the establishment of multiple hurdles or barriers to the pathogen with a purpose of minimizing the risk of introduction or survival of the SOD pathogen in a nursery. The BMPs assure the monitoring of the functionality of the process controls for the pathogen.

Each nursery facility is expected to review these and employ some or all of these practices depending upon their physical location and plant products that are handled. Nurseries are encouraged to incorporate these BMPs into their Standard Operating Procedures. The County Department of Agriculture may review the BMPs of each nursery in a regulated county.

The BMPs have been divided into two categories:

- **Exclusion/Prevention**
- **Monitoring**

The following BMPs should be considered for preventing the establishment or spread of diseases caused by *P. ramorum*:

EXCLUSION/PREVENTION

- No overstory or understory of known *P. ramorum* hosts on nursery growing grounds unless regular monitoring of those hosts
- Confirm nursery stock is propagated from materials originating on site or is received from shipping nurseries with a USDA SOD compliance agreement or certified free from the pathogen.
- All incoming nursery stock (buy-ins, transfers ...), regardless of origin, should be visually inspected for symptoms of *P. ramorum* by trained nursery personnel.
- Off load incoming shipments to an area that can be cleaned of the leafy debris. Sweep debris from the receiving pad and the delivery truck; collect debris and bag for disposal.
- For buy-ins, suspend the use of *Phytophthora*-specific fungicides on 10% or 100 plants, whichever is fewer for a two-month period. Conduct a visual inspection of the plants for the two-month period to determine if fungicides were masking symptoms of *P. ramorum*. Keep isolated from production grounds if possible.
- Effective fungicide program to control *P. ramorum*. (Research in progress.)

- Avoid Product Returns of nursery stock from a receiver in a regulated area. If unavoidable, contact your County Agricultural Commissioner prior to accepting the nursery stock return.

MONITORING

- Nursery personnel should attend one or more SOD trainings offered by California Oak Mortality Task Force, USDA Forest Service, California Department of Food and Agriculture, County Agricultural Commissioner, or other qualified personnel.
- All buy-ins should be isolated from host plants and periodically inspected for symptoms of the disease over the course of a growing season.
- Monitor host plants in surrounding area for symptoms of *P. ramorum* in Spring/Summer.
- Develop and distribute disease recognition fact sheets on host plants to educate ALL field nursery personnel.
- Walk through SOD host and associated host plants on a weekly basis and rogue out the unhealthy looking plants. Implement good sanitation practices.
- Record Keeping: Maintain accurate shipping documentation identifying product, amount, date and origin or receiver for the purpose of identifying tracebacks and traceforwards.

If the disease is found in your area, these BMPs should be followed:

- Diversion berms to prevent soil and water movement, during storm-related events, from hillsides populated with *P. ramorum* host plants.
- Containers/pots on a soil barrier, such as gravel or on raised beds.
- Irrigation water from any source other than well or municipal water supplies should be monitored to confirm that it is free from the pathogen.
- Avoid overhead irrigation of host plants where practical. When using overhead irrigation, irrigate in the morning to allow the foliage to dry before nightfall.
- Ensure your cull pile is a distance away from your soil components and your soil mixing area.
- Ensure your mixing pile is on a concrete slab versus bare soil.
- Review your Field Layout Plan and determine how you can minimize the impact of the disease and the Destruction Protocol if *P. ramorum* is found at your wholesale operation. Break up long, continuous sections of host plants with non-host material to the genus level.
- If soil or soil-less media is recycled, maintain a separate scrap pile for host material so it is not included in the soil recycling pile for future use.