

## Management of Sudden Oak Death (S.O.D) Recommendations from the 2009 LAH “SOD Blitz”

On Saturday, November 7, Dr. Matteo Garbelotto, U.C. Berkeley professor and SOD researcher, reported the results of the May 2009 “SOD Blitz” and discussed management options for protecting oaks and slowing the spread of this highly aggressive plant disease. During the SOD Blitz, which was funded by grants from the U.S. Forest Service and hosted by the LAH Open Space Committee, LAH volunteers submitted over 250 California Bay leaf samples from all over Town for testing. Although only about 6% of the samples were positive for the SOD pathogen, the disease is present in many areas of Town and is expected to continue to spread.

To view the SOD Blitz results see: [www.matteolab.org](http://www.matteolab.org)

This is expected to be another warm and wet “El Nino” winter, providing perfect conditions for growth and spread of SOD. Residents are strongly encouraged to participate in the Spring 2010 SOD Blitz to help with early detection and monitoring of this devastating disease.

**2010 LAH SOD Blitz**  
**Saturday, MAY 15**  
**10:30 AM–12:00 PM**  
**LAH Town Hall**

Register at: [sodblitz09@earthlink.net](mailto:sodblitz09@earthlink.net)

### Sudden Oak Death Preventive Treatment Calendar

Summer	<ul style="list-style-type: none"> <li>• If pruning oaks is necessary do it at least 4 months prior to start of the rainy season to allow time for bark to heal</li> <li>• Dry season is the best time to remove Bay trees from SOD-infected areas. Chip or cut into small pieces and spread thinly to dry in the area where the tree stood.</li> </ul>
Nov–Dec	<ul style="list-style-type: none"> <li>• Apply preventive phosphonate treatment to oaks (e.g., <i>AgriFos</i>) via bark application or injection</li> </ul>
December to January	<p><i>Wet season when SOD pathogen is naturally active and spreading</i></p> <ul style="list-style-type: none"> <li>• Avoid disturbing soil in infected areas</li> <li>• Avoid pruning trees or wounding bark</li> <li>• Avoid moving soil and plant debris from infected to uninfected areas</li> </ul>
Feb–Mar	<ul style="list-style-type: none"> <li>• Apply optional preventive phosphonate treatment to oaks (especially after first year’s treatment in fall)</li> <li>• Apply fresh, fine, commercial-grade compost around oak trunks to reduce “splash” infection of the trunk</li> </ul>
Apr–May	<ul style="list-style-type: none"> <li>• LAH 2010 SOD BLITZ (Saturday, May 15, 2010)</li> </ul>
Nov–Dec	<ul style="list-style-type: none"> <li>• Apply preventive phosphonate treatment (e.g., <i>AgriFos</i>) via bark application or injection</li> <li>• If injections are used, alternate them with bark application every other year</li> </ul>

*Timing is approximate and can vary with temperature and weather conditions*

*The LAH SOD Blitz was funded by the U.S. Forest Service and hosted by the LAH Open Space Committee  
Mention of commercial products or services does not constitute endorsement by the Town of LAH*

## Management Options for Areas Where SOD Is Present

- Select specific oaks to protect (i.e., high value or potentially hazardous trees); it may not be possible to save all trees.
- Although hundreds of plant species can become infected with SOD, Tan oak, Coast live oak, California Black oak, and Shreve oak are the most susceptible trees in our area. Deciduous oaks such as Valley oak, Blue oak, and Oregon oak are not susceptible to SOD.
- California Bay Laurel trees harbor the SOD pathogen and spread it to oaks. Remove bay trees within a 5-10 yard radius from the trunk of selected oaks. (Measure from the trunk of the oak to outer leaves of the bay.) Treat the cut stump surface with *Round-Up* to prevent re-sprouting. The best time to cut Bays is during the dry summer months.
- Although Bays contribute to disease spread, keep in mind that bays are important for many wildlife species and, should oaks be lost, bay trees may be the only remaining mature trees.
- Treat uninfected oaks with phosphonate (e.g., *AgriFos*) in fall (November-December) and/or spring (mid-February to March). Preventive phosphonate treatment increases resistance to the SOD pathogen. (See details below.)
- EARLY TREATMENT IS ESSENTIAL. Only *uninfected* oaks respond to phosphonate treatment; oaks that are already infected generally do not benefit and will die.
- In March, before the peak infection season, spread fresh, fine, commercial compost (not mulch) about a half- to one-inch thick in a 3- to 6-foot wide band around the trunks of selected trees and rake it into the soil. Do not pile compost on the trunk. Organisms in the compost help destroy the SOD pathogen and reduce infection from “splash up” from the soil.
- Applying insecticide in addition to phosphonate provides little or no benefit. Insects invade trees that are already beyond saving and their arrival is a warning that a tree is dying and may be a hazard.
- Fertilizing is not recommended and appears to make trees more susceptible to SOD.
- Oaks should be pruned only in the dry summer months, at least four months before the start of the rainy season. This allows time for bark to heal before the peak infectious period.
- During the winter rainy season, avoid activities that can wound the bark or disturb the soil around oaks and bays.
- Avoid moving soil and plant debris with the SOD pathogen from infected to uninfected areas on tools, shoes, bikes, and hooves. Work first in uninfected areas and then in infected areas.

### Preventive Chemical Treatment For At-Risk Oaks

Detailed information on how to do phosphonate bark applications and injections can be found at: [www.cnr.berkeley.edu/garbelotto/english/treatment.php](http://www.cnr.berkeley.edu/garbelotto/english/treatment.php)

- *AgriFos* is a phosphonate fungicide registered by the State for treatment of SOD. Other phosphonates are also commercially available (e.g., *NutriPhyte*, *Phostrol*, and *Phytoguard*) and appear to be equally effective.

- Phosphonates do not kill the SOD pathogen; rather, they aid the tree by inducing its natural defense mechanisms. Phosphonate treatment is for oaks and tanoaks only, not for California Bays trees.
- Homeowners can apply phosphonate themselves or hire an arborist. Two application methods are available and have similar efficacy:
  1. Bark application: Phosphonate solution (e.g., *AgriFos*) is mixed with surfactant (e.g., *PentraBark*) and sprayed onto the bark from the base of the trunk to as high up as you can reach (9-12 feet). The phosphonate is absorbed through the bark. Alternatively, the solution can be applied with a paintbrush. Moss **MUST** be removed from the bark for the tree to absorb the bark spray. Use a stiff brush or high-pressure water hose.
  2. Injection: Phosphonate solution is injected into the woody part of the tree via a re-useable pressurized syringe (one injection every six inches around the trunk). No surfactant (*PentraBark*) is used. Moss removal is not required for injections. The syringe is removed after the tree absorbs the solution (typically 15-60 minutes).
- Timing of phosphonate application is important because trees must be *active* to absorb the phosphonate and need about 4-8 weeks to convert it to an active form. Warm, sunny days are best.
- Phosphonate treatment is most effective in the fall (November to December) after oak trees break summer dormancy and become active and before the weather becomes too cold. An alternative treatment window is early spring (February to March). Timing is approximate and varies with weather conditions.
- Two applications are recommended the first year. If possible, treat with injections in the fall and bark application in February-March.
- In subsequent years, one yearly treatment (in the fall) is recommended. Alternate injections and bark applications each year (e.g., bark application one year, injections the next).
- Phosphonate treatment is for oaks and tanoaks only, not for California Bay trees.

<h3><b>Disposal of SOD-Infected Plant Material</b></h3>
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- To prevent spread of SOD to other areas, keep wood and trimmings from SOD-infected Bays and oaks on your property, if possible. Chip or cut into small pieces and spread thinly to dry in the area where the tree stood. The faster the materials dry out, the less SOD survives. Do not place it in piles or cover it with a tarp. Keep cut Bay trimmings at least 3-6 feet away from trunks of susceptible oaks.
- Larger wood can be cut for firewood and burned in your fireplace.
- SOD-infected materials less than 6 inches in diameter and less than 5 feet long can be placed in your green yardwaste (compostables) cart for weekly pick-up. GreenWaste Recovery carries it in covered trucks to a commercial composting facility that follows strict composting standards to assure that the pathogen is killed.
- Home composting is generally not adequate to kill the SOD pathogen.

- Carrying SOD-infected yard waste in an uncovered vehicle can spread the pathogen. If an arborist cuts down an SOD-infected tree on your property be sure that he follows proper procedures in disposing of the cut materials.
- If you have any questions about disposal of SOD-infected material contact Janice Alexander at UC Cooperative Extension, Marin County (415-499-3041 or [jalexander@ucdavis.edu](mailto:jalexander@ucdavis.edu))

## **Additional Resources**

### Free SOD Treatment Workshops

Dr. Garbelotto and his staff teach free Sudden Oak Death Treatment Workshops at on the U.C. Berkeley campus. These informative 2-hour outdoor sessions provide the latest information on SOD and details about when and how to treat trees, including demonstration of AgriFos injection. For information and sign up see: [www.matteolab.org](http://www.matteolab.org)

### Additional Information About Treatment Methods

- California Oak Mortality task Force: [www.suddenoakdeath.org](http://www.suddenoakdeath.org)
- Dr. Garbelotto's web site: [www.matteolab.org](http://www.matteolab.org)
- Phosphonate application protocol (PowerPoint presentation)  
[www.cnr.berkeley.edu/garbelotto/english/treatment.php](http://www.cnr.berkeley.edu/garbelotto/english/treatment.php)
- Video of SOD Bark Spray Training (1.5 hrs)  
[http://emarin.ucdavis.edu/Custom\\_program816/Sudden\\_Oak\\_Death\\_Spray\\_Training.htm](http://emarin.ucdavis.edu/Custom_program816/Sudden_Oak_Death_Spray_Training.htm)
- Video of Dr. Garbelotto's November 7, 2009 talk in LAH:  
[www.losaltoshills.ca.gov](http://www.losaltoshills.ca.gov) OR [www.hills2000.org](http://www.hills2000.org)
- For more information about removing bays see:  
<http://phytosphere.com/publications/SODmanagementstudy.htm>

### Chemical Injectors

LAH Open Space Committee purchased a bulk order of Chem-Jet syringe injectors directly from the Australian manufacturer. These can be purchased at cost (\$10 each). Contact [sodblitz09@earthlink.net](mailto:sodblitz09@earthlink.net) or 650-815-8286

Chemical injectors can also be ordered on-line (about \$15 each plus shipping) from:

Scenic Hills Nursery  
Kerrville, TX  
[www.oakwilt.com](http://www.oakwilt.com)

Tentex Company  
Petaluma, CA  
[www.protectyouroaks.com](http://www.protectyouroaks.com)

### Local Suppliers for AgriFos and PentraBark

Roger Reynolds Nursery  
Menlo Park  
650-323-5612 [rogerreynoldsnursery.com](http://rogerreynoldsnursery.com)

Information on the safety of Agri-Fos:  
<http://phytosphere.com/publications/SODmanagementstudy.htm>