



# The Plant Doctor:

## *Bacterial Wetwood and Alcoholic Flux*

### **Bacterial Wetwood**

Wetwood, or slime flux, is a bacterial disease. The bacterium usually enters the tree through wounds. It may enter the heartwood and sapwood of the tree. You cannot always see the wound, but you can see the liquid from this disease.

This alcohol-based ooze kills the cambium tissue near the cut, preventing proper callusing of wounds. If the ooze continues for months, leaves on those branches may become stunted and yellowed.

This oozing of sap is called "fluxing." The flux is colorless to tan at first but darkens on exposure to the air. As it dries, a light gray to white crust remains. This is slime flux.

As the flux runs down the branch or trunk, it discolors the bark. As fluxing continues, large areas of the bark become soaked. Grass and other plants may be killed where the flux runs down the trunk and contacts them.

The smell that sometimes develops is usually caused by other rotting organisms. Many different microorganisms grow in the flux, producing a foul or alcoholic smell. Various insects are attracted to the slime flux.

This chronic, rarely serious disease, can lead to general decline in tree vitality but is not known to cause tree death. Although this problem cannot be cured, it is comforting to know that the wet areas are not decayed. Decay generally does not thrive in this water-soaked wood.

In the past, correcting this problem included drilling a hole in the tree to relieve the pressure. We now know this causes more damage, spreading the disease, which increases infections.

Other recommendations called for installing plastic with holes in it or iron drain tubes in the tree to relieve the gas pressure and to allow continual drainage away from the trunk. The idea was to keep the liquid off the trunk so the cambium is not killed.

Drain tubes often worsen the problem. Trees can compartmentalize injuries or diseased wood. They may "wall off" the wetwood areas. Because drain tubes create a deep wound, they may break the compartment the tree has made to encompass the wetwood, letting the internal discoloration and any future decay spread beyond the contained area.

At this time there is no "cure" for this condition, but this may be helpful: fertilize stressed trees in the spring to stimulate vigorous growth. Remove dead or weak branches and prune and shape bark wounds promptly. Proper pruning encourages rapid callousing of wounds. The sap flow that results from pruned branches is normal and is not the same as wetwood flow. If there is loose or dead bark in the slime flux area, remove all of the loose bark and let the area dry. Do not apply a wound dressing.

In recent years many large mature landscape oaks with no apparent wounds or injuries have had problems with slime flux on the trunk or large exposed flare roots just above the soil line. Sap may continue to ooze for several weeks or months, but usually it eventually stops with no treatment and no apparent damage to the tree. This slime flux may be triggered by heat, drought, and other stress.

## Alcoholic Flux

Alcoholic or white flux, also called frothy flux, is not related to wet wood. It occurs where microorganisms ferment sap in cracks and other wounds in the bark and cambial region. Alcoholic flux is acidic and nearly colorless and sometimes appears as a white froth. It often emits a pleasant fermentative odor and persists only a short time in summer. The associated microorganisms apparently produce gas and alcohol. Alcoholic flux is common on stressed trees, especially sweet gum, oak, and elm in the Midwest and willow in the Southwest. It has been noted on mimosa or silktree affected by *Fusarium* wilt.

Alcoholic flux is stress related. Heat stress most likely sets the stage for this problem. To help avoid this problem, use good cultural practices. Watering properly during the growing season as well as during winter is critical. If the tree is in a lawn, be careful not to over water or cause other damage, such as that caused by lawn mowers and string trimmers.

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