

VEGETATION MANAGEMENT

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Q: How do you remove an oil spill from turf?

A: The only reference that I could find suggested applying detergent granules to the contaminated area and hosing with a vigorous spray application of water. The suds will float the oil to the surface and should be removed with a vacuum. Treated turf should recover in about two weeks for most petroleum product spills.

A: Can phloem necrosis be treated successfully with chemicals?

A: Phloem necrosis is caused by a submicroscopic mycoplasma-like organism and is spread by the whitebanded elm leafhopper (*scaphoideus luteolus*) and possibly by other leafhoppers. Injections with tetracycline have resulted in symptom remissions in some cases, but in most Northern areas death occurs so soon after symptoms occur that treatments are impractical.

Q: What will be the effects of newly installed high sodium light fixtures on trees and nursery stock?

A: High pressure sodium (HPS) lamps emit light in the red wave lengths which triggers continuous growth in some woody and herbaceous plants. Prolonged shoot growth and leaf retention expose plants to frost injury and winter dieback.

Dr. Cathey, horticulturist with the U.S. Department of Agriculture Science and Education Administration, has tested over 50 kinds of trees and shrubs and classified them according to their sensitivity to night lighting. This sensitivity should be considered when selecting trees for areas in close proximity to HPS lighting. Consideration should also be given to metal halide or improved mercury lighting, both of which are less energy-efficient than sodium lamps but have less radiation in the wave lengths that induce continuous growth.

Low pressure sodium lamps are said to have little or no effect on plant growth at the intensity used for outdoor lighting.

Q: I'm considering using milky spore disease this season, but would like to know all the facts. All the information I've reviewed thus far has been one-sided or "sketchy."

A: The bacteria, *Bacillus popillae* and *Bacillus lentimorbus* infect the white grubs of more than 40 species of beetles, although the Japanese beetle grub is the most extensively affected and is the only beetle grub for which milky spore bacteria is registered.

Commercial preparations of the bacteria are made by grinding up infected grubs and mixing with talc powder. The preparation is usually applied in a 4-foot grid pattern at a rate of two grams per spot. Spring and fall applications are recommended although treatments may be applied anytime the ground is not frozen.

The spores are spread from the spot areas by in-

fecting grubs, water movement and by other natural agents. The bacteria are host specific, and do not infect insects other than beetle grubs nor will they infect earthworms, birds, mammals or plants.

In spite of the obvious desirability of biological control, I am aware of only a few milky spore control programs that have been successful. Beetle populations and resultant injury to ornamentals are not reduced significantly unless treatments are done on a community basis. In addition, considerable turf injury can occur for several years following treatment until the bacteria have had sufficient time to spread throughout the soil. Insecticide applications during this initial establishment period are generally not compatible with a milky spore control program because insecticides kill the grubs necessary for multiplying and spreading the bacteria.

Q: I have received various treatment methods for bark beetles infesting different species of pine trees in this area (California). These trees are advanced in growth, usually 6" to 36" in diameter at the base, with rough bark. Please advise on best treatment and chemical use, particularly where the pests have already bored into the live wood.

A: Little can be done to control borers once they are beneath the bark. Insecticides do not penetrate the bark sufficiently to kill many of the larvae, and trying to dig them out may destroy a larger area than the borer would destroy if left alone.

Trees can be protected from beetle infestation by spraying the trunk with lindane, being careful to thoroughly cover all bark surfaces and crevices. One application in early March is recommended for your area of California.

Proper maintenance is the best insurance against borer infestation. Any factors that cause a stress condition on trees should be remedied, and fertilizer and water should be applied when deficient in the soil. Infested trees and stumps should be removed or debarked to reduce the insect population.

Q: How can I prevent apple trees from producing fruit? Can this be controlled by pruning or using chemicals without damaging foliage?

A: There are a number of chemicals registered to eliminate undesirable apples, but we have not had consistent results with the products we have tested. Timing and environmental conditions are major factors in determining the degree of control, and apple varieties may differ in their response.

Union Carbide produces a plant growth regulator with the trade name FLOREL™ which gave very good results without noticeable injury in a limited test last year. We are planning to continue the study on a wider range of apple varieties. The only limitation stated on the label is that fruit elimination may not be satisfactory on small, red-fruited varieties of crabapples.