

too ready to recommend or implement a spray program merely to soothe or diminish fears that our clients have for their trees. People often become so emotionally attached to their trees that management decisions are made without careful consideration.

The Quick Answer

I submit that most applications of pesticides to urban trees are unnecessary. They do little, if anything, to enhance tree vigor, and often have little impact on the pest's eventual population level, because sprays are used against harmless infestations or applied at the wrong time. The same is true in the lawn care industry. The so-called "preventive strategy" found acceptance at a time when scientific instrumentation was not sophisticated enough to detect low levels of pesticides in the environment. During the past nine years, the U.S. Environmental Protection Agency, prodded by environmentalist demands, has been reducing the pesticide arsenal available to the arborist and other landscape managers. We can expect this trend to continue.

You may argue that any sensible arborist would gladly eliminate a pesticidal application from his service, provided he could be assured that plant vigor would not be jeopardized. I tend to agree, since costs of pesticides have skyrocketed during the past few years. However, we continue to over-use pesticides.

An arborist from a leading national firm recently told me that most arborists know what to do, but there just isn't time to do it. *That's what this article is about:* deciding what needs to be done and doing it.

Let's forget pests for a minute and consider the target — the tree. Can we begin to think in terms of *Tree Health Care* (to borrow a phrase from Dr. C. C. Powell, Plant Pathologist at The Ohio State University and the Ohio Agricultural Research and Development Center). I'm suggesting that we de-emphasize pests and concentrate on developing a holistic or comprehensive landscape management strategy, much as physicians are beginning to emphasize holistic medicine.

Tree Health Care Approach

In this new scheme, trouble-shooting, the art of using training and experience to diagnose a problem and prescribe a solution, will be necessary, but mostly for new clients. You will become so familiar with the landscapes of your regular customers that developing pest populations or infections will usually be detected before damage occurs or clients become alarmed.

Scheduled maintenance will optimize tree health, thereby minimizing pest problems. Customers will be paying for inspections and early detection rather than chemical sprays. The con-

sultation segment of your business will be expanded as you learn how to manage a landscape and optimize pest control services. To do this, you may need to develop a new service ethic: one that emphasizes personal and public service, not necessarily pesticides.

I realize that many initial contacts result from some real and some imagined crises. This will undoubtedly continue. However, once you've controlled your clients "brush fire" you have an opportunity to sell your landscape service.

Are homeowners and managers of institutional landscapes ready to buy the concept of tree health care? I think some of them are now and that many others will be in the near future. Success of companies that provide a tree health care service tends to support this thought. There is certainly a significant segment of potential clients who have not contacted an arborist or pest control operation, because they hesitate to support use of conventional insecticides. A few newcomers to the plant maintenance industry are courting this untapped segment of our society by using titles that project an image of "organic" service practices. Recently, employees of such a firm requested that I familiarize them with alternative pest control practices. During our rather brief discussion, I learned they are more than willing to implement conventional pesticidal sprays, if other tactics are not effective. These people are selling a preventive health care program and using all available tactics to promote tree vigor. You can sell the same service by becoming thoroughly familiar with plant-pest relationships and organizing an educational program to sell your new product — Plant Health Care — not a pest control service, to potential clients. Perhaps highly professional arborists have been operating this way. If so, then many will be in agreement with me and wondering why I think I'm challenging them with something new. However, based on conversations with arborists, I know that many practicing today have not approached their work in the way I'm suggesting.

A basic model for implementing tree health care places your client at the top because he/she is the most important component. Trees don't pay arborists' fees, people do. So, we must keep our client's satisfaction in mind at all times. The tree occupies the center of the schematic because that is what we'll manage, not insects.

Health care service begins with a survey of the client's landscape that includes an inventory of all trees according to species, size class, and condition. Note physical factors that may influence tree vigor and implementation of management practices. The property analysis is prepared and submitted with a bill to the client. At the same time, a tree health management strategy is pro-

Continues on page 42

posed that includes at least spring and fall tree inspections. If the client accepts the proposal, every effort is made to keep the client informed about all activities provided through the service. Regular contact, especially when little spraying occurs, is essential to customer retention.

After completing the tree inventory and signing the customer to your service, make sure you are familiar with all cultural and pest problems common to trees in your geographical area. The knowledge required to make good management decisions comes only from study, on-the-job training, and experience. However, the initial survey and inventory for which you charge a fee will improve the ability of even relatively inexperienced arborists to make rational decisions, because they will have enough lead time, before action is required, to consult research and extension specialists in agronomy, horticulture, plant pathology, and entomology to learn how to combat pests detected.

Problem identification will become mostly routine and is included in the standard fee, unless you are called by the client between scheduled surveys. Background information previously obtained about insects in your area has already prepared you for consideration of man-

agement options, based on pest density and your client's attitudes. Next, you plan an action strategy that may include no action, cultural treatment, or application of an insecticide.

The "no action" option may be the best approach. However, this decision must be explained carefully, so the client respects and trusts your recommendation, rather than contacting another arborist or pest control operator who may be less informed and more than willing to apply an unnecessary treatment for a fee.

Follow-up is critical to determine if tactics employed caused the desired result. You should include the cost of follow-up in your fee for implementation of any tactic. Communication of results to clients is crucial for maintaining confidence in the program and its practitioners.

Detection of pest infestations before they become damaging, and awareness of management options before a control tactic is required, are the keys to effective pest control as part of quality tree care. Tree health care as a strategy for optimizing pest control services requires state-of-the-art familiarity with pests and trees. This is a professional challenge to modern arboriculturists.

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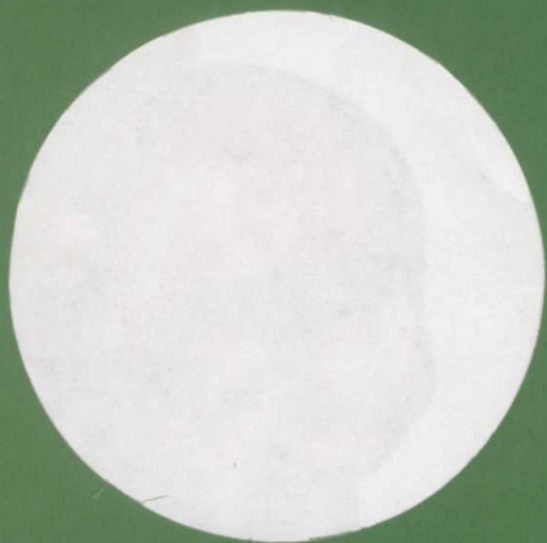
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VEGETATION MANAGEMENT

By Roger Funk, Ph.D., Davey Tree Expert Co., Kent, Ohio

Q: We have been treating leaf spot in English ivy beds with several fungicides but it is getting worse. What would you recommend? (California)

A: The problem could be bacterial leaf spot which is not controlled with fungicides. Ask your local cooperative extension agent for help in identification.

Bacterial leaf spots at first are small, round, light green and water-soaked on the lower surface. As the spots increase in size, they become angular and develop dark brown or black centers with reddish margins. Stem tissue also can become infected and appear black and shriveled, often with girdling cankers.

Warm, moist conditions favor the disease, particularly when the foliage remains wet throughout the night. To minimize the disease potential, water in the morning with a method such as drip irrigation that does not wet the foliage.

Q: We have been hearing a lot lately about the effect of acid rain. How acid is this rain and how harmful is it to trees? (New York)

A: Acid rains have been reported with a pH as low as 2.1 but normally are in the pH range of 4.0 to 5.8.

Acid rains have influenced the ecosystems in lakes leading to the extinction of fish. The effects on soils and trees are less clear.

Under laboratory conditions, simulated acid rains have inhibited seed germination, injured foliage, and accelerated the leaching of nutrients from soils and decreased growth of trees. However, trees in the natural environment may not be injured in the same manner or to the same degree. Further research is needed.

Q: When should you prune trees to get the most rapid healing? (Pennsylvania)

A: Wound closure is most rapid in pruning cuts made before May. Little callus formation occurs after July.

Q: Is there any chemical control for ground pearls?

A: No effective control, other than fumigation, is available.

Q: Can Basagran be used to control nutsedge in Bermudagrass lawns? (Florida)

A: Basagran will control yellow nutsedge, but it is not effective on purple nutsedge. MSMA and DSMA reportedly give good control of purple nutsedge and can be used safely in established Bermudagrass.

Q: I heard recently about a product called DOOM that is supposed to control beetle grubs for 20 years. Does it really work?

A: DOOM is a trade name for one of the milky spore disease products labeled for Japanese beetle control. Refer to the May 1980 Vegetation Management column for further information.

Q: Could you recommend a ground cover to plant in an area too shady to grow grass?

A: Ivy (*Hedera helix*), pachysandra (*Pachysandra terminalis*), myrtle (*Vinca minor*).

Q: Other than pruning, what can be done to improve grass growth under trees? (Michigan)

A: Some turfgrasses do better than others in shade. If the existing grass is not shade-tolerant, reseed with creeping red fescue or a mixture of fine fescue and Kentucky bluegrass cultivars recommended for shade such as 'Glade' or 'BenSun.' Early spring is the best time to seed to assure sufficient sunlight for germination and establishment. Autumn seeding is sometimes recommended but falling leaves may mat and smother young seedlings.

Mow the grass about ½ inch higher than in sunny exposures to increase the photosynthetic leaf area.

Control diseases such as powdery mildew that are more prevalent in shade to allow turfgrasses to remain healthy and vigorous.

Subsurface fertilization of trees may encourage deeper rooting and reduce competition with turfgrasses for water during drought periods.

Q: How can you identify ozone injury on trees? (Michigan)

A: On deciduous or broadleaved trees, ozone injury symptoms appear as flecking or stippling caused by dead cells on the upper surface of the leaf. Usually only the palisade cells are affected. The susceptibility of the leaves to ozone is greatest just after maximum leaf expansion. Very young or very old leaves are seldom injured.

On gymnosperms, mild ozone injury appears as chlorotic mottling of needles. Acute injury causes death of the needle tip or the whole needle.

Unfortunately, trees are often subjected to more than one polluting substance, which makes it difficult to identify the problem. Combinations of pollutants can significantly alter the injury symptoms.

Q: I have access to a large amount of rabbit manure. Can it be used like cattle manure in vertical holes to fertilize trees, or is the fertilizer value too low?

A: Rabbit manure, which contains 2.4% nitrogen, .62% phosphorus and .05% potassium, calculated on an oven-dry basis, compares very favorably with cattle manure.

Q: We have some areas in our fairways that dry out every summer because of poor water infiltration. Will the use of wetting agents correct this problem? (Ohio)

A: Wetting agents can be used to improve water infiltration into thatch and hydrophobic soil but do not correct poor soil conditions caused by compaction or poor drainage. The effect of wetting agents usually is retained for two or three rains or irrigations.

Continued use of wetting agents on the same turfgrass area may not be advisable. The long-term effects of multiple applications of wetting agents on soil structure and turfgrass plants are not known.

Send your questions or comments to: Vegetation Management c/o WEEDS TREES & TURF, 757 Third Avenue, New York, NY 10017. Leave at least two months for Roger Funk's response in this column.

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lems. In arid regions stone mulches are increasingly tried but do not have the cooling effect and biological fascination of vegetation. Drought-tolerant prairie grasses can sometimes be substituted, requiring somewhat less irrigation than conventional turfgrasses. However, the turf they form is not the carpet-like sward to which most American homes are accustomed.

Because of such factors, and the chore of keep-

The attitude "Let nature take over" is not well thought through. Nothing is more economical than a conventional lawn.

ing a lawn mowed, feelings such as "abandon the law; let nature take over" are sometimes expressed. This approach is not very well thought through. Over most of the country conditions are such that unpleasant, costly surroundings would result for years to come. In humid regions the cycle would normally be: coarse annual weeds, adventive perennials, brush and brambles, and volunteer saplings of impermanent trees. Not for a

hundred years or so would the disturbed landscape return to its natural climax of permanent, high-quality forest. Even then, most landscaping calls for open, airy parkland to extend the vista, provide air circulation and a sense of spaciousness. Nothing has proven more able or economical for meeting these needs than a lawn of turfgrasses conventionally tended.

The lawn need not be a burden. Choosing suitable lawngrass cultivars and according them basic needs is really not a difficult matter. Almost no other special use of vegetation has benefitted so much from the evolution of labor-saving equipment and products that spell convenience in care. If lawn tending turns onerous, it is generally because of poor understanding of lawngrasses and their basic requirements. Often considerable attention is devoted to non-essentials.

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