

VEGETATION MANAGEMENT

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

Q: *What is the latest information on Dutch elm disease control?*

A: Two research projects which involve the use of sex pheromones as an attractant to the elm bark beetle are currently underway.

Hundreds of sticky traps in conjunction with sex pheromones have been placed in a number of cities and have trapped literally millions of beetles. Unfortunately, the data has not shown a significant reduction in the occurrence of Dutch elm disease in the test areas. Dr. Lanier (Syracuse University) has demonstrated that, with isolated small "islands" of elms, trapping is successful, and he is recommending that sex pheromone traps receive a label for elm bark beetle control.

Sex pheromones are also being used experimentally to attract elm bark beetles to selected trees infected with Dutch elm disease. The trees are then injected with cacodylic acid which kills the trees, resulting in the death of the beetles. At the present time there is insufficient data to determine the effectiveness of this technique.

Our total control program has not changed in recent years and includes sanitation (pruning), dormant bark beetle sprays with methoxychlor, the injection of either of the fungicides Arbotect or Lignasan, prevention of root graft transmission of the fungus, and fertilization.

Q: *Will sod reroor after white grub damage?*

A: Grub injury can be compared to laying new sod. If the area is watered properly, new roots are formed and the turf "knits." Other cultural practices which minimize stress such as a higher mowing height, light fertilization and the avoidance of herbicides during this period will increase the chances for recovery.

Q: *I recently read that the Europeans have solved the chestnut blight problem. Are we doing anything here in the United States?*

A: Hypovirulent (less virulent) strains of the fungus *Endothia parasitica* which causes chestnut blight have been found occurring naturally in Italy. These hypovirulent strains are apparently infected with a virus, mycoplasma or similar organism that results in the loss of the ability to cause the chestnut blight disease. Fortunately, this hypovirulent factor can be transferred to the virulent strain which then becomes hypovirulent. In other words, the chestnut blight organism itself becomes diseased.

In Europe, the hypovirulent strains are disseminated naturally, providing a relatively inexpensive and practical means of control. Unfortunately, hypovirulent strains are not disseminated naturally in the United States, and each canker must be individually treated. Although usually effective, this method is time-consuming and not practical for widespread control of chestnut blight. The general

feeling of scientists working on this problem is that the use of hypovirulent strains will eventually be successful in the United States.

Q: *There seems to be much controversy among some lawn maintenance firms, regarding liquid fertilization as opposed to granular fertilization. Could you please address this subject? I realize there are many points to consider; if this question seems too broad, could you suggest reference material that would cover this topic?*

A: All fertilizers — regardless of the source — must first dissolve in water before they can be absorbed and utilized by plants. Liquid fertilizers are already in a form that can be absorbed when they are applied; granular fertilizers dissolve in soil water to form the same nutrient salts (ions), found in liquid fertilizers.

Dry fertilizer programs can offer slow-release nitrogen by applying organic sources which must be broken down by microorganisms in the soil before the nutrients dissolve, or by applying nitrogen sources coated with a substance that slows down the process of dissolution.

Liquid fertilizer programs can offer the same slow-release properties by applying organic nitrogen as liquid ureaform or as a very fine powder that will remain in suspension.

Some slow-release nitrogen is desirable to produce more uniform growth and to reduce the "burn" potential during the hot summer months. Of course, the more often fertilizer is applied, the less need there is for slow-release properties.

Since the turfgrass plant absorbs fertilizers in soluble form regardless of the form in which they are applied, the real question is not whether the program is liquid or dry but whether the fertilizers are applied properly.

For more detailed information, I am sending to you a copy of a Davey publication entitled "Introduction to Fertilizer."

Q: *We have problems with rhododendrons in the West Virginia area. What food should be used?*

A: Rhododendrons grow best when the soil pH is between 5 and 6. You should test your soil pH and correct it if necessary since alkaline soils result in inefficient utilization of nutrients, particularly iron. Fertilizer formulated for the so-called acid-loving plants or well-rotted manure give good results with rhododendrons.

You might also check for *Phytophthora* root rot which is common in some parts of West Virginia and is often misdiagnosed as a nutrient deficiency. The new leaves initially are a dull yellow color and later turn cinnamon brown and collapse like a closed umbrella.

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