

# **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 reroot 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, mycoplasm 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 "Intro-

duction 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 acidloving 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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## **PROSCAPE**

By Michael Hurdzan, Ph.D., golf course designer and consultant

Q: How do you locate buried plastic tile and water lines without disturbing large areas of turf? J.M.F., Wickford

A: Whenever a tile or piping system is planned it should be drawn out on a topographic map with as much detail and accuracy as possible. This plan should then be followed as closely as one can during installation. But if the area being planned is 150 or 200 acres, by necessity the scale of the plan must be 1 inch = 200 feet or 1 inch = 100 feet. At these scales, the width of a pencil line might be equivalent to 5'-10' on the ground.

So the drawn plan should be carefully followed but adjusted in the field as necessary to make the system most functional. If these field changes are significant then these changes should be carefully noted on the original plan. After the project is complete, the plan should be redrawn with all the changes incorporated and this becomes a "drawing of record." From this drawing of record one can quickly see the relative location of the field installation. However even with a detailed record drawing finding the actual installed tile or pipe in the field can sometimes be very costly, aggravating, and laborious.

To reduce the problems of finding the buried conduit several things can be done during installation. One procedure would be to measure the exact distance of the trench from some known landmark such as a large tree, a fence, or building, and note this on the drawing. Another procedure would be to install gravel or sand to the soil surface at every tile intersection or at every major change in direction of the pipe or tile. Not only will this gravel backfill permit you to more easily find the intersections but they also can serve as gravel drop-inlets for surface water. A third method is to drive steel pins into the soil to just below the soil surface at important reference points so these points can again be found using a metal detec-

Once a tile has been uncovered and you wish to check it's function, there is another simple procedure that may aid you. Find the outlet end of the tile that you think is plugged or broken, or uncover the tile in several places along its length about 100 yards apart, and start running a small stream of water into the tile if it is not already flowing any water. To either trace the flow of this water or to find a stoppage, use food coloring to color the water and simply

look for the marked water. If no colored water comes from the outlet or does not reach the next observation spot down the tile run then you know that you have "bracketted" the disfunction. Repeat the procedure with narrower brackets until you find the problem.

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#### NURSERY

# Garden suppliers to gather in Germany

The business year has commenced surprisingly well in all sectors of the garden supplies industry, according to information officers of the International Garden Trade Fair to be held in Cologne, Germany.

The officers report that manufacturers expect a growing development of sales in months to come in view of the continuing brisk demand. Additional business may be generated from the 7th International Garden Trade Fair scheduled for the Cologne trade fair centre from September 23-25.

Thus far, 413 direct exhibitors and 39 represented firms from 18 nations have applied for space at the fair. Of these, 167 direct exhibitors and 21 represented firms come from countries other than Germany.

Foreign participation is headed by Great Britain with 53 direct exhibitors and another 3 represented firms to date, followed by France (20 + 2), Holland (20 + 1), the United States (15 + 5), and Italy (14 + 3). The proportion of foreign countries represented will be about 44 percent.

The wide range of products exhibited includes lawn mowers, garden implements and tools, garden equipment, and garden supplies. They should fill a floor space of 344,-320 square feet.

#### HORTICULTURE

#### Prominent speakers head horticulture show

Ted Stamen of the University of California and Tom Flippen of John Henry Co.'s Floral Decor Div. will highlight the Living Plant Growers

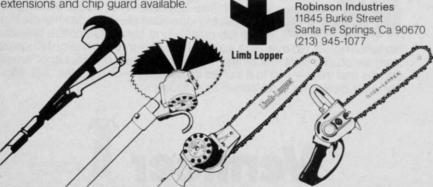
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Association seminar at the Pacific Horticultural Trade Show in Long Beach, Calif.

The LPGA seminar is one of three scheduled for Friday morning of the three-day event, September 6-8 at the Long Beach Convention Center and sponsored by the California Association of Nurserymen.

"Marketing and Merchandising House Plants — an Overview" will be Stamen's subject. He has much experience as a horticulturist with the University of California Cooperative Extension.

Flippen, an experienced nurseryman and Western Sales Manager for the John Henry Co., will speak on "Merchandising House Plants in the Retail Industry."

A general session seminar will run concurrently with the LPGA seminar from 10 a.m. until 12 noon. It will feature Charles D. Greenidge, Ph.D., a management consultant, and a discussion of problems of landscape maintenance by a panel of experts for the California Landscape Contractors Association seminar.

#### NURSERY

# Allied trade show set for Tampa, Fla.

The 1979 Florida Nursery & Allied Trades Show will be held at the Florida State Fair Expohall in Tampa, Fla., Sept. 28-30.

The Expohall is located within the 276-acre Florida State Fair and Expopark. The facility features 93,000 square feet of unobstructed and air conditioned floor space and a 45-foot ceiling.

Concession areas are located within the building and parking is readily accessible with space for 10,000 cars within walking distance of the Expohall.

The show is being co-sponsored by the Florida Nurserymen and Growers Association and the Florida Seedsmen and Garden Supply Association.

#### TREES

#### Survey yields tree farm data

Growing sawtimber or pulpwood is the primary objective in tree farming for 79 percent of those responding to a questionnaire given by Tree Farm News.

Out of more than 5,000 tree farmers who completed the questionnaire, 36 percent, the largest segment, indicate that they originally began to practice forest management because of a general interest in forestry.

Data on the respondents shows that 77 percent own tree farms with less than 200 acres and 61 percent have their principal residence on their tree farm, or live in the same

county.

Other personal questions revealed that 53 percent have a college or graduate degree. Fifty-six percent report incomes exceeding \$20,000.

More than half of those surveyed say they would be interested in visiting other outstanding tree farms in their region.



even scoring on the bearing surfaces because there was not enough clearance between the rod and the crankshaft.

If the rod was not tightened to the correct torque, the mating surface will have a peened effect caused by the two sections of the rod pounding together. A dull gray finish — called fretting would be the result if the two rod sections were not quite loose enough to cause peening but still loose enough for the two parts to work against each other.

If the mating surfaces have indicated a loose connection, check the bolts. If a bolt is polished all the way around it means it was turning or backing out. If it is polished only on one side, that indicates that the bolt was stationary.

The fourth area you should examine are breaks. Look along the sides of any breaks for faults such as pock marks.

One last area that should be considered is oil pump failure if the engine is pressure lubricated. Examine the pump carefully for failure. Check the oil galleries to be sure that they were not restricted or completely plugged.

At this point, you have made a very thorough

examination of your engine. You have noted the condition of the oil as you found it, the state of the air cleaning system, and any marks on pistons and rings. From these observations you can identify the cause of this particular engine failure.

Determining the cause of the failure would be strictly an academic exercise unless you plan to do something about it. If lack of lubrication seemed to be the problem, certainly you would pay extra attention to that in your regular maintenance schedule. If your air cleaner was dirty or grass screen clogged, you would make a note to check these more frequently.

By finding out what causes an engine problem, then taking steps to correct the problem, you can reduce the frequency of engine repair and costly

A bit of failure analysis is all it takes — and it's worth it.

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# **PRODUCTS**



A hydraulic dump box for the Toro Workmaster is available from Dedoes Industries, Inc. Its hydraulic system and brackets quickly mount under the vehicle's bed. The dump box holds 1,000 pounds.

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A monofilament trimmer, the WC-22, uses a loop-type handlebar with antivibration grip so the operator can work with one hand on the bar and the other on the shaft. This handling position gives the operator close control in an area distant from his feet.

The trimmer also contains a gasoline-powered motor mounted on the top of the shaft and a shoulder strap. The manufacturer, Hoffco, Inc., offers an adapter kit to substitute its other models with the handlebar arrangement.

Circle 702 on free information card

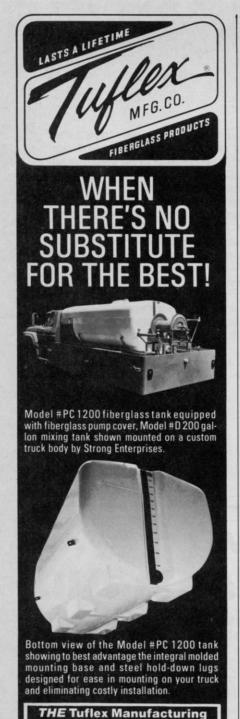


Woodsman model 6003-DH clears and reclaims land, prepares sites, and cleans up landfill. An operator can clear 3 acres of land in a day, cutting through heavy brush, 6-inch diameter trees, trash lumber, and other ligneous debris. The machine leaves a layer of wood chips in its path; the land is ready for immediate use.

A diesel engine with hydrostatic drive protects the engine from shock loads at the rotor. A remote control panel mounts on the prime mover and provides the operator with convenient controls for starting, speed selection, rotor disengaging, and stopping. The land clearer attaches to front-end loaders and other equipment which handles 6,000 pounds.

Adjustable skids permit cutting from ground level to 5 inches above. Tree pushers protect the operator and direct trees into the machine's path for efficient cutting. A 60-inchwide rotary assembly consists of 20 19-inch-diameter discs and 38 heattreated, alloy steel cutters which are double-edged, free-swinging, and easily reversed or replaced.

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Transport speeds — forward, reverse, and free wheel — vary from 0 to 40 f.p.m. The trencher is easy to operate, and because it's hydraulic, there are few moving parts for quick and easy maintenance.

Circle 704 on free information card



Lickity Chipster, a rugged brush chipper from Piqua Engineering, Inc., turns 2-inch-diameter limbs into usable mulch. Chips leave through a screen and are directed through the hood to containers or the ground. The mulch is useful for municipal parks, streets, and recreation areas, plus around trees, shrubbery, and flower beds.

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Design features of the 450B crawler include a raised operator's compartment and sloping hood for improved visibility, easier entry and exit, and simple maintenance to the main mechanical parts. Power on both tracks maneuvers the J I Case Co. machine with little surface ground distrubance.

The hydraulic angle/tilt dozer efficiently operates through on-the-go blade position from the operator's seat. A single lever controls bucket lift and dump. A four-cylinder diesel engine powers the crawler.

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LS-50 splits logs 31 inches long under 22,000 pounds of hydraulic force. The log splitter mounts on the three-point hitch of a category 1 or 2 tractor and utilizes the tractor's hydraulic system. A single hydraulic lever moves the cutting wedge. Vermeer Manufacturing Co. manufactures the 570-pound attachment, which has its own dismounting stand.

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A large capacity hopper with emptying shoot on the Moto-Cast spreader increases your work load and reduces time on the lawn. The Leisure Lawn, Inc., product evenly applies dry materials at an adjustable rate. Its stainless steel impeller with slanted deck is also adjustable.

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