

that the benomyl-DMF combination has a very low toxicity. In fact, much lower than many currently used insecticides. But he believes the reason for slow acceptance is connected to the possibility that an applicator would mix a highly toxic insecticide, such as parathion, with the benomyl-DMF combo. Since the fungicide treatment requires the penetrating agent, any contact with the operator would produce poisoning and possibly death if a toxic insecticide were mixed in. Benomyl and the penetrating agent alone are relatively safe to use, according to Van Arsdel.

Using the campus trees, Van Arsdel has established two methods of treatment for diseased trees. The drenching of the tree base every few years produces good results. The other method of treatment is the application of a foliage spray to the tree's crown. While the foliage spray will not cause a complete remission it does slow the progress of the disease. A combination of both treatments provides the best results. Van Arsdel judges the success of his



Decline spreads through intertwined root systems as in this clump of post oaks.

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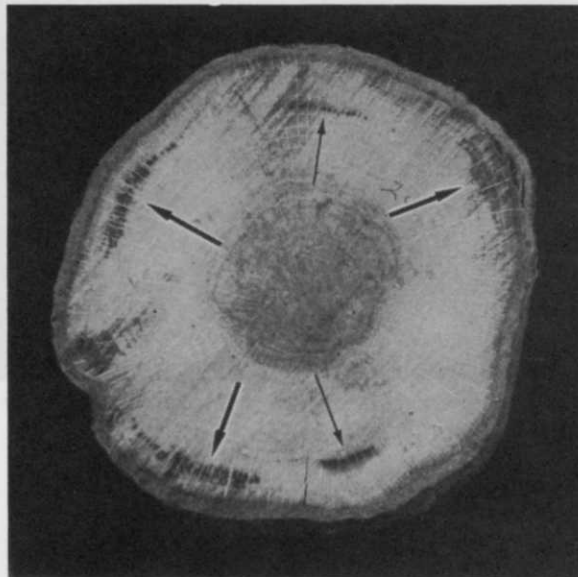


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Oak Wilt

treatments by the increased leaf size the following spring. The increase in leaf size is the first sign of successful treatment. The treatments are applied during the summer which has

Crosssection of tree shows streaks caused by fungus (heavy arrows). Light arrows indicate streaks caused by ambrosia beetle.



been found the ideal time to apply the systemic fungicides.

Approximately 200 oaks are being treated and observed on the College Station campus. Many of the trees display small signs stapled to their bases indicating the research project. Van Arsdel placed the signs to discourage any human-

caused damage to the trees. Unfortunately the past few years have seen a large number of construction programs on the campus. While most trees survived the contractor damage, several could not be saved.

These construction-damaged trees display another form of decline. Damage caused by contractors cutting the roots produce a similar appearance in the crown growth and adds to the chance of fungal infection. Van Arsdel has discovered that several varieties of wood-boring insects attack the damaged parts of the tree. These insects then infect the tree with the *Cephalosporium* fungus which they serve as vectors.

"A live oak is mainly of value as an ornamental tree and I think that's actually a much higher value than lumber because the oak is in someone's front yard who loves it," said Van Arsdel, referring to the economic and sentimental damage caused by oak decline. While a 24-inch diameter oak may be worth several thousand dollars, a tree's beauty and grandeur are priceless.



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February 12-17, 1978

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Conference Highlights

- *preconference seminars*
- *certification examination*
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- *special interest assemblies*
- *turfgrass industry show*
- *annual meeting and election*
- *golf course tour*
- *ladies' program*
- *social events*

Brochures and registration materials for GCSAA's 49th International Turfgrass Conference and Show will be mailed to all GCSAA members October 1. Others may use the coupon below to request the materials.

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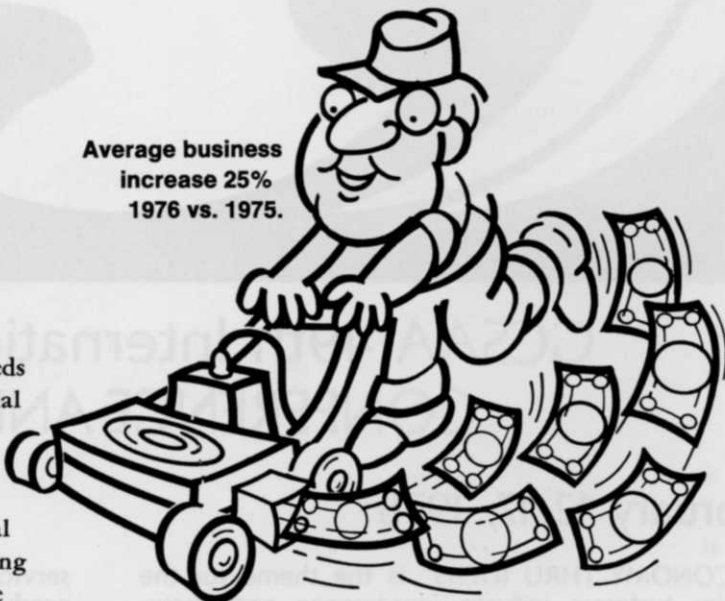
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Let's get down to grass facts!

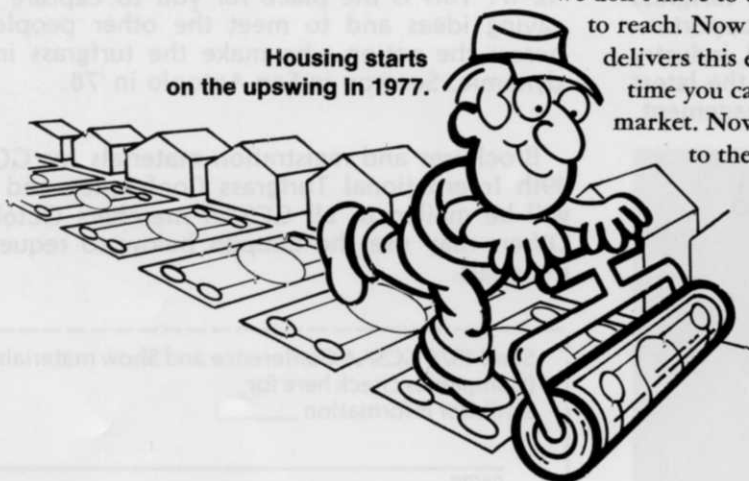
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Preventing Injury to Frosted or Frozen Turf

by John F. Shoulders
Extension Specialist, Turf
Virginia Polytechnic Institute
Blacksburg, Va.

Each fall turf superintendents are faced with the problem of how to protect fine turf areas such as putting greens, athletic fields, fairways and lawns from frost injury. Later in the season the problem expands to include the management of turf areas while they are frozen and also during freezing and thawing.

Any traffic on turf while frost is present results in injury to the turf. For example, walking across a frosty putting green results in the death of the grass blades in the footprints. The same is true for a vehicle driven over frosted turf. There is

Any traffic on frosted turf causes injury.

usually little or no damage to the crown or roots.

The preferred management practice for frosted turf areas is to prevent all traffic until the frost has melted.

Turning to the management of freezing, frozen or thawing turf areas, it is helpful to keep in mind that the most severe damage from traffic occurs during the freezing and thawing processes. Traffic of any kind should be prevented while either of these processes are taking place. Limited traffic may be permitted under certain conditions when the ground is frozen solid.

While the turf and soil are in the process of freezing, cells are particularly vulnerable to damage from traffic. Areas of turf that would otherwise remain alive have frequently been killed by traffic during the freezing process.

Bentgrass and other species of cool season turf are also vulnerable to injury from traffic during the thawing process. The most



Damage caused by foot traffic across a partially frozen lawn. (Photo courtesy Davey Lawnscape)

If you leave footprints on turf, further thawing is needed.

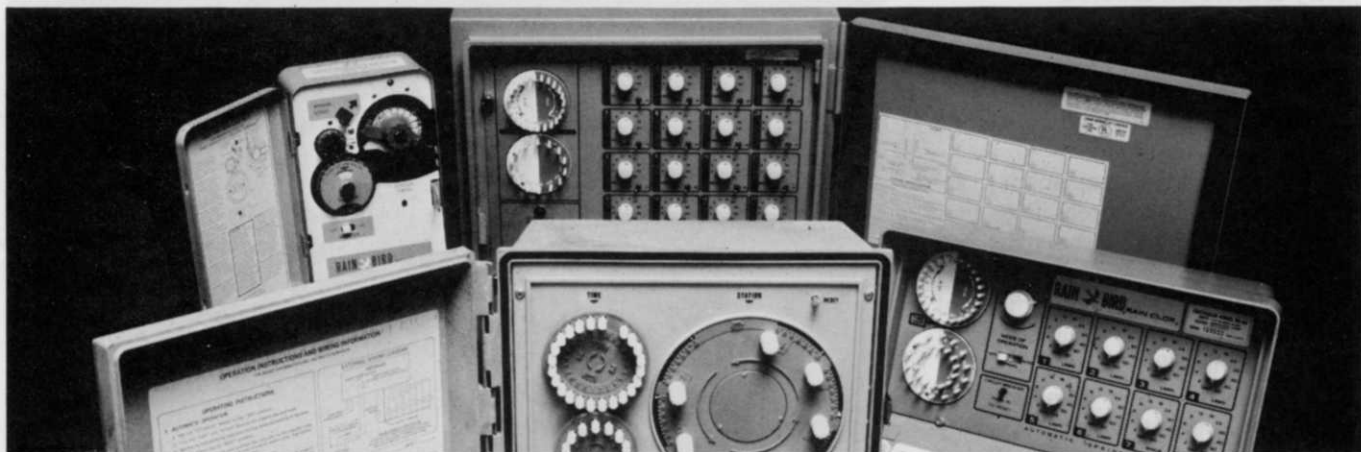
vulnerable time is when the surface of the green has thawed but the soil just underneath the surface of the green remains frozen. This is true from the time the surface of the green begins to thaw and may remain true until the green has thawed to a depth of perhaps 2 to 3 inches. During this period, roots are easily injured by traffic. Furthermore, the frozen portion of the green prevents the internal drainage of moisture, resulting in a condition where the green is too wet for play.

After the turf has frozen solid and enough time has elapsed for the frost and ice to disappear from the surface of the blades and from the cells within the blades, little damage occurs from play so long as the area remains firmly frozen and traffic is limited to individuals walking, running, etc. Golf cars and heavier vehicles should not be permitted on high priority turf areas. While light play can be permitted under these conditions, heavy traffic may result in

injury to the blades by abrasive action resulting from crushing the turf between the foot and the firmly frozen surface.

The most pressure to open golf courses and playgrounds usually occurs when the weather moderates following a cold spell and players want to get on the turf before the soil has had an opportunity to thaw deep enough to avoid injury to the turf. Good judgement dictates that the golf courses, playgrounds and similar turf areas should be opened as early as possible under these conditions, but not so soon that the turf is injured. A rule of thumb to consider under these conditions is to permit play if the soil has thawed and dried to the point that the surface of the turf is firm enough to support a person's weight without leaving footprints as he walks across it. When you feel your foot sinking into the soft upper portion of the turf, play should be avoided. □

Reprinted from the October 1977 issue of Tech Turf Topics, a publication of VPI and the Cooperative Extension Service.



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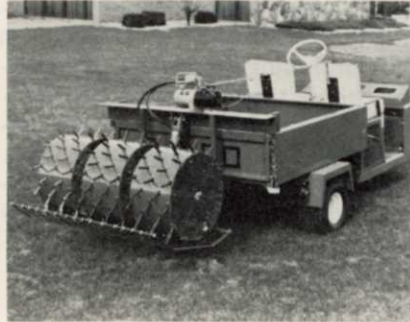
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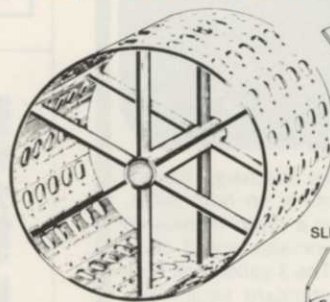
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CLCA seeks help with educational programs

The Education Coordination Committee of the California Landscape Contractors Association is seeking greater participation from other segments of the horticulture industry to help with on-going programs and provide fresh ideas for new programs.

The committee, formed five years ago by its chairman, Corte Madera landscape contractor Frank Peccorini, has included nurserymen, golf course superintendents, flower growers, maintenance contractors and suppliers and educators for the purpose of organizing and coordinating community college ornamental horticultural programs.

The committee has been successful in organizing better student

programs, according to Peccorini. A system of accreditation of college programs has also been developed with several colleges accredited and more requests pending.

Peccorini indicated that the committee also concerns itself with the continuing education of industry people through statewide seminars. The committee was also responsible for obtaining state funding for a free industry placement bureau, currently located at Butte College.

Tree course offered in California

A course in small tree farm management is being offered as part of the continuing education program of University Extension, University of California. Peter C.

Passof, forest advisor, Mendocino Cooperative Extension, Ukiah, will be conducting the course. It will focus on the more important elements of small tree farm management for those who are unfamiliar with basic forestry principles.

The course covers growth; practical ecology; silviculture; protection against forest pests; forest economics and marketing opportunities; regulations; future forestry practices, and multiple-use management concepts. Participants will learn how to get professional forestry assistance from the public and private sectors, and how to increase revenues by marketing a wide range of forest products.

Enrollment is requested by February 17. For more information contact Catherine Baker in the News Service Department, University Extension, University of California, Davis, Calif., 95616.

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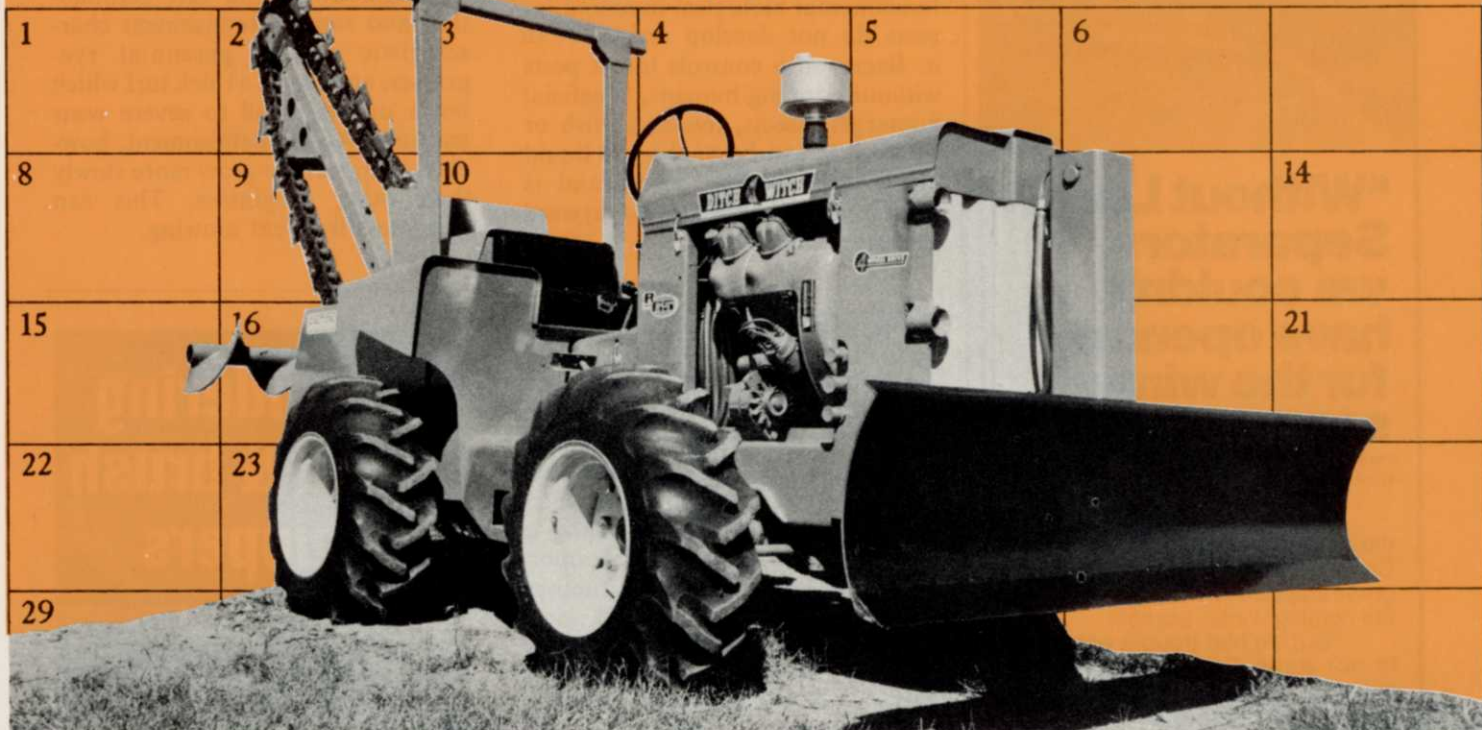
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Industry News

Bacterial insecticide controls five insects

Bactur, a highly-selective biological insecticide, has been newly registered for use against fall webworms, cankerworms, tent caterpillars, rehdumped caterpillars and gypsy moths.

The insecticide contains bacteria (*Bacillus thuringiensis*), that paralyze the insects’ stomachs, causing death within 3-5 days after ingesting Bactur-treated foliage.

Because Bactur interferes with a fundamental biological function, insects do not develop resistance to it. Bactur also controls target pests without harming humans, beneficial nontarget insects, livestock, fish or wildlife. It can be applied in liquid or wettable powder forms and is marketed by Thompson-Hayward Chemical Company.

EPA halts DBCP sales

Sales and use of DBCP (dibromochloropropane) have been halted by EPA administrator Douglas M. Costle. DBCP has been used as a soil fumigant since 1955 and is now suspected of being a human cancer agent based upon stomach and mammary tumors found in laboratory rats and mice, according to Costle. DBCP is believed responsible for causing sterility or reduced sperm levels among more than 100 workers producing the pesticide in four states.

Dow Chemical and Shell Chemical, the principle manufacturers, voluntarily stopped production last summer. Despite the halt, other firms may still have some of the compound on hand. The EPA order would prohibit any future sale in the U.S. unless safeguards are met.

Costle declared that he would lift the “suspension order” for uses of DBCP such as treatments of home lawns and golf courses, if the makers will agree to change the labels of their products to restrict use only to trained applicators “wearing protective clothing and respirators.”

Ignoring the safeguards would be a violation of the 1972 Federal pesticides law, he warned.

NAPB releases Regal perennial ryegrass

Regal perennial ryegrass, a new turf-type variety from North American Plant Breeders (NABP) reportedly offers improved rust resistance, cuts cleanly and is said to be a darker green color than the other turf-type ryegrasses.

Regal offers the fast germination and rapid establishment characteristic of the perennial ryegrasses, and forms a thick turf which holds up very well to severe wear and tear. After establishment, however, it appears to grow more slowly than other ryegrasses. This can mean less frequent mowing.

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