## Check This New Program Which Insures Underground Storage Tanks on Golf Courses

Club officials at America's golf courses should note that the clock is ticking toward a federally mandated deadline.

By October 26, 1991, golf courses operating underground storage tanks [USTs] that hold petroleum products must prove that they can be financially responsible for the costs of pollution that might arise from a leaking tank. Small businesses like golf courses have been scrambling to find an affordable way both to comply with the law and to fill the gap left by the pollution exclusion contained in nearly all general liability policies.

"Golf courses were really in a tough spot," says Pat Jones of the Golf Course Superintendents Association of America [GCSAA]. "That's why we decided to establish our own program that lets courses affordably meet the EPA requirements and patch up a big hole in their existing liability insurance."

GCSAA, in cooperation with Jardine Insurance Brokers Kansas City Inc., and the First Specialty division of Employers Reinsurance Company, now offers golf courses a stand-alone UST insurance product that meets or exceeds all EPA standards [\$1 million annual aggregate and \$500,000 "per incident" coverage]. The coverage can be added to any general liability policy at eligible golf courses in the United States and is available to all agents.

According to Richard L. Shanks, president of Jardine Insurance Brokers Kansas City, Inc., "Agents who are currently writing

coverage for golf courses should act quickly to arrange for this coverage." Shanks added that the program is currently approved in the following states: Alabama, Arizona, California, Colorado, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Maine, Maryland, Missouri, Nebraska, N. Carolina, N. Dakota, Oregon, Tennessee, Texas, Vermont, Virginia, Washington, W. Virginia, Wyoming and the District of Columbia. Approval in the remaining states should be in place by the end of the summer.

Interested risk managers should contact Jardine's Susan Courtney at 1-800/727-0250.

#### **Phlox Blight**

A physiological leaf blight is evident now on older phlox plantings. The condition is characterized by the dying of older leaves from the base upward until the entire shoot is killed. No organisms or viruses are associated with this blight. The problem is most severe on old clumps and is entirely absent on seedlings. Phlox should be divided in the fall and every two to four years. Do not confuse this with powdery mildew. Mildew gives the leaves a white to gray cast and may cause the lower leaves to dry up.

-Cynthia Ash, Minnesota Extension Service

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## **CALL FOR A DEMO TODAY**

## USGA Will Spend \$5.4 Million On Research Over Next Three Years

The United States Golf Association will spend \$5.4 million on research over the the next three years, more than double its previous rate, and has directed \$3 million of the total toward evaluating the impact of golf courses on the environment.

In announcing the association's decision to study how fertilizers and pesticides affect the environment, C. Grant Spaeth, the USGA's president, said, "Right now the game is threatened by the lack of knowledge about the environmental impact of pesticides and fertilizers used to maintain golf courses. I can think of nothing more urgent to golf than to answer this environmental question, and to propose responsible solutions."

The work will be done by land grant universities throughout the United States, assuring that studies are relevant to a variety of conditions, such as soils and climate. Additionally, the USGA committee that oversaw turfgrass research has been renamed the Turfgrass and Environmental Research Committee, and has been expanded to include recognized authorities from environmental agencies and organizations.

Spaeth said the USGA will enter into the program with no preconceived position. "We must maintain a position as the honest and independent broker."

These studies will examine questions such as whether fertilizers and pesticides contaminate ground water, and if they do, the duration of their impact.

Studies will also be geared toward the development of alternative and non-chemical methods of pest control, and the influence of golf courses on people and wildlife.

The project will be the responsibility of the Green Section Committee, chaired by Ray Anderson, of Chicago. Jim Snow is National Director of the Green Section and Chairman of the Research Committee, and Dr. Mike Kenna is Director of Green Section Research. Dean Knuth is Director of Green Section Administration. The Golf Course Superintendents' Association of America plans to cooperate with the USGA on this enterprise.

## **MEMBERSHIP REPORT**

#### NEW MEMBERS-SEPTEMBER 19, 1990

| Dan Gabler    | Class | F | Strate Grain Company |
|---------------|-------|---|----------------------|
| Harvey Nornes |       | F | SHR Golf             |
| Bruce Speiers |       | F | RW Golf Cars         |

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| Mitchell Fossey   | BII to B | Eisenhower          |
| Dennis Morgenweck | B to A   | Mora                |
| David Deem        | BII to B | Hazeltine           |
| Bradley Harne     | C to F   | Nyberg Ace Hardware |
| Andy Lindquist    | A to E   | Anoka Technical     |
| Fred Taylor       | BII to B | Mankato             |
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| Scott Sievert     | B to A   | Vallebrook          |
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| Greg Spencer      | BII to A | Brookview           |
| Warren Nehring    | BII to A | Koronis Hills       |

Greg Hubbard, Membership Chairman

## **Pest Update**

#### By MARK E. ASCERNO Department of Entomology

1. The drought of 1988 resulted in high populations of the two lined chestnut borer, *Agrilus bilineatus*. Oaks, especially those located on sandy soil, are being lost.

2. Elm leaf beetle (ELB), *Xanthogaleruca luteola*, populations which were high in 1988, have remained high in 1989. Previously, ELB had been a spotty problem associated primarily with Siberian elm. In 1989, ELB was widespread in Minneapolis and St. Paul on American, Siberian, and hybrid elms. Indoor invasions for overwintering of the beetles are resulting in a record number of complaints. It remains to be seen whether ELB will return to its previously spotty distribution or if it will take a place as a consistent urban pest.

3. Boxelder bugs, *Boisea trivitata*, have returned to normal after a year of tremendously high populations.

4. Dutch elm disease doubled in 1989, compared to 1988.

5. Unknowns: Introduced pine sawfly, *Neodiprion sertifer* (Feoffroy) on mugo pine in St. Paul, Minnesota; a wooly aphid on green ash; a bud and twig boring Pyralid in birch.

### Prevention of Resistance To DMI Fungicides In Turf Pathogens

The North American Fungicide Resistance Action Committee DMI Working Group is a cooperative effort among producers of these highly active, demethylation-inhibiting [DMI] fungicides to prevent the development of resistant pathogens.

Selection for resistant individuals can, over time, lead to loss

of field efficacy.

The following recommendations should help to reduce selection pressure on the fungal population and, therefore, to preserve the excellent activity of these fungicides against diseases of turgrasses.

• Lower risk of resistance development can be achieved when these materials are applied preventively or early in the disease epidemic.

Use proper equipment to apply the recommended gal-

lonage to ensure thorough coverage.

• **Do not use DMI's alone season-long.** Use a tank mix or alternate sprays with a non-DMI fungicide. Alternation with other DMI fungicides will **not** help prevent resistance development.

Consult your local Extension Service if you are unsure about appropriate alternation or mixing partners.

Your adherence to this anti-resistance strategy benefits all users of these fungicides.

#### DMI Fungicides Currently Labelled For Use On Turfgrasses

| TRADE NAME | PRODUCER   |
|------------|------------|
| Banner     | Ciba-Geigy |
| Bayleton   | Mobay      |
| Rubigan    | Elanco     |

### Movement of Fertilizer Nutrients and Pesticides

(Continued from Page 17)

1991, analyses of water samples will continue. Data analyses, interpretation and preparation of the final report will also take place.

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#### **Personnel Support:**

Thomas L. Watschke, Professor of Turfgrass Science, 5% Donald V. Waddington, Professor of Soil Science, 5% Paul R. Heller, Professor of Entomology Extension, 5% George Hamilton, Research Assistant, 25%

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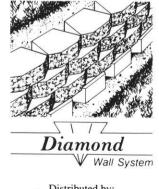
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## Drought/Winter/Stress Evident in the Landscape

By Deborah Brown Extension Horticulturist Minnesota Extension Service

The fall of '89 and the winter of '89 90 have combined with the past two years' drought to leave us a legacy of injury, dieback and outright death of plants in the landscape.

The first hint that something was amiss was the large number of people calling the University to complain that they had planted daffodils last autumn (sometimes as many as 500!) but they had nothing to show for their efforts this spring. When told to dig in the garden where they had planted them, all they found were the soft, rotted remnants of those once-firm bulbs that had been so full of promise last September.

Next were calls and samples of arborvitae from throughout the state. These evergreens looked fine, for the most part, all winter long, but as soon as the weather started to become warmer and windy, the exposed south or west side of each turned yellow, then brown and brittle. In most cases, they'll have to be replaced.

Now we're seeing a trend of calls about trees that have leafed out slowly, sporadically, or not at all. Sometimes it is the upper 1/4th of the tree that has died back. In others, only the lower 1/4th remains alive. Shrub roses that have been perfectly hardy for years died down to the base, where tiny new shoots are just coming out. Other trees and shrubs have leafed out, but are drying and dying back.

In an attempt to aid many of these plants that look so ragged, people want to fertilize them. Unfortunately, this just adds to the stress they're experiencing by giving them a push to send out new growth at a time when they haven't even the ability to pop out normal spring growth. All people can do is prune out dead, brittle growth and water regularly once the weather turns hot and dry. Some plants will come back; others will have to be removed and replaced.

#### Watering Evergreens Essential

By Deborah Brown Extension Horticulturist Minnesota Extension Service

So many evergreen shrubs and trees were damaged by last year's unfavorable weather—little autumn rainfall, extreme cold in December without benefit of snow-cover on the ground and the drying effects of sun and wind. They looked green early in the spring, but turned brown, yellow or orange rapidly, once temperatures began to climb.

There's no way to guarantee your evergreens will be okay this winter, but regular watering throughout the growing season can insure that they don't go into winter under moisture-stressed conditions. Several inches of woodchip mulch laid beneath each plant also helps stem moisture loss through evaporation and holds off the date at which the soil freezes, to a point a little later in the season.

Unless it's dreadfully hot, a good soaking every seven to ten days should be adequate. Then as weather cools in autumn, that interval can be stretched to two weeks or more, depending on rainfall. Never water evergreens if the soil is already moist. Unless they're planted in sandy soil, you run the risk of rotting their roots.

## Characteristics of Minnesota Woodland Wildflowers

Ed. Note: Information in this table is from a presentation given by Dr. Bob Mullin from the Horticulture Department University of Minnesota.

|  | Flowers              | Fruit            | Foliage                 | Habitat                                  | Soil Type                  | pН                | Propagation             |  |  |  |
|--|----------------------|------------------|-------------------------|--|----------------------------|-------------------|-------------------------|--|--|--|
| ctaea rubra<br>Red Baneberry                       |                      |                  |                         | Conif, Decid W.<br>Lt. Shade             | High Humus<br>Well Drained | 5.0-6.0           | Seeds<br>Divisions      |  |  |  |
| nemonella thallictroides<br>Wood or Rue Anomone    | Wh. Pink<br>E. Spr   | Dry<br>6"        | Spr-E.Sum.<br>Lt. Shade | Decid. W.                                | High Humus                 | 5.0-6.5           | Seeds<br>Tubers         |  |  |  |
| quilegia canadensis*<br>Wild Columbine             | Orange<br>E. Sum     | Dry              | Full Season<br>18"      | Decid. Conil. W.<br>Meadows, Lt. Shade   | Moist Sandy                | 6.0-7.0           | Seed                    |  |  |  |
| Arisaema triphyllum*<br>Jack-In-The-Pulpit         | Green<br>L. Spr      | Red<br>Poisonous | To Mid-Sum.             | Decid. W.<br>Shade                       | Moist<br>High Humus        | 5.0-6.5           | Seed<br>Divisions       |  |  |  |
| Asarum canadense*<br>Wild Ginger                   | Brown<br>E. Spr      | Dry              | Full Season<br>6"       | Decid. Conil. W.<br>Shade                | 5.5-6.5                    | Rhizomes<br>Seeds |                         |  |  |  |
| Claytonia virginica<br>Spring Beauty               | Pink                 | Dry              | Spring<br>4"            | Decid. W.<br>Lt. Shade                   | High Humus<br>Moist        | 5.5-6.5           | Corms                   |  |  |  |
| Cornus canadensis<br>Bunchberry                    | White<br>E.Sum       | Red              | Full Season<br>6"       | Conif. Decid. W.<br>Shade                | Peat Moss<br>Wet           | 4.0-5.0           | Seed                    |  |  |  |
| Cypripedium calceolus<br>Yellow Ladyslipper        | Yellow<br>Spring     | Dry              | Full Season<br>18-24"   | Conif., Decid. W.<br>Shade               | Moist-Wet<br>High Humus    | 4.5-5.5           | Rhizomes                |  |  |  |
| Dicentra cucullaria*<br>Dutchmen's Breeches        | White<br>E. Spr      | Dry              | Spring<br>6-10"         | Decid.W.<br>Lt. Shade                    | High Humus<br>Moist        | 6.5-7.0           | Seeds<br>Corms          |  |  |  |
| Geranium maculatum*<br>Wild Geranium               | Pink<br>E. Spr.      | Dry              | Full Season<br>18-24"   | Decid., Connif. W.<br>Meadows            | Variable                   | 6.0-7.0           | Rhizomes<br>Seeds       |  |  |  |
| Hepatica acutiloba*<br>Sharp-Lobed Hepatica        | Wh - Purp<br>E. Spr. | Dry              | 6''                     | Conif., Decid. W.<br>Lt. Shade           | High Humus                 | 6.0-7.0           | Seeds<br>Divisions      |  |  |  |
| Lobelia cardinalis*<br>Cardinal Flower             | Red<br>L. Sun        | Dry              | Full Season<br>24-48"   | Wetlands<br>Lt. Shade                    | Wet<br>High Humus          | 5.5-7.0           | Seeds<br>Cuttings, Div. |  |  |  |
| Maianthemum canadensis<br>False Lily-Of-The-Valley | White<br>Spring      | Green            | Full Season<br>6"       | Conif., Decid. W.<br>Shade               | High Humus<br>Moist        | 5.0-6.5           | Seeds<br>Divisions      |  |  |  |
| Mertensia virginica*<br>Virginia Bluebell          | Blue<br>L. Spring    | Green            | E. Summer 12-18"        | Decid. W.<br>Lt. Shade                   | Moist in Spring            | 5.5-6.5           | Divisions<br>Seeds      |  |  |  |
| Phlox divaricata<br>Woods Phlox                    | Blue<br>E. Summer    | Dry              | Full Season<br>12-18"   | Decid. W.<br>Meadow, Lt. Shade           | High Humus<br>Moist        | 6.0-7.0           | Div. Cut.<br>Seeds      |  |  |  |
| Polemonium reptans<br>Jacob's Ladder               | Blue<br>Spring       | Dry              | Full Season<br>10-15"   | Decid. W.<br>Meadow, Sun-Lt. Sh.         | High Humus                 | 6.0-7.0           | Divisions<br>Seeds      |  |  |  |
| Polygonatum biflorum<br>True Solomon's Seed        | Cream<br>L. Spr.     | Blue             | Full Season<br>24-36"   | Conif., Decid. W.<br>Prairie, Sun, Shade | High Humus                 | 4.5-6.0           | Rhizome<br>Seed         |  |  |  |
| Podophyllum peltatum<br>Mayapple                   | White<br>L. Spr.     | Yellow           | Mid-summer<br>12-18"    | Conif., Decid. W.<br>Lt. Shade           | High Humus<br>Moist        |                   |                         |  |  |  |
|  |                      |                  |                         |  |                            |                   |                         |  |  |  |

## Characteristics of Minnesota Woodland Wildflowers

Ed. Note: Information in this table is from a presentation given by Dr. Bob Mullin from the Horticulture Department University of Minnesota.

| Sanguinaria canadensis*<br>Common Bloodroot     | White<br>E. Spr.                  | Green | Full Season<br>8-12'' | Decid. W.<br>Lt. Shade          | High Humus<br>Moist | 5.5-6.5 | Seed<br>Divisions |
|---|-----------------------------------|-------|-----------------------|---------------------------------|---------------------|---------|-------------------|
| Smilacina racemosa<br>False Solomon's Seal      | White<br>Spring                   | Red   | Full Season<br>24-80" | Woods, Meadow<br>Sun. Lt. Shade | Rich<br>Moist       | 5.5-6.5 | Rhizome<br>Seed   |
| Trillium grandiflorum*<br>Showy Trillium        | White<br>Spring                   | Green | Full Season<br>12-15" | Decid. W.<br>Lt. Shade          | Sandy Loam          | 6.0-7.0 | Rhizome<br>Seed   |
| Uvularia grandiflora<br>Large Flowered Bellwort | Yellow<br>Mid Spr.                | Green | Full Season<br>12-24" | Conif., Decid. W.<br>Shade      | High Humus<br>Moist | 5.5-6.5 | Seed<br>Rhizome   |
| Uvularia Sessilifolia<br>Little Merrybells      | Cream<br>Mid. Spr.                | Green | Full Season<br>10-15" | Conif., Decid. W.<br>Shade      | High Humus<br>Moist | 5.5-6.5 | Seed<br>Rhizome   |
| Viola<br>Violets                                | Purple, White<br>Yellow<br>Spring | Dry   | Full Season<br>4-8"   | Conif., Decid. W.<br>Shade      | High Humus<br>Moist | 6.0-7.0 | Seed<br>Division  |

<sup>\*</sup>Popular and relatively easy to grow.

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| Elk River . |   |   |   |   |    |   |   |    |   |   |   |  |  |  |  |        |
| Izaty's     | * |   |   |   |    |   |   |    |   |   |   |  |  |  |  | . 60.7 |
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# EDITOR'S CORNER

By Bill Johnson Edina Country Club



Greg Hubbard, former editor of *Hole Notes* and our likeable colleague at Manitou Ridge, sent along some interesting information about environmental safety.

A new research report from The Center for Golf Course Management [CGCM] confirms that golf course superintendents consider environmental safety to be an extremely important priority in maintaining their courses.

In its nationwide study, CGCM concludes that superintendents are "very concerned about choosing maintenance practices that will not negatively affect the environment."

This reaction was very evident from the responses.

**When asked to rate their level of concern** about the environment when making maintenance decisions, responses from superintendents averaged 6.27 on a 7-point scale, where "7" represented the highest level of concern.

When asked to rank special areas of concern, superintendents gave groundwater protection the highest priority. Notifying the public of chemical applications, water-use restrictions and regulations on underground storage tanks and hazard communication also were cited as priority concerns.

**John Schilling, executive director of our national association,** notes that the survey provides "strong evidence that our members are fully committed to doing their jobs in an ecologically responsible manner." He also said that "the study clearly shows that golf course superintendents are very well informed about our nation's environmental priorities."

Known as *Buying Habits of Golf Course Superintendents*, the study was conducted by CGCM as part of a major new research effort to determine trends in golf course maintenance and to track the purchasing and budgeting practices of superintendents.

A recently created GCSAA subsidiary, CGCM performs market research to document facts and trends in the maintenance and management of golf courses. Several prepared reports are now available through the Center, and companies can custom design reports on individual research topics.

According to Schilling, several of the industry's leading corporations already have purchased copies of the *Buying Habits* report, which is available through CGCM for \$945.

The Maintenance Trends Report, which documents the opinions of certified golf course superintendents on five key maintenance practices and industry trends, can be obtained for \$100. For more information, call CGCM at 1-800-472-7878.

**Jack Kolb from Turf Supply** has informed me that Calo Chlor will not be accepted by UPS for shipment. Calo Chlor is a fungicide used to control snow mold on golf course greens and tees. Golf courses in the outlying areas will have a very difficult time obtaining the fungicide if UPS will not deliver it.

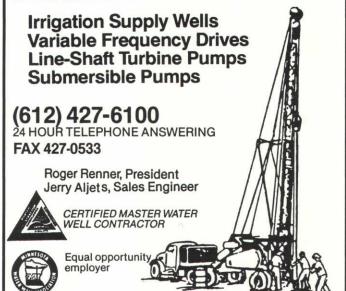
-Bill Johnson, Editor

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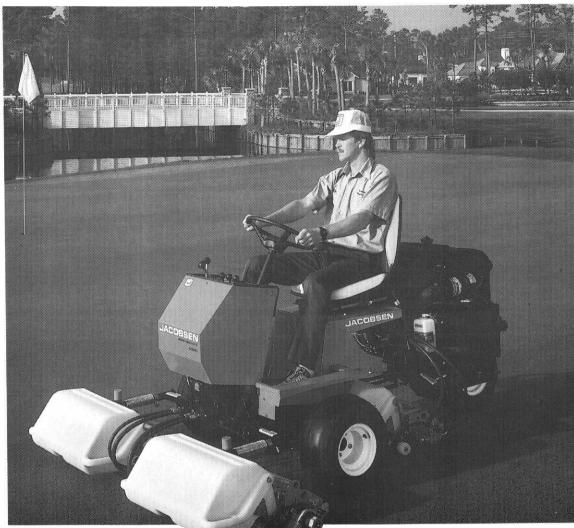
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