

MGCSA AFFILIATE NEWS

Jeff Churchill Accepts New Position

Custom Retaining Walls, Inc., with locations in Rochester, LaCrosse and Cottage Grove, recently announced the appointment of Jeff Churchill as regional sales manager. With his newly assigned responsibilities, Churchill will help fortify the company's position within the wholesale market.

Custom Retaining Walls specializes in the distribution and installation of Rockwood modular concrete retaining walls and Interlock paving stones and site furnishings.

With his 12 years experience within the commercial turf and golf markets, Churchill will also help seek new opportunities outside the company's normal channels of business by offering its products and services to turf and golf related accounts throughout the Twin Cities and Southern Minnesota.

"The addition of Jeff to our team strengthens our position within the marketplace," said Greg Ernst, president and owner of Custom Retaining Walls. "Jeff has developed many good relationships within the turf business and by accepting his new role he will be able to introduce our company and products to new faces and markets."

MTI Announces Quality Control Process Management System

MTI Distributing has announced the implementation of a quality control process management system to insure the proper and timely set-up and delivery of commercial turf equipment.

With the technological advances in today's commercial turf maintenance equipment, it is essential that processes insure the quality of the finished product to the end user.

Mike Anderson, MTI's new president and general manager says, "We are proud to be on the leading edge of insured customer satisfaction in the professional turf management industry. We are pleased to have an open and honest relationship with our customers that has encouraged continuous improvement in the area of customer satisfaction."

Toro Company and GCSAA To Sponsor Joint Promotion for '99 U.S. Open

The Toro Company and the GCSAA will sponsor a joint promotion sending two assistant superintendents and one student GCSAA chapter member to work on the superintendent crew for the 1999 U.S. Open at Pinehurst, June 13-20. Selected individuals will spend the week working with the superintendent and golf course maintenance staff of Pinehurst maintaining the outstanding playing conditions demanded by tournament play.

Participating on the U.S. Open turf care team is a milestone in the career path for many assistants. Not only is it resume building, but it increases individual visibility within a team representing the country's finest turf care professionals. The GCSAA already provides an invaluable networking feature through its career development programs.

Applications for the program have been mailed to members of the Golf Course Superintendents Association of America, including student chapter members. Packets include the application form and a brief overview of potential responsibilities at the tournament.

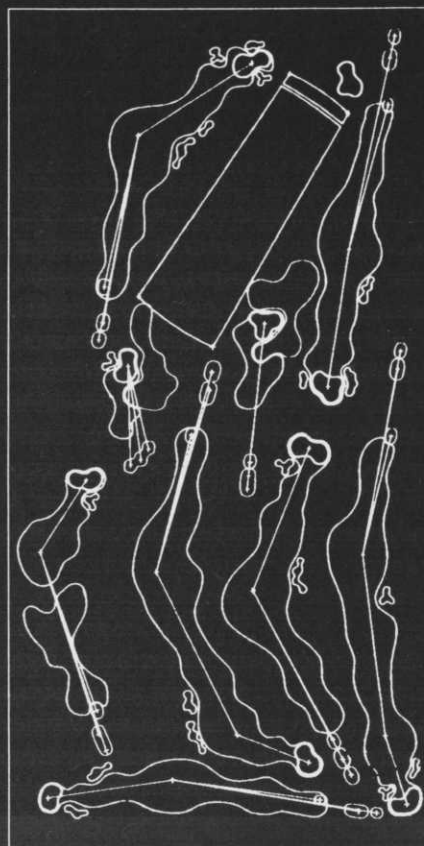
Additional applications may be obtained by calling the GCSAA Service Center at 800-472-7878 or by applying on-line through the Members section of the GCSAA Web Site at <http://www.gcsaa.org/members/torocvr.html>

Ten finalists will be selected from the applicant pool and forwarded to the selection committee at Pinehurst Country Club. Bob Farren, assistant director of golf course maintenance, and his team will select three winners — two assistant superintendents and a student chapter member.

All will participate on this tournament turf care team. Winners will be notified by May 1, 1999.

For more information, contact GCSAA Service Center by calling 800-472-7878.

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Weeds, Moss and Dead Poa—

(Continued from Page 20)

on *Poa annua* applying surfaces and severe losses of turf occurred after several bouts with severe thunderstorms undated previously dry courses with several inches of rain. High winds associated with lines of thunderstorms also cause extensive damage to trees on many courses during the summer. Acres of *Poa* turf on fairways died or were severely injured after a few days of heavy rainfall during August. Preventive fungicide applications and grub control did little to prevent the loss of *Poa* last summer, which took superintendent and golfers by surprise. Scalping the turf after the heavy rain probably contributed to the injury. Golfers grumbled about poor fairway conditions well into October and were typically unwilling to accept that the injury was weather related and beyond the superintendents control.

Atypical weather persisted well into fall. A warm November and early December had many superintendents second-guessing themselves regarding the use of covers on greens. Covers encouraged turf growth on greens at some courses until late December. Some superintendents removed covers, mowed the greens, and then re-applied snow mold fungicides, while others did nothing. The implications of delaying the normal hardening off process by covering turf will not be known until this spring.

What will the last season of the millenium hold for your course? Only time will tell.

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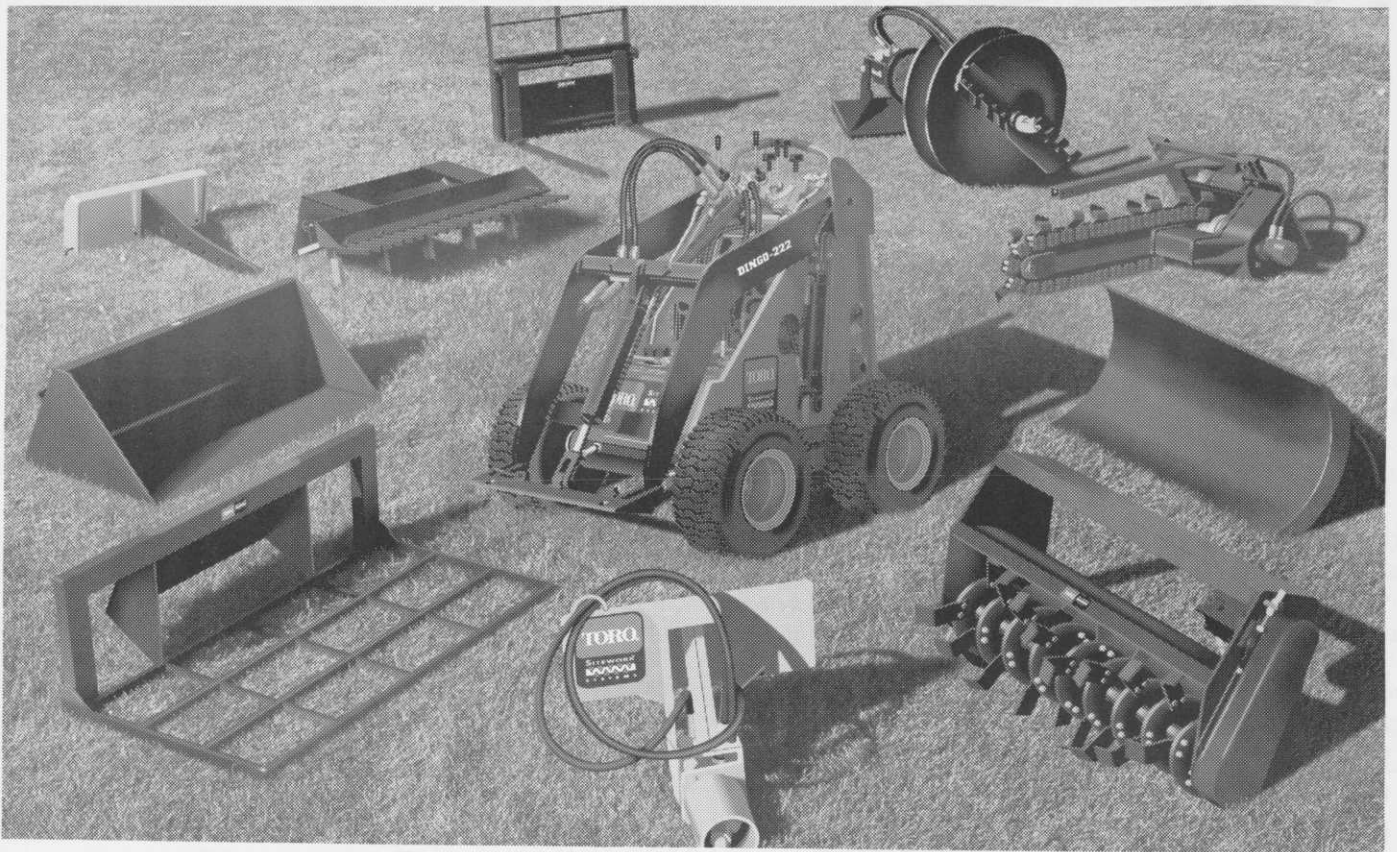
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Calcium

A Major Player With Returns Above and Below

By **RICK GABLER**
Floratine Products

We all know how critical the correct nutrients within the soil and turfgrass are for turf survival during the more stressful periods of time. Calcium is one of the nutrients to help with this task. Its nutrient-carrying capabilities within the turfgrass are critical. Its responsibility within the soil is major. Then why do we not see it added to fertility programs more? Let's go over some of the major proven facts of Calcium, before we try to answer this.

Calcium Improves Soil Structure In Heavy Clay Soils

Calcium is used to flocculate the clays in the soil. Flocculation is the process where smaller clay particles are broken up and then held together in fewer but larger particles. These particles allow more air space between them which means more air and water movement down through the root system. Better infiltration and conductivity results in less water on the surface which may help minimize algae problems.

Calcium Helps Plants Absorb Nutrients Better

In a simplified manner, Calcium is a nutrient carrier in both the soil and the turfgrass tissue. In the soil it helps control the water movement and conductivity which means it can deliver more nutrients from the soil solution. In the turfgrass, Calcium helps regulate water and nutrient uptake by the roots and the movement throughout the plant. Calcium aids cell division and cell wall formation and is critical for respiration during high heat and humidity periods. A large Calcium deficiency *within the turfgrass* could result in poor root development and little response to nitrogen or iron applications. Also, high nitrogen applications in the spring or fall can lead to wilt if the Calcium *within the turfgrass* is below its target range.

Calcium Helps Bind Organic Matter to Clay

The value of organics is increased when Calcium levels in the soil are correct. Microbial populations favor a correct Ca: Mg ratio (1). Imbalances of Calcium and Magnesium can permit organic residues to decay into alcohol, a sterilant to bacteria, and also into formaldehyde, a preservative of cell tissue. In soil tests, this is exactly what is happening when we see high levels of organics and low levels of *available* Calcium. A minimal response to organic fertilizer inputs can be seen in these situations.

Calcium Can Decrease Sodium Content in Soil

Because Calcium is divalent (double positive charge), and atomic weight of the Calcium molecule being 40 and sodium being 23 with a single charge, sodium can be replaced on the soil colloid by Calcium. The sodium is then ionized in the soil solution, which then can be flushed.

Here are some of the findings we have seen after completing many soil reports in the Upper Midwest:

- Calcium levels in the sand-based greens are usually 70-90% base saturation. This usually means calcareous sand was used in the construction.
- Old push-up greens usually show a 55-70% base saturation of Calcium.

Which one of these is better for **Calcium availability?**
(Continued on Page 26)

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Calcium—

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It may be difficult to say until you do a soil test called "Water Soluble Paste Extraction." This test takes a sample of your soil, and adds either distilled water, or even better, your irrigation water. The soil solution is then sucked from it and analyzed for nutrients in the soil. Unless Gypsum, Limestone, Dolomitic or a liquid Calcium source has been applied, we typically see a low level of available Calcium. When the available Calcium reaches its target range and is in balance with other nutrients, the result on the turfgrass and soil is very significant. Disease, algae, thatch, LDSA, watering and color uniformity can be greatly affected.

Some Available Calcium Sources

Gypsum. Usually around 22% Calcium and 16% sulfur. Most widely used. Does not significantly effect pH. Check sulfur levels in the soil before application.

Limestone. Usually around 36% Calcium. Can raise pH.

Dolomite. Usually around 21% Calcium and 10% magnesium. Can raise pH. Check magnesium levels in the soil before application. *(The above three products are usually in granular form but liquids are available.)*

Liquid Calcium. Usually around 8% Calcium. Immediately available to the turfgrass.

The answer to why we don't see Calcium used more often is in the above mentioned products. The granular Calcium products that were available years ago took a long time to break down in the soil and were messy during application.

Many times the results were not seen until the next year. How many times have we seen limestone used to make something on a course or athletic field and then the next spring the grass was greener where the limestone was applied?

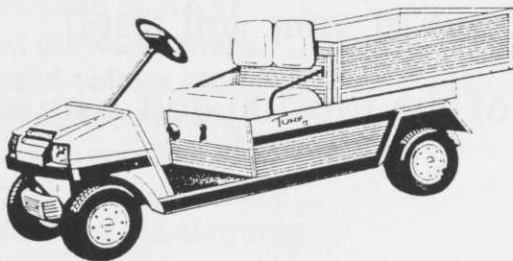
New granular products are sold today where the availability of the Calcium is significantly improved. Now some manufacturers pulverize the gypsum or limestone and then bind the powder with an organic water soluble binder into very small beads. Upon application to the turf, and after the first watering, the product disperses into the soil. The exposed surface area of the Calcium is greatly enhanced over the old chunks and rocks of older products. More surface area means a faster break down into the soil. There are no powder clouds drifting around during the application and no big bumps on the greens or tees. No powder means no loss of product to the wind and no foot marks.

Liquid Calcium applications are very fast in delivering the available Calcium to the turfgrass when applied correctly. Don't let the low application rates fool you. The liquid Calcium products are usually complexed for foliar uptake or chelated for staying in the soil solution for uptake by the turfgrass roots. Since most liquid Calcium products can only contain a maximum of approximately 8% total Calcium, the addition of bulk granular Calcium to the soil might be required per a soil report.

Calcium has been building and strengthening our bones for many years, now try it on your turfgrass. It will like it and, in return, strengthen you.

References: (1) *Eco Farm, C.J. Fenzau.*

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How to Save Dutch Elm Infected Trees by Tracing

By TOM PROSSER
Rainbow Treecare

Tracing Dutch Elm disease and saving elms is not a difficult process. In fact, it can easily save many elms that are infected well into the trunk. However, it can be tricky and the arborist performing the tracing must have a basic understanding of how Dutch Elm disease grows in the tree as well as an elms vascular physiology. If the disease has entered the root system of the elm, this process will not work and the tree needs to be removed.

The Goal of Tracing

This process will only work if *all* the disease fungus is isolated from the rest of the tree. This sounds much harder than it actually is. If you clearly understand the essential points as stated below, with a little practice you will easily be able to perform this operation. You will readily be able to predict where the disease is growing inside the tree and be able to put walls between it and the healthy portion of the tree. Many trees are saved every year. The disease is so predictable that seldom are trees lost after isolating the infected part.

Basic Information about Dutch Elm Disease, Elm Physiology and Tracing

Dutch Elm disease is a fungus. It usually enters an elm through a 2-4 year old twig, on the back of the European elm bark beetle. Once inside the tree, the disease starts to grow downwards at a rate anywhere between one inch to one foot per day. It is important to note that the Dutch Elm fungus moves downward much faster than it spreads laterally. In addition, it *only* grows in the current year's water conducting tissue — never deeper. The disease causes the tree to produce a dark brown stain in the xylem. These brownish "tyloses" are not the disease, but the tree's reaction to the disease are what the arborist will use to follow the disease.

The architecture of a branch/trunk junction only allows the disease to grow down. This is because the vascular tissue connection is only at the bottom of a branch. This is different than a co-dominate stem junction where the vascular tissue is connected on all sides. The reason you need to know this is that when tracing an infected branch, the disease will only grow out the bottom of the branch into the trunk or stem. Thus, it is often unnecessary to remove that whole limb, as the disease is often isolated to growing below that branch.

Once this information is clearly understood, the tracing process should be within reach of most anyone who has the

patience and care to thoroughly finish the process.

The Steps of Tracing Dutch Elm Disease

The tools needed for tracing are a chainsaw, a hammer, a sharp chisel and a sharp-pointed pick.

Step 1

The first step of tracing DED is to pick your candidate wisely. Because the symptoms of this disease are often behind the growth of the fungus, symptoms alone cannot be your guide. To determine if a tree can be saved, "exploratory surgery" must be done. This involves finding the point of the infection and then opening small windows progressively down the tree looking for the characteristic brown staining. When doing this, notice how the width of the fungus growth gets narrower the further down you go. For a tree to be saveable, the disease discoloration must end at least 10 feet above the root system. One exception to this scenario exists, that is if the disease has grown into the center of a co-dominant stem. If this happens, the disease may grow upward into the rest of the tree quickly and the tree may not be saveable. Note: In some cases, there are multiple disease infection sites; each one needs to be traced.

Step 2

Once the tree has been determined to be a viable candidate, the tracing process can begin. The first step is to remove the infected branch or branches that are less than 6 inches in diameter. Once you reach infected limbs over this size and the disease stain comprises less than a third of the circumference of the branch, you can begin the tracing process. If the disease comprises more than 1/3 of the branch circumference, it is advisable to remove this limb back to the collar.

Step 3

Begin tracing at the point where the diseased branch was removed. The first step is to cut a window to get an idea of the size of the disease and the direction it is growing. Using a chainsaw, cut a 1-1½ inch deep groove 1-2 inches on each side of your estimated disease stain. Since the bark is in the way, you will need to interpolate the path the fungus is growing. This first section should go 6 inches down. Then cut across and connect the two cuts. Take the hammer and pound on the bark. It should pop off revealing the disease stain and the direction it is going. If the disease stain goes wider than estimated, be sure to increase the

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Dutch Elm Disease—

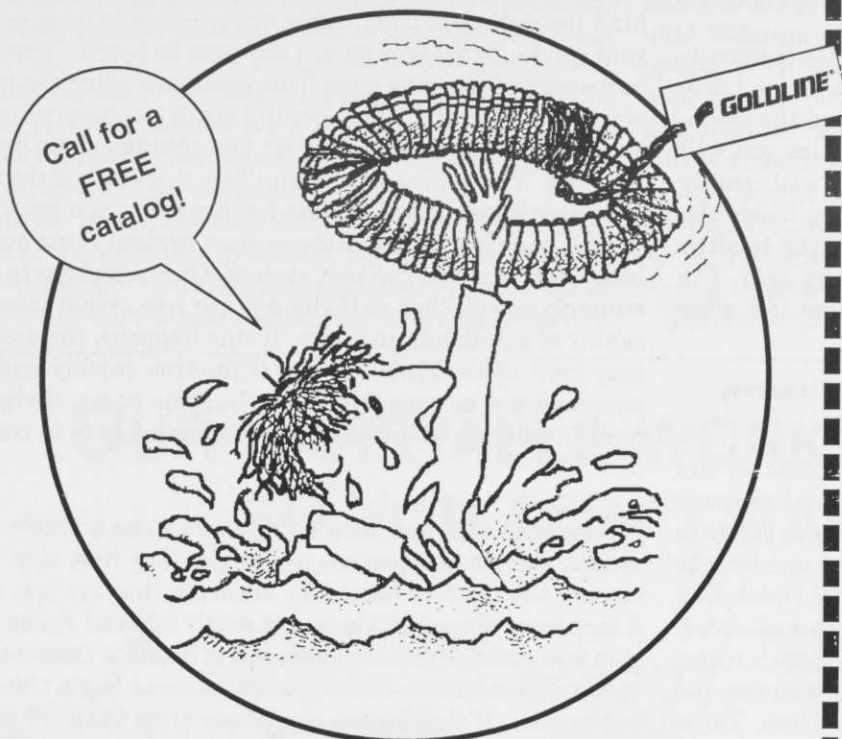
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width of the isolated area. Also, be sure you create a buffer zone of clear unstained wood of 1-2 inches to the outside of the growing disease.

Step 4

Keep repeating the above process all the way down the limb and into the trunk. This will take practice and patience at first; as you get experience, you will be able to go much faster. In many cases the disease will not go exactly straight, but will follow the twists and turns of the xylem. The pattern of the bark can be a useful tool to help predict these turns. However, the staining must be your guide.

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Step 5

Eventually the disease stain will become very thin and then disappear. Because the tyloses stain is a symptomatic reaction to the disease, the tracing must continue for a minimum of 10 and a maximum of 15 additional feet to insure all the disease is compartmentalized. This is the trickiest part of the process, but by using a sharp pick or nail you will be able to "light up" the xylem and continue tracing. At this point, stick the pick into the xylem — you will notice that the xylem in both directions will turn a lighter color. This will be your guide to making sure you are isolating the infected xylem and not going off course. Once you have gone at least 1-15 feet past the last visible stain, you are finished. If you have isolated all the disease from the rest of the tree, it will be saved.

Step 6

The final step is optional: injection of Thiabendazole (Arbotect 20-S) using the University of Minnesota technique and dosage. While this will not cure infected tissue that may have been missed, it will very effectively protect the tree from future infection for 2½-3 years.

Important Notes

- Because this tracing process leaves a wound on the tree, it is important not to cut too deep. Deeper than one inch below the bark and two inches outside the stain is usually unnecessary.
- Early season disease signs often reflect an infection from the year before. In these cases, the symptoms can be very far behind the disease in the tree and some disease will be located in last year's xylem hidden underneath this year's tissue. A chisel can be used to scrape away this year's xylem to make sure the disease is not in last year's vessels.
- Wet springs often result in larger xylem tubes and a faster moving disease. Conversely a dry spring will result in smaller xylem tubes and much slower moving disease.
- Because there is an element of risk, other elms in root graft distance need to have these root grafts physically or chemically disrupted in case the procedure fails.

* * *

Editor's Note: This procedure was developed by Tom Prosser of Rainbow Treecare in Minneapolis and has been successfully used to save hundreds of infected elms.

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EDITOR'S CORNER

By Steve Shumansky
Perham Lakeside Country Club



Cabin Fever

Do you have it? Are you thinking about how nice it's going to be when all the snow is gone and the ice on the lakes melts away? That is what I've been thinking about these past couple weeks. I can't wait until I can go out on the course and see how nice everything will look. Besides, my fish house is on dry land and the Walleye season is over for a time, not that they were biting very much the last month of the season. The sun is shining and warming everything up. So far, this winter has been rather good to us, no ice anywhere and enough snow cover to keep a blanket on everything. As long as it doesn't turn really cold and stay that way for a long period of time, I don't see any problems for anybody. (I hope I haven't jinxed anybody by saying that!)

Are You Ready

Spring is almost upon us. The time to kick butt is right around the corner. By now our equipment has been serviced, cleaned up and ready for another season's use. I'm getting that itch to start painting all the amenities, i.e. benches, ball washers, tee markers, etc. And when that happens, the feeling of a new season brings a feeling of freshness.

For me, I had better finish up those around-the-house

projects before the busy time hits. Otherwise it'll have to wait until November. And I hate when that happens. Living out of a suitcase or bathing in a sink are not my cup of tea.

Golf Show

Paul Eckholm would like to take this time to thank everyone who helped out at the Golf Show held February 19-21 at the Metrodome. Supporting our association is something we need to do to keep it viable. Maybe a lot of people didn't even know we have a booth there. It's my fault for not announcing it in *Hole Notes* for you to sign up. I know Paul talked to people about working it, but I can say it made for a long weekend for us. (Yes, I drove down and helped, too.)

Notes

Congratulations go out to Tom and Tracy Johanns on the birth of their son Steven Russell in January.

* * * *

The MGCSA wishes to thank P&H Warehouse for its generous contribution for the Orlando Hospitality Night.

* * * *

Condolences go out to Steve Young whose father passed away this winter in Arizona. Steve is an affiliate member from Plaisted Industries who served on the MGCSA Board of Directors this past year.

* * * *

With this I'll close. I've run out of things to talk about. I hope as the snow melts and spring arrives you and your courses are in good health!

See ya next month.

— Steve Shumansky
Editor

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