Chemical Tools for Lakes and Ponds

By Jim Schmidt

A variety of chemical "tools" are available to effectively and selectively manage most aquatic vegetation problems. Today's products have withstood the rigors of current Environmental Protection Agency (EPA) requirements and the ongoing re-registration standards. A sampling of products, descriptions and manufacturers follows. As with all chemical products, *read the entire label before choosing and using the product.*

Aquashade (Applied Biochemists Inc.). This product is the *only* EPA-registered and patented lake and pond dye for use in aquatic plant growth control. It functions by restricting the penetration of certain wavelengths of light into the water column, thereby suppressing photosynthesis. There are no water-use restrictions on swimming, fishing or irrigation following treatment. Shoreline and surface growth will be unaffected. The water retains an aqua-blue coloration following treatment, which should be periodically maintained with subsequent dosing.

Aquathol (Actochem Inc.). A contact herbicide with dipotassium endothal as its active ingredient. Effectively controls a fairly broad range of submerged aquatic vegetation, especially those belonging to the pondweed (*Potamogeton spp.*) genus. The product is also available in granular formulation for spot treatments. Water-user restrictions are: one day no swimming, three days no fish consumption, and seven to 21 days no irrigation (depending on the dosage used). Bentgrasses, however, can be irrigated immediately.

Cutrine-Plus (Applied Biochemists Inc.). A concentrated, chelated copper algicide containing 9-percent copper as its active ingredient. Chelation holds the copper in solution under a wide variety of water quality conditions. This provides a longer contact time and longer control at lower dosages than copper sulfate. Cutrine-Plus controls planktonic (suspended), filamentous (mat-forming) and bottom-growing (Chara) forms of algae. There are no water-use restrictions following treatment. The product is also available in a granular formulation for use on bottom-growing algae.

Hydrothol 191 (Elf Atochem). A herbicide-algicide effective against a wide range of submersed aquatic weeds and algae. Water-use restrictions are: 3 days no fish consumption, 7 to 25 days no domestic or livestock use. Liquid and granular formulations are available.

Komeen (Griffin Corp.). A copper-ethylenediamine complex herbicide effective on hydrilla, elodea and southern naiad. No restrictions on water usage at label rates.

K-Tea (Griffin Corp.). A chelated copper algicide effective against planktonic, filamentous and chara algae. No restrictions on water use following application at the recommended rates. Works in hard water.

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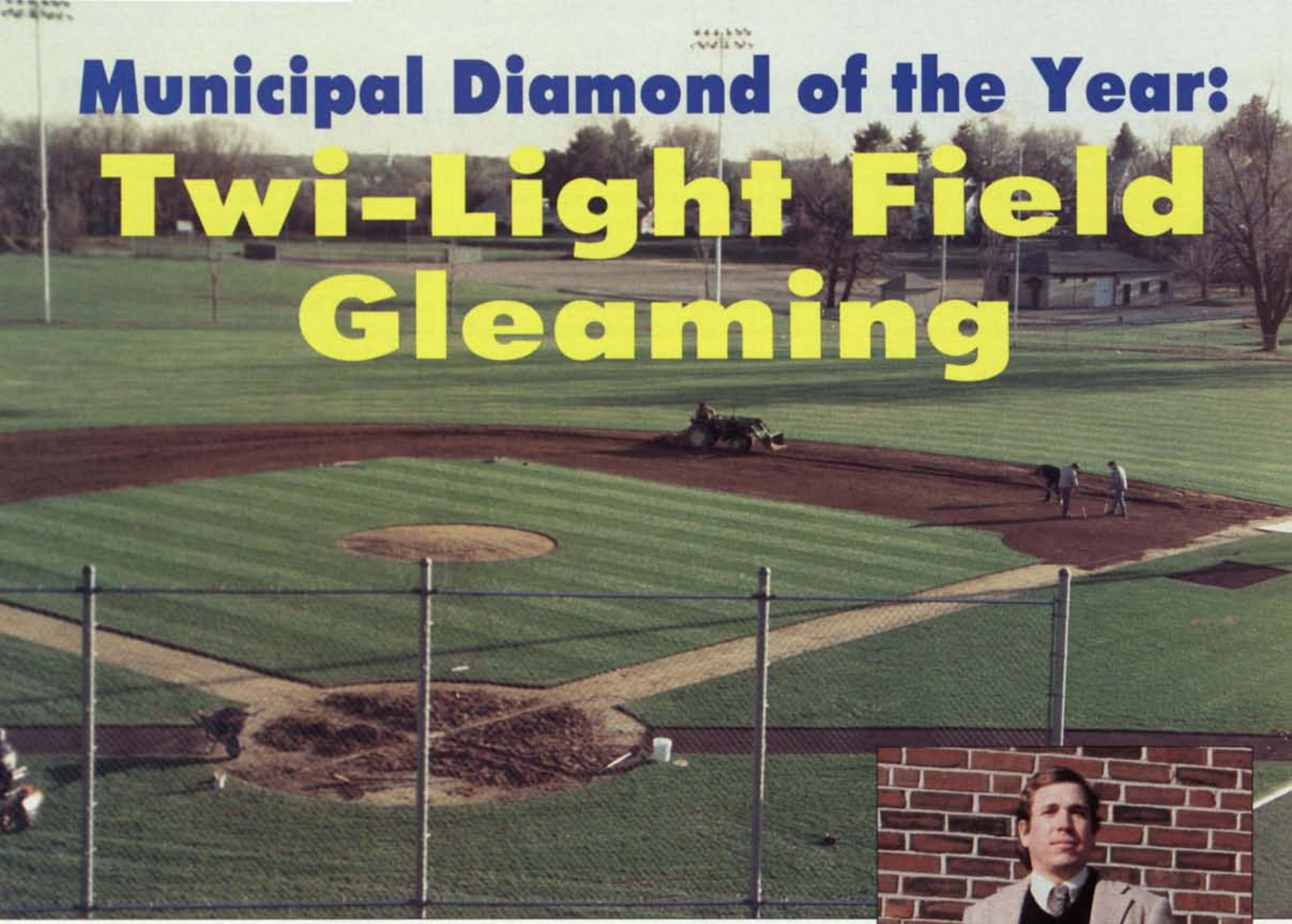
Municipal Diamond of the Year: Twi-Light Field Gleaming



Twi-Light Field. Infield skinned-area construction.

John Schmidgall.

By Bob Tracinski

Prior to renovations in 1985 and 1986, Twi-Light Field in Danvers, MA, sat on a dense clay base with an infield that gradually dropped 2 1/2 to 3 feet lower than the surrounding turf. That made for a *significant* drainage problem.

"After a rain, it was more like a lake than a ball field," says John H. Schmidgall, tree and grounds supervisor. "Today, visiting teams, coaches, officials and fans continuously comment about the quality of the site. Area residents would have to travel to Fenway Park, home of the Boston Red Sox, to view a field of equal quality."

The field is Schmidgall's baby, so he may be slightly biased. On the other hand, his high opinions of Twi-Light Field were confirmed recently when it was named 1992 Municipal Diamond of the Year.

Lay of the Land

Danvers is located 12 miles north of Boston, within a coastal area referred to as the North Shore. Baseball programs throughout the area are numerous and extremely active, with inner-town and city leagues for players of all ages. Field use normally begins during late March and is coordinated by the town of Danvers recreation director and school department athletic director. Last season, between April 1 and August 31, 136 games were played on Twi-Light Field. Practice sessions and specially scheduled training programs are not included in this total.

Throughout the summer, nighttime doubleheaders are played under eight light standards that jut 70 feet into the dark skies. Each standard supports a number of 1,000-watt metal halide lamps. The energy of 150,000 watts lights up the entire field after dark.

Twi-Light Field was originally established at its present location in 1968. By 1983, the field was extremely worn. It had elevation and drainage problems, lacked desirable turf and featured a number of dimensional inconsistencies. It wasn't the only field in distress in the Public Works Department system — eight softball fields and four Little League fields also needed serious renovation.

To its credit, the town recognized the importance of maintaining safe, professional-quality facilities. Danvers' decision-makers had the vision to search for a professional's assistance in work-

ing toward long-range capital improvements in grounds under the care of the Public Works Department.

That desire and attitude, and the challenge of reaching those lofty goals, drew Schmidgall to the job. He joined the town of Danvers in his present position in 1983.

Renovation Strategy

As tree and grounds supervisor for Danvers, Schmidgall oversees all town property — athletic fields, parks, playgrounds, public lands and roadsides. In addition, he's the "tree warden" in charge of landscaping and maintenance for all trees, shrubs, flower beds, and other plant materials.

Schmidgall came prepared. Hooked on sports turf from working weekends and summers on golf courses, he entered the University of Massachusetts School of Agriculture and earned his degree in turf management in 1974. After graduation, he spent nine years in charge of the athletic fields, schools, public lands, parks and playgrounds for the town of Wakefield, MA. As a member of the national Sports Turf Managers Association, he's become acquainted with other facilities throughout the nation via publications and newsletters. He also serves as membership chairman of the New England Sports Turf Managers Association.

During his first two years at Danvers, Schmidgall analyzed existing conditions at the various facilities, pulling together a workable plan of renovation that would tackle one or two fields a year.

Twi-Light Field was the first on the schedule, and Schmidgall was determined to turn it into a first-class, pro-level facility. Since he would be handling the design and overseeing the renovation and subsequent maintenance, he wanted to consider a wide range of options. He checked out professional fields, looked at field layout and studied construction. He weighed the pros and cons of various drainage and irrigation systems and compared details of each aspect of superior fields.

His final design retained the positive characteristics of the original field. The same distances were kept in the outfield and the "homey" feel was retained.

"The design is very similar to Jack Murphy Stadium in San Diego, though I hadn't seen it before completing the plan," Schmidgall explains. "We used the same cutting pattern, the same infield baseline set up. Take away the formal seating and Major League accompaniments, and you've got Twi-Light Field."

The field has limited bleacher seating. For tournament play and big games, fans set up lawn chairs to extend viewing space and keep the crowd out of the way, yet close to the action.

Total reconstruction of the field began in September 1985. Existing topsoil and infield clay were removed and stockpiled for reuse. The elevation of the infield playing surface needed to be raised approximately 2 1/2 feet to conform with the elevation plane of the outfield. To accomplish this and create a drainable subsoil, the clay base was modified and supplemented with nearly 28 inches of gravel.

A formal herringbone drainage system was installed, utilizing 4-to-6-inch "ADS Drain-Guard," spaced at 10-foot intervals and bedded in stone. The main drain line runs down the center of the field and flows into an active street drain. Because of modifications to the subsoil profile, gravity drainage is sufficient.

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An automatic irrigation systemwas installed in the gravel base throughout the entire field and adjacent complex. Schmidgall used stakes to maintain accurate positioning and to keep sprinkler-head elevation set with the field grade.

The outfield soil was modified and mixed off-site to develop a suitable soil profile for sports turf as specified by the Texas A&M Soil Science Department: 80 percent sand, 10 percent soil and 10 percent peat. The custom-made profile was then returned to the field.

The infield soil mix specified 70 to 80 percent sand, 4 to 8 percent silt and 16 to 25 percent clay, with precise screening requirements set for the sand components. A density of 1,890 to 2,025 pounds per cubic yard was required.

Approximately 8 inches of these modified soils covers the gravel subsoil.

As if the challenges of field renovation weren't enough, the fall of 1985 brought excessive rainfall to the North Shore area. Nearly 6 inches of rain fell in 1 1/2 months. However, the major field portion of the reconstruction was completed.

Throughout the summer, nighttime doubleheaders are played under eight light standards.

One-hundred percent bluegrass sod was put in place on December 12 and immediately buried by snowfall.

Work resumed in the spring, although the weather continued its soggy pattern. Says Schmidgall: "We used plywood and pumps to counteract the wet conditions so we could install the asphalt for the bleacher pads, walkways and such, and do the finish work on the surrounding field."

Schmidgall used some innovative touches in the construction process that paid off well. "We framed the field with 2-by-6-inch strips of wood, similar to the process used for a concrete pour," he reveals. "The forms were set to finish grade around the baselines, mound and perimeter so that when the topsoil layer was poured they had a standard to meet. That allowed for consistent compaction when placing the outfield and infield soil-sand-silt mixes and the skinned area mix. It also set separation barriers between the different soil profiles and retained all dimensions. The framing strips were set 1 3/4 inches into the clay and the sod was laid right up to the edge of the infield mix.

"By spring, the soil mixes were set in and compacted. One week before game time, we pulled the boards and were rewarded with solid, precise sod edges. The field was in ideal shape when the first game was played on May 2."

Preserving the Efforts

Schmidgall hand-held the field through the renovation process. Equally important, he says, was the need for optimum playing conditions at all times. He developed a solid turf-maintenance program to meet that goal.

"The biggest challenge affecting the program is caring for the turf while the field is in use," he explains. "Maintenance practices, including soil cultivation and chemical applications, must be coordinated around the fully scheduled training and game schedules."

To this end, he developed an extensive year-long maintenance program, as well as a daily maintenance regime. Each gives a step-by-step breakdown of activities to follow during a "normal" day or month. But as always, the turf manager must monitor conditions continually and be flexible enough to cope with unusual use or weather patterns.

Schmidgall starts every season with a soil test of both infield and outfield areas. Fertilization programs are then adjusted according to test results. Monitoring turf color, thickness, growth rate and other visual factors lead to further modifications throughout the season.

"At first, we tried to stretch our fertilization program to get the greatest long-term nutrient release effects from each application," he says. "Now we add supplemental fertilization with nitrogen and a micro-nutrient package with every tank mix application. By putting on just a 'kiss' of extra nutrients, we give our turf a good green color and keep it growing at a reasonable rate. Keeping turf out of a stress situation makes all the difference in field quality.

"Because of the high sand content within soil, frequent irrigation, and clipping removal," he continues. "The bluegrass infield receives 7.5 pounds of actual nitrogen per 1,000 square feet over the course of the growing season."

With the Northeast's normal temperature and humidity pattern, Schmidgall has incorporated an aggressive preventive fungicide application schedule into the program. For weed control, Gallery pre-emergence weed grass and broadleaf control is combined with a wetting agent, root enhancer and liquid manure for early April application. Additional weed control has not been necessary. Grubs are the basic insect problem and are handled with spot treatment as needed.

"Thatch buildup and a lack of cultural practices can devastate a field," says Schmidgall. "Normally, we use core aeration in mid-March, followed by a second core aeration, dethatching and verticutting in early April to stimulate rhizome activity. A third core aeration

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takes place in mid-May. In mid-August, we do the fourth core aeration and second verticutting. The fifth core aeration takes place in mid-September, followed by a sixth in mid-October combined with a second power dethatching. Deep aeration is done once each year. Obviously, weather conditions like this season's alter this scheduling."

Both core aeration and verticutting are done in two directions. Cores are left a day, then dragged or run over with the verticutter. Hand-raking removes the debris, which is normally just thatch. Areas are topdressed as needed.

"Various organics are included throughout the season to reduce thatch and promote root vigor," says Schmidgall. "We've used a turf reduction agent (Bio-Thatch) and found that we have 1/4-inch less thatch build-up than before."

As if the challenges of field renovation weren't enough, the fall of 1985 brought excessive rainfall to the North Shore area.

Daily maintenance tasks, except mowing, are assigned to one employee. During the active season, this takes approximately six hours each day.

The daily routine can include litter cleanup of the entire complex, backpack blowing of hard surfaces, painting foul lines, marking baselines and homeplate boxes to professional specifications with white pulverized marble, and manicuring infield skinned areas.

"Because the edges of the base paths are raked every day, lips aren't much of a problem," Schmidgall asserts. "We aim for efficient, cost-effective maintenance. For example, a 1-inch hose with syringe nozzle can be operated from a snap valve located behind the pitcher's mound.

One person is assigned to mowing all the baseball/softball fields. The outfield of Twi-Light Field is mowed every other day. Now that a plant growth regulator (Cutlass) is being used, the infield can be mowed daily to a 1-inch height. Prior to PGR use, the infield height of cut was similar to the outfield, from 1 1/2 to 1 3/8 inches.

Says Schmidgall: "The PGR decreases the length of the crown area. We have more mat and reduced steminess."

Major annual renovation, including power-edging of all field dimension sod lines to original specifications, is done in November. During this process, the crew strips and resods worn turf areas. They fill, spread, grade and roll in new infield dirt and warning-track material as needed and replace all pitching rubbers and homeplate. After this is completed, they power-spray an application of antidesiccant combined with turf colorant to aid winter hardiness and early spring green-up.

Players who use Twi-Light Field have become part of the maintenance team. "After the first season of use following the renovation, I saw signs of wear," Schmidgall says. "I communicated my concerns to the recreation director and we agreed to ask the users to lend a hand on infield maintenance, especially between doubleheaders. I chip in a couple of weekends teaching the proper techniques, and we supply the rakes and other materials. Then it's a matter of keeping open communications."

Schmidgall asserts that any city can put together a program similar to that of Danvers' with the help of a knowledgeable sports turf professional, access to equipment and the combined efforts of everyone involved.

"It was Danvers' desire to offer baseball players of all ages an ideal environment to improve their baseball skills," he concludes. "The whole sports community shares a mutual goal: to have a great facility for play and as an asset aesthetically. We've come a long way from that infield lake." ❑

Editor's note: Bob Tracinski is the manager of public relations for the John Deere Company in Raleigh, NC, and public relations chairman for the Sports Turf Managers Association. The Diamond of the Year Awards are sponsored by Beam Clay, STMA and sportsTURF Magazine.

For information on the New England Sports Turf Managers Association, contact John Schmidgall at (508) 777-0001, ext. 3014.

CHEMICAL LOG

Mole Crickets a Threat This Season

By Jim Shuford

The storm of the century, record high and low temperatures — you name it, southern turf managers have faced it this spring. To make matters worse, mole crickets are beginning their spring hatch. Sports turf managers and superintendents from Florida are reporting nymphs in various stages of development.

Beginning in mid-March, mole crickets begin their annual mating flights. The tawny mole cricket is usually the first as well as the most damaging variety. Little is known about individual behavior patterns of mole crickets, but university research indicates tawnys lay their clutches in the same place each year. If correct, this would explain the yearly mole-cricket hot spots that appear in turf in the South.

Bahiagrass and bermudagrass are the dominant turf hosts for mole crickets. St. Augustinegrass has also fallen prey in recent years, causing turf managers to make unscheduled and unbudgeted pesticide treatments.

The combination of cricket size and changing spring weather patterns make control and timing treatments difficult. In recent years, turfgrass managers have begun to rely more on mapping as a means of planning treatment programs. As previously mentioned, mole crickets tend to infest the same areas year after year. Using this information and keeping detailed records, turfgrass managers can more effectively time their treatments for optimum control.

Treatment programs using baits containing Sevin or Dursban have performed well in tests against adults and large nymphs. In many cases, they are easier and more economical to use than sprays. Oftanol, once a mainstay in mole-cricket control programs, has fallen off in popularity but is once again being programmed. Used properly, it can provide excellent results. (As with all chemicals, make sure to read the label carefully prior to use and adhere strictly to manufacturer-specified application rates.)

Several new products are due out in late 1993, including Scimitar from Zeneca and Merit from Miles. Only time will tell if they are successful new tools in the never-ending battle against mole crickets.

Editor's note: Jim Shuford is with United Horticultural Supply.

PRESIDENT'S MESSAGE

Sports Turf Managers Association

By Gil Landry

Spring always provides a feeling of optimism — an opportunity for sports turf professionals to work off the frustration of the winter doldrums and apply the latest techniques they've learned through reading or attending educational programs.

Spring usually is *not* the time to think about upcoming fall and winter conferences. However, planning for those conferences is already under way. Since professional improvement through education is a major objective of STMA conferences, mark November 7-9 on your calendars for the Sports Turf Managers Association's fifth annual conference and exhibition. I am confident our educational program will provide an excellent opportunity for professionals to learn about the latest in sports turf technology.

The fifth annual conference and exhibition theme is "The More We Know, the More We Grow." It will be held in the unique confines of Oriole Park at Camden Yards in Baltimore. Baltimore is the ideal location for the national conference. It is our first trip to the East, and it offers you the opportunity to see and feel both cool- and warm-season turfgrasses.

Conference co-chairs Greg Petry and Dr. Henry Indyk have worked closely with our Chesapeake Chapter, represented by Joe Ardolino and Camden Yards Head Groundskeeper Paul Zwaska, to make conference arrangements. In addition to Oriole Park, the group is working on possible tours of JFK Stadium, Townson State University Campus and research turf plots at the United States Department of Agriculture in Beltsville or the University of Maryland.

Keep your eyes open for more information this summer. Be sure to enter our member referral contest — you can win round-trip airfare and free registration to the conference. Better yet, since we are in the midst of our 1993 membership drive, join us. For contest and conference information, contact STMA Headquarters at (312) 644-6610.

If you intend to make a career in the sports turf industry, you need to consider membership in a professional organization. STMA should be your organization. We are the only professional association that represents all aspects of sports turf management. For more reasons for professional membership, see our ad in this magazine.

As spring signals the official beginning of major league baseball and the drive of your favorite team to an October engagement with the World Series, think about becoming a member of the best organization for sports turf professionals and join us this fall for "The More We Know, the More We Grow."

STMA Chapter News

The New England Chapter, STMA: Future plans of the New England Chapter include a day-long seminar to be held August 11 at Forest Park in Springfield, MA. This event will include educational sessions; equipment demonstrations; a trade show; and the annual business meeting and election of officers. Further details will be announced soon.

For information on the meeting, trade show exhibit space or other chapter activities, contact: Mary Owen, University of Massachusetts Cooperative Extension System, at (508) 831-1225.

Carolina Chapter, STMA: For information on the Carolina Chapter and its activities, contact: Marc Farha, facilities manager for the Charlotte Knights, at (704) 332-3746.

Iowa Sports Turf Managers Association: ISTMA will hold a "Hands-On Workshop" August 4 in Des Moines, IA, at Sec Taylor Stadium, home of the Chicago Cubs' AAA affiliate. Registration for this full-day workshop begins at 8 a.m.

The program will be directed by two sports turf leaders: Mike Andresen, head groundskeeper of the Iowa Cubs, and Jesse Cuevas, stadium superintendent of Rosenblatt Stadium, home of the Kansas City Royals' AAA affiliate and site of the annual College World Series.

This workshop will start off with a 9 a.m. tour of the stadium and "cover the field" on baseball field maintenance. Scheduled sessions include: "Maintaining Infield Lips, Post-Game Repairs of the Mound/Home Plate/Bullpens and Measuring the Mound Specifications"; "Proper Infield Dragging and Pre-Game Infield Set-Up"; and "Drying Puddles and Wet Areas." An exhibit area will be included and time allowed to visit the booths and talk with exhibitors.

For information on this workshop or other Iowa Chapter activities, contact: Gary Peterson (515) 791-0765.

Colorado Chapter, STMA: The Colorado Chapter is in the planning stages for a late-spring workshop on topdressing, a summer institute on care of soccer fields and a fall workshop on football field maintenance.

The Colorado Chapter will hold a workshop May 19 in Commerce City. This will be a hands-on event on the use of Turface on baseball infields. The workshop is co-sponsored by L. L. Johnson Distributors.

On June 18, the chapter will host an institute at the Colorado Springs Sky Sox Stadium. Institute events will include: informative sessions with guest speakers; vendor demonstrations; and game-day ball diamond preparations. The day will end with a game between the Sky Sox and the Portland Beavers.

For additional information on these meetings, contact: Mark Leasure (719) 597-1449 or Joe Adams at (303) 350-0390. For information on the Colorado Chapter and/or upcoming activities, contact: Ron Marten, Falcon Colorado School District 49, (719) 495-3601. ❑