

THRU THE GREEN**EDITOR**

JEAN LADUC
1356 Munro Avenue
Campbell, CA 95008

OUR OBJECTIVE: The collection, preservation, and dissemination of scientific and practical knowledge and to promote the efficient and economical maintenance of golf courses.

Information contained in this publication may be used freely, in whole or in part, without special permission as long as the true context is maintained. We would appreciate a credit line.

**PRESIDENT**

JOSEPH RODRIGUEZ, CGCS
Rossmoor GC
3312 Mountaire Drive
Antioch, CA 94509

VICE PRESIDENT

MICHAEL GARVALE, CGCS
Palo Alto Hills CC
3000 Alexis Drive
Palo Alto, CA 94304

SECRETARY-TREASURER

RODNEY KILCOYNE
Diablo Creek GC
140 Norman Avenue
Clyde, CA 94520

PAST PRESIDENT

GILBERT(PETE) BIBBER
Del Monte GC
30 Via Contenta B
Carmel Valley, CA 93924

DIRECTORS

PETER J. GALEA, CGCS
Crystal Springs GC
6650 Golf Course Drive
Burlingame, CA 94010

STEVE GOOD

Napa Golf Course
1625 Sierra Avenue
Napa, CA 94558

JEAN LA DUC

Coyote Creek GC
1356 Munro Ave.
Campbell, CA 95008

BRIAN BAGLEY

The Villages G & CC
125 Brook Lane
Boulder Creek, CA 95006

OFFICE

1745 Saratoga Ave. Suite A1
San Jose, CA 95129
(408) 865-0360

PRESIDENTS MESSAGE

This has been an interesting past few weeks since our last meeting. In fact it has been an extremely busy few weeks. Your Board of Directors held a Board Meeting on 12 July 1990 and voted to dispense with the services of our Executive Secretary. As a result of this decision the burden of handling the association business has fallen on our shoulders. This decision was made because of the best interests of the association were not being served in the proper manner.

It was then my decision to ask Myrtle Wagoner to bring our membership rolls up to date, which she graciously consented to do.

The Executive Secretary position for the Golf Course Superintendents Association of Northern California is very important in fulfilling our needs, our goals and in carrying out all of the mundane tasks that have to be taken care of on a routine basis.

The person who fills this position should also have a connection with or appreciation of the game of golf. At the present time we are actively recruiting for the position and would welcome any input from our members.

If you know of someone who might be interested in applying for the position, please contact me. I have regular office hours of every Wednesday from 10:00- 12:00 to answer Association calls.

Coming in the mail in August will be the registration letter for the Superintendents Institute being held this year in Sonora at Mountain Springs Golf Course. The Education Committee has put together a great program. We hope to you will bring the family to the gold country for this event.

This Christmas party committee is busy making plans for another successful event. If you would like to volunteer to help make this event a success, please contact Steve Good, who has accepted to be chairman of this event.

At this time I would like to give a great big thank you to Mike Garvale, for hosting Superintendent/Pro Tournament. Mother nature provide quite a show for us. The course was in excellent shape and all of the facilities were first class. Thank you Mike to you and your staff.

Joseph A. Rodriguez CGCS, President.

SUPERINTENDENTS INSTITUTE
MOUNTAIN SPRINGS, SONORA
OCTOBER 10, 11, & 12, 1990

A LOOK AHEAD

- Sept. 7 Mira Vista CC

- Oct. 10, 11, 12
 Superintendent. Institute
 Mountain Springs Sonora

- Nov.9 Claremont GCC

- Nov. 29, 30
 GCSAA-CSANC
 Seminar-Pleasanton

- Dec. 7
 Larry Lloyd
 Memorial Tournament

NAUMANN'S NORCAL NEWS

Dick McAllister has left Rancho Solano GC in Fairfield to become the supt. at Chardonnay GC in Napa...Tim McCoy left Tayman Park GC in Healdsburg to become the supt. at Rancho Solano GC and regional supt for C.C.A. Silband overseeing Tayman Park GC, Eureka Muni GC and Rancho Solano...Frank Wicker has left Chardonnay GC to become the Supt. at Vineyard Knolls GC in Napa. Vineyard Knolls recently went bankrupt and was bought out by a single person (a movie producer from Hollywood) and the golf course is being transferred to his private golf estate...Dana Waldor is leaving Meadowood Golf Resort to become the North Bay Rep for H.V. Carter Co. replacing Warren Hardy who is now going to work in the main office.

MEMBERSHIP FOR AUGUST

Subject to 30 Day Wait

Associate Class

- Nathan DeJung, Fairgrounds GC, Santa Rosa
- Charles Watson, Ukiah Municipal GC, Ukiah

Affiliate Class

- Mike McPherson, Automatic Rain, Menlo Park
- Marvin Mirviss, El Camino Crop Care, Morgan Hill
- Bob Pearson, Automatic Rain, Menlo Park

Associate Class-30 Day Wait up

- Daniel Kolosi, Moraga CC, Moraga

Pending Upgrade by Testing-Class A

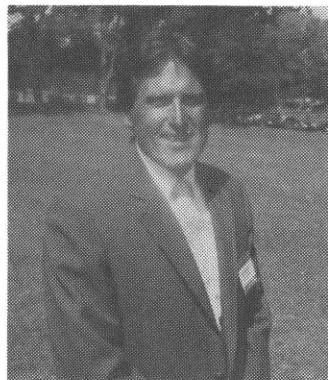
- Charles Watson, Ukiah Municipal GC, Ukiah

Passed Test to Upgrade-Class B

- Wayne Lindelof, Lone Tree GC, Antioch

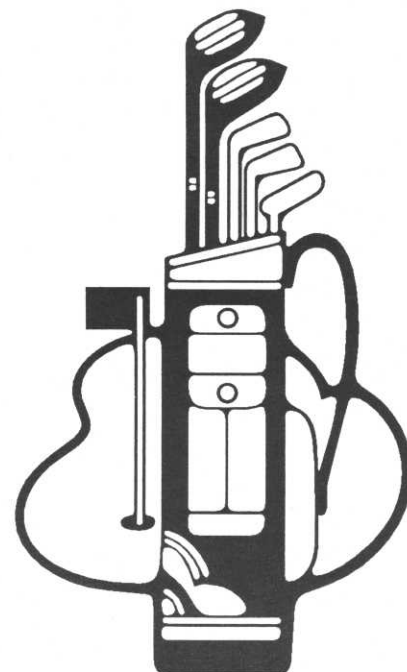
Editor's note: My sincere apology to Mike Garvale for the error on his article in July's newsletter. Listed below is how the article should have appeared.

attended the University of Detroit Graduate School majoring in Biochemistry. It was during this time he accepted his first assistants job. In 1975 he attended Michigan State University where he acquired his degree in Agronomy., He was recruited by Jim Timmerman out of Michigan State as his assistant, where he spent two years. He then went on to become the superintendent at three different courses in Northern Michigan before moving to California. He has been at Palo Alto Hills Country Club for six years and is presently serving as the Vice President of GCSANC.



THANKS MIKE

Many thanks to Mike Garvale, CGCS, and the staff at Palo Alto Hills Country Club for hosting the Annual Superintendent/Pro Tournament. The accommodations were great and the filet mignon delectable.



The host superintendent for July was Mike Garvale, CGCS. Mike began his career in Michigan while in College by working summers at Plum Hollow Country Club. After graduating from the University of Detroit with a Degree in Chemistry, he

ADJUSTING PH THROUGH THE IRRIGATION SYSTEM

What do you do when you've tried everything in the book to lower your soil pH, but turf still won't grow on your course? When all else fails, you might be willing to try anything - even if it involves adding sulfuric acid to your irrigation water. Several golf courses around the country, especially in the Southwest, have done just that. The results are dramatic.

This procedure is an option only for those situations in which all other methods of lowering pH have failed. Do not take lightly the highly caustic nature of concentrated sulfuric acid.

PROBLEM WATER

In arid regions, water for irrigating turf generally has high pH and high salt content. In some locations, irrigation water may have a pH of 7.4 to 10.4. In extreme cases, soil in these areas may show a buildup of white deposits of calcium carbonate (calcite). The first inch of soil can have the same pH as the irrigation water or, in many cases, it can be much higher.

Water may be so alkaline that turf and ornamentals die. Stressed ornamentals may lose their leaves. Rhizomes of stressed bermudagrass may refuse to root. The problem can be so severe that whole greens and fairways show stress and turf loss. As many as 60 percent of newly planted ornamentals may have to be replaced within the first month.

On highly alkaline sites seeded with bentgrass, bermudagrass or ryegrass, germination was poor. In some areas, seed failed to germinate.

Many of these situations have been traced to soil pH, but the problem seems to start with high-pH-irrigation water having high concentrations of calcium and bicarbonate ions.

TREATING THE PROBLEM

Generally, there are two accepted methods for controlling soil pH:

- You can apply elemental sulfur or a sulfur-containing compound that can be oxidized to

the sulfate ion, forming excess hydrogen ions in the process. (Remember, the sulfate ion, SO_4^{2-} , does not provide the acidification. It is the oxidation of the sulfur to sulfate ions that provides the hydrogen ions.)

- You can apply nitrogen in the form of ammonium ions from ammonium nitrate or ammonium sulfate or from ammonium producing fertilizers such as urea, urea formaldehyde, methylene ureas, etc. The ureas are converted to ammonical nitrogen, NH_3 or NH_4^+ , but the acidification comes from the oxidation of the ammonical nitrogen.

Whether you use nitrogen fertilizer or sulfur, oxidation must take place in order to produce hydrogen ions. Four variables determine the success of these processes:

- Soil moisture
- Temperature
- Oxygen concentration in the soil, and
- Application rate

During winter in the Southwest, many facilities operate at their peak. When soil temperature is low, conversion of materials used to control pH is slow, at best. Because of this slow conversion rate, many managers over apply acidifying material in an attempt to lower pH.

The problems resulting from such over applications may not be seen until late spring or summer because all material could not be converted at the lower temperatures. As the soil temperature increases, however, the conversion rate increases so fast that the soil pH may be lowered to 2.0 or 3.0.

The application of granular or spray materials to control pH may be inconsistent because of over application of material, overlap in the application pattern, or buildup of material in tight soils or low areas.

The crux of the problem is controlling the addition of the proper amount of acidifying material. The material added must offset the pH of the irrigation water and, at the same time, lower the soil pH and maintain it at the desired level. When sulfur or ammonical nitrogen are applied to control pH, the ideal balance exists for only short periods of time.

A POSSIBLE SOLUTION

One possible answer is direct pH control of irrigation water using sulfuric acid or urea-sulfuric acid. This method is not new. Acidifying irrigation water with sulfuric acid and, in some cases, spraying the soil directly with concentrated sulfuric acid solutions have been used for some time in Arizona agriculture to reclaim extremely alkaline soils.

The present system is designed to handle water with a pH as high as 11.0, bring it down to 6.8 and maintain the irrigation water at a set value.

As irrigation water pH was lowered to 6.8, pH control systems produced results like these in the leaves::

- Phosphorous concentration increased greatly
- Sodium concentration decreased
- All metal ion concentrations generally were more unchanged

All these changes took place while the ion concentration in the soil remained virtually unchanged.

CHEMICAL REACTION

Waters to which the pH system technology have

been applied are high in both bicarbonate and calcium ions; pH is high and there are higher salt concentrations.

When both pH and salt concentration are high (water EC values of 3.5), the processes associated with salt buildup in the soil are compounded when anions, such as bicarbonate or carbonate, are present in the irrigation water.

A precipitation reaction of calcite (calcium carbonate) takes place, which seems to restrict water flow through the soil layer. A co-precipitation of materials like calcium phosphate seems to occur with calcite as a seed crystal (a site on which the phosphate begins to crystallize).

ADJUST PH (CONT.)

High evapotranspiration conditions compound this formation of salt deposits near the surface. As the soil dries, the concentration of dissolved salts reaches the saturation point, and the precipitate begins to form. Usually, this material is calcium bicarbonate that, as it dries in basic solution, forms calcium carbonate.

As calcium carbonate builds up in the soil, it alters the complete soil chemistry. Soils that began as sand or sandy loam can become rich in carbonates, and the processes that normally move salts are much less effective. In some cases, water movement is essentially stopped.

When the pH of irrigation water has been lowered and maintained between 6.5 and 6.8, results are dramatic. The precipitation reaction of carbonates is retarded as bicarbonate becomes more stable at the lower

Deposited carbonate salts can be dissolved quite rapidly, if necessary, by controlling the pH at 6.5 or even 6.0 for a short time. The lower pH provides extra hydrogen ions to react with the deposited calcite. Now it is possible to add fertilizer for the plant, rather than to control the pH.

IMPLICATIONS

When you can control water pH as you irrigate, soil pH can be lowered in a regulated, easily monitored, step-by-step procedure. When you maintain the pH at a set value, fertilizer efficiency is increased. Plant stress, which opens the door to pest problems, will decrease. You will be able

to manage your turf and ornamentals fertilizer program without having a soil pH problem.

Article by Tom Lubin, chemistry department, Cypress College, as seen in Rub of the Green, Feb. 1990.

MEMBERSHIP UPDATE

At a recent Board meeting for the purpose of reviewing our present membership, it was noted that quite a few of our members are qualified to take their class A&B exams. It is the goal of any good association to grow and prosper in order to survive. Ours is no exception. Too merely become a member is not enough. The Board realizes that due to the nature of our business it is sometimes hard to schedule the time to take your exam. The Board is also sensitive to the fact that some people have trouble taking exams. Trust me, you are not alone. It is for this reason we are setting up a special study session to help our members prepare for their exams. If you are interested in participating in the study session in September, please call Pete Galea, CGCS, at Crystal Springs GC, (415) 342-4188. Remember, this isn't only for the benefit of the association, it's for yours as well. Take the time and get involved.

ALL APPLICATIONS TO UPGRADE TO ANOTHER CLASS, MUST BE IN THE OFFICE BY SEPTEMBER 6 IF YOU PLAN TO TEST AT THE STUDY SESSION ON SEPTEMBER 18, 1990.

OUR HOST SUPERINTENDENT FOR AUGUST

Our host Superintendent Dave Sexton, CGCS, first golf course experience was as member of the grounds at Paso Robles Golf & CC while a senior at Cal Poly at San Luis Obispo. I received my BS degree in Ornamental Horticulture in December 1976 and was hired as the assistant Superintendent for the Ojai Valley Golf & CC in March 1977. On the second day on the job the Superintendent left to advance his career in the desert and I was given the position of Superintendent which I held for 4 years until moving to the Meadow Club in 1981.

The Meadow Club is a private Country Club setting in the coastal hills surrounding Marin county. It is a par 71, 6257 yard golf course designed by Dr. Alister MacKenzie in 1927.

The golf course has been the focus of a continuing renovation program. So far 53 of 65 bunkers have been completed, 7 teeing areas have been leveled, lengthened and realigned, all the bridges have been refinished, irrigation system was replaced in 1984, a lake was added, more than a mile of cart path has been replaced with concrete and several miles of drains installed, as well as several hundred trees and landscaping.



**Start planning now to attend the BIG EVENT!
GCSAA's 62nd Golf Course Conference & Show**

SHINDAIWA POWER EQUIPMENT SEMINAR

Scotsco Pro Power Products and Country Club Sales in conjunction with Shindaiwa Power Equipment is offering a one day service seminar to all golf course superintendents and mechanics on proper maintenance and repair of 2 cycle power equipment.

The seminars will be held the week of November 5, 1990 at three convenient locations listed below.

Superintendents who wish to attend or send their mechanics, can sign up for this seminar by calling 1-800-648-6644 and give the name of the attendee and location of the seminar..

The cost is absolutely FREE but the seminars will be limited to 20 people due to their technical nature.

Listed below are the dates and locations. Please chose one and let us know as soon as you can. The classes are limited and we want to help as many of you as we can learn more about 2 cycle repair and maintenance.

Thank you very much and we look forward to seeing you in November!

NOVEMBER 5, 1990

RAMADA INN
808 N. MAIN ST.
SALINAS, CA 93906
(408) 424-8661
9am-3pm

NOVEMBER 6, 1990

SHERATON INN
45 JOHN GLENN DR.
CONCORD, 94520
(415)825-7700
9am-3pm

NOVEMBER 7, 1990

HOWARD JOHNSON
3343 BRADSHAW RD.
SACRAMENTO, CA 95827
(916) 366-1266
9am-3pm



GCSANC 10TH ANNUAL SUPERINTENDENTS/PRO TOURNAMENT RESULTS

CLOSES TO THE PIN #11

Glenn Stubblefield

CLOSES TO THE PIN #15

Rich Strass

GUEST LOW NET

First Place Rick Coombs
 Second Place Chuck Yurgelevil
 Third Place Don Ballard

4-MAN TEAM

First Place (196) Blake Swint
 Second Place (206) Mike Garvale
 Third Place (207) John Flachman

PRO LOW GROSS

Fourth Place (72) Bob Neiberding
 Scott Hoyt
 Bob McGrath
 Third Place (71) Glenn Stubblefield
 Second Place (71) Shawn McIntee
 First Place (69) Bob Borowitz

SUPT. LOW NET

Fifth Place (72) Ed Stocke
 Fourth Place (71) Terry Stratton
 Third Place (69) Ed Thiele
 Second Place (69) Blake Swint
 First Place (68) Steve Good

SUPT. LOW GROSS

Fifth Place (78) Mike Garvale
 Fourth Place (77) Ken Sakai
 Third Place (77) Mike Clark
 Second Place (74) Armando Claudio
 First Place (72) Ross Brownlie

SUPT./PRO

Third Place (62) Gravale/Neiberding
 Second Place (61) Diaz/Lozares
 First Place (61) Thiele/Wiseman

