

# THRU THE GREEN

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## PRESIDENTS MESSAGE

For those of you who had the pleasure of attending our meeting on August 22 at Oakland Coliseum, I'm sure you'll agree we were treated to a terrific day. Mark Razum had the field in great shape for the game. But when isn't it in great shape? How many of us would love to worry about 2.5 acres of grass instead of 100 plus acres. Sounds easy doesn't it? Don't be fooled. Mark assured us there's more to it than meets the eye.

Another thing which made the day special was it opened our eyes; at least mine anyway- to the fact that the agronomic field is not solely related to golf courses. We've always known that it wasn't, we'd just never really admit it. After talking with Mark I have to honestly admit I have a new found respect for those of us who follow a different agronomic path.

Finally, speaking of respect. It was refreshing to see and hear the praise Mark received not only from members of our Association but particularly from members of the coaching staff, including Tony LaRussa, as well as the players themselves. Congratulations Mark to you and your staff and everyone associated with the Oakland A's on providing us with a terrific family day.

Mike

## AFFILIATE PRIVILEGES

I have been asked by the Board of Directors to remind all Affiliate Members of the rules regarding their privileges at the meetings.

All memberships are personal memberships and not company memberships and therefore are not transferable. Members are eligible to bring one guest at each meeting. Other employees of the same company may come as the guest of the member but repeated abuse will not be tolerated. Please try to conform to the rules and if more than one employee of a certain company would like to regularly attend a meeting, please contact the Associations office for a membership application.

Don Naumann, Affiliate Representative

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il with a rototiller. One of these sites is managed as a golf tee/fairway and the other site is managed as a golf green. The third site was prepared by replacing the native soil with one foot of pure sand. The sand was low in calcium, magnesium and phosphorus. This was corrected by adding the appropriate amounts of gypsum and single superphosphate. This third site on sand is managed as a golf green. The varieties were planted (0.50 lbs/1000 sq.ft.) in March of 1990 in a randomized complete block design, with 10 ft.x 10 ft. plots and 3 replications. Fertilizer and irrigation water is added as needed. the tee site on the soil is mowed at 0.50 inches every other day. Greens are mowed at 3/16 of an inch every day except Monday. Twenty varieties were entered in each replication for each soil. Three of the varieties are colonial bentgrass, one dryland bentgrass (*Agrostis costellana*) one browntop bentgrass (*Agrostis cappillaris*) and the rest are creeping bentgrass. Not all of the same varieties were used on each of the soils. This National Bentgrass Trial will be completed in 1993 after three years of investigation.

Starting in January 1991 various data are taken on each plot. Overall quality on a scale of 1-9 (9 best) are taken on a monthly basis. Density on a scale of 1-9 (9 best) and percent (%) ground cover are taken on a monthly basis. Color ratings will be taken one time per year during October or November when the least amount of environmental stress is present and the full genetic potential for any given variety can be expressed. The first color rating will be taken when the plantings are more than one year old in order to eliminate false color expression of juvenile plants. Evaluation for diseases, insects, or environmental stresses will be recorded if they appear and are widespread. Progress reports, including the rating data, will be released annually. Final results and recommendations will be available in 1993.

In addition to significant financial support of this project by the City of Sunnyvale Municipal Golf Course, the following agencies have also contributed financially to the construction and maintenance of the project: O. M. Scott, Pacific Sod, R.V. Cloud, Shelton Transfer, Sierra Pacific Turf Supply, United Agri Products and WestStar Distributing.

### Results and Discussion

The following results are preliminary. Overall quality ratings are the means of six observations. The final ratings will be the mean of thirty-six observations. Density and percent ground cover are means of three observations while the final ratings will be means of twelve observations. These preliminary data are not supported by statistical analysis.

**SOIL SITE, TEE-** Results from the soil site managed as a tee indicate the colonial bentgrass varieties (Tracenta, Bardot and Allure), the dryland variety (BR 1518) and the browntop variety (Egmont) are inferior to the creeping bentgrass varieties with overall quality ratings of 4.7, 4.8, 5.6, 4.1 and 6.1 respectively. The top performing creeping bentgrass varieties are Normarc 101, Cobra, TAMU 88-1 Putter and Penncross with overall quality ratings of 6.9, 6.9, 6.8, 6.8 and 6.7 respectively.

**SOIL SITE, GREEN-** Results from the soil site managed as a green indicate the colonial bentgrass varieties ( Tracenta, Bardot and Allure), the dryland variety (BR 1518) and the browntop variety (Egmont) are inferior to the creeping bentgrass varieties with quality ratings of 4.2, 4.8, 4.8, 3.7 and 5.3 respectively. The best performing creeping bentgrass varieties are SR 1020, 88 CBL, Pennlinks and Carmen with overall quality ratings of 6.8, 6.7, 6.7, and 6.5 respectively.

**SAND SITE, GREEN-** Results from the sand site managed as a green indicate the colonial bentgrass varieties (Tracenta, Bardot and Allure), the dryland variety (BR 1518) and the browntop variety (Egmont) are inferior to the creeping bentgrass varieties with overall quality ratings of 4.0 4.4, 4.6, 3.5 and 5.5 respectively. The best performing creeping bentgrass varieties are SR 1020, 88 CBL, Pennlinks and Cobra with overall ratings of 6.6, 6.4, 6.4, and 6.4 respectively.

In summary creeping bentgrass (*Agrostis palustris* Huds.) has performed much better to date than other bentgrass species at this location. Since the available data is limited, the results reported here should be viewed only as preliminary. Varieties may perform differently in the years to come as they are subjected to a wider range of climatic, management and pathogenic stresses. Accordingly, no specific recommendations on choosing any of the tested varieties can be given at this time.

\*Research Assistant and Turfgrass Advisor, respectively, University of California Cooperative Extension.

## NAUMANN'S NORCAL NEWS

Bob Dalton, Supt. at Castlewood CC has accepted the Supt. position at Kings Country Club in Hanford... Scott Pajak has accepted the Supt. position at Chimney Rock GC in Napa. Scott was the assistant under Peter Galea at Crystal Springs GC... Capital projects must be in the wind. There are new maintenance shops at Lone Tree Golf Course in Antioch (Wayne Lindelof, Supt.) Stanford Golf Course in Palo Alto (Tom Thatcher, Supt.) and Alameda Muni Golf Course (Denny Plato, Supt.).

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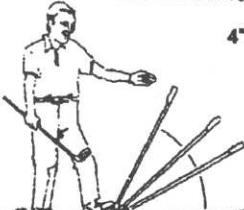
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## The Anatomy of a Golf Course Irrigation System

by Doug Macdonald

Have you ever been out on your course all by yourself (maybe early in the morning before your crew gets in, or late at night after the last group has holed out) and just listened to the sounds it makes? You recognize that unmistakable muffled yawn followed by the steady hum of your pump station as it wakes up and comes to life. And there's the quiet hiss or consistent clap of your sprinklers as they let water escape the confines of your pipe network. Ain't life grand!?

Or...

Have you ever been sitting down to a nice dinner with your family when the phone rings and you answer a frantic call from your assistant because the main line between 13 green and 14 tee just blew out of the ground? By the time you get to the course the greenside bunker has washed out onto the putting surface and nobody can fine the right isolation valves to shut down the system. Ain't life a pain!?

Like it or not, your golf course is a living thing. It breathes and it bleeds. Whether it thrives or dies depends on how you and your crew can respond to its needs. One of the most important things that you are responsible for providing to your course is its life blood, water. Because of this, it is important for you to have a functional system of distributing water to each area of the course that you want to keep alive. Your irrigation system can be thought of as the cardiovascular and nervous system of your golf course - all you have to do is provide the brainwork to operate it.

The "heart" of your irrigation system usually consists of your source of water and your pump station. the "veins and arteries" that keep your golf course alive are made up of the pressure pipe network, and the drainage system.

But the heart won't beat, and the "blood" won't flow, until the brain says go. The brain indicates to the nervous system what function should be occurring at any given time and the brain is made up of only one component - you. Fortunately, technology has developed some pretty good tools that make up the "nervous system" of most golf courses; sprinkler heads, control valves and automatic control systems.

In the next few months we'll take a closer look at the purpose and function of the various "parts" that make up the "body" of a typical golf course irrigation system.

Doug Macdonald is an associate design consultant with Russell D. Mitchell & Associates, Inc., an irrigation system design and consultation firm in Walnut Creek, California.

This is the first of articles that will appear in "Thru the Green". These articles are intended to provide general information about the irrigation of a typical golf course in Northern California. We would be happy to address specific topics regarding irrigation systems, components, water management, etc., in upcoming newsletters. Please contact Jean LaDuc at (408) 374-7697 or Doug MacDonald at (415) 939-3985 with requests for specific topics to be dealt with in future articles.

## OUR HOST AND HIS COURSE FOR OCTOBER

Born and raised on the Sonoma Coast, Chester Manni was a self-employed dairyman for 25 years before he joined the grounds crew at Bodega Harbour Golf Course in 1975. Working for the company before the first nine holes were completed and in play Chester saw this cow pasture transformed into the challenging and spectacular course it is today.

Working his way "up the ladder" he became Greens Superintendent in 2 1/2 years, a position he still holds. He attributes much of his initial knowledge of greens maintenance to his former Superintendent Ron Roth. He also praises his crew and has an excellent camaraderie with them as he's not above rolling up his sleeves and joining them in the trenches.

Besides golfing, which he doesn't seem to get enough time to enjoy, Chester is also an avid hunter and fisherman, enjoying outdoors.

Bodega Harbour Golf Course is an 18 hole Scottish Links Style Course designed by Robert Trent Jones, Sr. and Robert Trent Jones, Jr. The front 9 was constructed in 1985, and the back 9 in 1974. It is a par 70, 6220 yards in length, course rating 71.9/130 slope. Extensive use of natural terrain incorporating hills, rock outcroppings, ravines and a large environmentally protected fresh water marsh into the total design concept. Total annual rounds played approximately 31,000+.



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## !!! ATTENTION CLASS B AND ASSOCIATE MEMBERS !!!

If you are eligible now or in the next few months for a classification upgrade to class A or B and you are worried about the dreaded "TEST" this is for you.

On October 28th the semi-annual study session to help prepare you for the upgrade exam will be held at the Meadow Club golf course by your membership chairman, David Sexton.

If you have met all the requirements the actual test for your classification will be available, or a practice exam can be taken to help you prepare for a future testing date.

In order to qualify for class A you must have completed 3 years as a Golf Course Superintendent. To qualify for class B you must have completed 1 year as a Golf Course Superintendent.

In addition you must submit an application for reclassification to the Board of Directors by the October 10th meeting at Bodega Harbour. The application does not need to be attested for reclassification and they are available from the Association office or by contacting David Sexton.

Depending upon the weather and aerification schedules the Meadow Club may be available for complimentary golf after the morning study session which will start at 8:30 am.

Any questions, please call David Sexton, (415) 457-2050 between 8:30-9:30 am Monday-Friday.

Chuck Dal Pozzo  
Technical Representative

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## A LOOK AHEAD

### October 10

Bodega Harbour GC, Joint Meeting  
with Sierra Nevada Chapter

### November 6,7,8

Superintendent's Institute, Santa Rosa

### November 21,22

GCSAA-GCSANC Seminar  
Integrated Pest Management

### December 6

Christmas Party

## FUNGICIDES

*How you apply it can be at least as important as which one you use, says famed researcher*

Do nozzle type, dilution rates, spray patterns, pH and pressure make a difference when applying fungicides?

"You bet'cha," says Dr. Houston Couch, Professor of plant pathology at Virginia Polytechnic Institute and State University. Couch, well known for his book, *Diseases of Turfgrass*, was the speaker at the Fourth Annual South Florida Workshop and Exposition in Fort Lauderdale April 17.

For two hours, he discussed a checklist of items necessary for the correct application of fungicides. This checklist is important, he said, because of golf course superintendents need to improve the effectiveness of the fungicides they are applying to the nation's golf courses.

"With the IQ of Zippo the chimp, a crescent wrench and a screwdriver, you can double the effectiveness of your fungicide application," Couch said.

Superintendents must optimize the applications of their fungicides because they are faced with increasing expectations.

"The Stimpmeter is the worst thing that happened to golf," he said.

"They roll the golf ball and tell the guy on the spot what they want. To get the number right, the superintendent will roll the green to harden it up, back up on the watering and lower the cutting height. But biologically, under these conditions, the grass has a real a problem. Along comes a fungus that really sort of likes this world, and all it's got to do is snarl and this grass dies."

The problem is even worse because of South Florida's climatic conditions, he added. "A lot of you are growing grass in a part of the world where the Lord did not mean for that grass to grow. You know that. This is where he created fungus to kill the grass."

In order to fight the fungus problems, Couch recommends several procedures.

## GRANULAR FUNGICIDES

Although he spent a majority of his time discussing spray fungicides, he did delineate his findings on granular fungicides: mow and irrigate the day before application to have the longest possible interval between application and mowing or watering; and apply the fungicide in the morning while the grass is still wet.

"Granular formulations of non-systemic fungicides require two to three times the active ingredient level of spray formulations to produce the same degree of disease control."

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CONT FROM PAGE 5

The type of carrier makes a tremendous difference in effectiveness. Get test data on the carrier as well as the active ingredient.

Granular formulation should never be used on home lawns or park applications.

## NOZZLE TYPES

Couch is emphatic about not using flood jet nozzles in fungicide applications.

"The flood jet has the worst of all possible worlds," he said, "with big droplet size and lots of aerosol. The material comes through the nozzle, hits the baffle and goes splat. That's equivalent to putting your thumb over a hose. The only good thing you can do with a flood jet nozzle is to take it to a kiln, have it melted down and make it into a doorstop for your office."

He recommends either the flat fan 8002 or the raindrop type nozzles, RA 10 to RA 15 for fungicide applications. He also says fungicides should be applied with 100 percent to overlap and the angle of the nozzle on the floating boom should be set at 45 degrees.

"The Chempro floating boom is the hottest thing you'll ever see. It has two manifolds for putting out the same pressure at each nozzle and will give you uniform application. The boom is in a class by itself.

In Couch's research, nozzle pressure made a significant difference in the effectiveness of the fungicides.

"We used the 8002 nozzles with the right dilution rate of Chipco 26019 to control dollar spot," Couch said. "When we used 10 pounds per square inch, we got 55 percent control. But when we switched to 30-60 pounds, with the same amount of material in the same amount of water, we just about doubled the effectiveness of the fungicide. With Dyrene, the same thing occurred. There was 45 percent control at 10 pounds and nearly 100 percent control at 30-60 pounds."

In order to calibrate the correct pressure, Couch recommends gauges on both the tank and the nozzle ends. "You should be using the Spraycheck method to check your pressure when you apply fungicides. This may not seem important unless it's your prize putting green, it's five days before the big tournament, the nights are in the 90's and the humidity is 150 percent, and one part of the boom is killing all the fungus and the other part is killing just some of the fungus. That's when you think about moving up North."

Couch recommends 40-pound pressure for both the flat fan nozzles and the raindrop nozzles.

## DILUTION RATES

Forget the old rule, primarily based on the use of mercury fungicides, of 5-10 gallons per 1,000 square feet.

Couch recommends Daconil 2787 at one gallon per 1,000 square feet; Bayleton at 2 gallons; Chipco 26019 at 0.5 to 4 gallons and Banner at 2 gallons.

"Chipco is hard to mess up," he says. "It's not dilution dependent, so if you went from a half gallon to four gallons, per 1,000 square feet, you got some control."

"Bayleton shouldn't be put in at one or three gallons, but at its optimum rate of two gallons.

If you change from the optimum dilution rate with Bayleton, you get less control over the fungus and it doesn't last as long."

## IRRIGATION AND RAINFALL

Irrigation or rainfall shortly after application will affect the fungicide, and usually not for the better.

In his research, Couch used Dyrene, Rubigan, Bayleton and Daconil. He applied the materials to the leaves while they were wet, allowed the leaves to dry, then irrigated. After three days, he irrigated again.

As a result, Couch said, "with dollar spot control, rainfall before the spray dries, significantly reduces the effectiveness of the contact type fungicides. With Rubigan, if the leaves are washed before the spray dries, it's goodbye Rubigan. With Bayleton, leaf washing before the spray dries does not significantly reduce the effectiveness."

He also concluded that the basic effectiveness of turfgrass fungicide is established by initial amount of water used in its spray application.

If the treated area gets more water before the spray dries on the leaf, the effectiveness of non-systemic fungicides will drop significantly.



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If the fungicide formulation contains a wetting agent, rainfall or irrigation immediately after the spray dries on the leaves will not appreciably reduce its effectiveness.

## pH AND IN-TANK STABILITY

Superintendents need to know the stability of the active ingredient of the fungicide (which usually is supplied by the manufacturer); they need to test for the pH of the water in the area.

"The lesson here is that if the active ingredient of the product is unstable in alkaline ranges, it will be formulated with a buffer that will skew it if the water you are using will offset what was going on in the first place."

"Dyrene is alkaline sensitive. It loses disease control effectiveness rapidly at 9.5 in the alkaline range. However, if it is used immediately in the acid range it doesn't lose effectiveness."

He recommends using a simple pen-type pH meter to avoid mistakes. The ideal pH for a fungicide formulation is 6.5.

But pH is not the only significant factor. The length of time a fungicide mixture is stored can affect it, even to the point of rendering it useless.

During Couch's tests, the fungicide formulations were adjusted and tested immediately. Then they were stored for 24 hours at 71 degrees, and tested again.

"If Dyrene is allowed to stand for 24 hours, regardless of pH, there is a significant drop in the effectiveness of the fungicide. the same holds true of Daconil 2787. Although it's stable initially from 3.5 to 9.5, if its allowed to stand for 24 hours, there is a clumping together of the particles and a loss of effectiveness."

Rubigan is stable from 3.5 to 9.5 initially and remains stable from 6.5 to 9.6 after 24 hours. "But", he said, "at 3.5, the material breaks down significantly. It's acid unstable."

## SYNERGISM

A lot of research still must be done on synergism, a positive reaction that occurs when fungicides are combined to improve their baselines. But some products have already proven to exhibit that characteristic.

For instance, Fore and Subdue or Fore and Banol can be used at half the dilution rates and improve their effectiveness through synergistic action.

For dollar spot control, Couch recommends Banner and Dyrene, Banner and Chipco 26019 or Banner And Bayleton at a quarter of the normal rate.

"Not everything (combination of fungicides) works, but when they do, it can increase the effectiveness of the products," Couch said.

"Good golf course superintendents need more training in pesticides and agricultural chemicals because we are more dependent on chemicals than ever before," said Couch in an interview after his lecture.

"In order to stay alive in their profession, superintendents need to attend the local and national educational sessions. the information they receive in these sessions is current. by the time it hits the magazines, it's months old and by the time the material is in a book it is about two years old."

Couch feels superintendents also need education in personal relations.

"One of the reasons they need this training is because of a trend I see as bad; the trend toward having golf course managers or having corporations involved with the golf course."

"This takes away the superintendent's ability to make spot decisions. In some cases, a superintendent may need a product to take care of a problem, but he can't get the money released, or can't get it released in time to apply the material. And as a result, there's a problem on the course."

"Who gets blamed?" Couch asked rhetorically. "The golf course superintendent, and yet it wasn't his fault."

Credit: Article was taken from the June Issue of "THE FLORIDA GREEN."



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