

EDITOR

ROBERT J. COSTA, CGCS
408-373-3701

OFFICE

Barbara Mikel - Exec. Sec'y
550 Main St., Suite G
P.O. Box 3360
Diamond Springs, CA
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Fax: (916) 626-5132

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THRU THE GREEN

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From The President

It's hard to believe that the end of the year is fast approaching. Seems like only yesterday we were all working at a frantic pace for that big club tournament, ladies guest day or all the other high priority requests we get on an everyday basis. We can all wind down a little during this time of year and just catch our breath. I feel it's really important just to do that. Take some time, review what has transpired in the past year and congratulate yourself for making it through another year. Especially this past year which was agronomically tough throughout the west coast. I had problems on my greens this past July that I had never encountered in eighteen years here. Crabgrass was also present in areas where I have never had a problem before. So sit back, relax, learn from the past year and attend and participate in your local chapter meetings.

The Christmas Tournament and Dinner is on December 6th. If you haven't registered yet, maybe it's not too late. Give Barbara a call.

This year golf and dinner will be at Rancho Cañada with Tim Greenwald, Superintendent as our host. This annual event is a wonderful opportunity for all of our member including Superintendents, Associates, Affiliates, etc. to get together, play golf, relax and just have a good time. It is also appropriate at this event to acknowledge our Affiliate members who have been so supportive in the past and will continue to be. This support is greatly appreciated and we thank you for your generosity.

Talking about Christmas and the holidays, I would like to convey a brief but meaningful message. I would like to sincerely wish each and every member of our Association and their families a very special holiday season.

Joseph Rodriguez, CGCS
President



Joseph Rodriguez, CGCS
GCSANC President 1996-1997

Did You Know?

City use of pesticides will be banned in San Francisco by the year 2000, under a new ordinance passed unanimously by the city's Board of Supervisors. The ordinance also creates posting requirements and establishes Integrated Pest Management programs.

Quick Quotes

"I don't want any yes-men around me. I want everybody to tell me the truth even if it costs them their job."

— Samuel Goldwyn —

Office Notes

By: Barbara Mikel

We had a delay with our supplier this year and as of this writing I am still awaiting cards. Hopefully, by the time you are reading this, I will have mailed the renewed member cards. Be assured you will get them!! Hope you like the changes. I would like to thank all of you responding so quickly and accurately. I have a few checks sent to me without renewal questionnaires. I will continue to notify those individuals we need those questionnaires. The end of the month is the last date to renew without penalty. Twenty dollars penalty is the going rate, so get busy and get those renewals to the office.

I am still collecting ideas for the 65th Anniversary year of GCSANC. I have been exploring the idea of a special 65th Anniversary issue of the Directory with pictures, contemporary products, equipment pictures in use. I will need help! Any volunteers? I don't know how many of you realize I have in my office records going back to 1932. Well organized and surprisingly complete. There are some pretty interesting pictures of current members in their "younger" years. If you are curious and in my neighborhood, stop by. Or if you are coming to a meeting, give me a call and I can bring some with me.

USGA

Frost, Firewood, Spike Free Footprints and Winter Putting Conditions

By: Mike Huck - Agronomist, Western Region

Fall is upon us and while most northern courses are preparing to close down, southern courses are growing in their winter overseeding. In either case everyone will soon be hearing those famous fall and winter comments of "What do you mean we can't tee off until 9:30 a.m.?" "Can't you just turn the sprinklers on and melt the frost?" "But the thermometer at the bank down the street said 36 degrees — that's not freezing!" Yes, it's the frost season again.

It is sad but true that many golfers do not understand the importance of greens being allowed to thaw before play begins and, even worse, don't appreciate the long-term consequences caused by placing concentrated traffic on turf that is not actively growing. We often attempt to explain in technical terms how cell walls and tissue are destroyed by sharp ice crystals when the weight of a golfer or mower is placed on the frozen plant. We tell players how

cooler soil temperatures limit plant growth, hindering recovery from traffic damage and opening the door for *Poa annua* invasion, in even the warmest climates. We often feel these explanations all fall on deaf ears.

Knowing that turfgrass leaves are primarily composed of water, it should be easy to understand that the entire plant (internally and externally) can rapidly freeze when temperatures do drop. Maybe a simpler analogy that golfers could more easily understand would be to compare a grass plant's leaf to a paper straw filled with water. A frosted leaf would be similar to freezing the water in a straw, while a "thawed" version would contain melted water. Then, if you were to take the two side by side and bend them, the frozen straw would break in two damaging the tissue (the paper of the straw), while the unfrozen example would flex unharmed. It tells the same story without what many golfers often perceive as technical turf science babble.

The frost season is a great time to encourage cutting some firewood to warm your greens. When the sun is positioned low on the horizon, long shadows cast from trees shading eastern and southern exposures have a significant impact on how early greens thaw and become playable. Golfers and club officials are probably more likely to approve removing trees that delay starting times than any other reason imaginable. Reducing early morning shade not only melts frost and gets players on the course earlier, but helps maintain warmer soil temperatures improving winter and spring growth. Additionally, scientific evidence shows that early morning sunlight on greens is extremely important to grow healthy turf and deep roots. Compared with greens growing in cleared areas, those in shaded surroundings are much slower to respond in spring and often enter summer in a weakened state. ♦

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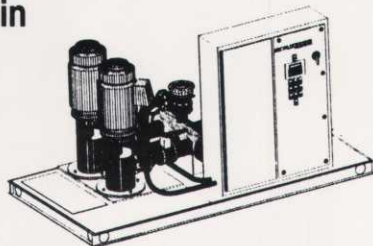


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Recycled Water For Turfgrass Irrigation

By Jess Evans

The demand for water increases. Potable water is not an unlimited resource and some discretion must be used when considering its use and conservation. One possible means of conserving potable water is the use of effluent or recycled water for irrigating turfgrass.

Golf courses are a prime example of an area in which recycled water can be used successfully. Golf courses require significant amounts of water and because the costs of fresh water is ever increasing, recycled water is a good alternative. Also, golf courses are usually under intense management by a trained professional who closely monitors water quality and irrigation, making it possible to utilize water of lesser quality. Even so, there are still some important factors that must be considered when determining the quality. These include: total salt content, sodicity, toxic ion levels, bicarbonate, and pH (Harivandi, 1994)

Salinity

Reclaimed waters have been found to have salt levels higher than that of fresh water. There is a high negative correlation between the salt concentration in the soil solution and turfgrass growth. The salts inhibit the plant's ability to access water in the soil solution. As the plant takes up water, the concentration of salt in the rhizosphere increases. This increase in the salt concentration reduces the osmotic potential in the rhizosphere and, thus, reduces the water potential relative to the roots.

Salinity is measured by electrical

conductivity or total dissolved solids. Electrical conductivity (EC) is measured as resistance with an alternating current bridge (Butler, 1985). Electrical conductivity is usually expressed as either millimoles per centimeter or decisiemens per meter (dS/M).

Irrigation water with EC_w of greater than 0.75 dS/m may cause salinity problems, but real caution must be taken when the EC exceeds 3.0 dS/m. Water with electrical conductivity of great than 3.0 dS/m is not recommended for irrigation purposes (Harivandi, 1994).

Although the electrical conductivity of the water is an important factor when evaluating water quality, it is the electrical conductivity of the soil solution that has the greatest impact on plant growth. Soil sal levels below 3 dS/m usually do not inhibit turfgrass growth.

Sodicity

The sodium (Na) concentrations in recycled water is an other important factor that must be considered when using the effluent for turfgrass irrigation. Although Na itself can reach levels that may cause phytotoxicity in plants, it is the indirect effects of Na on soil structure that causes concern (Harivandi, 1994). Hayes et al. (1990) showed that secondary-effluent-irrigated soils contained greater concentrations of potentially hazardous Na and soluble salts when compared to potable-irrigated soils.

The primary effect of Na on soil structure is a reduction in permeability. Sodium causes deflocculation of the soil clay particles. This means that the high sodium concentrations cause an actual physical

dispersion of the soil colloids and loss of soil structure. As a result, aeration is reduced, infiltration decreases, and a high degree of mechanical impedance to the root is observed.

The influence of sodium on soil permeability is commonly measured as the sodium adsorption ratio (SAR). SAR is the ratio of the Na ion concentration to that of calcium plus magnesium. Calcium and magnesium help to reduce the negative effect of Na on the soil (Mancino, 1994). Recycled water with SAR values of greater than 9 can cause severe permeability problems when applied to fine textured soils (Harivandi, 1994).

Turfgrass grown in Sandy soils can tolerate a higher SAR than turfgrass grown in clay soils. Coarse sandy soils have very low cation exchange capacities. As a result, the Na tends to leach through the soil profile and the soil structure and integrity is maintained. Many modern golf courses construct that putting greens with a sand base, making it possible to irrigate with water of less than optimal Na concentrations. I must point out that most of these sand base greens also have some organic material mixed in with the soil. This organic material provides additional binding sites for the Na and could potentially become dispersed causing problems in the root zone.

The use of effluent water with high sodium concentrations may make it necessary to apply soil amendments, like gypsum, more frequently in order to prevent possible problems with soil permeability. Frequent aeration is another



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technique commonly used, especially in clay soils (Hayes et al., 1990).

The adverse effects of Na ions on soil permeability have been shown to be counteracted by the concentration of soluble salts in water (Harivandi, 1994). Therefore, the sodium hazard of irrigation water is evaluated considering both the sodium absorption ratio and the electrical conductivity. Increasing salinity reduces the ability of sodium to deflocculate soil particles (Hayes et al., 1990). This is usually due to the counteracting effects of calcium and magnesium.

Besides sodium, recycled waters contain several other elements that can cause phytotoxicity. These include boron, chloride and many of the heavy metals or trace elements. In some cases the turfgrass itself may not be sensitive to these ions, but many of the trees and shrubs are.

Nutrient Benefits

Effluent water contains many, if not all, of the nutrients necessary for plant growth. The concentration of these nutrients in the water may not fulfill the needs of the plant, but are present nevertheless. Hayes et al, (1990) observed reductions in seedling emergence in areas irrigated with effluent water. They attributed this to high ammonium concentrations and salinity. However, these same areas showed improvement in seedling establishment and growth rate. This was attributed to the increases in nutrient availability with effluent water as compared to potable water (Hayes et al., 1990).

Nitrogen is one of the primary macronutrients essential for plant growth. Nitrogen is also a component of recycled water. These two facts make recycled water an attractive alternative to potable water for irrigation of turfgrass. However, the potential of nitrate leaching through the soil into the ground water causes critics to question its use. Healthy turf has been found to remove 90% of the nitrogen delivered by recycled water, even in the cases resulting in a 41% leaching fraction (Mancino and Pepper, 1994).

In addition to nitrogen, effluent irrigated soils have been found to contain significantly higher levels of phosphorus and potassium when compared to soils irrigated with potable water. While the amount of nitrogen in the effluent water may sometimes be less than that required by the plant, the phosphorus levels often exceed the needs of the plant (Hayes et al., 1990).

The nutrients in effluent water are most effective when used in conjunction with a fertilization schedule. Both the water and the soil on which it is being applied must be periodically tested. This allows the superintendent to make adjustment in irrigation and fertilization practices when necessary (Hayes et al., 1990). ♦



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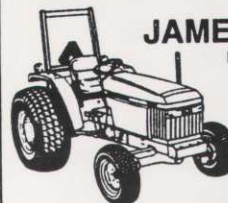
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Imagine An Image

By Alan T. Fierst, The Oak Park Country Club, Elmwood Park, Ill.

We, as golf course superintendents, are becoming the focal point of all golf-course and golf-club-related operations. In doing so, we are elevating our own professional positions within the employment and management structure of our golf facilities as they seek (and we become) ever more sophisticated, business-oriented managers. We are the results people: ever efficient, with a smile and a willing "can-do" attitude. That's good . . . but superintendents are also coming under the focus of stringent, critical scrutiny from not only the individuals playing our golf courses, but also the individuals who own these facilities, are board-level operations directors and/or officers, or are placed into titled positions of general management.

The general public is gradually becoming aware of us, as well. It is just now learning who that person is who manages the turf on the golf courses of the world, and how that person strives to be an efficient and environmentally responsible manager. That's good too. We know that we are up to the job in terms of delivering the "goods" to our clientele. But are we adequately and effectively addressing the challenges of bringing our professional management image up to a par with the long-established (and positive) image of our task-related performance? That is unclear. Certainly it is time to seriously focus on the way we are perceived from outside the comfortable realm of our profession.

It is time to consciously work on the visual, verbal and attitude traits of being not only a golf course superintendent, but also a manager who measures up to the standards, values and mores of today's business climate. We are professionals, we know that. What remains as an apparent obstacle is the acceptance of superintendents as equals within the business and professional communities. As we professionally develop ourselves from within, so too is it imperative that we continue that same level of development toward the exterior. Develop it to the extent that others accept the golf course superintendent as their professional and intellectual equal.

We have not accomplished this yet. We may not accomplish this overnight. We have been told, time and time again, about the importance of personal presentation and perceptions. It is time we begin to take notice of and truly begin to implement the steps necessary for a professional image. It will not be easy, and in fact, it may be somewhat costly. What it will be in the end is ultimately

beneficial. And then, perhaps, we shall begin to be regarded as true professional equals in the golf, business and management communities. It will happen as soon as we, as golf course superintendents, begin to devote the same level of dedication to our image as we do to the manicuring of our golf courses. ♦

Our Survey Says . . .

Over forty survey's were collected from attendees at the recently concluded Golf Course Superintendents Institute. The responses will be used when planning future events.

Here's a sampling of the results:

- ♦ 95% of the respondents would like to return to Santa Cruz in 1998
- ♦ Napa, San Jose, Monterey and San Francisco were suggested as alternate sites
- ♦ 78% like the program, with 22% stating it was okay
- ♦ The program, the food, the golf course and the location were noted most frequently as positive comments, while the length of the lunch and the lack of Q & A were noted as negatives.
- ♦ Cost was a factor in about 50% of those who considered playing golf
- ♦ 44% favored agronomic topics for next year's event, 32% preferred Personal Growth and Management and 23% were interested in Environmental topics.
- ♦ 83% of the respondents thought the idea of providing a limited line of NorCal logoed merchandise was a good idea, with 90% saying they would consider purchasing items such as hats, shirts and sweatshirts.



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Boardroom Briefs

- ◆ Membership Chairman, Wayne Lindelof will contact GCSAA to seek clarification of new membership classifications
- ◆ The Board recommended the Education Committee to pursue Santa Rosa as the site of the 1997 Golf Course Superintendent's Institute.
- ◆ Gary Carls, CGCS has been appointed the Program Chairman, replacing Bob Costa, CGCS, who has been fulfilling those duties.
- ◆ Bob Costa, CGCS informed the Board of the selection of Palo Alto Hills Country Club as the site selected for the Thursday, January 16, General Meeting
- ◆ Scholarship Committee Chairman, Gary Carls, CGCS, announced the receipt of 17 scholarship applications. The applications will be reviewed by the Scholarship Committee who will report its recommendations to the Board in January, 1997
- ◆ Joe Rodriguez, CGCS, reported the Flamingo Hotel has been chosen as the location for the California Golf Course Superintendents' Hospitality Suite during the GCSAA Conference and Show
- ◆ The sale of GCSANC merchandise continues to be explored by the Committee of Forrest Arthur and Bob Costa, CGCS
- ◆ The Membership Subcommittee reported back to the Board for discussion the proposal to offer complimentary attendance to monthly meetings to Class A Life Members except the \$5 prize fund. Also proposed was a reduced rate of 1/2 the meeting fee except for \$5 prize fund to Class A/B/Affiliate Retired Members

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