PRESIDENTS MESSAGE

Having just returned from the GCSAA conference I can reflect back on how encouraging it was to see so many familiar faces from Northern California.

For those of you who were unable to attend, you missed a tremendous show.

The educational sessions were excellent. A lot of new research data coupled with a strong influence on environment issues. It's good to see that as an organization, the GCSAA is responding to the criticism in a very professional manner. As to the trade show, the only way to describe it is mind-boggling. It just keeps getting bigger and bigger.

On a more local level, it's that time of year when our Annual Meeting is just around the corner.

The Awards Committee is making their final selections of this years recipients. We bid farewell to several outgoing Board Members and welcome in our new ones. And the gavel is passed on to our new President.

This would be a good time to do some sole searching. I've stated it before that in order for an Association to grow and prosper it takes dedication from its membership. It takes commitment most importantly though it takes involvement.

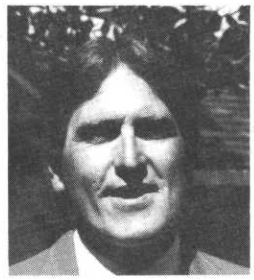
To join an Association and never give anything back serves no one. I realize that our schedules are hectic and even for the most efficient manager there never seems to be enough time.

To serve on the Board of Directors may not be right for everyone. But a lot of our members have good ideas which can benefit our Association. They have leadership qualities which would prove invaluable to our continued growth and prosperity.

It I may be permitted a final request as outgoing president. Look within yourself. I think you'll find as I did, it's time to give something back.

Thanks,

Mike



CALIBRATING A HAND SPRAYER

Here's an accepted way to calibrate a single-nozzle hand sprayer.

Find a walking rate that is comfortable for you. Hold the nozzle tip at a distance above the surface to be sprayed that is both comfortable and within the recommended range of the nozzle, generally about 18 inches. (You might want to tie one end of an 18 inch piece of string to the nozzle and a small weight to the other end.)

Step 1: Measure an area 10 by 25 feet (250 sq. ft.) for the test area.
Step 2: Fill the sprayer to a level that's easily recognized. Be sure there's enough water in the tank to cover the test area.
Step 3: Pump the sprayer up to a sufficient pressure that provides an optimum spray pattern.
Step 4: Spray the pre-measured area. Walk at a constant rate and hold the nozzle tip at the same height over the entire test area. (Do not move the wand back and forth. Hold it in one position.)
Step 5: Refill the tank to the original water level. Note the exact amount of liquid needed to refill the tank. That amount is the volume per 250 sq. ft.
Step 6: Depending on label recommendations; 1) Multiply the volume for 250 sq. ft. by 4 to get the volume per 1000 sq. ft. or 2) multiply the volume for 250 sq. ft. by 175 to get the volume per acre.
Step 7: Check the label for restrictions on minimum volume applied per 1000 sq. ft. or per acre. Frequently, pesticide labels explicitly state that the pesticide must be applied with a given number of gallons of water. If the sprayer delivers more water per area than needed, walk at faster rate or change to a nozzle tip with a smaller orifice. If the sprayer delivers less water than needed, walk a a slower rate or change to a nozzle tip with a larger orifice. In either case, repeat Steps 2 through 6.
Step 8: Determine the amount of pesticide needed for each gallon of spray and the amount needed per tankful. Add this amount to the spray tank and then fill with water. Begin application.
Step 9: Frequently stop and pump up your sprayer to insure uniform discharge.

This information was supplied by the Pesticide Applicator Training Office at Purdue University, West Lafayette, Ind. Article seen in Landscape Management, February 1992 Issue.

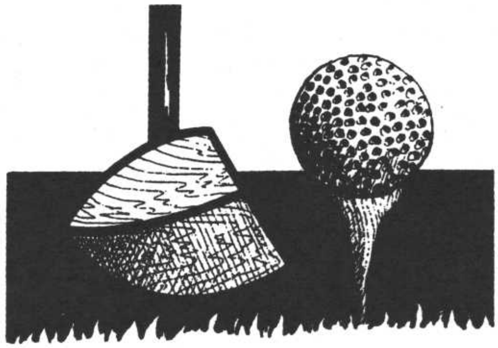
RIDEGEMARK GOLF RESULTS

LOW GROSS

J. Faulkner	69
B. Lapic	74
J. Lloyd	76
D. Lehman	76

LOW NET

R. Hsu	65
B. Hagan	67
R. Rogers	67
C. Weatherton, Sr.	68
J. Ross	69
D. Cannon	69



ENVIRONMENTAL FACTORS INVOLVED IN EFFECTIVE CONTROLLER PROGRAMMING

Knowing how much water to apply to the various turf zones on the golf course is an important aspect of e every Superintendents job. The amount of water to be applied by the irrigation system is dependent on the following environmental factors:

*How much water the turf needs to survive.
*How quickly does the applied water infiltrate the soil, or move through the soil and beyond the turf root zone.
*How much water is currently available within the turf root zone.
*How much of that available water is expected to be lost through evaporation or used by the turf between irrigation periods.
*How much water is expected to be supplied by natural rainfall between irrigation periods.

Since the formulas used for calculation sprinkler precipitation rates, rainfall data, root zone depths, and moisture capacities for various soil types each use "inches" as a basis for measurement, the Superintendent should try to determine each of these environmental factors using "inches" as a basis for evaluation.

The amount of water needed by turfgrass for survival and healthy growth will vary depending on the type of turf being used, its current stage of growth or development, and other seasonal or environmental considerations. A great deal of research has been published regarding water requirements for cool season and warm season turfgrass species in California., Several publications regarding this subject are currently available from the University of California through ANR Publications, (510) 642-2431. Publication #21491 "Turfgrass Evapotranspiration Map for the Central Coast of California" ($2.00) and Publication #21492 "Turfgrass Irrigation Scheduling" ($2.50) may be of assistance in the determination of typical evapotranspiration rates and water requirements for turf in a specific regional climatic zone. If possible, the turf water requirement should be estimated as an "inches per day" quantity for each month of the year.

Available water within the turf root zone is often difficult to quantify and is dependent on root zone depth, as well as soil type and texture. Active root zone depth can usually be approximated by using a soil probe to pull soil samples at various locations around the golf course. The soil samples can also be used to evaluate typical soil types an layering (soil profiles) around the course. This data will provide an indication of which areas of the course will require more (or less) frequent irrigation cycles in order to provide available water to the root zone (based on the turf requirement). In general, sandy soils will hold less available water than clay soils. Therefore, longer or more frequent irrigation cycles may be needed in sandy soils than in clay soils to maintain a healthy and active root zone. Available water held within the root zone is usually measured as "inches of water held per inch of soil" under field water capacity conditions.

Applied water that is not fully absorbed into the soil may be lost due to evaporation or run-off before it reaches the turf root zone. Water within the root zone is drawn into the plant by osmotic pressure and is used by the turf for nutrient transfer, structural support, and temperature control. This temperature control mechanism involves the "transpiration" of water from the plant to the atmosphere. The combination of "evaporation" and "transpiration" creates a water loss that is replaced by natural rainfall and supplementary irrigations. "Evapotranspiration" rates run in cycles that are closely associated with seasonal weather patterns. In cool winter months, the rate that water is lost due to evapotranspiration is much slower than during the peak summer season. Conversely, in Northern California the cool winter season generally produces more rainfall than the hot, dry summer months. Because of these opposing factors, it is necessary to reduce irrigation applications during the winter and apply water on a regular basis throughout the peak summer season. Evapotranspiration rates are expressed in terms of "inches of water lost per day" and effective rainfall is expressed in terms of "inches of water applied to the root zone per day".

To summarize, the following environmental factors at the golf course should be determined for effective irrigation program scheduling:

*Turf water requirement (average inches per day for each month).

*Active turf root zone depth (inches).
*Water holding capacity of soil within the root zone (inches of water held per inch of soil at field capacity).
*Evapotranspiration rate for turf on-site (average inches per day for each month).
*Site rainfall (average inches per day for each month)

These environmental factors will help determine the amount of water needed by the turf and will set the groundwork for developing an effective irrigation system program. The actual time required by an irrigation system to apply effective water to the turf is dependent on the physical properties and operation of the system itself.

Next Month: Physical Properties Involved in Irrigation System Programming.

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

MEMBERSHIP

New Members

Class A
Bill Kissick, Salinas Golf & CC, Salinas

Associate

Todd Cook, The Olympic Club, San Francisco
Christopher Gose, Sunnyvale Municipal GC, Sunnyvale
(pending Class B exam)
Thomas Langbein, Wikiup GC, Santa Rosa
(pending Class A exam)

Affiliate

Don Grivina, Dow Elanco, Penryn
Michael Haile, Turf Tech, Concord

Class B Retired

Edward Munnelly, Concord

New Applications Subject to 30 Day Wait

Micael Landsdale, Cambridge Systems, La Selva
James Niskanen, City of Modesto Golf Program, Modesto

A LOOK AHEAD

March 26	USGA/NCGA
April 27	Palo Alto Hills CC
May 4,5	CGCSA Annual Meeting Ojai Valley Inn
May 13	Sonoma G & CC
June 19	U.S. Open-Pebble Beach
July 13	Lake MercedCC-Supt/Pro
August 14	Marin CC
September 14	Pasitiempo CC
October 9	Sierra Nevada Chapter joint meeting
November 11,12	GCSANC /UC CooperativeExtension Golf Course Institute
December 4	Christmas Party

EQUIPMENT FOR SALE

Deedos aerator Model TCA 501 hydraulic unit 3 supreme drums with hinged screened doors. Excellent condition. Please contact:

Bill Nigh
Auburn Lake Trails Golf Club
(916) 885-2919.

SUMMER PATCH

By Dr. Bruce Clark, Specialist in Turfgrass Pathology, Rutgers University

Summer patch was first recognized as a disease of cool-season turfgrasses in 1984. Prior to that time, it was an unidentified component of Fusarium blight. Summer patch has bee reported in North America on Festuca glacua, F. longifolia, F. ovina, F. rubra, Poa Annua, and P. pratensis. The causal agent has also been isolated on occasion from Agrostis palustris and Lolium perenne. The disease generally occurs on turf that has been established for more than two years.

SYMPTOMS

On P. pratensis, symptoms first appear in early summer as small, circular patches of wilted turf 3 to 8 cm in diameter. Patches may enlarge to more than 60 cm, but generally remain in the 6 to 30 cm range. Affected leaves rapidly fade from a grayish-green to a light straw color during sustained hot weather (daytime highs 28-35C and nighttime temperatures exceeding 20C). Irregular patches, rings, frog-eye and crescent patterns may also develop and coalesce into large areas of blighted turf.

In mixed stands of Agrotis and Poa maintained under putting green conditions, patches are circular and range from 3 to 30 cm in diameter. As P. annua yellows and declines, Agrotis spp. frequently recolonize patch centers. On fairways and lawns, rings or frog-eye patches may not develop. In such cases, symptoms may appear as diffuse patterns of yellowed or straw colored turf that are easily confused with heat stress, insect damage, or other diseases. Infected roots, rhizomes, and crowns turn brown as they are killed. Examination of these tissues typically reveals a network of sparse, dark brown to black, ectotrophic hyphae from which hyaline penetration hyphae invade the underlying vascular tissue. In the latter stages of infection, vascular discoloration and cortical rot are extensive. No fruiting structures have been observed under field conditions.

CAUSAL AGENT

Magnaporthe poae Landschoot and Jackson, the casual agent of summer patch, is a newly described heterothallic fungus show anamorph had previously been misidentified as Phialophor graminicola (Deacon) J. Walker. The fungus forms dark brown to black, septate, ectotrophic runner hyphae on roots, crowns, and rhizomes of turfgrass hosts. Perithecia, which have only been observed in culture, are black, spherical (252-556 um in diameter), and have long (357-756 um) cylindrical necks. Asci are unitunicate, cylindrical (63 x 108 um long), and bear eight ascospores. At maturity, ascospores are 23-42 um long and 4-6 um in diameter. Ascospores are tri-septate with two intermediate dark brown cells and tow hyaline terminal cells.

On half strength PDA, mycelial growth is appressed, olive brown to black, and curls back towards the center of the colony. Philalospores of the anamorph are hyaline, 3-8 um long, and 1-3 um wide. Hyphopodia are globose, dark brown, and occasionally found in nature on stem bases and roots.

DISEASE CYCLE

The pathogen is believed to survive the winter months as mycelia in previously colonized plant debris and in perennial host tissue. Colonization and suppression of root growth has been shown to occur between 21 and 35C under controlled environmental conditions, with optimum disease development at 28C. In the field, infection commences in late spring when soil temperatures stabilize between 18 and 20C. The fungus moves from plant to plant by growing along roots and rhizomes. symptoms develop during g hot (30-35C), rainy weather or when high temperatures follow periods of heavy rainfall. Patches may continue to expand through the summer and early autumn and are often still evident the following growing season. Summer patch may be spread by aerification and dethatching equipment as well as by the transport of infected sod.

EPIDEMIOLOGY

Summer patch is most severe during hot, wet years and on poorly drained, compacted sites. Although heat stress plays an important role in disease development, drought stress is usually not a predisposing factor. Under ideal conditions, the causal agent can spread along roots, crowns, and stem tissue at a rate of up to 3 cm per week. Symptom expression has been shown to increase with the use of arsenate herbicides, quick release nitrogen fertilizers, and several contact fungicides. The disease is frequently stimulated when turfgrass is maintained under conditions of low mowing height and frequent, light irrigation. Soil pH, a major factor in the development of take-all patch, apparently does not affect the incidence of summer patch.

NTROL

Because summer patch is a root disease, cultural practice that alleviate stress and promote root development will reduce disease severity. Since low mowing enhances symptom expression, avoid mowing turf below recommended heights, particularly during periods of heat stress. In the Northeast, symptoms are less apparent when lawns are maintained at a height of 5 to 7 cm, respectively. Fertilize turf with a slow release nitrogen source such as sulfur-coated urea. Irrigate deeply and as infrequently as possible without inducing drought stress. Syringing to reduce heat stress, aerification, improving drainage, and reducing compaction are other practices that will aid in the control of this disease.

Overseeding affected areas with L. perenne, F. arundinacea, or resistant cultivars of P. pratensis represent one of the most cost-effective means of controlling summer patch. Use mixtures or blends of resistant turf cultivars or species for best results. Conversions of golf areas from Poa to Agrotis spp. will also reduce disease incidence.

Fungicides are available that can effectively control summer patch. Applications should commence on a preventative basis in late spring or early summer when soil temperatures stabilize between 18 and 20C. Systemic fungicides have proven to be most effective but must be applied at high label rates and repeated two to three times at 21-28 day intervals. Efficacy is enhance when products are applied in at least 1600 L of water per hectare. Certain contact fungicides may stimulate symptom severity when used repeatedly at high rates.

Article seen in Connecticut Clippings, January 1992.

THANKS RICK

Many thanks to our host **Rick Key**for hosting theFebruary meeting at Ridgemark Golf and Country Club. The luncheon was great and we all found Jeff Kollenkark from Ciba-Geigy presentation on plant growth regulators and their application on golf courses very informative.

TURFGRASS MANAGEMENT FOR PROFESSIONALS

Current techniques and research results pertaining to turfgrass integrated pest management are the focus of this two-say course. It should be of special interest to golf course superintendents, park and recreation site managers, cemetery and sports turf managers, horticultural consultants, turf and seed sod suppliers, landscape managers, pest control advisors and other professional turf and landscape managers. Ten hours of CDFA continuing education credit pending.

Topics of discussion include: Turf Selection; The first step in pest management; Insect turfgrass pest management; Pre-emergent turf weed management and control; Post-emergent turf weed management and control; Rodents and other turf animal pests; Turfgrass nematode diseases; Turfgrass management to reduce diseases; Low and high temperature turf diseases.

This class will be held on March 24, 25; 9 am to 4 pm at the University Club, UC Davis. For more information call (916) 757-8899.