Tee to Green

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MEETING NOTICE

Joint meeting MGCSAA, LIGCSA, HVGCSA, NJGCSA

Date:	May 17, 1973 Thursday
Place:	Elmwood C.C. (phone number) 914-592-6600
Golf:	12:00 noon on (call if you want to play earlier)
Lunch:	Available in grill room
Cocktails:	6:00 PM
Dinner:	7:00 PM
Speaker:	Dr. Houston Couch — Turf Diseases & Systemics Charles Baskin, V. P. GCSAAA National News
Host:	Harry Nichol
Directions:	Take Cross Westchester Expressway 287 to Exit 4. Go south to second intersection by shopping center, take left, 1 mile to entrance on left.

NOTE: Please return attached post card immediately.

Coming Events:

June 12	Rutgers Field Day
June ?	Tentative club, Quaker Ridge
July 10	Siwanoy C. C.
Aug. 20	Wee Burn C. C. Joint meeting Conn.
Sept. 20	Bonnie Briar
Oct. 2	Invitational Metropolis C. C.
Nov.	Annual meeting open

MGCSA NEWS:

We had an excellent turnout at Tamarack C. C. We were all anxious to play golf but the weather man was not with us. Believe it or not about three Supts played including Golf Chairman Bob Bruce. Gene Grady was our host. We certainly had an excellent meal. We had 44 sign up for the OSHA first aid clinics to be held at the American Red Cross in White Plains.

Mr. Frank Doughty gave us an excellent talk on all aspects of OSHA. He was a representative from Hartford Insurance Co. It might be possible to have your insurance company give you an inspection of your facilities to see just where you may not be complying to OSHA. It should be a great meeting at Elmwood. Please return your cards or call the Program Chairman — 967-2100. Ext. 49. Keep mowing the Poa.

Golf Committee — Complete chart on Calloway Handicap System.

SPECIAL NOTICE: The OSHA first aid clinics scheduled for May 14th have been cancelled. We will reschedule the earliest possible date and notify you.

Membership Committee:

The executive board has approved the application of Victor Cedroue Jr. as a Class B member. Victor is the Assistant Superintendent at Fenway.

Membership Dues:

Remainder of dues are now overdue so please send your dues in NOW — to Bob Alonzi.

CALLOWAY HANDICAP SYSTEM

Score	*Deduct*
Par or less	Scratch
73 - 75	½ Highest hole only
76 - 80	1 Highest hole only
81 - 85	1 Highest hole plus ½ next highest hole
86 - 90	2 Highest holes only
91 - 95	2 Highest holes plus ½ next highest hole
96 - 100	3 Highest holes only
101 - 105	3 Highest holes plus ½ next highest hole
106 - 110	4 Highest holes only
111 - 115	4 Highest holes plus ½ next highest hole
116 - 120	5 Highest holes only
121 - 125	5 Highest holes plus ½ next highest hole
126 - 130	6 Highest holes only
131 - 135	6 Highest holes plus ½ next highest hole
136 - 140	7 Highest holes only
141 - 145	7 Highest holes plus ½ next highest hole
146 - 150 or more	8 Highest holes only

Highest hole score allowed – 9
Highest handicap allowed – 50

Garry Crothers *Co-Editor*
Ted Horton *Co-Editor*

OFFICERS

President:	Harry H. Nichol, Elmwood C.C. Office 914-592-6608, Home 914-472-0174
First Vice President:	Garry N. Crothers, Apawamis Club Office 914-967-2100, Home 914-234-3770
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Sergeant at Arms:	Anthony Altamaro, Greenwich C.C. Office 203-869-1000, Home 203-661-7019

SUBJECT: Charter Flight to National Conference, Anaheim, California.

NATIONAL CONFERENCE DATES: February 10, 1974 to Friday, February 15, 1974.

TO: All members of the New Jersey Golf Course Superintendents Association and neighboring Associations.

Arrangements are being made and a deposit has been sent for the charter flight to Los Angeles sponsored by the N.J.G.C.S.A.

FLIGHT:

New York to Los Angeles via non-stop United Airlines DC-stretch 8, dinner and movie. Plane leaves Feb. 6, 1974 and returns Feb. 23, 1974. 206 seat guarantee — children fill 1 seat. All passengers must leave and return together. Final cost dependent on total seats sold. Cost per seat — $145. At this time we will require a $25 **per seat** deposit. $10 of which is nonrefundable. The $10 will cover our nonrefundable deposit and Association expenses.

Deadline for deposits is July 1, 1973 and will be based on a first-come, first-serve basis.

Side-trips can be arranged at reduced rates if there is enough interest.

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Please fill in the required information and return with your $25 per seat deposit to the address listed below. Checks payable to N.J.G.C.S.A.

NAME_____

ADDRESS_____

_____

_____

Number of seats required___Amount of check _____

Those preferring other dates please list them — we will try to please the majority.

Arrive L.A. _____ Depart L.A. _____

RETURN TO: Al Rathjens
341 Country Club Rd.
Somerville, N.J. 08876

Summary of Talk by Frank Doughty on OSHA
by Dave Lerner — Winged Foot Golf Club

No insurance company can certify that you are in exact compliance with the law.

The Purposes of the William Steiger OSHA Health Act of 1970 are:

1. personal injury concern
2. assure workers are safe
3. have rights for safe working conditions
4. allows for research in safety
5. to avoid workers being killed
6. for reporting injuries and the nature of them
7. to encourage reductions of hazards

Any employee may request an inspection. The employer has 15 days to contest a violation.

It was suggested that we have a safety program on the golf course as it would result in a 20 % reduction in the fines. The program should be in writing showing:

1. management leadership
2. assignments of responsibility
3. established safety training programs
4. medical and first aid systems
5. acceptance of personal responsibility by the employees

RESEARCH REVIEW
By Wayne C. Morgan

THE USE OF
IRON TURFGRASS MANAGEMENT

Reprinted from DIVOT News, April 1973

Pale green and/or yellow chlorotic turf is one of the problems many turfgrass managers are confronted with from time to time. Often the cause of this lack of color may be traced to iron deficiency. An excellent article on this subject, written by Dr. Eliot C. Roberts of the University of Rhode Island appeared in the 1970 Ohio Turfgrass Conference Proceedings.

Everyone knows that iron is an essential ingredient of the red pigment of blood hemoglobin, but it's not so well understood that the prophyrin ring, which is the fundamental unit of heme (the red pigment of hemoglobin), is the same type of structural unit found in chlorophyll. Magnesium is bonded in the center of the chlorophyll prophyrin ring, whereas heme and other respiratory pigments all contain iron bound in this position.

Availability of Iron In the Soil

Availability of iron is not always adequate to meet turfgrass needs. The following conditions help to create iron deficiencies in plants:

I. Calcareous soils
II. Use of too much lime
III. High levels of phosphorus in the soil
IV. High levels of manganese, zinc, copper or nickel in the soil
V. Poorly drained soils

Some soils are naturally deficient in iron; however, most soils contain adequate quantities for growth of turfgrasses. Where soils are calcareous in nature, or where lime is used in excessive amounts, iron may become unavailable to the turf. At a pH of about 6.0 or above, inorganic iron precipitates from solution as $Fe(OH)_3$ and is deposited as insoluble Fe_2O_3.

As soils become acid (within the range pH 5 to 3), iron

becomes increasingly soluble and at low soil pH levels iron may become toxic.

An abundance of phosphates in the soil serve to fix iron, aluminum and manganese. In acid soil both iron and aluminum form compounds of low solubility with phosphate ions. These reactions take place at pH of 5.0 and below. Lime helps to increase the solubility of phosphorus and carbon dioxide in the soil making phosphorus more available. However, neither of these soil reactions are of much practical significance in improving the availability of iron.

Other relationships of iron with essential nutrients include those involving potassium and manganese. In grasses, iron accumulates in the nodes when potassium is not available in adequate quantities. This results in iron deficiency within the plant. A deficiency of manganese, on the other hand, often results in iron toxicity. Under normal circumstances, plants seldom accumulate toxic levels of iron; however, the relationship between manganese and iron in this respect is of considerable interest. In general, as far as iron toxicity is concerned, Ferrous iron is more toxic than Ferric iron.

The availability of iron varies with the degree of soil aeration. Poorly aerated soils, where anaerobic conditions exist, generally contain larger amounts of available iron. Since plant growth is often restricted under poorly drained soil conditions, iron may not be absorbed in adequate quantities even though its availability is increased. Poorly drained soils often have a blue or mottled color in the subsoil. This is related to the presence of iron in the unoxidized form. Oxidized soils develop a characteristic rusty brown color and these are associated with well aerated conditions.

Behavior of Iron in Turf

Although most soils contain relatively large amounts of iron, very little of this element is absorbed and accumulated in plants. Iron is taken up in either the Ferric or Ferrous state, but its presence cannot be demonstrated within plants by ordinary inorganic reactions. Iron forms complex organic ions in plant tissue.

It is know that iron is essential for normal chlorophyll formation. Although magnesium is a part of the chlorophyll molecule and iron is not, the iron is believed to function in association with catalysts that make the production of chlorophyll possible.

Iron also functions as a part of various enzymes. It is not bound directly with the protein but is incorporated into a more complex molecule. These enzymes function as catalysts, and as such, they are not altered or destroyed in the overall reaction with which they are involved. Iron is not involved in many of these processes without interactions of other essential mineral elements. For example: Iron and manganese are often closely associated; i.e., too much of one tends to exclude the other.

Iron Chlorosis In Turf

Chlorosis caused by iron deficiency is sufficiently common to be designated as iron chlorosis. Leaves are characteristically chlorotic in the interveinal areas, while the veins retain a darker color. Iron deficiency leads to the immediate development of these symptoms, particularly in young, developing leaves. Since iron is relatively immobile within the plant, older or lower leaves may remain green while younger or upper leaves are chlorotic. Thus, in order to keep turfgrass growing adequately a constant supply of iron is required even though only a small amount is needed at any given time.

In general, micronutrient deficiencies in turfgrasses are not recognized as common. Where clippings are returned to the turf, the supply of these nutrients is not depleted as rapidly as when part of the plant is harvested and removed. Also, natural organic and other fertilizers which contain micronutrients are used regularly on turf. These practices are usually adequate to prevent most micronutrient deficiencies except iron.

Excesses of some micronutrients, such as chromium, copper, zinc, cobalt, nickel and cadmium, have been observed to create conditions that result in chlorosis and a related iron deficiency.

Sources of Iron For Turf

Iron deficiency in turf may be corrected by use of one of the following three sources of iron:

I. Iron sulphate (Ferrous sulfate)
II. Iron chelate
III. Activated sewage sludge or other natural organic fertilizer containing iron.

Rate of application should be as low as possible. Iron sulphate applied to turf at a rate of from 1 to 2 ounces per 1,000 square feet approximates this solution culture rate. At this rate, there should be no danger of injury to the foliage; and in fact, some foliar feeding may well benefit the turf and speed up the correction of iron deficiency. In addition, this rate of application is not so great that it will be wasted by being tied up and inactivated in the soil. As long as soil conditions favor iron deficiency, it is advisable to use small amounts of iron frequently rather than large amounts infrequently. Iron toxicity should be expected within the range of 15 to 20 ounces per 1,000 square feet and even then under some circumstances no injury has been noted from applications made at twice this rate.

Use of chelated iron at manufacturers recommended rates provides a means of getting iron into deficient soils without having it tied up and made totally unavailable to the turf. These materials are readily available and safe to use.

Lowering soil pH by use of acid reacting fertilizers of flowers of sulphur, improving drainage of the soil and reducing phosphorous fertilization all help to make iron more available to turfgrasses.

Practical Consideration In the Use of Iron On Turf

Those who use golf turf generally like to play on grass that has a good healthy dark green appearance. Nitrogen fertilization contributes to the production and maintenance of good turf color; however, during warm summer months it is not desirable to stimulate the grass with much supplemental nitrogen. During these periods nitrogen fertilization often results in oversucculent, disease susceptible turf that has lost its normal hardiness. During these periods, applications of small amounts of iron often improve: color, decrease proneness to wilt, and hardiness of the grass.

Since iron is known to be important in enzyme reactions that regulate respiration, this nutrient may play a significant role in establishing patterns of persistence during hot weather. Of particular concern are periods of high night temperatures. At these times respiration is known to proceed at a faster than normal rate. Energy reserves accumulated through photosynthetic activity during daylight hours become exhausted in short time as accelerated respiration rates continue through the period of hot weather. During these periods it would seem desirable to have the turf maintained at a peak of iron nutrition so that these reactions would be as effective as possible.

Evidence indicates that both annual bluegrass and velvet bentgrass are especially sensitive to wilt during periods of high daytime temperatures combined with high night temperatures. Applications of iron on these grasses during these periods have helped to increase their persistence and maintain high turf quality.

Tee to Green

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First Class

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"He's not just another duffer. He's chairman of the greens committee."