



THE NEWSLETTER

Golf Course Superintendents

Association OF NEW ENGLAND, INC.

Sponsors and administrators of the Troll-Dickinson Scholarship Fund - Awarded yearly to deserving Turf Management Students.

June 1993

July Meeting

Monday, July 19, 1993
Concord Country Club

Host Superintendent
Dick Duggan

9:00 a.m. Board Meeting
10:30 a.m. Regular Meeting
11:00 a.m. Education
Golf and Lunch to follow
Golf & Lunch - \$30.00
Lunch Only - \$18.00

Reservations Required
Call by July 16, 1993
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Dick Duggan has been superintendent at Concord Country Club for the past nine years. Previously superintendent at Maynard Country Club for five years. He was an assistant superintendent for five years at Spring Valley Country Club in Sharon, MA.

Directions to Concord Country Club: Rte. 128 North or South. Take Route 2 west. Take the Emerson Hospital exit, go past hospital entrance. The Club is 1/4 mile from the hospital.

School of hard knocks softens Brown's rise

Daryn Brown has an amusingly unique way of depicting his near passion-like determination to become a head golf superintendent. Simply put, he described his approach to the process of nailing down a career move as the spin-off of two characteristics -- "I'm a nature nut to begin with who just doesn't feel comfortable in a suit and tie."

Thus came the decision to pursue a professional life as a golf course superintendent. There followed a rigid apprenticeship otherwise known as a successful grind through the school of hard knocks. Result? Three months ago at the age of 24 Brown became one of the youngest supers to take charge of maintaining one of the country's public golf course gems - the Shaker Hill Country Club in Harvard, MA.

Daryn pulled nine years learning the ropes under two of the more respected and recognizable names in the Golf Course of New England Superintendents Association files - Ron Kirkman and Mike Nagle. "That was my background before Doug Johnson's group hired me for the Shaker Hill job," Daryn explained. "I couldn't have had better



tutoring than I got from Ron and Mike. You know, one of the basic requirements for being a successful superintendent is a solid work discipline. On that score I can only say, 'thank God for Ron and Mike'."

Kirkman and Nagle recommended Brown when Johnson, who operates a golf course maintenance management service, was looking

for someone to take charge at Shaker Hill. The post carried a high-prestige label since in only its third year it was selected as site of the New England PGA Championship.

Daryn is well aware of the responsibilities that go with heading up a maintenance crew at a course which was rated second-best new public course in the United States by Golf Digest when Shaker Hill opened in 1991. "My goal is to bring Shaker Hill up another notch in its reputation as a potentially outstanding championship course," Daryn said. "All the ground-level ingredients are there, a course designed by Brian Silva and layered in bent grass. Now all I have to do is put all that I learned under Ron and Mike to work, doing my own thing. It's exciting and the

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only pressure I experience will be self-imposed. But I don't see that happening."

Brown started thinking he could make the grade as a super when he was hitting the books at Needham High School. An athlete, Daryn played lacrosse and soccer in high school and drifted to the Needham Golf Club when seeking summer employment. There he met Kirkman who as manager-superintendent does everything except kiss the course goodnight at Needham.

He worked in the pro shop for a while but soon found that he was more interested in the golf course than the game, itself. That led Daryn to a long and fruitful relationship with Kirkman. Originally, Daryn had set his sights on a career in either landscape or golf course architecture, having studied those professions for almost two years at Ohio State University. However, as his summers working for Kirkman progressed, he gradually reversed his field toward the superintendent's profession.

Kirkman had much to do with that switch. After his third summer working at Needham, Brown took the next step -- the two-year turf management course at Stockbridge. Again, it came at the urging of Kirkman who wrote a letter of recommendation to the Amherst school on Brown's behalf.

Daryn graduated from Stockbridge in 1991. Kirkman intervened once more and pointed him to the Worcester Country Club where nagle was looking for top talent in the form of an assistant. Turns out Brown was his man.

"The change from Needham to Worcester Country Club was an orderly one and fell in line with Ron's idea of a true apprenticeship program," Brown told. "I was thinking of going out to try for my own job but Ron said to put that idea on hold and spend at least two years with Mike at Worcester. Hey, that advice was golden, just like the time I spent furthering my on-course education under Mike. Those two guys couldn't do enough for me and for that I am forever grateful."

Brown viewed his two years at Worcester as a major challenge because Nagle hiked his responsibilities, treating Daryn more as an associate super than his assistant. That condition hit home with Brown.

So, the move to Shaker Hill this year was almost tuned to a schedule of Kirkman's and Nagle's making. "I think I'm as prepared for

"I'm a nature nut to begin with who just doesn't feel comfortable in a suit and tie."

Daryn Brown

this Shaker Hill job as well as any other first-year head super has ever been because of Ron and Mike," Daryn disclosed. "The funny thing about all of it is that it's just a continuation of what's happened before because Doug Johnson has given me full control.

"The arrangement is great. Doug drops in a couple of times a week and we discuss the maintenance program. Shaker Hill is one of four courses in his management group so there is an interchange of equipment and ideas that helps each and every super working for Doug. As for Doug, when I got the job, he said, 'here's the course; now run it'. You can't beat that setup."

The school of hard knocks. It still pays off, doesn't it?

GERRY FINN

Calendar

June 28	Franklin C.C. Supt./Chairman
July 19	Concord C.C. Championship
August 9	Thorny Lea
Sept. 13	Hatherly C.C. Member/Member

The Super Speaks Out:

This month's question: *What has been your experience in seeking funds for and eventually moving into an improved maintenance facility (building)?*



Kip Tyler, Salem Country Club: "First of all, you have to know what we had for a maintenance facility before we got the new one.

The original or the one when I got here was a World War II relic. It was

what they called a Quonset-type hut, found mostly at military air fields. I think the one Salem ended up with was a Flying Tigers' hangar.

"Anyway, with the coming of the need for more and more sophisticated maintenance equipment came the need for a more suitable place to store it. Our old place was really cramped. It took five men and the moving of five different pieces of equipment to find the one you were looking for. So, a lot of time was wasted just getting prepared for a grooming project."

"The 'hangar' also served other purposes. It was our dining area and even a rehab center for those times when certain phases of work might have irritated a worker or super or two. Frankly, it was a 10-year selling job to get the wheels rolling."

"In all probability, the long length of selling was the result of the 'hangar' being practically off-limits to members. The only time members became aware of its condition was in a rainstorm when they were seeking relief from it. That was the key, the membership realizing the old building was out of date and a hindrance to a proper maintenance program. Once that came out, proposals were made ready to send the actual construction of a replacement out to bid."

"In fact, the members placed no restriction on the expense of building the new facility. My mechanic and I designed it, a member who was a draftsman drew it the way we wanted it and the low bid did the job, coming in \$500 under budget. The new building was ready in September and has turned out over

all operation into a more efficient one. We're up to date in all parts of the facility, it makes for a more pleasant atmosphere and has been a morale booster among my crew"

Scott Reynolds, Charles River Country Club: "We just about doubled the size of our facility with a replacement that didn't fall into place until three years ago. Before it was finished, we were working out of

a closet that leaked and heated up to the point that I thought I might have to have my crew get malaria shots to survive the ordeal."

"Selling the new place was tough for a while until I found a green chairman who suggested that I abandon a verbal campaign and put everything in writing. That did the trick, especially when members learned (from a structural engineer) that the old building could fall down anytime."

"There wasn't much quibbling over the cost of the new facility. However we did run into a major snag when the low-bid contractor, who came in at \$80,000 less than anyone, couldn't complete the job. As it was, I took over as sub-contractor halfway through the project, including having to conform to a new town (Newton) fire protection ordinance requiring a complete sprinkler system. So, getting everything the way it was intended to be proved a gigantic responsibility for me."

"But it was worth it. We have a 10,000 square-foot facility that meets our needs. We even have an oversized office, large enough for committee meetings pertaining to course maintenance decisions. All in all, the facility is a plus for everyone concerned."



our present facility or go with an approved separate site and building. Whatever, the change will mean going from 3,000 square feet of room to a facility with almost 13,000 square feet of space. That in itself is a comforting feeling."

"The need for additional room is obvious and this was my selling point to the membership which was well aware that we had run out of space and everything was being jammed into the old building."

"There never has been any problem along those lines. My green chairman is with me all the way even though the present building is structurally sound. It's just not big enough."

"Regardless, an improvement will occur one way or the other. In the end I will end up with almost 10,000 square feet of a facility I didn't have. After it's all done and over with, it might make a more interesting story than this month's speak-out question."

Mark Spaulding

"The pros and cons surrounding the build-on or build-new argument have been presented and the choice could be up for grabs. Personally, I prefer a separate site and separate building for the maintenance program because that determination would serve two purposes. The new building could be used to accommodate equipment deployed on a regular basis, the existing one would serve as an ideal storage area. This makes sense to me."

"Regardless, an improvement will occur one way or the other. In the end I'll wind up with almost 10,000 square feet of facility I didn't have before the decision to increase the space was made. After it's all done and over with, it might make a more interesting story than this month's speak-out question."

Mark Spaulding, Dedham Polo & Country Club: "As we speak, we are in the middle of a bid decision - whether to add to

GERRY FINN



Panel of scientists fails to arrive at cancer classification for 2,4-D.

A panel of scientists convened by the EPA to advise the government on how to evaluate the evidence of carcinogenicity of the widely used herbicide 2,4-D has told the government that it could not agree on a recommended cancer classification.

All of the panelists said they were concerned over the reliability of human studies to show clear associations between exposure to 2,4-D and cancer. They agreed that all currently available evidence combined from animal and human studies are inconclusive and suggested that additional studies would be useful.

2,4-D has been legally registered for more than 40 years and is used at a rate of 70 million pounds a year, according to EPA records, making it the third most widely used pesticide in the nation. It is applied to turfgrass and agricultural sites, residential lawns, public rights-of-way and aquatic areas.

A two-day joint meeting of the Science

Advisory Board and the Federal Insecticide, Fungicide and Rodenticide Act Scientific Panel was held to assess the combined weight of the evidence on 2,4-D. The panels are made up of scientist selected by EPA under the authority of the Federal Advisory Committees Act.

EPA asked the panel to evaluate the scientific data available and to develop a position on cancer classification to be recommended to the agency. EPA did not take a position on the weight of the evidence for the herbicide as it usually does in convening science advisory groups.

The primary sticking point among the nine panelists was in arriving at a term that best expressed their position on the merit of the human data suggesting a positive link between 2,4-D exposure and the development of non-Hodgins lymphoma. At the heart of the discussion were the results of the National Cancer Institute studies on farm workers in Kansas, Nebraska and Iowa, and an ongoing study of chemical manufacturing plant workers provided by Dow Chemical Company.

Following lengthy discussions, five scientist voted in favor of the term "weakly suggestive" of carcinogenicity, three voted for "weakly possible", and one voted for "possible."

Chemical manufacturers say they are concerned that usage of the term "possible" could lead to additional regulatory restrictions on 2,4-D products.

EPA says a report by the panel will be made available to the public by late June. After EPA Administrator Carol Browner has reviewed the report, the agency will decide whether to put the chemical into special review or to further restrict its use. A final regulatory decision could be made in early fall.

Pesticide distributors might be "arrangers" of waste disposal, a federal district court rules.

Pesticide distributors potentially can be subject to "arranger" liability under the federal superfund law because of an agreement under which the distributors were supposed to retrieve leftover chemicals from the pesticide applicators, a federal court in California has ruled.

Under the ruling, four pesticide distributors that allegedly had arranged for disposal of hazardous substances and who allegedly failed to retrieve unused chemicals may be liable for the cleanup of the substances that later were released into the environment.

However, the court said that more evidence was needed to determine whether liability should be imposed on the distributors.

The case involves a contaminated site in California operated by a company that used helicopters to apply pesticides. Growers purchased pesticides from the chemical distributors, who delivered them to the operating company for application. By agreement, the distributors were to retrieve unused pesticides from the operating company, the court said.

State environmental authorities discovered in 1984 that the site was contaminated and filed a cost-recovery suit against the company and the chemical distributors under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

The distributors raised the issue of whether they could be held liable as

arrangers, arguing that they were selling a useful product and that any decision regarding disposal of leftover quantities were made solely by the operating company.

The court denied the distributors' claims, saying that CERCLA explicitly applies to hazardous substances and not just hazardous waste. The court also said that it could be inferred that the unusual portions of the chemicals remained the property of the distributors, calling into question whether the defendants owned, possessed or controlled the chemical containers such that they could be held liable under CERCLA.



Turf fertilization and environmental consequences

Dr. Richard Cooper
Department of Plant and Soil Sciences
University of Massachusetts, Amherst, MA

Of the phone calls I received each week dealing with turf management problems, at least a few are guaranteed to be from someone concerned about possible nitrogen pollution from fertilization of turf. Concerns about nitrate (NO_3^-) pollution increased dramatically during the early 1980's following a report on groundwater quality on Long Island. Researchers there published preliminary work reporting a value of 50% for plant uptake of applied N and then assumed that the remaining 50% must ultimately leach to groundwater. This guess of 50% nitrogen leaching caused great alarm among people concerned with protecting water quality.

As research has progressed over the years, we have come to know that an assumption of 50% leaching is unreasonable high. Other processes including storage in soil and thatch, gaseous losses, and chemical transformation to unavailable products are important processes which greatly reduce the amount of nitrogen available to leach. A more accurate estimate of nitrogen leaching would probably be less than 5% of the nitrogen applied. The purpose of this article is to summarize some of what we know about nitrogen fate in the environment.

Although numerous research studies have been conducted to investigate nitrogen movement in the environment, experimental conditions and the fertilizers evaluated have varied substantially among research projects. Research is normally done under conditions which favor the avenue of loss being investigated (i.e., 'a worst case scenario') in order to estimate the maximum loss that might be expected. Thus, one cannot simply add the estimates of N loss to derive a total estimate of nitrogen loss. Even so, it is clear that the percentage of applied N available to potentially leach is much less than the amount actually applied. Research studies conducted for a wide range of fertilizers and applications rates, indicate:

N recovered from clippings

30-60% for materials releasing their N primarily during a single growing season.
(for soluble sources)

N storage in soil and thatch:

36-47%

N lost to atmosphere via ammonia (volatilization):

5-40%; high losses for urea.

N lost to atmosphere as N_2 (denitrification):

Not usually meaningful unless soils are saturated and soil temperatures exceed 70°F.

Following application of a N fertilizer, the N contained in the fertilizer undergoes changes in its chemical composition and location within the atmosphere/turf/soil system. Nitrogen must be transformed to either the ammonium form (NH_4^+) or nitrate from (NO_3^-) before it can be taken up by the turfgrass plant. The conversion of ammonium to nitrate is a chemical reaction known as **NITRIFICATION** requiring the bacteria *Nitrosomonas* and *Nitrobacter*. The activity of these bacteria declines greatly at soil temperatures <55°F. Thus, the conversion of nitrogen to leachable nitrate following application to cool soils occurs very slowly, if at all. One should also keep in mind Massachusetts soils (at least those inland) are normally frozen during winter which minimizes water movement.

The N in all fertilizers, whether they can be cow manure, seaweed, urea, or IBDU is eventually transformed into either NH_4^+ and/or NO_3^- . The key difference among fertilizers is how rapidly this conversion takes place. The rate of conversion to NO_3^- is especially important since NO_3^- has the greatest potential to leach.

Concerns regarding possible negative effects of turfgrass fertilizers generally focus on potential movement in runoff, or groundwater contamination due to leaching. Numerous research studies have concluded that normal application of fertilizer to dense, well rotted turfgrass is unlikely to result in leaching or runoff sufficient to threaten groundwater.

Several research studies have demonstrated that a well maintained turf area can reduce runoff to near zero. Studies conducted in Rhode Island revealed that during a two year period runoff from lawn type turf (3% slope) occurred on only two occasions. In one case rain fell on snow covered frozen ground, and in the other case extremely wet conditions preceded a five inch rainstorm which generated runoff. In the latter case, although a total of ten inches of rain within one week, depth of runoff was less than 1/3 inch. When runoff did occur, NO_3^- concentrations never exceeded 4.3 ppm from N application as high as 5 lb.N/1000ft² (federal drinking water standard: 10.00 ppm nitrate).

In Pennsylvania, irrigation applied at a rate of six inches per hour was necessary to cause measurable runoff from sodded slopes of 9-14% overlaying a clay soil. In many areas of the Northeastern United States, storms generating rainfall of even four inches can be expected to occur only once every five years. Runoff due to natural rainfall did not occur during the Pennsylvania study (1985-1988). Analysis of runoff revealed that NO_3^- concentrations were less than 10 ppm on 28 of 29 sample dates.

In 1981, Starr and DeRoo reported on experiments conducted in Connecticut to evaluate fertilizer fate under turf. They applied 2 lb.N/1000ft² to a Kentucky bluegrass/red fescue turf in May and September for three consecutive years. Average NO_3^- concentration under fertilized plots was 2.0 ppm compared to 1.0-2.7 ppm in samples where no nitrogen was applied. Starr and DeRoo concluded that "these comparative data suggest little, if any, leaching losses of NO_3^- from the turf plots" and "fertilizer N loss observed in these experiments can be attributed to denitrification and ammonia volatilization."

In order to determine the effect of watering on NO_3^- leaching Morton and his associates at the University of Rhode Island evaluated two watering regimes; minimal irrigation (water only when the soil water content was low) and overwatering (applying 0.5" of water three times per week in addition to rainfall) in conjunction with N applications of 0, 2, and 5 lb.N/1000ft² per year. Average NO_3^- concentrations in soil water percolate ranged from 0.36 ppm for over irrigated, unfertilized

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President's Message



At our Association's Annual Meeting in January, it was announced that the GCSANE Board of Directors had approved the appointment of a sub-committee to investigate the creation of a Benevolence/Scholarship Fund. The details of this Fund's formation and how it will serve our GCSANE members, has been researched by this committee during the last five months. Final details should soon be presented to the Board, at which time the Board will recommend that the membership of the Association approve the Fund's formation and the necessary By-law change.

The initial phase of planning for the Fund involves the determination of the manner in which to accumulate value in the Fund. Since the benefits of this Fund are to be made available to all members of GCSANE, regular, assistant, and affiliate, our objective will be to build in an annual contribution to the Fund from cash generated by a slight increase in membership dues. The Benevolence/Scholarship Fund Committee, chaired by Jack Hassett, is working on the final details of this funding process.

Meanwhile, Jack Hassett has received confirmation from the Wachusett Country Club in West Boylston, for August 24, 1993, at which time a Memorial Golf Tournament will be conducted. GCSANE member Don Marone, superintendent and owner of Wachusett, has for a long while wished to establish a Memorial event to remember and honor our profession's deceased benefactors. The event will serve as a fund-raiser for GCSANE.

Proceeds from the August 24th event will be donated to the Benevolence Fund. Don plans to make his golf course and clubhouse, along with golf carts and a mid-afternoon dinner available to approximately 145 golfers, at no cost to the Association. All entry fees collected will go to the Fund.

Details of this event will be mailed to the membership very soon. It will be our responsibility to assure that the field is filled to capacity by our members and friends. Please mark August 24th on your calendar now. Thanks.

Steven Chiavaroli, CGCS
President

DIVOT DRIFT ...announcements...educational seminars...job opportunities...tournament results...and miscellaneous items of interest to the membership.

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New Members:

Gerard Jones, Affiliate, Ken Jones, Inc., Friend; Barry Hackett, Affiliate, Sani-Mate Supply, Friend.

MEMBERSHIP

Proposed New Members:

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THOMSON C.C.

JUNE RESULTS

2 Man Team Point Quota

1st	Brian McCarthy	
	Matt Crowther	+2
2nd	Dennis Friel	
	Pat Kristianiatis	-2
3rd	Max Meirzwa	
	John Hyduka	-3

THOMSON C.C.

July Format - Championship
Gross & Net

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turf to 4.02 ppm on the overwatered, high N treatment.

CONCLUSIONS

Groundwater is clearly one of our most precious and fragile natural resources. Every fertilizer program should have groundwater protection as one of its primary considerations. While fertilization of turfgrass areas is essential to maintain them for their intended use, existing research does support the contention that adequate fertility can be maintained without jeopardizing water quality.

One can maintain acceptable quality without increased nitrogen leaching by using light rates of materials which are quickly transformed to NO_3^- (slowly soluble fertilizers). It is important to note that any N source can be used in an environmentally responsible manner by adjusting the rate of application. As the percentage of quickly available nitrogen in a material increases, application rates should decrease to insure minimal leaching concern.

The above review of nitrogen fate represents only a small portion of research on this topic. Those desiring more information might refer to an article by A. Martin Petrovic (Golf Course Management and Nitrates in Groundwater) which was published in the September 1989 issue of *Golf Course Management*, p. 54. That article reviews many nitrogen fate research papers and also contains 16 additional references.

Cape Cod Sand Blaster
April 1993

NEWS RELEASE

**Wisconsin superintendents donate \$10,000
for health research.**

Lawrence, Kan., June 4, 1993

A major scientific study of the health effects of pesticide exposure recently received a substantial boost from Wisconsin's golf course superintendents. During a May 25th event at Waupun's Rock River Country Club, the Wisconsin Golf Course Superintendents Association (WGCSA) presented a grant totaling nearly \$10,000 to the national foundation that is sponsoring the study.

The research project is the first to examine whether superintendents have higher rates of any cancers or other illnesses that could be related to their occupational exposure to the products used to control weeds, insects and turfgrass diseases on golf courses.

The study, which is sponsored by the Golf Course Superintendents Association of America (GCSAA) research foundation, is being independently conducted by the University of Iowa College of Medicine's occupational health institute.

University scientists will examine causes of death among a group of approximately 1,000 deceased superintendents to determine if any unusual trends exist. Preliminary results of the study should be available early next year. WGCSA President

Bruce Worzella, CGCS, said that the donation showed that, "Superintendents in our state are committed to ensuring that golf courses are safe and healthy places for people to work and play." Worzella is the certified golf course superintendent at West Bend Country Club in West Bend, Wis.

GCSAA Immediate Past President William R. Roberts, CGCS, who was on hand to accept the check, said the study has received strong support from superintendents and golf clubs around the country. "This is a critically important study for our profession and for the game of golf," said Roberts. "The financial and philosophical support we've received thus far has been outstanding."

Roberts also praised the efforts of former WGCSA President Rodney W. Johnson, CGCS, who led the fund-raising effort. Johnson, who is the certified golf course superintendent at Sheboygan Pine Hills Golf Club, organized the state group's sale of newly required pesticide posting signs to golf courses. The grant came from proceeds from that sale. "Rod Johnson is a true professional who has done a great service to golf in this state and around the nation," Roberts said.



**THE
NEWSLETTER**

James Reinertson

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