

November/December 1985

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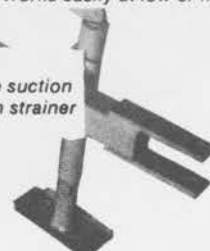
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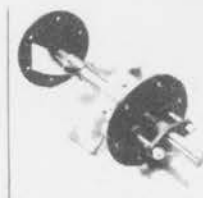
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Annual Picnic

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Burroughs Farms

MORE PHOTOS ON PAGE 20

The MBCGCSA annual picnic was held at Burroughs Farms on August 20. Hosts Jim Vlassis and Jim Dewling put on a fine day in spite of the cool weather. The fun-filled day was attended by over 110 members and their families. There was a lot of good food and plenty of games. All of the kids were treated to fun events such as water balloon throwing contest, sack races, bubblegum blowing contest, egg tosses and jelly donut eating contests. The highlight of the jelly donut eating contest was when six-year old Marc Dushane ate his donut in record time. The donut was consumed in less than two minutes. But by the look on Marc's face no one was sure is was not going to be unconsumed, if you know what I mean. It is safe to report that Marc will not be eating a jelly donut for quite a while.



JUSTIN KIRTLAND – Happy the game is over.

The adults enjoyed themselves by joining in the festivities. They played volleyball, softball, participated in the egg throw, the water balloon throw, sack races and a driving contest using a marshmallow and a golf club.

Jan Edgerton did a great job in organizing the kids games. She said if anyone needs a babysitter for their kids she would be happy to volunteer. Just kidding, Jan.

Again, thanks to golf course superintendent Jim Vlassis and general manager of Burroughs, Jim Dewling, for their fine efforts in making the annual picnic a fun day for all MBCGCSA members and their families. The hospitality at Burroughs is always first class.



L-R – ERIC EDGERTON, MEGAN KIRTLAND, BETH EDGERTON, LAURA GAIGE, in the bubblegum blowing contest



L-R – JETTIE FIELDS, MEGAN KIRTLAND, BETH EDGERTON, ANGIE COLLAR



JOHN & BRAD MADDERN



BRAD MADDERN (Left), & JUSTIN MITCHELSON

EDUCATION

Our final monthly educational site for the 1985 season was at Riverview Highlands Golf Course on September 23, with Dick Matthews as our host. The day and the course were excellent and the 32 people in attendance were treated very well. The guest speaker for the evening was Mr. Don Juchartz, of Juchartz's Horticultural Management. Don is probably better known as the Cooperative Extension Agent for Wayne County until 1984.

He talked to us about *Senate Bill #65*, which concerns the spraying of petro-chemical products that people may be sensitive to. This bill would require us to notify anyone who is registered as being petro-chemical sensitive and living within 2,000 feet in any direction of the area to be sprayed, 24 hours before doing so. These people can register at the local government office or the county offices - you would receive this list and would have to notify these people.

As of now, the bill is waiting for a governor's-appointed task force report on what should be done. The Senate Committee does not want to do anything now and find out when this report comes out that there is a better way.

He did say that before this is all said and done though, that Integrated Pest Management may be the only way we will be able to spray. This means that you could not spray unless you have so many species of pests in a certain size area. The number would be determined by the Department of Agriculture.

A question was asked, What is petro-chemical sensitive? Don said there is no real scientific way of determining this, but if you feel ill after chemicals are sprayed you are sensitive.

Another question was, Areas open to the public, would they have to be posted the same as notifying? Yes, at all entrances, Don said.

Don said there was a public hearing coming-up on this bill, but again stated nothing would happen until the task force report is out. We will keep you informed of all new developments.

Mr. Juchartz then went into some of the signs and symptoms of pests that affect trees in this area. He talked about Scale and Mites, giving us the ways to stop these pests and when to spray. He also told us the best time to fertilize trees is when all the leaves have fallen off, or in early spring. You use a fertilizer that

CONTINUED PAGE 22

TREE TRANSPLANTING

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VOICE YOUR OPINION

In the last issue of *A Patch of Green*, a two-part question was asked -

1. From what you know of the new mid-year GCSAA Turfgrass Conference and Show, is the mini conference a good idea?
2. And, will you be attending?

There were 40 responses, and the results were:

58% said, Yes it was a good idea.

48% said, No it was not a good idea.

49% said they were going to attend.

51% said they were not.

Many of the vendors that participated in the poll felt it was not a good idea, but many will be attending the conference anyway (for obvious reasons).

YES COMMENTS: A chance for the mechanics and assistant superintendents and new members to attend . . . Good for clubs who cannot afford to send staff to a larger National Conference.

NO COMMENTS: Too many regional conferences in the area already . . . Program not very appealing . . . Too early in the fall . . . Too far to go.

This Month's Question -

The GCSAA has instituted a new, extensive Golf Course Superintendent's Certification program. The written test is better designed to identify the *true* Golf Course Superintendent. It also stipulates that a committee of other certified Superintendents will view the applicants' golf course and determine, under certain guidelines, whether or he or she qualifies as a Certified Golf Course Superintendent.

Do you agree with the new Certification Program?
Will you become certified?

We now have 33 superintendents in the state of Michigan that have proudly earned the letters CGCS after their names - a worthy title.

COMING EVENTS

56th Annual Michigan Turfgrass Conference

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Contact: Michael McElroy
Crop and Soil Sciences Department
Michigan State University
East Lansing
Phone (517) 353-9022

In cooperation with the Michigan and Border Cities GCSA, GCSAA will be sponsoring the popular "Business Communication and Assertiveness Techniques" educational seminar in early November. Dr. Steven Hazel, of the Department of Human Development at the University of Kansas, will present this two-day seminar on November 4 and 5, 1985, from 8:00 a.m. to 5:00 p.m. at the Midway Motor Lodge, Lansing, Michigan.

Dr. Hazel, in addition to his faculty position at the University of Kansas, is a psychologist in private practice in Kansas City. His research focuses on problem solving, communication and social skills.

For Reservations call - 1-800 472-7878
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Did you see the GCSAA ads on T.V.?

Several were aired from the PGA and many from the Buick Open. A great effort in promoting the recognition of Golf Course Superintendents.

GCSAA TURFGRASS CONFERENCE

San Francisco, California
January 27 - February 4, 1986

WORDS OF WISDOM

For those of you who understand, no explanation is necessary.

For those of you who do not understand, no explanation is sufficient.

LIGHT-WEIGHT FAIRWAY MOWING

by Doug Mahal
Superintendent, Interlachen Country Club

Our light-weight fairway mowing program began early in the 1984 season. Previously, we had heard about the incredible results obtained with the triplex cutting units on fairways and wanted to learn more about it. We conducted a survey of 17 private country clubs in the country that we knew were already on the program, to get a true idea of what was involved and to get the full picture right from the horse's mouth - the superintendent.

We found through the results of this survey that all the clubs noticed an increase in bentgrass populations even after one year. Most of the clubs also found it necessary to reduce their fairway acreage to make the effort more manageable. Over half began using less nitrogen, less water and some even less fungicides, all at a smooth, clean 3/8" to 3/4" cutting height. These were some of the things we were looking for in our fairway program - being able to apply less water and nutrients over less acreage, reducing compaction and spin-out damage caused by the tractor units and to increase our bentgrass population. After in-depth

discussion with our board, we decided to try the program over a three year period and analyze the results vs. expense at that time.

our first chore was to decide on the best type of mowing equipment for our conditions. We considered our topography, soil type, desired quality and maintenance factors. We looked at the 5-gang, wide 3-gangs and finally the triplex greensmower. During the time we were demonstrating all these various pieces of equipment, we found no other unit with quite the cutting quality, maneuverability, simplicity of operation and light weight as the triplex greensmower. Our choice was to purchase six units in order to complete a fairway cutting in six hours or less.

Our next chore was to determine when and how often to cut and at what height. I have always thought, agronomically speaking, that it is best to cut when the leaf surface is dry - in the afternoon or early evening. I think the cutting quality is better and the dry conditions make scattering of clippings easier.

CONTINUED PAGE 21

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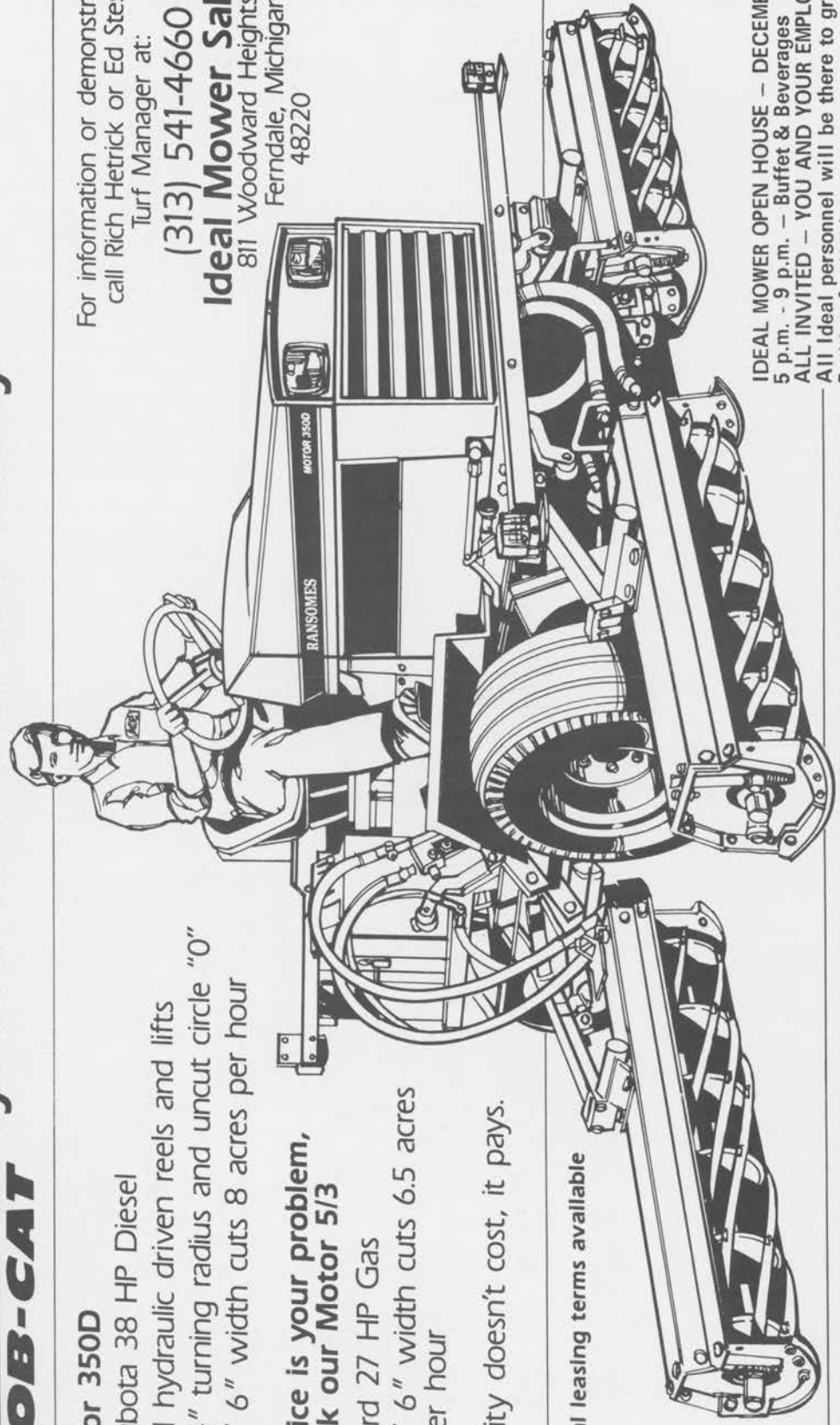
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THE NATURE OF SUMMER PATCH: A STATUS REPORT

by Houston B. Couch

Professor of Plant Pathology
Virginia Polytechnic Institute
and State University
Blacksburg, Virginia 24061

The hot, dry weather of the past few summers has managed to bring out the worst in Kentucky bluegrass in many sections of the country. Loss of turf quality in both professionally managed grass and home lawns under the care of the husband, wife and children has been common. There has been a "fringe benefit" from all of this however, for the situation has sparked an increased research interest in the nature of these types of disorders and the development of procedures for preventing them from happening.

In New York, a hot weather, dying-out condition of Kentucky bluegrass has been assigned the name "summer patch." The researchers at Cornell University have suggested that this same may be occurring in other northeastern states as well as New England. Reports from Michigan State University indicate that summer patch may also be a problem in certain midwestern and northcentral states.

Outbreaks of summer patch develop during July and August during prolonged periods of hot, dry weather. The symptoms described are irregular patches of dull tan to brown grass. The individual areas may be more or less circular in outline and extend up to several feet in diameter. Within the diseased stand of grass may be patches that show the basic "frog-eye" pattern of blighted grass with center tufts of apparently healthy plants.

The research at Cornell University indicates that summer patch might be brought on by periods of high air temperature stress and then the colonization of the weakened plants by the fungus *Phialophora graminicola*. This fungus

species is commonly found in association with the root systems of grasses. Its potential for affecting the health of plants has been the subject on considerable research by plant pathologists in England.

The research in England has shown that *Phialophora graminicola* is a weak pathogen. In fact, when it is placed in the soil, it actually protects the turf grass plants from *take-all patch* (*Ophiobolus patch*). Also, when the soil is infested with *Phialophora graminicola*, the growth rates of fescue and bentgrass are increased. This is thought to be due to the fact that the fungus enhances nutrient uptake by the root system.

The laboratory and field research procedures described by the workers at Cornell University to bring about death of Kentucky bluegrass by *Phialophora graminicola* have been of the type that place severe stress on the plants. For example, in one series of pathogenicity experiments, the tests were conducted on Kentucky bluegrass field-grown sod cut at a depth of $\frac{3}{4}$ inch and then placed over a $\frac{3}{8}$ inch layer of soil in plastic containers. These plants were then held in growth chambers under a continuous day-night air temperature of 85 degrees F. for 15 weeks. During this time, the leaves were maintained at a $\frac{1}{2}$ inch cutting height.

In view of the extreme stress placed on the growth systems of the plants in these tests, it is not surprising that *Phialophora graminicola* switched from its normal role as a beneficial soil-inhabiting fungus to an active Kentucky bluegrass root colonizer.

These various research findings place summer patch in the category of turfgrass diseases known as "Senescence Syndromes." The diseases in this grouping are caused by a combination of acute plant stress followed by colonization of the weakened tissue by various microorganisms. Examples of other senescence syndrome disease

are *Culvularia* blight and anthracnose.

In assessing what can be done to control these types of diseases, the first question that must be answered is whether or not the invading fungi or bacteria are actually compounding the acute stress-induced problem by introducing an added measure of tissue degradation, or if the initial environmental pressure was severe enough in itself to lead to the ultimate death of the affected leaf, crown or root system.

In light of (1) the research reports from England that show *Phialophora graminicola* to be beneficial to the growth and development of turfgrass, and (2), the work at Cornell that shows an extreme stress must be placed on the Kentucky bluegrass plants in order to weaken them to such an extent that a major form of colonization by this organism can take place, it would seem reasonable to assure that what is being called summer patch is a product of environmental stress rather than the result of infection and colonization of the plants by either *Phialophora graminicola* or any other microorganism.

What is evident is that much more field and laboratory research is needed before the cause and nature of summer patch is adequately understood and a definite determination made as to whether the problem that is being described is within the realm of control by either spray programs with fungicides or the use of certain management practices to help offset the damaging effects of environmental stresses. In the meantime, in situations where it has been decided that the disease at hand is indeed summer patch, the best advice on fungicidal control that can be given is that if these attempts are made, one should keep the expectations for their success to a minimum.

SPECIAL OLYMPICS

GOLF OUTING — MAY 6, 1985 — INDIANWOOD COUNTRY CLUB



Special Olympics Winners, (L-R) — JIM WILSON, JAKE PILAT, AL OTTO, JIM COLEMAN



(L-R) — CRAIG ROGGE MAN, MIKE EDGERTON, Chairman, Special Olympics CRAIG MOSHER, Speaker RON KRAMER

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WHO SAID, "The grass is always greener..."?

by James T. Snow
Director, Northwestern Region
USGA Green Section

It is a little-known fact that the enlightened philosopher who once said, "the grass is always greener on the other side of the fence," was actually a widely travelled suburban golfer! In fact, according to rumor, that quote is taken from a verse he once wrote:

*The grass is always greener,
the trees are always taller,
the budget is always lower,
the fairways always shorter,
the greens always faster,
and the turf is always more dense
on the other side of the fence.*

Human nature being what it is, it seems inevitable that golfers will compare one golf course to another. Golf course superintendents, aware of the burden these comparisons create, often ask what can be done to prevent them. The answer is simple -Nothing!

What *can* be done however, is to point out variables that make fair comparisons difficult, if not impossible. For example, two theorems immediately come to mind:

No golf course is identical to any other.

No golf course will *always* be in excellent condition.

If today's golfers consider these statements, fewer repercussions would result from the inevitable comparison.

Begin with the hypothesis "No golf course is identical to any other golf course." That every course is built on an entirely different site should make this statement obvious. Even courses that share common boundaries often contend with different conditions. Varying soil conditions alone usually dictate subtle differences in maintenance programs. As soil types and terrain become more divergent between one course and another, so may the maintenance practices needed to keep each course in good shape.

Poor drainage is usually a major factor in course upkeep. It effects soil compaction, turfgrass wear and disease, and results in weak turf and the need for more intensive maintenance. Naturally, drainage problems must be corrected.

On a broad scale, climate has a dramatic effect of what can be done with any maintenance program. Cries for bentgrass greens in the South and bermudagrass fairways in the North are common and require tactful handling by golf course superintendents. More realistically, growing and keeping *Poa Annua* requires different techniques in every region of the country, requiring much local knowledge. Even on a

local level, prevailing winds, altitude, or the presence of large bodies of water can influence the maintenance of one golf course differently from one just a few miles away.

Finally, there is the actual layout of the golf course. Almost any course would pale in comparison with Pebble Beach, Winged Foot or Augusta National, regardless of the quality of the maintenance program. When a golfer says, "Why can't our greens and fairways be like those at Ultimate Links Golf Course?" chances are he's more infatuated with the layout or site than the conditions of greens and fairways. And any golfer who plays a course for the first time is likely to give that course the benefit of the doubt as far as maintenance is concerned, thus invalidating comparisons.

Not all golf courses are maintained equally. Some are obviously kept in better condition and this reflects the resources of the club and the tools available to the

CONTINUED PAGE 14

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Agri-Systems Soil Testing Laboratory Will Continue

Many inquiries have been made to Green Section regional offices concerning the status of the soil testing laboratory facilities of Agri-Systems of Texas, Inc. Dr. Marvin H. Ferguson developed the soil laboratory and many of its techniques 20 years ago, and with his death, on January 10, 1985, the future of the laboratory has been of great concern to many in the field.

Agri-Systems will continue to be active in testing of soils for USGA Putting Green Construction Specifications. Judith Ferguson Gockel, Dr. Ferguson's daughter, was the manager and chief technician for Agri-Systems for eight years; she will continue the laboratory operations.

In addition to the training received from her father and some formal course work at Texas A & M, Mrs. Gockel has studied soil physics and soil mechanics. She developed and now holds two patents, based on fluid movement and soil structure, widely used in the oil-drilling industry today. She and her husband, a petroleum engineer, operate an engineering and laboratory service for the oil industry.

Plans have been made to upgrade and improve the present soil testing laboratory equipment and to expand the services now offered. Assurances have been made that the same high standards for testing and the same frame of reference will be maintained.



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Agri-Systems is *NOT* the "USGA Soils Laboratory." Rather, it is a private contractor. It has agreed to conduct the physical soil analysis requirements for USGA Green Section Specification greens.

THE GOLF COURSE SUPERINTENDENT

By Betty Beckwith

You begin this work when you are young
It's out of bed early to meet the sun.
At first you're given the menial chores
And soon you learn the whys and therefores!
As years go on, the pressures grow;
You apply the things you've come to know.
You read and learn through trial and test
And pray the Lord will do his best
To make your goals work, as you trust
Results, a golf course, trim and lush!

The years go by, the work goes on,
You love the job and success is won
But success is never a thing that's sure -
The elements and unknown often appear.
You exchange ideas in search of a clue;
What's right in some cases is not always true.
Age and experience do help a lot
But often it's basics that "hit the spot".
You delight in success of the men you've taught,
An addition to pride that you've always sought.

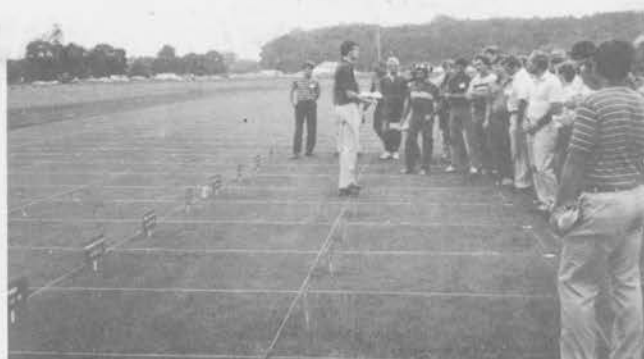
Age 65 has gone and retirement is here,
A change so great from many a year.
The day still starts before the sun,
A yard to mow and golf is fun!
But Superintendents will always be
Unhappy unless there is turf to see.
They need the problems, miss the pride,
Yearn to see sprinklers go side to side.
The calls from friends who need advice
Make an ultimate end, almost nice.

*Dedicated to My Husband-
John Beckwith, Class AA Ret.*

Credit: Miami Valley



Auction at 'Expo' – TURFGRASS FIELD DAY, 1985



TURFGRASS FIELD DAY 1985 – M.S.U.



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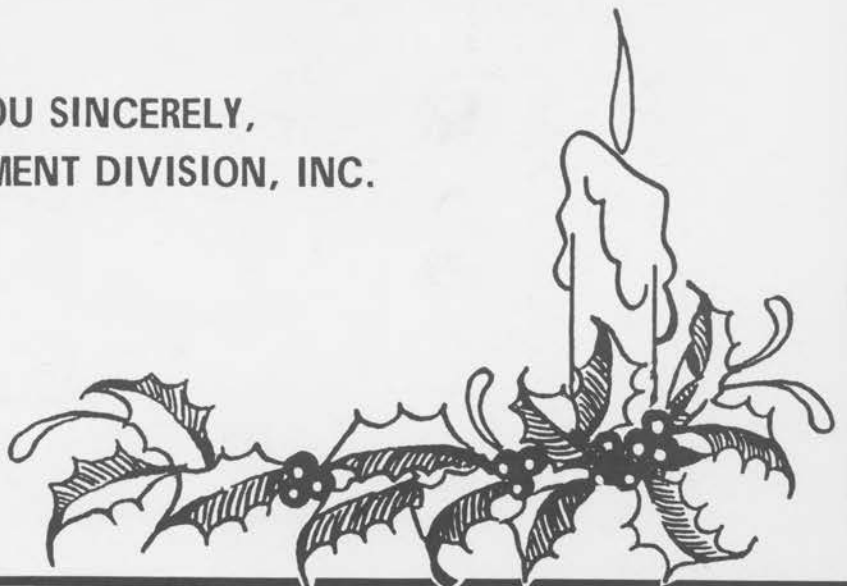
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THANKING YOU SINCERELY,
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WHO SAID?, CONT.

superintendent. When blessed with decent site conditions and good drainage, a superintendent can expect success with a maintenance program if he has a good irrigation system, an adequate supply of equipment and labor, and a sufficient operating budget. Without these essential tools, little consistency can be expected.

Few golfers appreciate the need for a good automatic irrigation system. The ability to apply water when and where it is needed and in the quantities desired is essential, especially as cutting heights inch fractionally downwards. Outdated manual systems make it very difficult to syringe during stressful weather and usually result in overwatering low areas or underwatering the high spots. Too many superintendents are forced to make the best of a bad situation by having to irrigate with an adequate water supply, a weak pumphouse and poor pressure, weak or corroded pipe, or worn heads and poor coverage. Some are still dragging hoses and sprinkler to irrigate their greens and tees. Is it any wonder that these courses suffer in comparison to others?

The need for an adequate equipment inventory and labor supply is probably more obvious to most golfers, although they usually have no idea of how much is involved. Every course should establish a good program for replacing old equipment and acquiring new pieces on a timely basis. The number of workers will dictate the extent to which maintenance programs can be followed and grooming items

can be carried out.

Finally, the superintendent must be provided with a reasonable operating budget if he is to bring out the best in the golf course. Determining the actual figure for a good budget is a real task. Due in part to some of the variables already discussed, a reasonable budget for one course might not be adequate for another. One thing is for sure - trying to compare one budget to another by looking only at the bottom line is mis-leading. Many maintenance budgets include such odd items as golf cart repair, scorecards and pencils, golf shop electricity, property taxes, etc. Be sure to compare apples to apples and oranges to oranges if you must compare at all.

Other items affect turf quality and influence subsequent comparisons.

The species and varieties of grasses represent one such category. For example, on fairways in northern climates one will find bentgrass, perennial ryegrass, Kentucky bluegrass and/or annual bluegrass on a particular course. Each requires specialized treatment with respect to fertilization, pest control, cultivation, overseeding, irrigation and cutting height. The cost of maintaining each species will be different and their playing characteristics can vary widely depending on the weather and the season.

Another of the intangibles is the presence or absence of trees. Most people consider trees only as items of beauty or hazards to avoid during play - few appreciate their effects of turf and the maintenance of the course. Too many trees in the wrong place,



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(common on many courses) can shade the turf, block air movement and produce surface roots that affect playability and compete with the turf for water and nutrients. It is time-consuming to mow around trees. Their roots frequently plug-up drain lines and leaf removal in the fall can be major and costly budget item. Finally, the trees themselves often require routine irrigation, fertilization, pest control and pruning.

The extent to which golf carts are used also contributes to appearance and condition. The club policy with respect to cart path construction, the use of carts on fairways, allowing carts during wet weather or when turf is dormant and the number of cart rounds per year will affect the health of the turf and maintenance program.

The amount of play is another consideration. Small, soil-based greens and tees are especially vulnerable to the effects of heavy play, although any course that experiences many rounds of golf is likely to require more intensive maintenance and a larger budget than a comparable course with less play. The amount of play during the winter, when the turf is dormant, is often as important as the play the course receives during the entire growing season. Heavy winter play can be devastating and should be avoided whenever possible.

The demands of the golfers themselves and the standards they set for the course are other intangibles. Demands for lush green grass, short roughs

and soft greens will produce a different golf course and leave a different impression than if the members desire firm, closely cut fairways, U.S. Open rough and firm, fast greens. Other variables include demands for fairway contouring, immaculate manicuring, flower beds, water coolers by every tee and tree planting.

Now for the second of the two hypotheses that "No golf course will always be in excellent condition."

Most unfair comparisons are the result of a golfer's very heavy exposure to his home course and very limited exposure to the other course. If a golfer plays his home course often enough, he is bound to see it at some time in poor condition, if for no other reason than the weather. Flooding, winter damage, wind storms or an irrigation breakdown during 100 degree weather will happen to every golf course. However, if he plays Uitimate Links Golf Course once a year, in late September, it may indeed always seem to be in great shape.

This was brought to light recently during a visit to Deadly Fast Country Club, when a Green Chairman asked, "Why can't our greens be as fast as those at Just-As-Fast Country Club?" On a subsequent visit to Just-As-Fast Country Club, their Green Chairman asked, "Why can't our greens be as fast as those at Deadly Fast Country Club?" In following-up on this strange turn of events, it seems that each Green Chairman had played each other's course on a

CONTINUED NEXT PAGE



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WHO SAID?, CONT.

member-guest weekend. Not surprisingly, each superintendent had done a yeoman's job of grooming his course and double-cutting greens prior to the event.

The other story, which is familiar to every golf course superintendent, concerns television golf. All that need happen is for television cameras to focus on Augusta National on a spectacular spring weekend and practically every superintendent will head for the nearest hideaway for the next several weeks hoping to avoid the inevitable question, "Why can't our golf course . . . ?"

Week after week, the television viewer is treated to beautiful, usually high-budget golf courses that are groomed for their one big event of the year. The problem is that the viewers don't see the same course each week. They see only the course that has peaked, much as Deadly Fast Country Club does for its member-guest, for television and an important professional tournament during a single week of the year. The members at these clubs know that the course does not look and play the same way throughout the season. Any living entity, whether it be a football quarterback, a race horse or turf on a golf course, cannot be expected to perform as precisely and predictably as a machine. Each will have its good days and its bad and each will peak at certain times.

The one important, secret ingredient missing from this discussion thus far is the golf course superinten-

dent. Superintendents are only human and as variable as the golf courses they manage. Each has his special strengths and weaknesses and some are more suited to certain types of courses than to others. As a group however, they represent a dedicated, professional company. When golfers compare courses, they often state it in such a way as to suggest that there is some human failing on the part of the superintendent that should be blamed. As we are all human and capable of making mistakes or misjudgments, this could be true. However, it is probably apparent from this review that many other factors play a role in any problems or concerns being experienced on a particular course.

Thus, when golfers get the urge to criticize their course or compare it to another, they should first stop and think about the site, the tools and the intangibles that so greatly influence the way any course can be maintained. After considering these elements, they then might conclude that the grass is actually greener on *their* side of the fence.

MERRY CHRISTMAS



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LATE-SEASON NITROGEN FERTILIZATION

by John R. Street, Ph.D.,
Associate Professor, Ohio State University

It has been pointed out that heavy nitrogen fertilization during the spring and summer is undesirable for cool-season turfgrasses. Nitrogen fertilization has proven beneficial during the late fall (late season) on cool-season turfgrasses (Powell, Blazer and Schmidt). Decreased disease, improved stress tolerance and increased rhizome and root growth are among several of the claimed advantages to the "late-season" nitrogen fertilization program. The late-season program is based on differences in optimum temperatures that exist between (1) root-rhizome growth versus shoot growth and (2) photosynthesis versus respiration.

Shoot and root growth of cool-season turfgrasses occur most readily in the temperature ranges of 60-70°F and 50-65°F, respectively. Root growth of cool-season grasses will continue at soil temperatures close to freezing (Koski, 1983). Shoot growth will cease at higher temperatures than that for root growth. Late-season nitrogen fertilization capitalizes on this differential. Under late-season fertilization, nitrogen applications should be made when vertical shoot growth has stopped, but the turf leaves are still green to produce carbohydrates via photosynthesis.

Air temperatures of 45-50°C are usually necessary for vertical shoot growth stoppage. *It is important to understand that since temperatures will be at a point causing stoppage of topgrowth, roots, rhizomes and stolons will capitalize on any applied nitrogen.* The carbohydrate produced will be more efficiently used for root, rhizome and stolon growth during the late fall and winter periods. It is critical that the nitrogen be applied prior to dormancy for maximum efficiency of applied nitrogen. Once the tissue has turned brown, photosynthesis will no longer occur. "Late-season" fertilization is not dormant fertilization.

During late fall, photosynthesis is higher than respiration for cool-season grasses. With green tissue, photosynthesis will occur readily at low temperatures. The high net photosynthesis during late season leads to maximum carbohydrate production and carbohydrate storage for reserves. The positive carbohydrate balance favors root and rhizome growth over topgrowth since air temperatures are well below that considered optimum for shoot growth.

Nitrogen applications during the late season if timed properly will extend the greening of the turf later into the fall and winter. Spring green-up will normally occur earlier. The green turf is photosynthetically active favoring a positive carbohydrate balance. Late-season nitrogen fertilization increases the "green growing" period of the turfgrass plant later into the fall and earlier in the spring. Physiologically, this is a positive agronomic practice.

The most efficient nitrogen fertilizers for use in late-season fertilization programs are those independent of temperature for nitrogen release. Soil temperatures and microbial activity are low at this time of year resulting in less efficiency from methylene urea and other temperature-dependent fertilizers. Urea and IBDU are fertilizers that are independent of temperature for nitrogen release and therefore, make for excellent late-season nitrogen sources. IBDU, having a slow-release characteristic, will not cause surge growth even if misapplied (e.g. too early) in the late-season program. Nitrogen is a key component of turfgrass fertilization programs. It has an influence on both the morphology and physiology of the turf plant. High quality turf exhibiting acceptable green color and density requires periodic applications of nitrogen. Nitrogen, however, is frequently referred to as the "TNT" of turfgrass fertilizations programs. It can be as detrimental as beneficial if it is mismanaged. Physiologically, the turf manager must maintain a good carbohydrate reserve. Proper timing and rate of application are important in successful long-term programs. Always remember: greener is not always better. A happy medium must be reached between agronomics and aesthetics.

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NOTES FROM THE UNDERGROUND

by Harry Roote

Greetings. Did everyone finish their fall projects in time? It's been pretty wet through the month of October. Normal precipitation for October is 2.5". We've had almost 5" this October. Add to the situation that the days are shorter and there is less sunlight and it seems like it takes forever to dry out. Oh well, winter is just around the corner and our troubles will be forgotten until next spring. The first official day of winter is December 21 - lasting until March 20.

There is a new bumper sticker being seen on cars these days. It reads, "Wil Rogers never met Howard Cosell."

Congratulations to Doug Melton and his wife, Sharon. They have a new addition to their family, a boy named Benjamin born on August 15. Doug is superintendent at Shenandoah Golf Club.

The winter is a good time for all superintendents to take-in turfgrass seminars and conferences, to confer with other turf professionals and exchange ideas and discuss problems they might have experienced through the summer. Winter is also a good time to play raquetball, basketball, hockey and other forms of exercise.

How is your health? If everyone would be concerned about the health of their own bodies as much as they are concerned with the health of the turf during the summer, there would be less chance for heart attacks, sickness and stress.

Good nutrition and exercise during the winter months will help make the stressful summer months easier to manage, both physically and mentally. Also, if you smoke, and *can* quit, your chances for better health will increase manyfold.

The body requires six basic nutrients. They are protein, fats, carbohydrates, vitamins, minerals and water. To obtain these nutrients a variety of foods should be consumed. The four basic foods are fruits and vegetables, breads and cereals, dairy products and meats. Eating the proper foods will assist you in controlling unwanted body fats and make it easier to control your weight, if you have a weight problem. My wife Harriet has a weight problem. A few months ago she weighed herself on a scale that told your fortune. The card came out and said, "Only one person at a time, please."

Stay away from the refined carbohydrates which are high in calories and low in nutritional value. They include sugar, soft drinks, seeds, white breads and other forms of food high in sugar content. The good carbohydrates to eat are fruits, vegetables and whole grain products. Sixty percent of your daily caloric intake should come from carbohydrates.

Exercise, along with a proper diet, will benefit you

greatly. Moderate and high intensity exercise will help decrease your appetite. Also, it increases the body's ability to burn fat by increasing fat-burning enzymes. My wife increases her fat-burning enzymes by running to the refrigerator.

A person who exercises three times a week for 45 minutes a day in conjunction with a well balanced diet will most likely find it easier to handle the physical and mental stress of his job. So, join a raquetball league this winter or a health club. Ed Stesney from Ideal Mower Sales is always looking for someone to play raquetball with. Keep active this winter and see if it improves the way you feel next summer - just for the health of it. George Perles, eat your heart out!

This year's Christmas party is going to be held at Greenfield Village in Dearborn, on December 6. Charlie Gaige is this year's chairman and it looks as though he has quite a party in store for those in attendance.

A pessimist is a person who looks both ways before crossing a one-way street.

Does everyone have their snow tires on their vehicles and the snowblowers tuned up? The Detroit area averages 59.1" of snow annually. We shouldn't feel too bad, though. Marquette Michigan averages 171" of snow a year.

To put everyone in the mood for winter here is a poem written by Ralph Waldo Emerson, one of the great poets in American Literature. It is entitled "The Snowstorm."

Announced by all the trumpets in the sky!
Arrives the snow, and, driving o'er the fields,
Seems nowhere to alight: the whited air
hides hills and woods, the river, and the heaven,
Ane veils the farmhouse at the garden's end.
The sled and traveler stopped, the courier's feet
Delayed, all friends shut out, the housemates sit
Around the radiant fireplace, enclosed
In a tumultuous privacy of storm.

Come see the north wind's masonry.
Out of the unseen quarry evermore
Furnished with tile, the fierce artificer
Curves his white bastions with projected roof
Round every windward stake, or tree, or door.
Speeding, the myriad-handed, his wild work
So fanciful, so savage, nought cares he
For number or proportion. Mockingly,
on coop or kennel he hangs Parian wreaths;
A swanlike form invests the hidden thorn;
Fills up the farmer's lane from wall to wall,

CONTINUED PAGE 22

Our best to you!



**Merry
CHRISTMAS**



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LIGHT-WEIGHT MOWING, CONT.

One only need throw the clippings at an angle into the wind and the breeze will help disperse them. Coupled with the drier turf and the fact that here at Interlachen we have limited play beyond 6:00 p.m., cutting is begun at 3:00 and concludes approximately at 8:30. This gives us a couple of good hours of uninterrupted cutting time. We determined that 1/2" cut to be very adequate to hit from and the membership found that height very pleasing visually. Three cuttings per week, Monday, Wednesday and Friday worked well. I send cutters out in tandem, which gives a very desirable 10' stripe and also reduces the boredom an operator may experience from a continuous 5 1/2 hour cutting. When hiring operators, I looked for people who only desired part-time employment and had no other job. On a few occasions during the season, whether it be for special events or due to rainy weather, we are obliged to cut on odd days or during morning hours. It became quite important to us to find employees with a flexible schedule. As I mentioned earlier, we are removing clippings and scattering them in the roughs. An original thought was that the clippings would really begin to pile-up and start to produce some pungent odors. We have not found that to be the case at all, if they are well scattered.

Improving turf quality generally requires some kind of sacrifice. We've made several on our fairway program, most being financial. The mowing process alone requires 5 1/2 times more man hours. I found it necessary to put on a part-time mechanic assistant just to keep up with the increased load. Initial machinery costs are actually about the same as the self-contained tractor/gang units but the machinery life is about one-fifth that of these larger units. We've discovered that we must perform some routine maintenance on the greensmowers after each cutting. The units were just not designed to cut rougher terrain found fairways so we frequently must repair broken reel spider welds caused from nicking sprinkler heads and drain covers. Another drawback is the that instead of having one operator and one machine in the middle of play, the membership must now contend with six operators and six machines. Having the additional cutters also necessitates more supervisory time and mileage.

But the real bottom line is - Does the program work? We've seen a surprising increase in our bentgrass population even after a year and a half. I can see patches up to 6000 sq. ft. of virtually pure bentgrass I hadn't seen previously. Much of that bent may have been there as individual plants or small plant groups, but since beginning our light-weight mowing, these small spots have coalesced into very large areas. Another benefit has been that I can hire less skilled operators due to the ease of operation of the triplex units and the limited training time required to learn the machine. High school students are very trainable and don't need the "hard knocks" experience on their resume. We've obviously seen less compaction, which I think is the single-most important factor of the

CONTINUED NEXT PAGE

LIGHT-WEIGHT MOWING, CONT.

whole program. We now have the capability to cross-cut fairways in three or four directions with ease. We've virtually eliminated the long grass that used to form in the subtle hollows and around old, sunken tile lines and drains. As with most of the other clubs using the triplex for fairways, we did reduce our acreage from 32 to 27 and found it essential to cut back on our applications of nitrogen and water. We can still keep the turf healthy without accumulating all those clippings. Our members appreciate the drier $\frac{1}{2}$ " cut because they can hit the ball farther due to increased ball roll. Because of the maneuverability we now have, the opportunity exists to create very appealing, strong contours which previously would have been difficult to cut with the 20' tractor unit. We've added much to the visual appearance of our fairway lines with this program.

As suggested earlier, we've made several sacrifices to obtain a quality $\frac{1}{2}$ " cut, but these benefits I've discussed far out-way the sacrifice.

I've generally touched on the past and present programs used here, but what of the future? As I said, the triplex greensmower looked like the best unit for us at that time, but as these machines out (about two more seasons), we'll again be looking for just the right unit. A great amount of research and development has been done as of late on the larger 3-gang and especially the hydraulic 5-gang units. Perhaps the changes in cutting quality and maneuverability make these machines the best choice for us today. We'll also be looking for a more durable unit requiring less routine maintenance and reel repair. As our bentgrass populations continue to increase, our nitrogen, water and even fungicide usage will drop. I'm sure we'll have to begin a stringent fairway verticutting program as time passes. The bent is very vigorous at $\frac{1}{2}$ ". I think it is safe to say there will never be another 8,000 lb., 22' wide self-contained tractor unit on Interlachen fairways again. The program is expensive but without doubt the playability, eye appeal, durability and overall improved health of our fairway turf is easily worth the expense. Especially if one is trying to manage the seemingly everpresent, everpopular species, *Poa Annua*.

from *Hole Notes* (Minnesota GCSA), August, 1985

HARRY ROOTE, CONT.

Mauger the farmer's sighs; and at the gate
A tapering turret overtops the work.
And when his hours are numbered, and the world
Is all his own, retiring, as he were not,
Leaves, when the sun appears, astonished Art
to mimic in slow structures stone by stone,
Built in an age, the mad wind's night work,
The frolic architecture of the snow.

Everyone have a Happy Thanksgiving, a Merry Christmas and a very good New Year.

P.S. To D.Y., get well soon, fight hard. We love you.

EDUCATION, CONT.

has fair amount of phosphorous in it to promote root growth evenly in our soils. We can not hurt a tree's roots with too much phosphorous.

I would like to thank Mr. Don Juchartz and Dick Matthews for a very enjoyable day.

Don't forget, on November 4 and 5 there will be a GCSAA Seminar on Communications, Assertiveness and Self-Promotion. This seminar will be held at the Midway Motel Lodge in Lansing. The cost for the seminar is \$95 if paid in advance.

This is a very popular seminar and we are fortunate to be able to be the host chapter. We need at least 30 people in attendance. If you have any questions call either Betsy Evans at GCSAA or Tom Mason (at 644-6320 or 363-3201). It is important to get your reservation in as soon as possible.

Also, if you and club are interested in hosting a meeting during the 1986 season, please contact one of the Board members soon. It is our hope to have the schedule done by the first of the year.

FOR several years a lawyer and a doctor had regularly played golf together. They were evenly matched, and there was a keen sense of rivalry. Then one spring the lawyer's game suddenly improved so much that the doctor was losing regularly. The doctor's efforts to improve his own game were unsuccessful, but finally he came up with an idea. At a bookstore, he picked out three how-to-play-golf texts, and sent them to the lawyer for a birthday present.

It wasn't long before they were evenly matched again.



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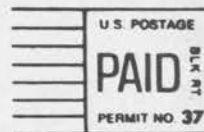


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