

September 1977

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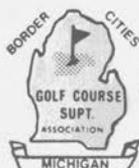
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A PATCH of GREEN

Official Publication of the
Michigan & Border Cities Golf Course Superintendents Association



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What Went Wrong This Summer?

By TED WOHRLE

During my travels around the country this summer, I have heard the same story no matter where I might have been. "This is the toughest summer in 20 years."

This has been a very unusual year - high temperatures, high humidity, no rain, too much rain, low temperatures, insect attacks, diseases no longer controlled by conventional practices and chemicals.

What has happened?

A few weeks ago several Superintendents got together over lunch to discuss their turf maintenance practices and to compare notes on the results of various programs.

These practices included: fertilizer use, chemicals used to control pests (rates and timing schedules), mowing techniques (height of cut and frequency), watering schedules, drainage, spiking and aeration (frequency and timing), top dressing, weed control (Broadleafed weeds and grassy weeds), insects (identification and control), new diseases (resistant strains).

To date we have had 30 days of 90 degree temperatures for the summer. May was unseasonable *Hot* and dry. June was cool and periodically wet. July once again was hot but wet (in spots) other areas were dry but humid. The grasses were under terrible stress. If your timing was off for fertilizing your grass was very lush and pythium took over or your grass was hungry and dollar spot became a problem.

Some of the fungicides no longer controlled the dollar spot. Courses with pythium found chemicals scarce. One of the controls for pythium involve restricting water use. If you dried out too much your *poa* wilted and in many cases, death of your turf occurred.

Several Superintendents reported outbreaks of hard to control leaf spot. Others found large "brown patch" a problem. Still others were victims of Anthracnose.

Where will it all end?

Because we operate a mon-culture (growing the same crop each year) we can't expect anything else. When we began irrigating fairways, we began creating problems.

Golfers wanted green grass. Water was the answer. No longer was the dormant bluegrass fairway tolerated. Additional water required additional fertilizer. This caused additional mowing. The lush grass became more susceptible to diseases.

Poa annua thrived and became the predominate grass. The turf really never dried out. Compaction from equipment and golf carts aggravated the problem. Moisture penetration became restricted. *Poa*, Knotweed, clover, chickweed and crabgrass are all the result of compaction and poor soil structure.

Diseases are more prevalent because of the weaker turf. Insects thrive in the additional thatch. What can we do? Stop watering? No - this seems like the logical answer because as we stated earlier, watering caused all our problems. If we could keep our thatch from becoming a problem and keep our soil aerified for good water penetration, then our problems would be fewer. Using less water would demand the introduction of the more permanent desirable grasses into existing turf. The close cut turf as we know it today and which is admired by the low handicap golfer would become a thing of the past. Will golfers tolerate this transition? Next Page

What Went Wrong? Cont.

Most of my comments have been slanted to fairway turf. I realize that greens and tees are also some of your problems but these areas are small enough to rebuild and maintain for less money than rebuilding the many acres of fairway.

Another secret would be to keep as many new plants coming on the scene at all times. This can be accomplished by; aerification, slicing, disking, seeding. A young plant is healthier and stronger than older plants.

When using pesticides try to alternate chemicals to help prevent the buildup of tolerant pests.

If you are blessed with non-irrigated fairways, but plan on installing irrigation, resist the temptation of watering when the grass turns off-color. If you don't you will be joining the group of superintendents who would like to move back to the "good old days" and water only when needed - but you can't do that with *Poa annua*.

GCSAA'S SEMINAR SCHEDULE

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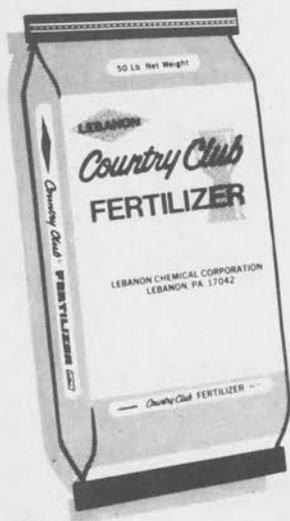
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LIME - What it is and how does it affect turf?

Have you ever looked at that big mass of lime-filled bags that are stored in a part of your equipment building complex? Or have you ever watched a spreader truck roaring down the fairway with a white dust storm appearing from the rear?

I am sure you have. But have you ever really wondered why you use as much plant food as you do? Or have you ever really wondered why your turfgrass is not as pretty and healthy as it should be? It could be related to lime - or lack of it. Lime is one of the most important and most forgotten of all the turf grass nutrients. Lime is more bulky, harder to apply, and shows up less than other fertilizers. These are some of the reasons for lack of lime use on turf. However, you should not make excuses for not using lime on turf if it's needed.

WHAT DOES LIME DO?

In my opinion lime is the key plant food that is used, and often times lime is not even included in a fertilizer discussion. But most of the soils in the southeast and particularly the lower south are acid to extremely acid. Lime is used to make the soil less acid. Most of the golf courses and similarly constructed turf areas have an acid pH. The term pH means the amount of acid present. All soil analyses that you can have run base the pH on a scale from 0-14. Seven is the neutral point. Neutral means soils are neither acid nor basic. They are neither sweet nor sour. A pH between 0 to 7 would be acid with the soil becoming less acid approaching the neutral point of 7.0. As the pH is decreased one unit (i.e. 7.0 to 6.0) the soil becomes 10 times more acid. Therefore, a soil with a pH of 4.0 is 1,000 times more acid than a pH of 7.0.

A pH from 7-14 means the soil is

basic or sweet or alkaline. The nearer 7.0 the pH reading is, the less basic the soil is. Very few turf soils are above 7.0; most are less than 7.0 which will require some type liming material to adjust the pH upward to the neutral point. The correct pH for most turfgrass nutrition is between 6.5 and 7.0. It is in this pH range that most of the essential nutrients are most available to the plant and this is the main reason for liming-reduce the acidity (move the pH upward) and make the nutrients already in the soil as well as the nutrients that you apply more available to the plant. Lime really makes fertilizer work better.

HOW MUCH LIME IS NEEDED?

Most of the turfgrass soils with which I have worked require somewhere between 25 to 100 pounds of lime per 1,000 square feet to adjust the pH to 6.5. On most turf soils a maximum of 75 pounds (50 pounds on a golf green) of lime per 1,000 feet should be applied - per application. There are several reasons for this recommendation. First the lime will need time to react but some of it begin to work immediately after application, depending on the source. Too much lime too quickly may temporarily put the surface soil in an over-limed condition.

Secondly, on a golf green the bulk of the material would be too much and interfere with the play. Large volumes of lime are also unsightly on the turf. When a soil requires a high rate of lime you should split the application. Make one application in the spring and one in the fall. However, do not limit lime applications just to the spring and fall; lime can be applied anytime. You should apply it as needed and remember - the only way to know how

Continued on Next Page



Turf Topics

AUTOMATIC IRRIGATION IS NOT FOR EVERYONE?

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LIME Cont.

much lime you need is to take a soil sample and have it analyzed.

Not all soils require the same amount of lime to move the pH scale an equal amount. A soil high in clay or organic matter will require more lime to adjust the pH than a soil that is porous or sandy. Organic matter and clay have chemical properties which "buffer" a soil. This means that organic matter and clay tend to resist a change in reaction. You have to apply more lime to change the reaction than you do on a sandy soil.

KINDS OF LIME

All lime sources are not the same. There is a big difference in the effect of liming materials. Some are available rather rapidly and some take a long time to neutralize. Some have coarse particles and some have fine particles. The relative value of a lime in adjusting the pH is usually referred to as the "neutralizing value". The neutralizing value of a liming material is always expressed as a percent of pure calcium carbonate. Pure calcium carbonate has been given a relative value of 100. A lime with a neutralizing value of less than 100 means that the lime is not as effective as pure calcium carbonate. If the neutralizing value is more than 100, it means that the lime source is better for neutralizing the pH than is calcium carbonate. Several commonly used lime sources on turf in the south vary greatly in neutralizing value. For instance, most dolomitic limestone has a neutralizing value from 95 to 108 percent. Most calcitic limestone has a neutralizing value between 85 and 100 percent basic slag has a neutralizing value ranging from 50 to 70 percent. Some of you might use lime sources such as burned lime - 150 to 175 percent neutralizing value, or hydrated lime - 120 to 135 percent neutralizing value. There are many other liming materials that vary in

Continued on Page 12

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What happened to the "Coat and Tie"?

The golf course Superintendents have just finished celebrating their 51st year as an association. They have come a long way since the days of the *Greenkeeper*. There was a humble beginning. Most were farmers forced off their farms, relatively uneducated and mostly poor people, but proud of their profession.

As the years passed, they kept striving for education which would help them do a better job for their clubs and perhaps gain a little more recognition. Along with this education, they began taking on a new image - that of a professional! This was accomplished by presenting themselves as gentlemen simply by dressing properly, wearing a coat and tie!

Before our members were allowed to use the Host Clubs' facilities, they were requested to abide by that Club's dress code. We have always attempted to honor this code.

The last few meetings this summer we have embarrassed several of our gracious host Superintendents with our sloppy appearance. Many members have failed to wear coats and ties. This cannot be *tolerated*. Several clubs in the state would not allow their own members to dine without proper attire - why should we expect to be served when we, as guests, do not abide by their rules.

Let's all look like the professionals that we are and wear our coats and ties. Let's honor the dreams of our early leaders.

Four years ago, the Board of Directors voted to charge all golfers for dinner - even if you only played golf.

Also, all prize winners had to be *present*. Maybe this rule should be enforced. It was noted recently that seven golfers failed to stay for dinner and when the prizes were to be distributed, several winners had gone home.

QUALITY OF WATER AFFECTS CHEMICALS

Jim Latham, of the Milwaukee Sewage Commission, recently told us at our July meeting that some of our problems concerning chemicals could stem from the quality of water that we use.

Have your water tested for hardness and ph. It could be revealing!!!

Ponder this thought the next time in your maintenance building. Did you know that you can find whatever you want when you don't need it by looking where it wouldn't be if you did want it and needed it.



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LIME Cont.

neutralizing value. But the soil sample which you get back will usually be based on calcium carbonate which is 100 percent. If you use a lime source that is 75 percent calcium carbonate equivalent you will need to increase the lime by about one-fourth to obtain the same activity on pH as you would get if you used pure calcium carbonate with a neutralizing value of 100.

Dolomitic limestone is a ground limestone which contains calcium and magnesium. Dolomitic limestone when finely ground is a good lime source. The smaller the lime particle, the faster the reaction time. One advantage of this limestone is that it does contain magnesium. But don't hesitate to use calcitic lime as magnesium can be applied in a fertilizer.

Basic slag is a by-product of the steel industry. Slag is finely ground and readily available. It is a lime source very low in neutralizing value

compared to the other sources, (50 to 70 percent) but basic slag contains several elements including magnesium which are important for turf growth. Basic slag also contains about 5 percent phosphate, and it can be purchased with 6 percent potash added if you need potash. In addition several other secondary and minor elements are included in basic slag.

HOW DOES LIME WORK?

Soils are acid because the soil particles have a negative charge. Positive charged elements are attracted to these negatively charged soil particles. Hydrogen from water is the element which is in abundance on the soil particle when it is acid. When a soil is limed, positively charged calcium and sometimes magnesium replace the hydrogen resulting in a soil particle with base or alkaline forming properties. This raises the pH as the displaced hydrogen combines with oxygen to form water.

Continued on Next Page

ARE YOU INTERESTED IN JOINING THE MICHIGAN AND BORDER CITIES GOLF COURSE SUPERINTENDENTS ASSOCIATION?

Fill in the questionnaire below and mail to:



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NAME OF INTERESTED PERSON _____ DATE _____

MAILING ADDRESS _____

CITY _____ STATE _____ ZIP _____

Or you may contact the next golf course supplier who calls on you and give him the information needed for application.

LIME Cont.

WILL LIME BURN THE GRASS?

Some sources of lime do burn; normally the recommended rates, 25 to 75 pounds of lime per 1,000 square feet, will not burn if you use the more common sources of lime. Burned lime or hydrated lime may burn or damage the turf. You should apply small amounts of these sources and water immediately after application. It is good practice to water after any lime source that is applied will remain on the leaves. This lime may burn, it may be lost when mowed, or it may interfere with the recreational activities - for which the turf is designed.

DOES LIME MOVE?

Once the lime makes contact with the soil it moves very little. It is doubtful that over a period of years, lime applied on the surface will move more than 2 to 3 inches deep, unless the soil is highly porous. The great majority of the lime will not even move that much. Therefore, on new turf plantings it is very important that the lime which will be needed be incorporated into the soil throughout the rooting depth. If you are establishing a new turf area, take a soil sample, determine the lime needs, and apply this lime prior to the last soil cultivation before planting. Once a turf is planted it is very difficult to get the lime deep enough to be effective in the lower root zone.

USE IT IF YOU NEED IT

Lime is an important fertilizer nutrient. Lime contains elements which are needed for plant growth and lime has a neutralizing effect on acid soils. Raising the acid pH will help the other fertilizer that is applied be more available and make your grass healthier. Take a soil sample, determine your needs, select a lime source that you can apply, and begin a liming program. Lime will help "wake up" much "sleeping turf" in the south. Much of this turf is sleeping because it is trying to grow in acid soils which

Continued on Next Page

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Are You A Golf Course Superintendent?

By Marion E. Johnson, CGCS, Southern Turfgrass Association

Are you a Golf Course Superintendent? If so you should be able to lay out and direct the construction of greens, tees, and fairways; supervise the mowing, watering, and maintenance of tees, greens, fairways, and related areas; supervise the planting, fertilizing, and maintenance of turf; supervise the operation of an equipment repair shop; order supplies and materials within budgetary limitations;

keep records of annual maintenance activities; be able to make an annual budget and explain in detail every expenditure in a manner that club officials can understand what they are paying for; know what OSHA and EPA requires of you and keep your club informed about the new amendments that affect your golf course and make your club aware that compliance of these Federal rules and regulations are mandatory.

LIME Cont.

can be changed with good liming practices.

REPRINT: Southern Turfgrass

By: Dr. Hiram D. Palmertree
Extension Agronomist
Cooperative Ext. Ser.
Mississippi State U.

If you are a Golf Course superintendent you must possess thorough knowledge of the construction and maintenance of golf course tees, fairways and greens; of the production and maintenance of the types of turf used on golf courses; of the planting

Continued on Next Page

Are You A Superintendent? Cont.

cultivating, pruning and caring for plants, shrubs and trees; of the characteristics and proper use of various fertilizers and soil conditioners; of herbicides and pest control methods and materials; of drainage control methods; and of watering and irrigation systems, including wells, pumps, and automatic controls, knowledge of construction and maintenance of golf cart paths.

If you are a Golf Course superintendent you must have the ability to maintain tees, fairways, greens and appurtenances to an acceptable standard of golf course play, to plan, assign and direct the work of others; to prepare clear and concise reports; to prepare annual budget estimates; and to maintain effective employee and public relations; and have a participating knowledge of golf.

Our profession is changing. A man who held the title of golf course superintendent a few years ago needed

only the knowledge of the average grass farmer. Today, he must be trained in Horticulture, Arboriculture, Agronomy, Botany, Landscape Architecture, Mechanics, Chemistry, Business Management, Engineering, Hydraulics, Psychology and Mathematics. Sooner or later you are going to have to produce results to satisfy the most demanding golfers and this takes back-up with an adequate budget and education. Hence, well-manicured courses are rapidly becoming the rule rather than the exception.

The Superintendent must take a more positive attitude toward requirements and qualifications and measure up in a very definite way. He must give evidence that he understands his profession or is making an effort to improve himself.

Today's Superintendent is faced with meeting continuous, major demands. He's under pressure to innovate, to solve old problems in new

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TED MULCAHEY JOINS WILKIE TURF EQUIPMENT COMPANY

To keep pace with rising Irrigation and Turf volume business Wilkie Turf Equipment Company is pleased to announce that Edward F. Mulcahey has joined the firm July 18, 1977 as Marketing Manager, Turf and Irrigation Products.

Prior to joining Wilkie Turf Equipment Company, "Ted" represented O M SCOTT in Northwest Ohio and Southeast Michigan from July, 1971 to July, 1976. From July, 1976 to July, 1977 he was Regional Manager (Central Region) for O M SCOTT. He is a graduate of the University of Rhode Island with a B S Degree in Agronomy.

Charles Kemp, who has been with Wilkie Turf Equipment Company since 1973, has been named Manager of Irrigation Department.

Kurt Kraly, who has represented Wilkie Turf Equipment Company in Turf Equipment sales has been promoted to Manager, Golf Course and Irrigation Contractor Sales.

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Are You A Superintendent? Cont.

ways. He is being forced to improve his skills. The way to improve our skills is to review the qualifications of the superintendent and spot our weak areas. The weak areas we spot may represent our toughest going. Face the facts frankly. These may be areas in which we have the least natural proficiency, so we'll have to work hard to improve. Or we may spot a weak area and find that this area is undeveloped simply because we never have worked at it sufficiently. In that case, improvement here may be essential in terms of personal growth and future advancement.

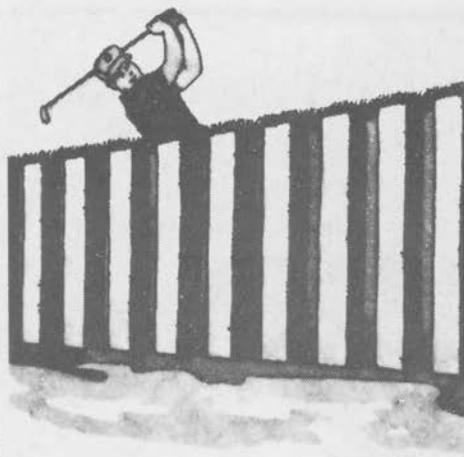
Every superintendent must be well versed in the agronomic problems of turf-grass management. Attendance at the National, Regional, local meeting and short courses is the only way to keep abreast of developments. There is no substitute for factual knowledge.

Each year a myriad of new fungicides, insecticides, herbicides, fertilizers and related products are put on the market. Research narrows these products down for us and distributes this information. It is then up to the Superintendent to do some testing on his own golf course. Just because something works in one location, it isn't necessarily going to work well on your course.

Research is the systematic search for the truth. Vast amounts of money are wasted on golf courses each year using products that their worth is not proven. Research investigates the problems of grass culture and distributes the information obtained through turf conferences. It is through these conferences that the Superintendent meets other superintendents and compares notes on techniques, ideas and problems.

Golf Clubs should insist that their Superintendent attend these educational conferences. I don't think any club, no matter how large or small, can afford

Continued on Next Page



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Are You A Superintendent? Cont

not to send him. This expenditure should be included in every course budget.

While the superintendent personally benefits by the acquisition of more knowledge and through a broadening awareness of new information and techniques, it is his club or turf facility that is the real beneficiary. It is the cheapest insurance a club can buy to keep up to date on rapidly moving new developments in machinery, chemicals and techniques that keep today's golf courses the finest in the world for the world's most demanding golfers.

As this year is coming to an end, look back and see how many turfgrass conferences you have attended and ask yourself, "Have I done my best?"

After reviewing the above qualifications and requirements of a golf course superintendent, can you truthfully claim the title, *Golf Course Superintendent?*

DO YOU KNOW YOUR PEATS?

1. **Raw peat**—obtained from the top of a bog. It is brown in colour and quite fibrous. It is difficult to mix with soil unless shredded first.
2. **Cultivated peat**—same material as raw peat but some decomposition has taken place. It is the next layer in the bog. It usually does not require shredding and mixes well with soil.
3. **Black muck**—obtained from the bottom of a bog. It is greatly decomposed and does little to improve soil texture. It is dark brown to black in colour and has little or no fibres. Not recommended for top dressing.
4. **Moss peat**—this is sphagnum peat. It is difficult to mix in soil and is inferior to the raw and cultivated peat.
5. **Sedimentary peat**—sediment developed on the bottom of a pond. It is also termed black muck and has no use in golf course maintenance.

Raw and cultivated peats come under the category of woody peat which is derived from roots, stems and branches of trees and shrubs.

Sphagnum peat comes under the category of fibrous moss which is derived mainly from sedges and mosses. Sedimentary peat is derived from such plants as water lilies, water hyacinths and cattails.

When preparing a top dressing mixture try and compost it for two months. This will prevent floating out of the peat when spread.



The New *Turf-Blo from Turf-Vac

Now there's a fairway blower that is completely self-contained. A unit that can be towed by any vehicle from a tractor to a pickup truck because no power takeoff is required.

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*Patent applied for

General Specifications:

Engine: 12 HP
Tires: 13 x 6/5 x 6 low pressure
Frame: 3" 4.1 channel
Turbine: Abrasive resistant steel, direct engine drive.
Air direction: Blows from either side. Controlled by lever.
Height: 36"
Length: 51"
Width: 42"
Shipping Weight: 450 pounds
Accessories: Electric start, battery.



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SPECIFICATIONS:

Sweeping Width	60 in.
Pick-Up	Mechanical, 2 reels-counter-rotating rubber fingers.
Frame	Rugged angular steel, all welded joints
Hopper	Hinged to power head, angular steel frame, galvanized steel skin riveted to frame.
Capacity	5 cu. yds.
Dumping	Self dumping, activated by three point hitch
Bearings	Sealed and self-aligning.
Gear Box	Heavy duty, 45 hp
Universals	Heavy duty
Drive to Reels	Chain (60) runs in lubricant
Reel Timing	Chain: connects reels for counter-rotating interlocking feature.
Wheels	Castor type—rear
Tires	Pneumatic, 16 x 6.50-8 (2)
Hitch	3 point, standard tractor hook up.
Height Adjustment	Pre-set at factory, for other than normal conditions skid shoes can be raised or lowered. For fine adjustment (0-3/8 in.) use adjustable top link on 3 point hitch.

OPTIONAL EQUIPMENT:

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Front Rear Roller Attachment	Replaces standard skid shoes
Curb Broom	
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