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The Bull Sheet

Official Bulletin
Midwest Association of Golf Course Superintendents

MICHEAL REITZ
Superintendent
Thorngate Country Club

NEXT MEETING

MONDAY, MAY 7, 1962

THORNGATE COUNTRY CLUB

Speakers:

Dr. H. B. Musser

and

Dr. Fred V. Grau

THE BULL SHEET, official publication of THE MIDWEST ASSOCIATION OF GOLF COURSE SUPERINTENDENTS.

TED WOEHRLE, *Editor,*
8700 So. Western Avenue
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PRESIDENT'S MESSAGE

During the Chicago World Flower Show it was my pleasure to serve in the booth of the Illinois Turfgrass Foundation. For the benefit of those who were unable to attend or participate, may I say that this was a very rewarding experience. The reasons for our presence were twofold: to answer questions that visitors may have had concerning their lawns; and to explain the purpose and functions of the Illinois Turfgrass Foundation. I think that our efforts relative to the first phase were successful. We should have done better on the second phase.

Displayed in the booth were approximately ten flats of turfgrass in which various types of weeds were growing. On the wall at the rear of the booth recommendations were given for the control of these weeds. I was amazed at the amount of interest that this display created. Visitors inspecting the flats would exclaim: "Hey, there's the weed that I have growing in my lawn," or "Now I know what to spray on my weeds."

Many people asked questions about other problems that they had. I shall relate a classic example. A middle aged lady and gentleman approached the booth. The lady was carrying a small paper bag from which she produced a plug of a foreign grass that was growing in here merion bluegrass lawn. She wanted to know what she should do to eliminate the invasion of the undesirable grass, which was identified to be poa trivialis. These people were noticeably disturbed and perturbed that their efforts to produce an excellent merion bluegrass lawn were not successful. Upon questioning the following facts evolved. The lawn was sodded with merion bluegrass three years ago. It was fertilized regularly and adequately. It was growing in open sunlight. The turf was mowed at a one inch height of cut. And the lawn was watered, very conscientiously - *every night.* Oh! Needless to say, our recommendation was obvious and simple.

The most significant impression that I gained was that the average homeowner that we talked with is very confused. It would be interesting to determine the cause of this confusion. Is it because they have been poorly advised by inexperienced clerks in garden stores and hardware stores? Do product advertisements and garden articles in magazines and newspapers confuse them? Or is it because they are unfamiliar with basic plant physiology?

Donald Gerber, President

PAUL VOYKIN

MEET THE BOARD

After receiving his basic training on golf courses in various parts of Canada, Paul came to this country during 1956 to work under Gordon Brinkworth who was then the Superintendent of Olympia Fields Country Club. After running one of the 18 hole courses there for two seasons, he took over the position of Superintendent at Calumet Country Club.

His first big job at Calumet was finishing the construction work on the newly designed course, after the Toll Road went through a portion of it.

Last year Paul changed jobs, and is now Superintendent at the Brairwood Country Club in Deerfield. He is married to a lovely Canadian girl, Donna, and they have three beautiful daughters. Paul is presently serving as Chairman of the Golf Committee.

FROM THE GOLF COMMITTEE

This year, Frank Dinneli, Dominic Grotti, Charles Rack and myself are going to endeavor to have the best golf ever for our Midwest members, or at least try to bring it back to the calibre of years ago. To start upon the road of reviving interest and enthusiasm, we are going to have putting contests which were so popular many years back. This contest will be held primarily for the old timers, and those who do not play at all, but would like to participate in some activity. The putting contest will be conducted by Mr. Frank Dinneli sometime between four and six o'clock. All gentlemen interested get your putters sharpened, and let's get some action started.

It has been agreed by past golf Chairmen that the price of golf prizes has gone up, like everything else, and therefore, the value of the $1.00 entry fee is not what it was ten years ago. In order to give better prizes to our winners, we are going to present fewer

prizes this year, and raise the entry fee to $2.00 per member and guest. The entry fee for competitive putting will be $1.00.

It has also been decided by the Golf Committee that in order to qualify for the Midwest golf team in California next year, a minimum of three rounds must be played. By doing this, at the end of the season we will know who our most competitive and better golfers are, and their best three rounds will be selected. This method of choosing our representatives for the annual Superintendents Tournament will be fair to everyone, and will do away with the player who shows up once a year, and shoots a hot round at our Fall Tournament in October.

Respectfully submitted,
Paul N. Voykin, Chairman

EDITORIAL

ICE SHEET DAMAGE

We are presently attempting to survive the damage of a most severe winter. Damage to turf is perhaps more extensive than at first realized. Reports are still coming in about damage on the various courses. It appears that this past winter will go down in history as one of the worst winters in Chicago. In some areas of the Chicago district there was snow and ice on the greens for over 100 days. Where an ice sheet was formed on the greens either from freezing rain or melting snow, which was the case on the South side of Chicago in early December, the damage seems to be more extensive than on the North side where they had more snow and no ice.

There are courses on the South side where entire greens are lost as compared to some on the North side where the damage seems to be localized in the lower areas of the greens where ice was formed during the melting of the snow.

We have seen several cases where clubs were adjacent to each other and one course was severely damaged and the other made it through the winter remarkably well. The first thing the Superintendent will do is try to analyze differences in maintenance proceedures. He will compare fertilizer materials used and their method of application as well as time of application. He will compare mowing techniques, watering practices, soil structure and strains of grass, trying to find an answer for what happened. This is good. As you know we all learn from errors. However, this time I feel that no one can blame the conditions on poor maintenance.

Several courses reporting the use of Corn Glutten were hit badly, others using the same product at the same time of year and at the same rate were not affected in the least. We have observed adjoining courses where maintenance practices were identical, again one course survived beautifully and one did not.

Two factors remain whereby we feel that there might be an answer. Where the soils are of the Sandy Loam nature they seemed to come through the winter far better than those that were constructed of the heavier soils. The new USGA greens seemed to fair very well.

The Toronto bents and the Penncross bents survived far better than some of the older types of bent. Seaside had its usual Snow Mold but little damage from the ice.

Let's examine the problem a little closer.

If you will remember late last fall we had an over abundance of rain that caused our soils to become super saturated and water logged. This was accompanied with freezing of the soil in early December. The soil had very little air space due to the large amounts of water. Along came a sheet of ice and sealed the air off completely from the plants. The leaves and stolons of the bents were actually incased in ice. Plants continue to respire even in temperatures of -1 to -4 degrees Centigrade. This means that there is Carbon Dioxide gas produced and it could not escape because of the ice sheet. Extensive damage was caused at this time. Another step that follows this CO^2 production is the absence of Oxygen. It could not penetrate the ice nor was there any available in the soil, (except the sandier soils.) An anaerobic condition was produced and the plants manufactured alcohols instead of sugars and starches. The thatch actually fermented along with the dead plant tissue. This is what caused the terrific odor immediately after the ice sheet melted. Many of the plants at first looked healthy, this was because the Chlorophil had not decomposed. As soon as air hit the plants they turned dark and in some cases even turned black.

If this sounds bad just remember what happened the first few days after the ice melted. We had days when the humidity was below twenty percent and the temperatures in the low forties with winds up to thirty miles per hour. This all added to the damage already produced by the ice. The few living plants died of wind damage.

We must distinguish between Ice Damage and Ice Sheet Damage at this time. Ice Damage refers to actual ice crystals being formed inside plant tissue. This destroys the plant tissue and it dies.

Ice Sheet Damage refers to a sheet of ice covering or incasing a plant so there is no air movement in or out.

In brief, then, we feel that the following maintenance practices had little or no effect on the condition of the turf after the ice melted;

1. Fertilization
2. Watering practices
3. Snow Mold treatment
4. Mowing practices
5. The use of arsenicals; as was suspected during the winter of 1959 when we had our last ice sheet damage.

Only two factors seem to be responsible for the damage:

1. Compaction of heavy soils. The sandy greens had lateral air movement under the ice as well as more air storage available due to particle size.
2. Strain of grass. Some definitely are more tolerant than others.

What can be done once it is determined that the grass is dead or almost dead?

We can overseed with Seaside or Penncross seed. Some prefer to mix these with Redtop for quicker germination. I doubt very much whether Redtop will germinate faster than Seaside or Penncross, after all it is also a bent. Redtop is not a permanent grass and will probably die during the heat of July and August.

After overseeding, an attempt should be made to topdress the seed for a good seedbed. This can be done by aerification and breaking up the plugs for your supply of topsoil, or you may use the Aero Thatch machine to accomplish the same thing. Actual topdress-

ing unless it is very pure, will only add to the weed population.

Next we must keep the seed bed damp at all times. This often requires handwatering several times a day if it is a little windy and dry. Some Supts. have used plastic coverings with very good results. If your damage is not severe enough to overseed you probably will only need to plug out the bad spots. If they look like they might make it by themselves you should guard against a disease attack by using your normal fungicides at half strength. An occasional light fertilization with liquid fertilizers will also be beneficial.

RECOMMENDATION:

Do your damndest to grow grass.

Information for this article was obtained from Dr. Mike Britton, Jim Holmes and a text book entitled "Introduction To Plant Physiology" by Curtis and Clark.

SPRING DINNER DANCE

On Saturday, April 14, the Midwest Association of Golf Course Supts. held its annual Spring Dinner Dance at the St. Andrews Country Club. Over 100 people attended the function in the newly constructed portion of the Clubhouse. The food and music as arranged by Bill Brady, and his Entertainment Committee, was out of this world. Amos Lapp and John Ebel and their wives were very gracious hosts.

Door prizes were awarded to the lucky people with the right tickets. They were: Mrs. John Ebel, Mrs. Frank Dinelli, Mrs. Frank Kohler, Mrs. Al Hinst and Mrs. Bob Duguid. Other prizes were won by Mrs. Pasco, Mrs. Wally Walmeldorf, Mrs. Russ Reed, Mrs. Ed Stewart, and Mrs. Frank Krueger. Still other door prizes were presented to Mrs. Carlson, Mrs. Warren Bidwell, Fay Lucas, and Mrs. George Dalman.

We would like to thank the various Distributors for their wonderful gifts for the door prizes.

MEMBERSHIP IN THE GCSAA

Class A Charter	23
Class AA	28
Class A	1387
Class B	187
Class C	30
Class D	41
Class E	165
Class F	74
	1935

THE ADEQUATE MAN

The need of the world is the adequate man, the man who is ready, who knows, and who can; the man who can rise to the need of the hour and meet it with courage and knowledge and power. The man with a mission, the man with grace to fill without flinching his God-given place; the man with a conscience; the man with a mind - kind enough to be strong, strong enough to be kind. The man who is master of what he must do, with the will and endurance to follow it through; the man who is fearless his pathway to plod, because he is consciously walking with God. The man with the wisdom to choose and decide with a justice unfailing, a sympathy wide; the man with a vision, the man with a plan - the need of the world is the adequate man.

LIME IN THE LIFE OF THE PLANT (Cont'd)

O. J. Noer

There are other notable examples where lime helped grass retain color during the early stages of drought notably at Brookline in Massachussetts where the benefit showed in June 1954 from an application made during the same month of 1934, exactly 20 years to the month. Just before the National Open Tournament a lime line was placed around each green to show spectators where to stop. The grass was better along the lime line in 1955, despite an overall application of lime after the striking results were noticed in 1954.

The use of lime to correct soil acidity is stressed most. Acid soils develop in humid regions where the annual rain fall is 20 inches, or more. As water percolates down through the soil it leaches calcium, magnesium, sodium and potassium in that order. Yet sea water contains sodium chloride mostly, 35,000 parts per million, or 3-1/2 percent. Calcium and magnesium are used to build shells by crustacea. Otherwise sea water would have a milky, opalascent appearance.

Carbonic acid in the percolating water is the principal solvent. The calcium becomes calcium bicarbonate. Its solubility is definite but low. When calcium, and the other bases are displaced from the exchange complex, hydrogen takes its place to produce an insoluble acid capable of releasing acid hydrogen.

Soil acidity is expressed as pH (potential hydrogen) with 7 as the neutral point. Figures below that denote increasing acidity. It is a geometric progression, so 6 is 10 times, 5 is 100 and 4 is 1,000 times more acid

than neutral. This is one reason why it takes much more lime to change pH 4 than is needed at pH 6.

Soil reaction has a direct effect upon plant population and an influence upon the availability of soil nutrient elements.

Alfalfa is a lime loving plant. It fails in moderate to strongly acid soil. A few plants require an acid medium, or special care. This class includes gardenias, rhododendrons and azaleas. All of them develop marked iron chlorosis on non-acid soil. Their power to assimilate iron seems to be feeble. Potato growers control scab by growing the crop in acid soil because the disease producing organism is helpless when reaction is below pH 5.5.

Among grasses blue grass is a lime lover, fescues and bent can make normal growth in moderate to slight acidity. They predominate in New England because soils there are acid mostly. Velvet bent withstands acidity best, among cool season grasses. When it takes over the soil is usually strongly acid. Centipede is the one grass that demands an acid soil for normal growth. Otherwise it turns yellow and will succumb unless soluble iron is used as a foliar spray. A good way to be rid of centipede is to make a generous application of lime.

The best reaction range for most soil nutrient elements is pH 6, 0 to 7, 2. Phosphorus availability is reduced by alkalinity and by acidity below pH 5.7, or there abouts. In acid soil phosphorus becomes difficultly soluble aluminum or iron phosphate. As acidity increases most of the basic elements become more soluable. Some of them may become toxic as a result. Copper toxicity as the result of the use of Bordeaux mixture to control disease during the acid era is a good example. Its toxicity can be stopped by applying a little lime hydrate. It precipitates the copper as a basic salt. Very finely ground limestone will do the same thing, but is a little slower acting.

On strongly acid soil the safest and best plan is to reduce acidity gradually by applying some lime twice or once a year. Benefit from the lime will be obtained even though the reaction change is slight. A very heavy application may disturb soil equilibrum, and may immobilize basic elements including trace elements such as copper, manganese, etc. For all practical purposes the best range of pH is 6.0 to 6.5. It is a desirable one for plants, and favors availability of soil nutrient elements.

Soil, reaction exerts an effect upon soil micro-organisms. A very slight to neutral reaction is best for them. Fungi tend to predominate in acid soil. Lime and soil reaction may affect turf grass diseases. They are caused by parasitic fungi for the most part. In 1927 Joe Valentine of Merion in Philadelphia questioned the Green Section ban on lime. He applied lime hydrate to half a Washington bent nursery. Three weeks later there was a bad attack of dollar spot. Although bad on the unlimed part of the nursery, not a spot appeared where he had applied the hydrate. A fungicide could not have been more effective. Frank Dinelli used ground limestone on one of two adjacent fairways at Northmore. The reaction was pH 5.5 to 5.7. That summer dollar spot was bad on the unlimed fairway but not on the limed one. So there are times when lime has a marked effect on disease. This does not mean that it can replace fungicide. However it could enhance their efficiency.

Thatch development is somewhat analogous to peat formation. Both consist of partially decomposed plant residues. Peat forms under waterlogged conditions. But moss peat forms in the presence of air on strongly acid bogs.

On the permanent pasture plots at Rothamstead in Britian it is necessary to use lime periodically to neutralize the organic acids formed in the plant residues so they will undergo decay.

Aside from mechanical methods, the prevention of thatch, and its control is a matter of making conditions favorable for the growth of cellulose decomposing organisms. They need a reaction near neutrality along with calcium to neutralize acid by products of their activity, some moisture and enough nitrogen for them and for the grass.

Hydrate at 2 to 5 pounds per 1,000 square feet, dusted over the surface of scalded greens in hot weather does wonders, no matter what the soil reaction. Frequently it is more beneficial than fungicide. Some ascribe benefits to the drying effect of hydrate. It may be a factor but the marked effect hardly seems that simple. Under hot anaerobic conditions some of the decomposition products may be toxic to the grass. In that case the calcium salt of the toxic organic substance is insoluble. Then they would lose their toxicity. This statement must be taken with reservations until put to test. However, Truog proved that lime counteracts the toxicity of organic acid compounds. Schreiner extracted many such compounds from soil. Their presence in greens as a result of anaerobic decomposition would lend credence to such a hypothesis.

The neutralization of an acid soil is based on the use of substances that contain a very weak decomposable acid, or a material in which water is the by product of the reaction. Ground limestone and lime hydrate fulfill these conditions. With limestone carbonic acid is the reaction by product. It becomes carbon dioxide gas and water. When lime hydrate reacts with an acid soil water is the only by product. Blast furnace slag can be used but it is only about half as efficient as limestone. Slag is calcium silicate. When it reacts with acid soil silicic acid is formed. Then this feeble acid dissociates into silica which is quartz sand.

There are two kinds of soil acids to deal with. One is the active soluble acid in the soil solution. The other is the residual or insoluble acid in the exchange complex consisting of humus and clay mostly. They are related because the active acidity is derived from the exchange complex. Otherwise 1 pound of lime hydrate would neutralize all the active acid in an acre to plow layer depth. In practice the exchange complex keeps generating more acid. So the problem is to saturate it with calcium.

The amount of lime to use depends upon the soil pH and the texture of the soil. It takes much more lime to change a clay from pH 4 to pH 5 because of its high exchange capacity, than to do the same thing to a sand or sandy loam. These factors, along with kind of grass, have been taken into account in compiling the table for the use of lime which is a part of the lime bulletin which will be made available to you at the conclusion of the meeting.

Our purpose tonight has been to emphasize the importance of lime, calcium and magnesium in the growth of plants. The use of lime is justified when soil is more than slightly acid, and otherwise when the levels of exchangeable calcium and magnesium are low, irrespective of reaction. Lime helps grass survive adversity. When its use promotes growth of tops or roots it is apt to be because of a soil defeciency in calcium or magnesium if dolomite was used.

THE BUSINESS OF TURF — GOLF COURSE SECTION — PURDUE - CLINIC

By
Bill Lyons, Supt. Firestone Country Club,
Akron, Ohio

Topic: "Saving Money"

The subject, "Saving Money" in the turf business will have as many varied aspects as there are people growing turf.

Whether you are a golf course owner, operator or a superintendent, you have a basic philosophy about money. Term it "Sense of Value."

Worth reading is a book entitled, "Have Fun With Your Money." The author used the thesis that money is only usable for the things and ideas that will satisfy the human emotion, "I Wanta." He would have one believe that money of itself is worthless after one has satisfied all of his "I Wantas."

Were you one who saw the movie, "You Can't Take It With You"? This too is another outstanding thought about the use of money.

George Washington threw a silver dollar across some river down east. What a piker he was compared to the way presidents since have been throwing the stuff all over the world. Now that we have run out of worlds we are allowing them to shoot if off into space at the moon, planets and the sun.

Webster's definition of a golf course refers only to land traveled. As you think of a *golf course,* think *of a modified natural area, maintained of grasses, trees, water, sand and flowers in such a manner that it becomes irresistible (unresistible) to people.*

To create these conditions in all their ramifications, let us look on money as a tool to use wisely to produce the:

"X" factor of satisfaction - for the
"Y" type of golfer - for the
"Z" type of management.

As a golf course owner, operator or superintendent it is your job to use the five (5) facets of nature to produce the "X" factor of satisfaction, first for the customer, be he junior learning the greatest game on a fee course of a bank president on a most exclusive private club and second for pride in yourself and your profession.

No matter whether yours is a public fee course or a tournament quality country club, in each there have to be standards of maintenance established and agreed upon by management and the superintendent. It simply boils down to a set of figures called a budget.

There are all kinds of golf courses being built and older ones being revamped. Some of the new ones are already bankrupt. Why? Did someone try to save money by building on cheap, rough land? Was there a golf market? Was the layout a 1910 model with present day labor costs?

Others may fail because the promoter did not inform the investor of the tremendous amount of water needed for greens, and tees, to say nothing of fairways. This is one area where short sighted savings may prove most expensive.

Many of you are operating older courses that were built using pipe sizes that are too small. Silver haired, Chas. E. "Scotty" Stewart, has told us so often at these conferences that we are paying for the right sized pipe whether we install it or not due to the increased power costs and the lack of enough water when we need it.

Much midnight oil has been burned and a lot of cheese eaten at these annual meetings discussing soil structures in building or rebuilding greens and tees. Money spent wisely in these areas is the first step in saving money for the private club or in making a "built in profit" for the fee course.

Mr. P. K. Wrigley, coined the slogan, "Fast nickles are better than slow dimes." Many courses need a practical golf designer to study the layout for possible improvements to speed up play. Thus speed up the number of rounds possible on the course and there by increase the "cash flow" thru the till.

Perhaps design can't be altered to achieve the desired results. What about maintenance? Are the golfers in our way or are we in the way of the golfer? It is a matter of attitude. What's yours?

(Continued Next Month)