

**THE BULL SHEET, official publication of the
MIDWEST ASSOCIATION OF GOLF COURSE
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President's Message

I had a very nice visit with Mr. Jim Lathum from the U.S.G.A. when he stopped by my club recently. As we toured Briar Ridge Country Club, we discussed the various problems Jim has seen this year in his travels. It is no secret that we all suffered through the month of July with little or no rain. Un-watered areas on our golf courses are burned out and lake levels are going down. The first of August brought to the south side of Chicago a nice rain of around 1.5 inches, depending on your location. With a couple of very cool evenings, those burned out areas started coming back very strong.

I sure hate to beat a dead horse, but I can't help but bring up the new mid-year conference planned for Indianapolis again. I have personally received four invitations to play in the golf day planned for Crooked Stick Country Club and I have received three mailings dealing with registration for the conference. Could the GCSAA be having some problems getting attendees for the conference and golf day? If not, why spend the extra money for postage to keep mailing conference literature? If so, maybe this is a one time fling that our national directors will evaluate upon completion and decide what the MAGCS said back in February. "Let's improve on our national conference and show and perfect it before branching out and starting something new."

Congratulations are in order for Mr. Oscar Miles, Superintendent at Butler National Golf Club. He had Butler in what Corey Pavin termed, "near perfect". I had the pleasure of attending the Western Open on Thursday and would concur with Mr. Pavin. The whole course was immaculate. A job well done, Oscar Miles.

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Joe P. Williamson, C.G.C.S.

MAGCS Directors Column

Preparing for the Big One

by Julius Albaugh
Westmoreland C.C., Wilmette, IL

While most of us do not have a major PGA or USGA Tournament to prepare for, we all have at least one key golf event each year which is very important to our individual clubs. At Westmoreland, our special day is called Tam Day. It always falls on the first Monday in August. It is a Member-guest stag day.

Preparation for the event is not an overnight thing. The early August date makes the entire golfing season a challenge, because we want as near perfect as possible golf conditions for the special day. Any turf failure before then will be reflected that day. For Tam Day we strive to have the golf course groomed to the highest degree.

1985, for the most part, has given us a near perfect year weather wise. For the first time in my 23 years in the Chicago area, we have had what can be called a real spring. The temperatures have been great. Eleven times, as of this early August writing, we have had a cool high pressure move in after two or three days of hot, humid weather. Rainfall has been below normal, but with an adequate irrigation system, the moisture level is controllable. It happens to be my first year with a new completely automatic irrigation system. For the first time in 23 years, I have total control over irrigation. I never thought it possible to go through three-fourths a season without a wet spot.

All good things usually come to an end. 1985 has been no exception. On the Wednesday before our special event we received a near perfect 1.50 inches of rain. It was what was needed for our dormant roughs. Sunday night another .60 inches of rain fell. Fairway mowing on Monday was questionable. The grass was long; it needed mowing. The wet conditions favored waiting a day for drier conditions. By early afternoon the grass was even longer; it had to be mowed. We mowed, and had enough clippings to bale. That's alright, the forecast looks good; we can mow again tomorrow and better disperse the clippings.

Never believe a forecast. At 1:30 A.M. I was awakened by lightning, thunder and heavy rain. At 5:00 A.M. I discovered the effects of the rain. The fairways were flooded, 22 traps were full of water, 42 bunkers were badly eroded and grass clippings, were drifted everywhere. The day had been planned for our final manicuring; 1.60 inches of rain in 15 minutes changed our plans. Two men pumped sand traps, 4 men repaired eroded bunkers and 4 men raked, vacuumed and picked up drifted grass clippings. Eleven and one-half hours later we were finished, the 70th Annual Tam Day will go as planned — minus the final mowing.

Yes, it happens to us all from time to time. Weather conditions completely reorganize our plans.

The Bunker Sand Trap

by Judith Ferguson Gockel
Agri-Systems of Texas, Inc.

Choosing a new bunker sand has many of the elements of organized gambling; if you are lucky or particularly skillful you could win, but the odds are not on your side. It is possible to even things up, if some of the basic guidelines for making the selection are observed.

In the laboratory, several factors are taken into account. We make recommendations based on particle size, distribution of the particles, particle shape, color, cleanliness, and cost. After we have done all of that, we then bring the whole thing into the real world, by firing a golf ball into a pile of the sand almost horizontally, and then dropping it from a height sufficient to achieve something close to terminal velocity. If the material passes these tests, it is going to be fine.

For the individual in the field, doing the initial selection, there are some points to consider. The first consideration is particle size. Experience has demonstrated that having the majority of the particles in the .25MM to the 1.0MM range provides the most satisfactory results. By majority, incidently, we are referring to 85% or more of the material, not merely a percentage large enough to elect a President.

Particles exceeding 1.0MM work their way toward the top of any aggregation, while the fines are moved downward through the coarser materials. Any mixture of particles will demonstrate this characteristic while achieving stability.

Large particles blasted onto the green can cause damage to equipment, as well as becoming an uncomfortable hazard to bystanders. Deposits of the recommended sand range are usually very similar to the material used for topdressing; consequently they create few problems. An excess of fine particles often indicate the presence of significant amounts of soil materials; these associated silts and clays can create serious drainage problems, or complicate existing ones.

It is most desirable to have the bulk of the particles in the .5MM to .25MM range, except where frequent high or gusty winds occur. In this instance, it is advisable to go to the larger size range.

Particle shape is harder to determine, and is largely a subjective determination in the field. There is no national standard for sand; one company's mason sand may be another's concrete or glass sand. You can at least request an angular or sub-angular sand, which terms have loose meanings to most suppliers. The problems engendered by round sands make a determined search for angular materials worthwhile. Round sands are theorized to have been windblown at some point in their history; the forces which create them are too great to have been mere water movement. They are inappropriate for most golf course uses, since they shift under pressures of various sorts. A good analogy is a boxful of ball bearings; if you apply pressure at any point everything moves eventually. Pity the hapless golfer, slowly sinking beneath a tide of encroaching sand, while slashing hopelessly at his invisible ball.

Angular materials have some flat sides which interlock with those of other particles, establishing stability quickly, and retaining it well in the long term. It is possible to go too far into the region of the angular, truly sharp sands may pack too hard, making explosion shots difficult. These determinations are dif-

(cont'd. page 4)

(Bunker Sand cont'd.)

difficult to make without special techniques, and these sands are best selected with a laboratory procedure.

The term "angle of repose" is related to particle shape; the more angular the particle, the greater the angle of repose. The material is piled to the highest angle it will support without having grains of sand begin to avalanche down the sides of the pile. The test is done with material in the dry state; the presence of moisture increases this angle considerably in all sands.

Color is a consideration which requires special attention. While the beautiful white sands show up well on television, and are much sought-after by persons who must rely on visual appeal for sales of property or memberships. The white sands are hard on the eyes, and can make the ball hard to see in some situations. If you have a choice of materials, you might want to take into consideration your specific needs. If maintenance creates problems, bear in mind that the white and pale cream sands show contamination much more readily than some of the darker materials.

Compaction is another major consideration. The best results are usually obtained from the silica-based sands. There are white limestone sands which are available; however they tend to break down, creating an undesirable quantity of fines. The fines can cement together, creating drainage problems; they can also produce a good deal of dust in windy conditions. This is your last choice if any other materials are available.

Cleanliness is a major consideration in the choice of a bunker sand. Many sands, including "washed" sands, have a significant silt/clay component. This is difficult to determine quantitatively in the field. Because processing methods vary so greatly, one company's washing procedure may be much more or less efficient than another's. As with any of the conditions involving fines particles, the silt and clay can cause drainage problems, and should be avoided. A percentage of no more than 2% total silt plus clay may be acceptable in a material which meets all other standards.

The final consideration is cost. As the ideal material must be screened, and in most cases washed, you can predict that your costs will be substantial. Do not assume that the most expensive material is necessarily the best one; the material may have had to be processed much more intensively than its' less expensive competitor in order to meet acceptable standards. In some areas there are local "name" brand materials with good reputations, these tend to be quite expensive, and not always better than a less well-known one. The cost of hauling cannot be overlooked in the cost equation, since this factor can double or triple your total cost. In submitting material for testing, it is helpful to indicate relative costs of the materials, since we can weigh our selection using the same factors you do and assist you more effectively in making a choice.

There are a few things to bear in mind as you prepare to put your new materials in place. First, do not mix new material with old, contaminated sand. The bunker should be emptied, drainage checked and corrected, and then the new sand should be added.

Also, try to stage the addition of the material; have it brought to the course and dumped on a driveway or other hard, clean surface. Then transfer it to the prepared bunker. This permits examination and control of incoming materials. It is a good idea

(cont'd. page 6)



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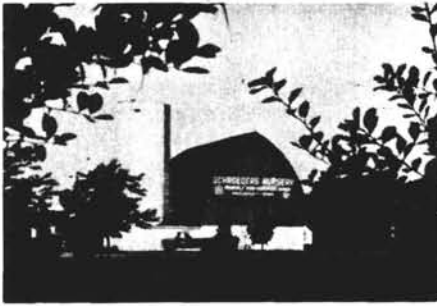
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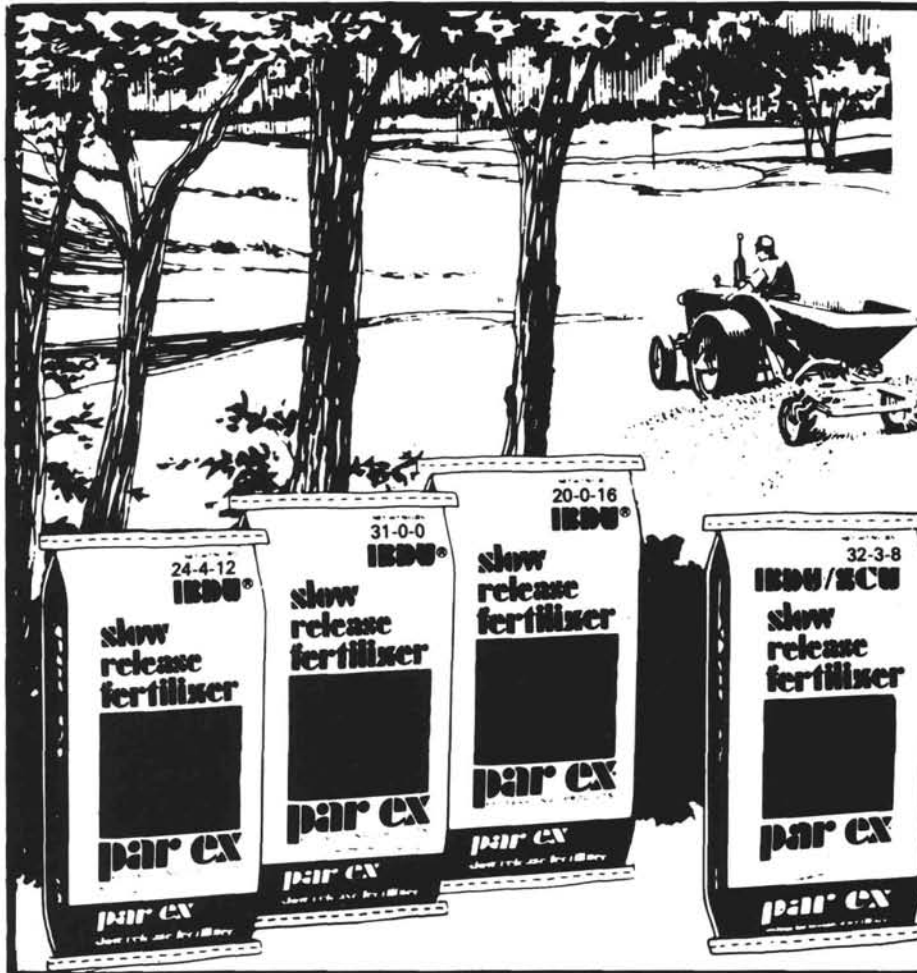
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(Bunker Sand cont'd.)

to specify that the trucks doing the hauling be cleaned before picking up your load. This prevents contaminating materials such as gravel or cement being picked up by your fresh sand.

Finally, check with the supplier of your selected materials to determine that the deposit of the material you select is adequate to supply your needs for some time to come. Limited availability can affect your future additions, and require that you go thru the whole process again much sooner than you would wish.

A little time spent initially on assessing your specific needs, making inquiries concerning available materials, and solving the initial cost versus maintenance cost equation will provide you with a more satisfactory longterm result. The more information you have, and can provide to us, the better able we will be to recommend the best material for your needs.

1985 — The Year for the Golfer

by James M. Latham, Director

Great Lakes Region, USGA Green Section

From mid-April to this writing - golfers in the Great Lakes Region have no cause to complain about the number of playing days this year. Club members' cost per round of golf could be at its lowest in years. Revenue on daily fee courses, on the other hand should be at its highest in years. Let's also include greatly increased revenue at all courses from golf car rentals, dining room and bar. In fact, everyone associated with golf around here should mark the 1985 season (so far) as a Vintage Year.

This might also be remembered as a great year to evaluate the effectiveness of irrigation systems. It is rather easy to spot the scallops along the edges of fairways and perhaps the doughnuts from inadequate or uneven water distribution. This season has also provided a great opportunity to locate areas of overapplication of water due to either misscheduling, poor system design or distribution pattern.

The season has also pointed out some strange seepage locations not detectable in 'normal' years. Some have been weak springs on hilltops. In other cases, areas which should have been drained a long time ago were easily located so that drainage installation can be made in the off season. Low water levels in streams and ponds have caused a few headaches from muddying up the equipment.

Perhaps the most frustrating experience of the irrigation year is a design which took into account the direction of the prevailing wind in the pipe layout. But the wind didn't blow during the irrigation cycles. **Great** roughs! It is also difficult for most of us to understand the elation of a superintendent to find an extra **one-fourth inch** of water in the irrigation pond after a rain. (No well).

This has been a great year to maintain "a little" moisture stress on **Poa annua**, in the hope that bentgrass might compete.

Perhaps the most nagging problem in the Region has been localized dry spots. These things started with the warm winds of April and remain bothersome in some areas. Some of the backbenchers lay the total responsibility to sand topdressing and the waxy coating caused by "something". If that be true, how come the old soil below the sand still won't take water after aeration, wetting agents and flooding? I'm afraid the problem goes much deeper. Certainly the dryness does. You might also take a look at the shape of the dry spots in the early morning dew or at sundown. The C shapes indicate the presence of microorganisms not unlike the fairy ring fungi. Could we have done something to screw up the population balance of soil organisms? How? Inadequate or imbalanced fertility? Unknown activity by organic fungicides? Whatever the cause, the nature of the dry spots remind us **again** that the turf surfaces we see are only the result of soil processes and a quick fix out of a bottle doesn't really cope with an underlying problem in the root zone.

The most talked about non-turf problem this year is the quality and care of sand bunkers. Earnest and vigorous comments and complaints are common throughout the region. The sand is either too fluffy, too heavy, too coarse, too fine, too something. It seems that the golf course superintendent will take all the gaff until someone or some committee commits themselves to a stated style of playability, deep and loose or shallow and hard.

Under most situations, the sand itself is of secondary impor-

tance. The overall maintenance operation determines the play of the bunker. This involves the depth of penetration made by the equipment, wet or dry raking, and other operational factors. Several of these are determined by the architectural features of the bunker and their location on the course. The basic problem is the lack of agreement by the golfers on just how they want the bunkers to play and, as usual, the superintendent is caught in the middle. But isn't it nice that golfers have **sand** quality and not **turf** quality to complain about?

Toronto bent is still a problem to some folks and comes in all sizes. And yet many golf courses still have magnificent Toronto greens for their play and management style. The decline problem is well known, but just try to spend big bucks to replace a fine putting surface! A bad surface is something else and contingency plans are prepared for when, not if, needed. The funding is another thing.

The other exotic diseases with the strange sounding names have been around, but not in epidemic proportions. Preventive fungicide programs have apparently worked as well as the curative programs. Panic purchases of fungicides have been rare, not necessarily as a result of good planning, just low disease pressure so far.

Bug chasers have been rather busy this year - from the grasshoppers in Montana to the cutworms in this area. After all, these things aren't dumb. Why lay eggs in a dried up corn patch when a lush, tasty, well irrigated golf course is in the neighborhood?

The old-timers have a phrase for 1985: A Great Clover Year. Maybe part of this is due to the inability or justifiable reluctance to spray herbicides last spring. Some credit should be given to clover's deep root system, giving it the ability to grow well under the moisture stress early in the season.

And finally, a word to the wise. If your lightweight mowing of fairways is producing great spread of bentgrass into **Poa annua** colonies, watch out. The floating mowers are riding up and over the growth, helping to produce some of the fluffiest turf you ever saw. Now is the time to begin a strong thatch **prevention** program. With the acreage involved this is surely a good example of an ounce of prevention being worth a pound of cure.

3PF is a Winner!

U.S. District Judge Llana Rovner has ruled in favor of the lawn care industry and the green industry as a whole by stating that the Wauconda ordinance which was passed last summer as a result of local environmental pressures, is preempted by Illinois state laws that regulate the application of pesticides. The village was enjoined from enforcing the law. The Village of Wauconda was requiring the lawn care industry to post warning signs on lawns that they sprayed.

The ordinance required the lawn care companies to register with the village and to post signs on the lawns that they sprayed. The signs had to read: "This lawn chemically treated. Keep children and pets off for 72 hours."

The golf courses were concerned about this ordinance for it could have filtered down to them and we would have been required to post our property and warn property owners along our borders of any spraying that we were going to do.

This is an important win for the lobbying group, the Pesticide Public Policy Foundation (3PF). A number of other towns across the country were considering similar ordinances but were waiting to see the outcome of the Wauconda ruling.



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Minimizing Transplant Shock

by Thomas L. Green, Research Plant Pathologist
Morton Arboretum

Trees are usually planted either bare rooted, balled & burlaped, or with a tree spade. There are advantages and disadvantages with each method. It's not the method of planting that is important; it is whether the tree survives after planting. Transplant shock (TS), death caused by the tree's failure to establish, can occur up to six years after planting. If transplanting losses exceed 10%, something is wrong. Most transplant shock is due to improper site preparation or lack of follow-up maintenance.

SITE PREPARATION

1. **Depth of Planting:** Trees that are planted too shallowly may die within the TS period. Trees that are planted too deeply usually survive the TS period but may fail after 10 or 20 years of apparently good growth.

The root flare, where the roots spread at the tree base, should always be at the ground line. When the soil added to the planting hole settles the root flare sinks below grade. To prevent settling do not dig the hole deeper than the roots or ball. Let the root system or ball sit on undisturbed subsoil. If the hole is dug deeper than the root system or ball, the fill soil must be packed firmly.

Sometimes nurseries mound soil around the tree base above the root flare. When balled with burlap, B&B, the basal flare is hidden. If the tree is planted with the tip of the ball at ground line, the tree will have been planted too deeply. Check B&B trees. Locate the basal flare and plant accordingly.

2. **Depth of the Fill Soil:** Most of the fine roots of a tree are located in the upper two feet of soil or within the black layer. The fine roots are absolutely essential to the growth and survival of the tree. The fill soil should provide nutrients, have a pH from 5.5-6.5, and permit oxygen movement (low in clay). The depth should not be less than 12 inches, ideally 20 inches or more.

3. **Diameter of the Planting Hole:** Most root regeneration occurs at the cut surfaces. Root growth therefore, starts at the outer edges of the transplanted tree root system. If the planting hole is one foot or less wider than the tree roots, then the roots have a very short distance to grow in the good fill soil before they reach the original soil. If the existing soil has a high clay content and is compacted, the roots won't grow into it and may begin spiraling as they do in a pot. Tree spades and augers can glaze the surface of the hole and produce a physical barrier to root regrowth.

The wider the planting hole, the better the root regeneration and the greater the prospects for survival. The hole should be at least three feet wider than the edge of the root system. For auger and tree spade planting, a rototiller should be used to break the tree soil-existing soil interface.

FOLLOW-UP MAINTENANCE

1. **Mulch:** The research literature has overwhelming evidence that grass is harmful to trees. In a research study at College of DuPage, I have demonstrated that turf severely affects the growth of newly planted trees.

Grass is a highly competitive, energy demanding plant. Tree root systems in turf are hotter in the summer, colder in the winter, and drier than those growing in the natural forest or covered by organic mulch. Mulch also provides nutrients; the

lawn competes for nutrients.

The top of the planting hole (6-8 ft. dia.) should be covered with organic mulch: such as composted leaves, composted wood chips and fresh, composted hardwood bark, pine bark, mushroom compost, or other organic material. For golf courses, the organic mulch should not interfere with mowing. Mushroom compost or similar fine mulch should prove to be satisfactory. Weeds can be controlled with one or two sprays of Glyphosate (Roundup) each year. The mulch should not exceed five inches in depth and should be slightly thicker at the periphery of the planting hole.

The mulch will provide an excellent growing medium for roots, retain moisture during dry periods, protect tree roots from turf herbicides, and protect the tree base from lawnmower injury. (Lawnmower injury is the most serious problem affecting the future forest on golf courses)

2. **Staking and Wrapping:** Newly transplanted trees may require staking. Two 6' or 8' metal stakes, with heavy gauge wire and cut garden hose to protect the bark from the wire should be sufficient to hold newly planted trees in position. By keeping the two metal stakes inside the mulch, it will be easier to mow around than stakes or guy wires outside the mulch. It is also recommended to wrap newly planted trees.

3. **Watering:** All newly planted trees should be watered following planting. These trees should also be irrigated during periods of drought just like the fairways. Trees with mulch will need watering less frequently than trees planted in turf.

Every planted tree should outlive the person doing the planting. If a little time and effort is spent in preparation, planting losses will be minimized and the investment you are making in trees will pay off with a healthy and attractive landscape with specimen trees.

Anyone who is responsible for planting trees and shrubs should have **Tree and Shrub Transplanting Manual** by E. B. Himelick.

What Do We Plant

What do we plant when we plant the tree?

We plant the ship, which will cross the sea.

We plant the mast to carry the sails;

We plant the planks to withstand the gales —

The keel, the keelson, the beam, the knee;

We plant the ship when we plant the tree.

What do we plant when we plant the tree?

We plant the houses for you and me.

We plant the rafters, the shingles, the floors,

We plant the studding, the lath, the doors,

The beams, the siding, all parts that be;

We plant the house when we plant the tree.

What do we plant when we plant the tree?

A thousand things that we daily see;

We plant the spire that out-towers the crag.

We plant the staff for our country's flag.

We plant the shade, from the hot sun free;

We plant all these when we plant the tree.

by Henry Abbey

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