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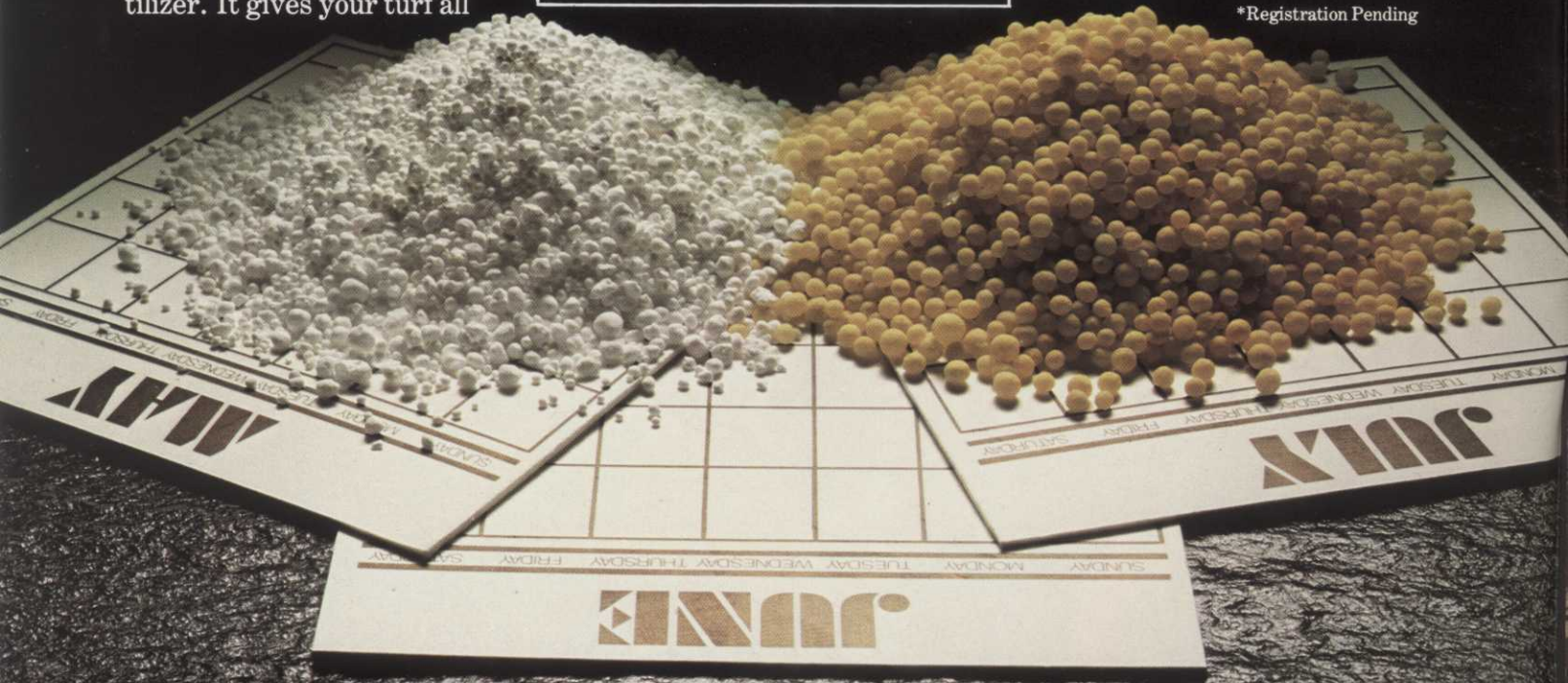

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# The Florida Green

The Official Bulletin of the Florida Golf Course Superintendents Association
Florida Green Phone: Days — (305) 793-2497



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# President's Message

The Florida G.C.S.A. is pleased to announce that six thousand dollars has been donated to the Bermudagrass Decline Project that is being implemented by the F.T.G.A. in conjunction with the University of Florida IFAS. Dr. T.E. Freeman and Dr. Bruce Augustin will be heading a team of experts that will be involved with identifying the problem and determining different types of control. The total cost of the program is twenty thousand dollars with an estimated duration time of two years. Hopefully the research team will come up with some answers in a shorter time period with the assistance of golf course superintendents who will become involved in field trials and observations.

Since the Scholarship and Research Committee of the F.T.G.A. is organized to oversee various research programs, we feel confident that these people can effectively represent the interests of the Florida golf course superintendents. An additional five thousand dollars was earmarked for the general S&R Fund to be used at the discretion of the committee knowing full well the Florida G.C.S.A. will continue to be actively involved in selecting various projects that will warrant research funds. Many thanks to the local chapters and Nematode Controllers Inc. for the collection of these funds.

Since our association's rebirth in 1977 we have gotten involved with a lot more projects than we ever anticipated. It always seems that each new problem is just as important as the last endeavor and they all seem to be critical to the improvement of our profession. Our executive board feels that it is now time to sit back and evaluate our goals and objectives and formulate a realistic and practical set of long range plans. Our direct working relationship with F.T.G.A. must be determined so that the two organizations don't conflict and end up counter-productive. Various ideas have been discussed to get the association more involved with improved public relations throughout the golfing community, creation of more services available to the members, expanded fund raising efforts for research programs plus striving to present educational topics that superintendents truly want to participate in. At our summer board meeting we will be discussing the formation of these plans and a committee to compile them. PLEASE LET YOUR FEELINGS BE KNOWN by contacting your External Vice-President. ■

Kevin Downing

INSTITUTE OF FOOD AND AGRICULTURAL SCIENCES
UNIVERSITY OF FLORIDA

FLORIDA COOPERATIVE EXTENSION SERVICE

# GOLF TURF NEWS

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## THE IMPORTANCE OF TURF AERIFICATION

A number of mechanical, cultural practices are commonly used in turfgrass management to help develop and sustain quality turf. These practices physically alter the plant's environment by removing and/or relocating soil and organic materials. Coring, slicing, spiking, and vertical mowing are different methods that are used and they vary in the degree of cultivation.

Coring or aerifying is the most intensive form of cultivation. Coring uses hollow tines that remove turf, thatch, and soil in cores of 0.25 to 0.75 inches in diameter and up to 3 inches long. There are a number of commercially available coring machines.

The main function of aerifying is to open up the soil and thatch layers and allow oxygen in and carbon dioxide out of the root zone. Roots and soil micro-organisms use oxygen for respiration and other metabolic processes, and release carbon dioxide. Water and nutrient uptake depend on the soil haivng adequate amounts of oxygen so that roots can function properly. If the oxygen is used up in the soil, absorption by roots ceases.

Aerification provides many benefits to turf: root and shoot growth are stimulated around the holes, and poor root systems can be quicky improved if diseases and nematodes are not a problem. Dense roots are often observed in aerifier holes.

Cultivation by coring helps alleviate many physical problems that cause poor aeration, such as soil compaction, layering, and thatch. Wetting of dry soils can also be improved by coring.

Aerifying can be accomplished at any time the grass is actively growing. This is normally April through September in Florida. A time should be chosen when the grass is not under stresses from the environment or pests. If a nematode infestation exists, it should be corrected before aerifying. This will help promote rapid and extensive root growth after coring.

Frequency for aerification depends on the quality and use of turf. Normally coring is done in spring and fall in Florida, but if problems such as compaction, layering, excesive dry spots exist, coring may be done once per month during the growing season. No one has ever had problems with over-aerification, except budgetary.

Size of the tines used depends on the reason for aerifying, the area being aerified, and the piece of equipment being used. Large tractor drawn units which take large cores (0.75 inches in diameter) are used on tees and fairways. On greens, several sizes of cores can be taken. Small (0.25 inch diameter) tines are used for routine aerification. Large ).625 inch diameter) tines are used to correct major compaction and layering problems.

The cores should be removed from greens if there is any contamination problem. However, cores can be matted back into the green if no problems exist. This will provide a light top-dressing. Cores are best disposed by matting on fairways and other playing surfaces.

The importance of aerification in Florida is often underestimated because people think our sandy soils are sufficiently porous, but many cultural problems occur that stem from the lack of oxygen in the root zone. Thatch and heavy rainfall can seal the soil and prevent oxygen movement into it. Root degeneration usually then will occur in water-logged soils making it difficult to get fungicides into the root zone to prevent this from happening.

Aerification is an important turf management tool that can help correct existing problems and prevent other problems from occurring. High quality turf often depends on aerification.

# South Florida Sunshine

By BRAD G. KOCHER
Inverrary Country Club

# "A SUPERIOR PUTTING SURFACE"

The one area of the course where over 50% of the game of golf is played is the green or putting surface. By "scorecard design", 50% of the strokes of a par round are supposed to be putts. Further, taking into consideration approach shots and chip and run shots, one can see that the putting surface is where a majority of golf is played.

A good putting surface is one that permits the ball to roll true. A good green will also "hold" a well hit shot. If I possessed a perfect putting stroke, I would not expect the putting surface to adversely affect the roll of the ball.

A perfect surface for putting might be a 5,000 square foot pool table. I could accurately predict that the ball would roll exactly where I hit it. It might be a little on the fast side, but it would be a true test of putting skill.

A turfgrass putting surface could not be nearly as perfect as a pool table because of some of the inherent consistencies of a growing plant. But a putting surface as near to those standards would exhibit perfection.

There are many superior putting surfaces in existence and there are certain agronomic and mechanical practices that contribute to a high quality putting green.

The variables that will be discussed are mowing, verticutting, topdressing and fertilization. There are certainly a multitude of other variables such as irrigation, aerification, pesticide programs, cup changing and a host of others. I do not wish to downplay these areas. These areas are very important, however, the items we will discuss make the major difference between a good and a superior putting surface.

A superior surface is generally one that is fast. All slow surfaces are not bad nor are all fast surfaces good, but as a general rule the truest putting surfaces are the faster ones.

Fast greens are a by-product of a correct balance of mowing, verticutting, topdressing and fertilization. If any area gets out of balance, quality suffers.

Mowing at low heights is essential — on healthy turf. I do emphasize healthy because I would not want someone other than a golf course superintendent to mandate low mowing on turf that is not healthy and not in a growing condition conducive to low mowing. Mowing heights from 3/16″ to as low as 1/8″ on a daily basis are not uncommon. "Tournament" courses sometimes mow as low as 5/64″ for short periods of time.

Low mowing heights reduce the amount of friction the grass plant has on the golf ball, and allows the ball to roll faster and thereby truer. There must be enough leafblade density to keep the ball on course, but we will touch on that effect when we discuss verticutting.

Mowing direction should be changed daily to prevent the leafblades from laying in one direction and cause more upright growth.

Mowers should be sharp, and lapped at least weekly. The height of cut, and reel to bedknife settings, should be checked daily. Dull, improperly set mowers can cause extensive leafblade damage that is both unsightly and unhealthy.

The use of grooved rollers is also encouraged. To quote the U.S.G.A. Green Section; "Grooved rollers encourage more upright growth habit of grass. The surface area of the grooved roller is tremendously reduced, thus they do not lay the grass down as much in front of the bedknife."

Some of the finest Bentgrass and Tifdwarf Bermuda Greens I have played have been maintained most of the season at 1/8″. Tifgreen surfaces were maintained at slightly higher heights — 5/32″ through most of the growing season.

Vertical mowing or verticutting is also a beneficial mechanical process that removes and helps to control undesirable thatch in greens. A small amount of thatch is desirable between the grass plant and soil surface, however, excessive amounts provide for a spongy and undesirable putting surface. On a good green, infrequent "maintenance levels" of verticutting keep out excessive thatch buildup.

Thatch is generally caused by one or all of the following practices; overwatering, overfertilizing, infrequent mowing or by mowing at excessively high mowing heights. Putting green quality grasses are designed to withstand low mowing heights and will tend to build up thatch levels if not maintained at these levels.

If these conditions exist, verticutting will be a necessity. Ideally, the fewer number of verticuttings we must do, the better. Fred Klauk, in several talks he has given on putting surfaces, stresses the importance of leafblade den-

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sity. Excessive verticutting decreases leafblade density and adversely affects the roll of the ball. We desire dense leafblade coverage. It helps the golf ball roll true.

Another aid that helps to smooth a putting surface is topdressing. Light frequent topdressings do more to improve a putting surface than any one single maintenance practice. Topdressing also aids in thatch decomposition and can thus help to reduce verticuttings.

There are courses with superior putting surfaces that topdress lightly and as frequently as every two to four weeks. Light topdressing after it is worked into the turf is hardly noticeable, other than a smoother, faster putting surface. With the newer topdressers on the market eighteen greens can be topdressed in a matter of hours.

On slow play days, we will close the back nine in the morning, topdress, drag and mow before the golfers can turn from the front to the back. We then do the other nine ahead of afternoon play. Thanks to technology, topdressing is not the tedious task it used to be several years ago.

Fertilization is the management practice that varies so drastically from course to course. I believe that proper fertilization techniques can reduce the need for excessive verticutting because of thatch buildup. So many times we used to fertilize at 3/4 to one pound of nitrogen the beginning of the month, get a tremendous flush of growth that tapered off at the end of the month.

We were a victim of peaks and valleys of growth and thereby putting surface inconsistency. If we were to determine the nutritional needs of the grass plant and divide that equally by 30 days in a month, ideally we would be applying on an as needed basis. The grass would grow at consistent, manageable rates. We would not have to use corrective measures for under or overfertilization.

What is really desirable is *just enough* growth to provide dense, uniform, healthy turfgrass.

Monitoring clipping removal on a daily basis is an excellent method of determining growth. Excess growth, and we may be dumping our grass baskets every green, too little growth and we may be dumping after several greens.

One method of more closely attaining light, frequent applications of fertilizer is the use of liquid fertilizer. Many courses including Inverrary have used this method successfully for years.

If we determine through observation of the turf that 3/4 pound of nitrogen, coupled of course with the other essential elements for growth, can provide adequate nutritional needs for the plant, we will apply it in weekly doses.

We use a 100 gallon sprayer with a field jet nozzle calibrated at 100 gallons/acre. Greens are sprayed as needed, or for practical purposes let's say once a week at 3/16 pound of nitrogen. If our needs were 1/2 pound N per month then we would apply 1/8 pound N per week. The combinations are infinite.

Using a 8-0-8 formulation, we can spray 1 to 10 gallons per acre and attain from .018 pound N/1000 square feet to .18 pound N/1000 square feet. (The formulation weighs 10 lbs. per gallon). The frequency could be once a week to several times a week. The application is quick, ties up only one man to fertilize, and only requires a light syringe to wash the fertilizer into the soil.

The affect is predictable, manageable growth. We eliminate periods of large flushes of growth that build thatch. We find our flexibility is greatly increased using this method of supplying plant nutrition. It is certainly not the only method, but it assists us in fine tuning growth and thereby provide a more consistent, uniform putting surface.

It is challenging to try to attain a superior putting surface and fortunately with the increasing technology in turfgrass research, chemical research and product and equipment advances, we are able to better produce quality greens. By simply comparing notes with fellow superintendents, we can mold our own programs using the best ideas.

It all amounts to better putting surfaces for our golfers. I hope that management organizations, greens committees and other interested parties can financially support the programs that ultimately help produce the better greens and golf courses that we desire. I believe we all strive for perfection and a better golf course. Superior greens are a by product of routine maintenance, technology, communication and the continued efforts of research organizations that need our support. ■

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# GOLF TURF NEWS

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# WINTER TURF PROBLEMS

Florida's subtropical climate should provide ideal conditions for plant growth. This past winter has proved that growing grass under wet, warm conditions can be a challenge and problem.

Overseeding is never easy since competition between grasses is keen. Bermudagrass is tough and aggressive. Successful overseeding depends on timing the seeding of ryegrass at a period when temperatures favor germination and growth. Normally this is mid-November to December. This year overseedings did not establish early because soil temperatures during November and December *never* fell below 50°F, the cut off point for Bermudagrass growth. Temperatures were still in the mid 60° range at the end of December. Bermudagrass out-competed the ryegrass and management could not correct this. Cool days and nights in January and February allowed overseeding to become strong. While there were warmer temperatures in November and December than usual (averaging 5° higher) January, February and March were cooler (averaging 2-6° lower). This has favored the ryegrass later into spring and delayed active growth of Bermudagrass. Night temperatures at Gainesville were still in the low 40° range in early April.

At this time of year ryegrass is in good condition at the time overseeding grass should be going out to effect a smooth transition back to Bermudagrass. The transition period is thus more critical and detailed management for transition should be practiced.

Temperature problems were not the only climatic influences on turf growth this winter. Decreased sunshine (down 12% in November, 16% in December, and 15% in January from 1981) affected turf growth and pest problems. Bermudagrass does not grow well under cloudy weather and an early cool snap set the Tifdwarf into semi-dormant state from which it has not recovered. Many greens which were not overseeded were severely damaged by wear since Bermudagrass requires sunshine for optimum growth.

Through December, 1982 there was 25 more inches of rain than in 1981 and 6 inches above the 70 year average. This has been more severe in south Florida, with averages in certain areas considerably more than 60 inches of rainfall for the past 12 months. Decreased sunshine, warm temperatures, and high humidity increased the incidence of *Rhizoctonia* brown patch, *Holminthosporium* leaf spot, and *Pythium* through last December.

Wetter weather also may have increased nematode populations. Several people noted nematode problems during January. Wet conditions favor sedge growth, therefore selective control for sedges might be considered in certain areas.

Rain reduces irrigation requirements, but excessive rainfall leaches nutrients from sandy soils. Fertilizer applications often were delayed where fertigation was utilized, thus soil nutrient levels of certain elements may be low.

## Summary and Prognostication

Climatic factors have favored a strong overseeding into April, meaning a slower transition. This means more detail to transition management must be practiced. Soil testing for fertility and possible nematode problems should be done as early as possible so cultural practices can include corrective measures. No one controls the weather, and even the best superintendents can have unpredicable problems which relate directly to climate. As temperatures warm and turf growth is fully active, take a long hard look at problems this unusual weather has created. Plan to adjust management where necessary to bring the turf into a healthy, vigorous condition. ■