

Summertime Stress on Bermudagrass



Typical putting green appearance due to summer stress conditions. Photo by Todd Lowe.

Even though bermudagrass is a warm-season species, it can also experience environmental stress during the summer. Bermudagrass is sensitive to reduced light and requires at least eight hours of full-sun each day. Factors that decrease sunlight penetration like trees and clouds are stressful to bermudagrass and decrease food reserves (photosynthates). Closely-mown surfaces like putting greens become more easily stressed as less chlorophyll is available to intercept the sunlight.

Periods of cloudy, rainy weather produce chlorotic bermudagrass putting greens when lower mowing heights are maintained without regard to reduced sunlight and photosynthetic activity by the turfgrass. Chlorophyll is sunlight-dependent and initial signs of stress include loss of color and eventual yellowing and thinning. Aerification holes and low-set plugs often remain greener than the surrounding putting surface simply because of the increased leaf tissue in these areas.

Nature is trying to tell us something.

Raising mowing heights during this time compensates for reduced amounts of sunlight and is the best means to improve putting green quality. Even slight increases in mowing height significantly improve chlorophyll production. This past summer

was especially cloudy and courses that weathered best were those that gradually raised mowing heights throughout the summer as daily afternoon showers began to occur. Courses that maintained low mowing heights experienced more stress as was evident in yellowish, thin putting surfaces.

It is important to limit other stresses during this time until the putting surfaces have improved. Avoid aggressive cultural practices (low mowing, core aeration, verticutting) during periods of stress as they further weaken putting surfaces and prolong recovery. Instead, light topdressing, weekly spiking and frequent foliar fertilization should be applied to aid turf quality. Also, secondary pathogens may take advantage of the weakened state of the putting surfaces, so keep a watchful eye and treat as necessary.

Previous research with zoysiagrass has shown the plant growth regulator trinexapac-ethyl (Primo) to be useful in shady situations. However, little is known about its effect on bermudagrass in reduced light. Research at Clemson University is evaluating Primo on shaded TifEagle putting surfaces and preliminary results are promising.

Todd Lowe

WINTER PINES GC

Fourth of July Color is 'Pea Green' on Push-up Greens

The stress on the Tifdwarf bermudagrass greens we have been seeing the past few years at Winter Pines has been on the greens that were the push-up style construction built without drainage back in 1968. They are still relatively free from any mutations or off-types, but certain dwarf strains start to turn a pea green around the 4th of July each year. Then they turn yellowish green and eventually, a straw color and die if not treated.

No amount of fertilizer, aerification or other cultural practices seems to be able to stop it. Areas on the greens that we cut out and resodded don't seem to be affected again.

These past few years we have sprayed the problem greens with Heritage at the .4 lb rate to try to prevent the onset of the problem, and it seems to be working. We have also used Heritage as a curative treatment and that also worked very well. One application each summer seems to do the trick. Spot spraying with a 3-gallon sprayer is used to retreat persistent areas.

The control program that has worked best for us is triggered by observing the greens. When they go off color and don't respond to normal fertilizer and water then we make our fungicide applications. So far none of the new bermudagrass greens we have rebuilt and replanted seem to be affected.

Joe Ondo, CGCS

JOHNS ISLAND WEST GC

Follow the Basics, And Pay Attention to Weather, N:K Ratio

Our greens were converted from Tifdwarf to TifEagle during the summer of 1999. Since then it has been a learning experience. I have nothing but good things to say about TifEagle; sure there have been some troubling moments, but with Nature dealing the cards, you can't always win.

We experienced a severe breakout of

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Helminthosporium of the greens around August or September in the first year. By the time it was stopped, we had lost some turf, enough to warrant sodding a couple of areas. Since then we have increased the potassium level tremendously. Our goal is to maintain around a 1 to 4 ratio of nitrogen to potassium. Since incorporating this practice, our disease problems have all but disappeared.

Between the two assistants and me, one of us is on every green every day, monitoring and watching for any problem that might develop. About the only time a fungicide is applied is if we are forecast for three to five days of rainy, overcast weather.

Our mowing practices vary throughout the year from the lowest setting of .105 to about .140 being the highest setting. We typically will keep heights up a bit during the summer, usually around .125. If it looks like we're going to have a few of those cloudy, nasty days we will bump the mowers up a little and then, as conditions improve, drop them again. It's been our opinion that the grass seems to thrive better the lower we keep it, again depending on the weather.

With the use of Primo we have managed to keep very acceptable green speeds during the summer without having to drastically lower mowing heights. The lower heights and Primo use have enabled us to keep a very dense stand of grass. The only thin areas we typically develop are in very shady spots, and of course, algae can invade. These areas are spiked as frequently as possible and chemically treated as needed.

TifEagle is a relatively high-thatch produc-

er. The first summer we were not as aggressive as we should have been with thatch removal. Since that first summer, much to the mechanic's dismay, we have become very aggressive with cultural practices. We'll try to pull cores at least four times, verticut lightly about once every other week and verticut very heavily about three times during the course of the summer.

When we do our heavy verticutting, the greens are unplayable for at least a week; fortunately we have a couple of periods during the summer that we are closed for an extended amount of time. As far as topdressing is concerned, the more sand we can keep on them the better. During this time we topdress heavily after aerifications, and lightly once a week thereafter.

Our fertility program is basic. We apply a granular product year around on a typical five- to six-week basis. This is supplemented with liquids as needed. The majority of nitrogen is in a slow-release form, and potassium is supplied strictly through quick-release forms, usually being applied once per week. We try to coordinate fertilizer applications and watering simultaneously if possible. When we water, it is typically a heavy cycle sometimes as much as 60 minutes of water. The principle, of course, is to water as infrequently and as deeply as possible.

All in all with just following the basics and paying attention to weather forecasts, we really have not had too many problems, yet.

John Curran

ROYAL POINCIANA CC

Begin in May To Prepare for September Stress

When I started to think about this article on summer stress on ultradwarf bermudagrass, it didn't sound quite right. It should be *September* stress management on ultradwarf bermudagrass.

September is the worst month of the year to grow grass in Southwest Florida. The key factors in battling stress during the summer months are high temperatures, high humidity, cloudy days, lots of rainfall, the threat of numerous tropical storms, and an occasional hurricane; the month of September has all of them. Did I mention that the northern members return from their lush, prime-conditioned home courses on the first of October?

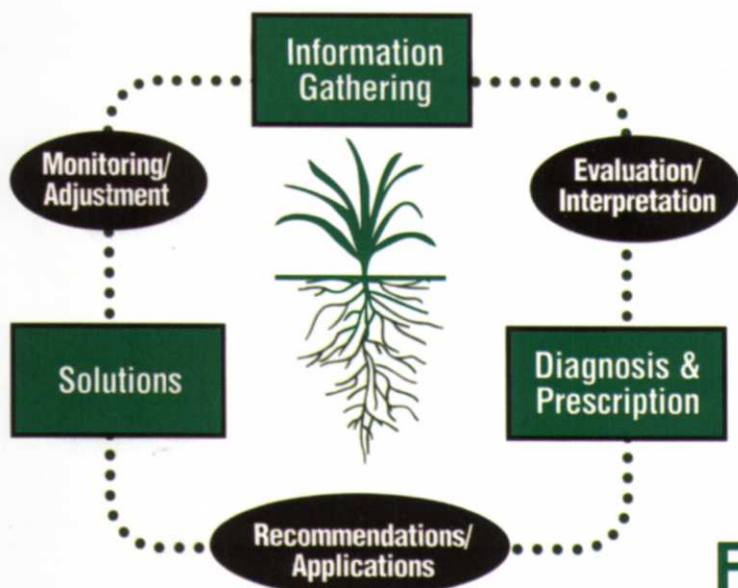
For those and many more reasons, managing our Champion Bermudagrass greens through the month of September always seems to be a challenge.

We begin our preparation for summer stress in early May by verticutting aggressively with Mataways. Some superintendents use vertical mowing machines called Graders. I prefer the Mataway because it removes more material and causes less damage to the root system.

After using the Mataways we aerify the greens with 1/2-inch tines, leaving the holes open for 24 hours to permit gas exchange. Then we add any needed

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- Continuing conscientious monitoring and appropriate program adjustment to achieve maximum health and aesthetics.

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