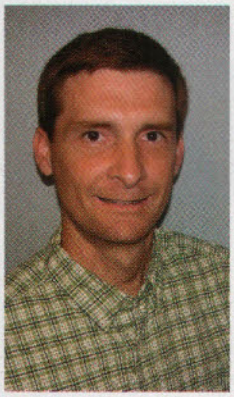
Less water = tougher renovation



BY DR. GRADY MILLER
Professor, North Carolina State University

Questions?
Send them to Grady Miller at North Carolina State University, Box 7620, Raleigh, NC 27695-7620, or email grady_miller@ncsu.edu

Or, send your question to David Minner at Iowa State University, 106 Horticulture Hall, Ames, IA 50011 or email dminner@iastate.edu.

We want to renovate the bermudagrass on our high school football field this spring. We have some heavily worn areas down the center and the sidelines but the rest of the field is ok. I think the field was originally sprigged to Tifway about 10 years ago, but that was before I was hired. We have decided to use a new seeded cultivar but we are not sure if we should take out the entire field or just seed into the worn area. One of our biggest issues is that we can only water the fields 1 day per week due to our local water restrictions. Any advice you can provide would be appreciated.

North Carolina

It seems 90% of the questions I have received the last few months have a drought component. My answer to your questions will be tempered based on your inability to irrigate. If irrigation was not an issue, your options would be a little different and the assurance of success would be much greater.

I will provide an overview of establishing via seeding, but you may want to download "A Guide to Establishing Seeded Bermudagrass in the Transition Zone" that was recently published. It was written by experts from Alabama, Arkansas, Indiana, Kansas, and Mississippi based on their years of combined experiences. It can be found at the Applied Turfgrass Science website, address: http://www.plantmanagementnetwork.org/ats/, under the headline Turf Management Guides.

This guide provides pages of useful information related to cultivar selection, seeding date, site preparation, seeding rate, weed control, fertilization, and costs. It does not provide relevant information related to irrigation management or suggestions for establishment without irrigation. The unfortunate reality is that most published recommendations are designed to minimize seedling stress and competition for light, water, and nutrients. Establishing a field without irrigation carries additional risks far beyond establishing an irrigated field.

If you have not yet selected your seeded cultivar, you could read through the information in table 1 of the guide, or look at the National Turfgrass Evaluation Program data (nhttp://www.ntep.org) for your region to help you decide which might be best. As is noted in the guide there is a wide range of cost for bermudagrass seed (about $5 to $25 per pound). Often the more expensive cultivars are those that produce the fewest seed heads, which is used by some people as a measure of quality. You should also check with your local seed supplier to see what is currently available.

But before you purchase the seed, you will need to decide if you are going to renovate the entire field or just the worn areas. If irrigation was not such an issue, I would suggest you renovate the entire field. You have time on your side and the field would look and play much more consistent. With regular rainfall and once per week irrigation, there is still a chance that you could successfully renovate the entire field, but there is the risk of slow germination and poor growth following establishment if the turf does not get adequate moisture.

Since you already have at least half your field grassed with an improved cultivar and your extensive midfield wear indicates you are getting more traffic than the field can normally handle, I would recommend just seeding the bare areas this year. Most of the newer seeded bermudagrass cultivars will blend reasonably well with Tifway. Once you get the lines painted for football any difference in texture or color will be even less noticeable. Given your situation I believe having turf coverage is more important than visual consistency.

Research has shown that early seeding dates are not detrimental in terms of seedling winterkill and may actually have some advantages. Bermudagrass generally does not germinate until temperatures reach 68 degrees but seed can be planted when the temperatures are cooler (mid-February to mid March rather than April to June) and will remain in the soil until conditions are conducive to germination.

Before planting thoroughly core aerify the area to be seeded to alleviate compaction and open the soil. Then use a rotary spreader or slit seeder to apply the seed evenly and at the appropriate rate. A slit seeder would be the ideal way to plant, but if one is not available then carefully rake broadcast seed into the top 1/8 inch of soil using a leaf rake or nail drag, and then lightly roll to improve seed-to-soil contact.

Once planted the recommendations are more difficult to make because you only have one fixed-day per week to water. You are now depending on Mother Nature and you hope that she graciously provides you with rainfall.

You want to irrigate as efficiently as possible so make sure that your irrigation system is working and provides good coverage. This is best accomplished by putting out at least a couple of catch containers between each head to check catch amounts and by looking for dry spots during and after an irrigation cycle. Make adjustments or replace heads if there are distribution problems.

Once the seedlings start to emerge, apply about 0.5 pounds N/1,000 sq. ft. using a soluble source of N (e.g. urea) just before an irrigation cycle. Continue to apply about 0.5 pounds every 2 weeks as long as there is adequate soil moisture until the turf is well established. Apply other nutrients based on a soil test. I would avoid the use of herbicides on drought stressed turf.

There is no guarantee that this is going to work. Without water turfgrasses will not germinate and without adequate water it will not remain healthy. But I believe taking this course of action is better than doing nothing. ■