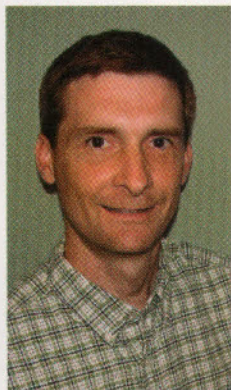


Paint by numbers

Here's one for you. It's Spring 2007 and on an overseeded football field in Florida, the fall 2006 football numbers are exaggerated in brightness and turf. The turf is generally weak around the numbers, but the ryegrass overseed is thick and healthy. Do you have any ideas or reasons for this occurrence?

– Floyd



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.

I got your attached picture and it looks just like I imagined. I have seen this type of response a few times before, although more frequently it is the painted areas that are weaker compared to the non-painted areas. There can be several contributing factors to this phenomenon. To explain my theory it is beneficial to go through a timeline of events leading up to the time the picture was taken.

Normally before overseeding, bermudagrass is verticut or scalped so as to open the canopy for good soil to seed contact. Afterwards, the overseed grass is sown, the area is watered, and the grass seedlings begin to grow. With adequate rainfall or irrigation, ryegrass will be up and growing within a week. With good weather and water, the stand can fill in in just a few weeks. During the fall, the grass continues to grow at a rapid pace due to moderate temperatures that favor the cool season grass over the bermudagrass. At some point during the fall the field will be painted. Often the field will be repainted weekly or twice a month.

Paint will cause microclimate changes in the turfgrass canopy and at the soil surface. The extent of these changes is influenced by normal climatic factors as well as paint color and paint application thickness. In my research, I have seen dark paint increase turf growth (due to elevated temperature) and light-colored paints decrease growth (presumably due to decreased temperatures and light reflectance).

With repeated heavy application of paint there is a tendency to suppress turf growth, sometimes to the point of total turf loss. Moderate to heavy paint applications can also seal the soil surface. This changes the water status underneath such that greater moisture is retained in the soil for a longer period of time. Paint may also reduce water infiltration. Soil can wick moisture laterally under painted surfaces that may momentarily reduce the problem.

So, come spring when it gets hot and the bermudagrass wants to grow, there is this buffered area under the paint that holds moisture. This paint color and moisture retained under the paint slightly moderates the temperature while providing moisture to the ryegrass plants. So, the ryegrass wants to keep growing and the bermudagrass does not have a good chance to grow up through the painted area due to competition from the ryegrass. The paint and the ryegrass also contribute to shading the bermudagrass. This



alone can be a substantial limitation to growing healthy bermudagrass in painted areas.

So the question becomes, what can be done to limit this problem once it occurs? Light irrigation usually will not change the response, but heavy application of water on painted areas may displace some of the paint and prevent some shading. If layering is an issue, aggressive aerification and verticutting may encourage the “painted soil” to dry a little faster and reduce the shading on the bermudagrass. Short of cutting out heavy layers of painted soil with a sod cutter, these are the most common practices. Care must be taken to not overdo it during green-up and cause damage to the bermudagrass.

If the ryegrass persists too long, it can prevent any bermudagrass from growing in the area. In this case, the turf manager may want to chemically remove the ryegrass to allow the bermudagrass to naturally begin to recover in those areas. Some of the older products that were used to remove overseeded grasses actually did not do a very good job of removing perennial ryegrass from painted areas. Luckily, the new herbicide products from the sulfonylurea family do a great job of removing most overseed grasses, even from the painted areas.

I think we have a lot to learn about athletic field paints and their use. One place to begin is the ingredients in our paints that we know may influence turf. Paints often contain calcium carbonate, a liming agent. They may also contain metal ions that may be considered undesirable to turf growth at high concentrations, although the bioavailability of some of these may be questioned. If a person uses paint that was formulated as a “house paint,” there may be a number of volatile organic compounds, preservatives, and/or mildew suppressing agents that could cause turf problems. Ingredients, formulations, application technology, and management of painted areas – there are lots of unanswered questions. ■