

What Color Is

Last year, we endured a grueling July—hot and dry—and this year, we are confronting extremely wet conditions. High temperatures, unusually dry or wet conditions, extreme humidity and lots of play add up to great stress for turf and turfgrass managers alike during our Midwestern summers. I have personally seen grass of many colors during this trying period. Each color across the spectrum tells its own tale of stress, recovery and even death. So I am inspired to write this article, which has been formulating in my mind for several years, about the colors of turf I have experienced and what they mean. During my career, I have been fortunate to experience turfgrass management in many guises: golf course grow-ins (three), Mid-Atlantic summers, Midwestern winters and PGA tournament preparations and aftermaths. All circumstances offered different outcomes and many different colors of turf. The color of turf can range from the dark green of spring to the purples, oranges, reds and browns of summer.

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Your Turf?

The first color to discuss is yellow; this color represents stress and deficiency of one sort or another. Yellow in the spring tells me that fertility is poor, or that something is missing in the nutrition of the turf. This is easily remedied with micronutrients or fertilizer. During grow-in, this color tells me I waited too long between fertilizer applications and that two-week intervals between feedings should not be stretched. Yellow is also the color of turfgrass after the Senior Open, when tents, bleachers, skyboxes and trucks are placed on the course two weeks before the event and are not removed until the week after. Consequently, my turf forgets what the sun looks like. Although this is an ugly color, recovery is usually quick if irrigation or rainfall occurs in a timely fashion. Yellow is the color of turf that tells you, the manager, that something needs to be done. It is not a color that forewarns disaster; it is only trying to get your attention to be fed or loved as we do best. Yellow is also a good color for those of us that are on *Poa* control programs; it is the lovely color of *Poa* reacting to TGR and represents the competitive advantage gained by the bentgrass under this regulation.

Purples and reds are the colors of extreme stress, caused by the lack of water or the presence of too much water. Last season, we saw all too much of these colors due to lack of rainfall, high temperatures and extreme humidity (both high and low). Irrigation system deficiencies and human error (not us) can cause these colors to pop up. I

personally have seen a broad spectrum of reds and purples on my course, sometimes all within a few feet of each other! Bright reds and purples represent the need to hand-water dry spots, those areas next to sprinklers that for whatever reason stay dry and won't get wet no matter what you do, unless you spend lots of money on wetting agents that solve the problem along with many hours on the business end of a hose. Purple also represents the color of turf preferred by the PGA tournament officials; no matter how well you manage your irrigation, when they arrive the course is too wet. It seems that long drives for the normal golfer are not good enough for the Tour player, who needs 40 extra yards of roll to be able to play your course without crying that the conditions are too tough. That is, of course, despite 20 mph-plus winds that along with low humidity can dry your turf faster than laundry on a line. But after two nights of no irrigation, the course is too dry and the ball bounces too much, so the turf manager is allowed to do what he thinks is best—Lord only knows that we might know our courses better than anyone else. In any event, stress related to water management is easily recognized by virtue of the red and purple color spectrum. Always remember that it is easier to add water than to take it away! This is a lesson that is usually learned the hard way, so be careful.

Next is my favorite color of turf, orange. This color can be deceptive and may have different meanings under various condi-

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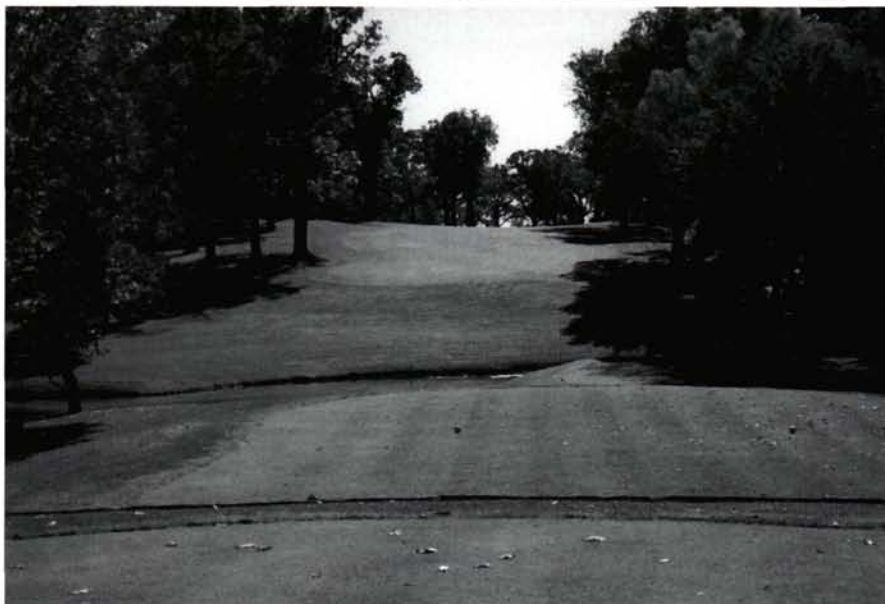
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tions. Orange can be a good and bad color; it can reveal problems or recovery. When turf is under stress and the conditions are correct, high humidity, high nighttime temperatures and wet conditions, orange represents the color of root pythium and may ultimately mean imminent death. Orange can also indicate mechanical damage to the turf; scalping is often manifest after the fact as an orange color. This color, however, can also be a good sign; often turf that is moisture-stressed will turn

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orange after lots of hand-watering. This orange is a transition color that indicates the recovery of these spots; they will become bright orange before they turn to a soft brown and ultimately back to green as the cycle is completed. I saw this color frequently following the hot, dry July of 1999, especially on greens where lots of *Poa* is present. I answered many questions about this color, reassuring others that this orange was a good sign, that the grass was not dying but was in recovery from extreme dry stress and would soon be green again with enough hand-watering.

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One source of inspiration for this article: impeccable and formidable Kemper Lakes G.C., Long Grove, home of the SBC Senior Open.

Brown is a color that also is not too bad. It represents dormancy, not death, and often my friends in the Mid-Atlantic remind me that you don't play on color. Last year, especially, we were reminded that brown may not be so bad as unirrigated turf on the course became brown along with most home lawns. Even though we had a difficult summer and fall, the entire Mid-Atlantic region from New Jersey to Virginia experienced the worst drought in 30 years. Many of my friends and former colleagues had entire golf courses that were brown. Water shortages and restrictions devastated golf courses in that area; most superintendents resorted to hand-watering greens and tees only because that was the extent of their water supply or the maximum that local authorities would permit. So keep in mind that someone is always worse off than you are, and know that brown is not bad, just another transition color.

Finally, we have the two colors we NEVER want to see. Those are black and white. Both of these colors represent death, be it sod that has died or algae-covered slime that once was turf. If possible, avoid these colors at all costs. Black cart tracks in stressed turf, soil poking through once-good turf areas, white tufts of once-vigorous turf are all signs that renovation is imminent and work needs to be done.

In conclusion, I can say with some humor that the grass is not always greener; it may be bluer, redder, orange or even brown, as long as it is not dead. Color is turfgrass talking to us, telling us what it needs, and as we gain experience on our golf courses, color dictates our management decisions. So don't panic if the grass is not green; just look and listen to your turf and respond with love, hoses and fertility agents as needed, and you will be rewarded with the best color of all: green!

