

TURF TWISTERS

THE BLACK LAYER

Question: This past summer I heard a lot of talk about what some say is a new putting green disease called "The Black Layer." It appears in the soils of greens, even USGA spec greens, usually about two or three inches below the surface, has a swampy odor, and the grass roots and plants die. What do you know about it? (Indiana)

Answer: Enough to say it is *not* a new disease and is *not* even associated with a disease. At least no causative pathogen has ever been identified. The so-called "Black Layer" has been around a long time. (See USGA GREEN SECTION RECORD, July 1970, "Solving Drainage Problems at El Macero," by Dr. D. W. Henderson, Dr. D. T. Bradley, University of California, Davis, and J. Jagur, Superintendent, El Macero C.C.)

It is, pure and simple, an irrigation problem or a drainage problem or both, depending upon how one wants to look at it. The soils have become too wet for too long. The swampy odor attests to that fact. Dry out the soil profile, and the Black Layer (and odor) disappear.

Even sandy soils and USGA spec greens can become too wet and compacted (in particular zones) if there was a poor or incorrect soil mix, incorrect construction, a migration of silt or other fine particles into a layer, poor internal tile drainage techniques, etc.

With insufficient soil permeability and continued rains and/or unrelenting irrigation, all pore spaces become saturated with water to the exclusion of air (oxygen). Couple this with warm summer soil temperatures and the presence of some organic matter, and anaerobic processes, indicated by the blue-black color and foul smell, naturally set in. Normal growth requirements are destroyed, and the plant dies.

How to correct or prevent the phenomenon? Step one is to drastically curtail or stop all irrigation, including syringing. Dry out the green. Aerify, spike or slice, even in the middle of the summer. Get some air back into the rootzone. Syringe only when moderate to severe blue wilt or footprinting develops, and even then syringe only for a minute or two over the entire green. Do not irrigate. It may be several days or even weeks (depending on climatic conditions) before new irrigation is needed. There must be a longer period for drainage between future irrigations. A very light dusting (two pounds per 1,000 square feet) of hydrated lime following aeration or spiking may also be helpful.

As Professor L. S. Dickinson once said, "Help the little grass plant to grow. Don't try to make it grow." Words of wisdom.