

Director's Column



Staying with the Times

by Joel Purpur, River Forest Golf Club

Advances in modern technology are definitely modifying our profession, but are we as Superintendents changing with the times?

Over the past ten years we have implemented many new strategies due to technological advancement in areas from new equipment to pesticides. Ten years ago public perception of pesticide usage on golf courses was not a major issue, but today it is front page news with an unsettled future. We must stay well informed on all current topics and prepare for future issues.

With more and more members playing at clubs throughout the country, they will continue to try and bring new ideas home. Some of these ideas may have a place at your home club, but others may be better left where they originated. If we stay current with new trends and research them properly, we can either implement a new idea with many of the rough spots ironed out right off the bat, or convincingly defend our ground and continue current methods. We know each course has different conditions and limiting factors, but our committees may not and must be informed of all consequences to assure their confidence in us professionally.

Attending local and national seminars are prime opportunities to stay up to date as the hot topics are usually on the program. If topics are not formally presented, someone with expertise is usually in attendance for one on one questioning.

Sometimes I think we occasionally pre-judge a topic or speaker and may visit a trade show or take a break only to miss out on valuable information and ideas. Even though many charts and graphs in a presentation can be somewhat dry, most of the time that is where the most important points and comparisons are spelled out for us from years of research, which can directly affect maintenance programs or how effectively we use our budget dollars. But put up a slide of some hairy disease symptoms and everyone is on the edge of their seat!

Attending local association meetings is also very important. Some form of education is usually on the agenda. Even though the actual education portion of the meeting may be less than an hour, conversation with fellow superintendents talking shop is also valuable.

University field days give out a wealth of up to date information as well as updates on new experiments and future issues. Even though sometimes it can be tough to get away, try and make it a priority.

Take advantage of our trade magazines which we sometimes take for granted. Even though technical articles are not real exciting all of the time, I try and make it a point to read at least one article a day which doesn't take much time or get boring.

With rapid advancement in biotechnology, chemical and mechanical engineering, who knows where we'll be ten years down the road. In these times of change, we must change with the times by taking advantage of all the opportunities to stay well informed.

The Cause of Black Layer in Golf Greens: An Alternative Hypothesis

by L. L. Burpee, The Guelph Turfgrass Inst.
and A. Anderson, The Ontario Ministry of
Agriculture and Food

Over the past several years, dark-coloured layers have been observed in the profile of many golf greens throughout North America. These layers, which impede root penetration, may form anywhere from 0 to 10 cm or more below the surface, and they are usually associated with conditions of high soil moistures. At least two hypotheses have been proposed as explanations for why "black layers" form. One hypothesis, formulated by Dr. Clinton Hodges of Iowa State University, focuses on algae and their mucilaginous by-products as causes of poor infiltration of water through "black layers". A second hypothesis, proposed by Drs. Branham, Rieke and Vargas of Michigan State University, suggests that the "black layer" is composed of insoluble precipitates formed by the reaction of hydrogen sulfide with metal ions. The hydrogen sulfide is produced by anaerobic bacteria that proliferate under conditions of low oxygen (i.e. high moisture).

Elements of both hypotheses may explain the biology and chemistry of "black layer", but what about the physical properties of the layer? Surely a unique physical environment must develop before algae and/or anaerobic bacteria can proliferate. Therefore, we propose that the origin of "black layers" can be traced to the movement and accumulation of silt and clay particles into distinct strata within the profile of a golf green. The silt and clay originate from sand topdressing that has not been washed and screened properly. The layers of fine particles create a perched watertable resulting in poor water infiltration and the possibility of waterlogged conditions developing within the layer(s). These conditions of high moisture and low oxygen provide an excellent environment for the growth of the bacteria and algae referred to in the first paragraph.

This summer we will be conducting an OTRF-supported research project to determine if "black layers" are associated with strata that contain a high concentration of silt and clay particles. The objectives of this project are: 1. To identify the physical properties (e.g. particle size distribution, bulk density, pH) of "black layers" in golf greens; 2. To compare the physical properties of "black layers" with the physical properties of strata that lie above and below "black layers"; and 3. To attempt to correlate the formation of "black layers" with the concentration of silt and clay in topdressing materials.

Credit: Greenmaster July/August '87