Salt-Affected Turf Sites’ an eye-opener

By MARK LESLIE

With more and more golf courses operating on former landfill sites and using often salt-laden wastewater for irrigation, superintendents are facing complex and difficult challenges in keeping their turfgrass growing and healthy.

With this in mind, Drs. Bob Carrow and Ronnie Duncan of the University of Georgia’s Crop and Soil Sciences Department have co-authored Salt-Affected Turfgrass Sites — Assessment and Management.

Dealing with such topics as ion imbalance, sulfate compounds and glycophytes, this is not bedtime reading for the layperson in the family. Yet, Carrow and Duncan do make their information understandable. Good thing, since 10 percent of the world’s land surface contains salt-affected soil, and one-third to one-half of all irrigated land is influenced by salinity.

Salt-affected soils are found on every continent, the two scientists say, with the highest concentrations in Australia, North and Central Asia, and South America. Some 25 to 35 percent of Australia’s land mass is influenced by salts, and in Western Australia that area increased by 680 percent between 1982 and 1996.

Salt problems are exacerbated in areas where people are under water-conservation rules, because they are often unable to leach salt through the soil and must use wastewater. Primary salt-induced problems — water deficits, soil permeability, ion toxicities and ion imbalances — are only worsened by such secondary causes as:

• saline soils require more frequent and careful irrigation;
• sodic soils (those with high exchangeable sodium) often make it difficult to schedule irrigation due to reduced water infiltration and percolation;
• sodic soils normally require much more intensive cultivation programs to maintain macropores of oxygen diffusion, water movement and root channels;
• fertilization programs are more complex due to ion imbalances, toxicities, and the necessity of additional chemical amendments to displace excess salinity;
• gravity-control programs must be carefully developed due to enhanced potential for water injury under salt stresses;
• salt-affected soils limit the choices for turfgrass cultivars to those with sufficient salinity tolerance to persist; and
• since drought and high-temperature tolerances are reduced by salinity stress, measures to prevent or minimize these potential injuries are often necessary.

The cases are surprisingly wide-ranging, from Bermuda-grass damaged by periodic flooding with brackish water and a high water table where the ground water is saline, to salt accumulation in the soil’s “B horizon” caused by occasional heavy rains in an arid region. Carrow and Duncan explain:

Salt damage to Bermuda-grass from periodic flooding with brackish water and a high-water table where the ground water is saline.

Continued on page 30

GOLF COURSE NEWS

IPM Handbook for Golf Courses
By Drs. Gail L. Schumann, Patricia J. Vittum, Monica L. Elliott, Patricia P. Cobb

Designed for both novice and experienced superintendents, this field manual will help you understand and implement successful integrated pest-management techniques. Each chapter begins with a solid introduction, followed by step-by-step lists to aid in the field application of IPM principles to real-world situations. More than 150 photographs — 32 in color — along with informative tables and drawings illustrate the key points. Actual examples and success stories are presented by superintendents from across the United States to help you plan or improve your Integrated Pest Management program. Chapters cover site assessment, scouting and monitoring, developing technologies for pest management, getting started and regional IPM portraits as well as cultural, biological and chemical control strategies, and managing insects, diseases, nematodes and weeds. $34.95, 300 pages, hardcover.

Guide to Golf Course Irrigation System Design and Drainage
By Edward Pira

As a working reference or as a textbook, the Guide to Golf Course Irrigation System Design and Drainage covers every important aspect of the subject in an easy-to-understand format. It is perfect for the practicing turfgrass manager, superintendent, consultant, sales representative, and student. Used in numerous academic courses for years, this is the first commercially-available version of a perennial best-seller, and is completely revised with new exercises, practical examples, numerous new figures, and expanded sections covering a wide variety of irrigation system components: A hands-on manual, it guides the reader through every phase of an irrigation program. Turfgrass managers and golf course superintendents will refer to this handy book often to plan effective irrigation systems, ensure appropriate capacity, easy installation, and practical operation and maintenance. $69.95, 400 pages, hardcover.

The Course Beautiful
By A.W. Tilghman

This is a fascinating collection of original articles and photographs on golf course design by one of the masters. A prolific writer, Tilghman delves into his philosophies on golf course design and maintenance, and his thoughts on what makes a championship course. It is loaded with vintage photographs and original Tillie sketches of such of his creations as San Francisco, Winged Foot and Baltusrol golf clubs. $34.95, 120 pages, hardcover.

The Captain — George C. Thomas Jr. and His Golf Architecture
By Geoff Shackelford

The creator of Riviera and Los Angeles country clubs and author of the classic book, “Golf Course Architecture in America, Its Strategy and Construction,” George Thomas has deeply affected the golf in- and construction as San Francisco, Winged Foot and Baltusrol golf clubs. $34.95, 180 pages, softcover.

The Creator of Golf: Tillinghast’s Designs
By Dr. Keith Kamok

Written in clear, everyday language, The Creator of Golf covers the biology, design and construction of virtually all the insects and mites that attack warm- and cool-season turfgrasses. No other sources provides as many practical and comprehensive management guidelines for use on golf courses, lawns and sports fields. Learn how to use insecticides effectively, while safeguarding human and environmental health. Examine the strengths and limitations of biological and chemical control techniques and the use of new biorational products. Dozens of sampling and diagnostic techniques are also discussed. This book has the answers on how to control white grubs, mole crickets, fire ants, ticks, other turfgrass—damaging pests such as moles and mites. It features 235 high-quality color photographs and more than 200 illustrations. $65.00, 400 pages, hardcover.
A different perspective: Pro-active job interviewing

A job-hunter’s perspective
By RAYMOND G. DAVIES

As superintendents, we have developed specific knowledge and skills that allow us to produce great golf course turf. Interviewing skills are not required to grow great turf, but having the right job is. To land a job in which your career can thrive, you must excel in the interview process.

A key to successful interviewing is to take initiative in — pro-actively manage — the interaction between yourself as the candidate and the employer as interviewer.

As the applicant for a superintendent’s job, you must achieve four objectives in an interview to glean

continued on next page

An employer’s perspective
By TOM ISAACK

I heartily endorse the principles of pro-active job interviewing. The job candidate who understands the concept put forth by Raymond Davies, in the companion article, has a powerful career-building tool — if he or she can implement the concept.

Ray and I work together. When we were interviewing each other we applied considerable collaborative effort to shaping a job that would marry the company’s needs with his skills and career goals.

My observations are intended to affirm Ray’s concept, while providing an employer’s perspective.

COMMUNICATE COMPETENCE
It is just as hard to communicate competence as it is to examine it. The pro-active interview strategy solves the problem for both parties. Competence — and its essential component, confidence — are communicated best by those who know where they stand. Understanding how a job fits into the career growth you have planned says you know where you stand. If career growth can be defined as acquiring knowledge and skills and applying them with satisfactory results, rather than simply where one works and for how much, the foundation is laid for a dialogue about what constitutes a successful employee-employer relationship. Think through the elements of career growth that will lead you to satisfaction. This self-knowledge about the subject of the interview — your career — is essential to communicating competence. It “centers” you for an interview and is the basis for knowing if the job is good for you. It also gives you the perspective as well as the strength to recognize if it isn’t a good match. Note that this is quite different than playing “hard to get,” which will come across to the interviewer as arrogance or manipulation.

QUESTION THE QUESTIONER
A good interviewer seeks to understand how you think. The pro-active candidate shows this, not tells about it, by question-

continued on next page

NOBODY BEATS US ON OUR TURF!

Nobody beats Pennington when it comes to Seed & Turfgrasses! All Pennington Seed varieties, blends and mixtures are available with our exclusive PENKOTED® protective coating. For the best turf selection, always rely on Pennington.

For information on Pennington's Turfgrasses, Call toll free: 1-800-277-1412
Web site: http://www.penningtonseed.com

Salt & turf
Continued from page 28

how to assess salt-influenced problems and then act to remedy them. They specify particulars about tests for total salinity, sodium (or permeability) hazard, specific ion toxicity to grasses and other landscape plants, and nutrient content and pH.

Then they recommend what lime-, sulfur-, gypsum- and phosphogypsum-based amendments to use; and when, how much and with what equipment to apply them.

Using several case studies, the scientists finalize this educational experience with real-life situations to help readers relate to their own circumstances.

Published by Ann Arbor Press, $54.95, 185 pages, hardcover. Available through Golf Course News Bookshelf.