

HOT TOPICS

Long-awaited mortality study released at golf show

GCSAA-commissioned research says incidences of death to superintendents by cancer are unusually high.

IOWA CITY, Ia.—A new study by the University of Iowa College of Medicine has found abnormally high deaths from cancer—particularly lung cancer—in golf course superintendents who died between 1970 and 1992.

However, Dr. Burton Kross, the study's chief investigator, tells superintendents that "the results of this study cannot and should not be used to draw any cause-and-effect relationships between your profession and cancer."

The study, yet to be submitted for peer review, was commissioned by the Golf Course Superintendents Association of America (GCSAA) to examine and correlate the death certificates of GCSAA members filed between 1970 and 1992. Preliminary results were obtained from 618 death certificates; when the study is completed, up to 750 former GCSAA members may be included.

"The relationships between pesticide exposures and human cancers are uncertain," Kross told an audience at the

GCSAA's annual convention last month in Dallas. "However, evidence is building between specific pesticides and specific human cancers."

Kross said that the results were adjust-

ed to reflect age at death compared to the total population. However, he also said that other factors such as lifestyle and family history—neither of which were studied—could "certainly" be contributing

GCSAA/Iowa State Epidemiology Study

Criteria: white males, former members of the GCSAA whose death certificates were filed between 1970 and 1992.

CAUSE OF DEATH	NO. IN STUDY	P.M.R. ¹	CONFIDENCE ²
All cancers	179	136	120-153
Byccal	3	90	29-275
Esophagus	5	163	69-388
Stomach	4	78	30-206
Large intestine	29	178	125-253
Liver	1	62	9-437
Pancreas	9	130	68-248
Other digestive	3	161	52-494
Lung	59	127	100-162
Respiratory, non-lung	2	91	23-362
Bone and connecting tissue	3	297	97-909
Skin	2	78	20-307
Prostate	15	229	140-375
Bladder	3	70	23-217
Kidney	3	93	31-282
Brain	7	242	120-488
Non-Hodgkin's lymphoma	9	211	113-395
Leukemia	7	157	78-317

¹**P.M.R.** = Proportionate Mortality Ratio, the number of observed deaths among superintendents divided by expected deaths from the general population multiplied by 100. (100 equals index for general population. More than 100 equals a more frequent incidence of the specific cause of death among superintendents; less than 100 equals a less frequent incidence.)

²**CONFIDENCE** level is 95% that actual P.M.R. is in this range.

Source: GCSAA, Iowa State University College of Medicine

ELSEWHERE

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factors to the high cancer rates.

The study found a higher-than-usual number of deaths from lung cancer. Two other types of cancer, brain and non-Hodgkin's lymphoma, occurred more often in the group. Researchers also found that cancer of the large intestine and the prostate were more common in this group (see chart).



Kross: no 'cause-and-effect'

"We can now identify what merits further investigation," said GCSAA president Randy Nichols. "This was the first phase toward looking at the occupational hazards that affect our membership."

New GCSAA executive director Steve Mona says the study is "a baseline for future research."

"We also think this gives us an opportunity to forge new partnerships with groups that can help us," Mona adds. "For example, this is one more reason to work closely with chemical manufacturers in their efforts to develop new technology in products and packaging. Another example could be working with an organization like

the American Cancer Society on the smoking issue."

Allen James, executive director of Responsible Industry for a Sound Environment (RISE), issued a statement in response to the study (see sidebar).

Kross, during his Dallas presentation, made three recommendations to the GCSAA:

1) Support programs to help employees stop smoking, and control exposure to secondary smoke by designating non-smoking areas for employees and patrons.

2) Minimize exposure to pesticides by carefully following pesticide application label directions and using protective clothing and equipment as much as possible.

3) Expand on the GCSAA's programs in pesticide application and training.

Nichols added another point:

4) "We need to work closely with chemical manufacturers in their efforts to develop new technology and new packaging."

Though the study was only 80 percent complete, Kross noted that he doesn't expect the final numbers to change drastically, and that releasing such preliminary results was not uncommon in the scientific community.

—Jerry Roche

RISE's response:

■ "We must caution everyone on the very preliminary nature of the study, and the fact that the researchers have not determined a cause-and-effect relationship for these results.

"While there is no proven link between health issues and practices used to control pests on our nation's golf courses, RISE members endorse research aimed at solutions for health concerns.

"We agree with the need for research. However, as Dr. Kross said, 'one cannot establish cause-and-effect relationship from this data.'

"RISE members believe it is important to note that today's products used for control of pests have undergone an average of 8 to 10 years of stringent health and safety tests before being considered for registration by the EPA. Such products are used safely when applied according to the labeled directions."



—Allen James

This LM reader sees a federal government that's out of control

■ To the editor:

My wife and I just returned from a week in Washington. We were there to do everything possible to help reduce the Federal Behemoth (aka federal "budget").

Our federal government is out of touch and out of control. It is unresponsive to reason, and its arrogant, regulatory overlords are contemptuous of those who would question their wisdom or motives.

The most recent manifestation of federal omniscience is the Clinton health care disaster. What Ira Magaziner and his minions have dreamed up is the antithesis of the American spirit.

The 100 businessmen in our group received a briefing from one of Ira's "health hacks." Any doubt I ever had about the intentions of the present administration were removed after this briefing. They intend to remove every vestige of entrepreneurial capitalism in this country, and they don't apologize for it.

There were three questions from the

audience. The answers were scary.

1) "My mom just had a quadruple bypass operation. What would happen to her?"

The reply was: "This administration intends to eliminate the financial incentives for the surgeon to perform the work."

"Well, then how would my mom get the needed operation?"

"We believe the doctor would still want to perform the surgery because it would be professionally rewarding and intrinsically valuable for him to do that type of work."

At this, another man told his concerned friend, "Phil, he just said your mom's gonna die!"

2) "What happens to the part-time worker who moves from job to job?"

"You will pay for the time he works for you. While he is between jobs, the federal government will pay for him."

3) "Considering the Hubble telescope and other federal fiascos, why should we trust you with health care?"

"That's a good question," said the administration hack. "However, our plan...blah, blah, blah, blah..."

Thank goodness our forefathers under-

stood that the best federal government is limited federal government.

Excessive regulation is choking business at all levels. Excessive taxes are choking the middle class. Excessive welfare is destroying generations of kids. Yet our pompous elected leaders continue to ignore their constituents.

What is the answer? I'm reminded of the words of the great American Socialist Patrick Henry, "Give me security, or give me death!" (Well, something like that.)

Wake up, people, and take responsibility for your personal lives. Get involved in your government. Your first instinct might be to say that it won't do any good because they won't listen. Well, they definitely won't listen if you don't call or write, that's for sure.

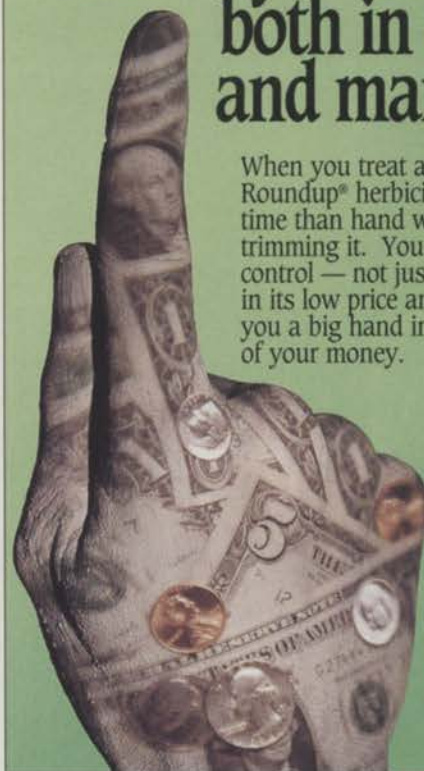
Write letters. Make visits. Invest your time, effort and money in changing your government.

Andie Hines
Shrub & Turf
Athens, Ga.

(ED. NOTE: Letters to the editor are welcomed. Mail your comments to: Editor, Landscape Management, 7500 Old Oak Blvd., Cleveland, OH 44130; or fax them to 216-891-2675.)

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IND-47080 2/94

Circle No. 103 on Reader Inquiry Card

Survey finds GIE Expo popular with owners

MARIETTA, Ga.— A survey of attendees taken during the 1993 Green Industry Expo in Baltimore last November found that a majority of the show's attendees were upper management personnel and business owners and presidents.

According to the survey, 67 percent of show attendees were upper management personnel, 45 percent were owners and presidents and 22 percent were managers and superintendents.

Ninety-two percent said they have a major role in decisions regarding equipment and service purchases. Fifty-seven percent said they have the final say in equipment buys.

Show attendees were surveyed during registration for the show, and the results were tabulated by Rob Brooks & Associates of Alexandria, Va. An average of 1,532 attendees responded to the show survey.

"The positive responses earned by GIE confirm that the show's position in the marketplace continues to gain strength and momentum," says George Gaumer, president of the Green Industry Expo.

GIE Expo is a joint trade exposition co-sponsored by the Associated Landscape Contractors of America, the Professional Grounds Management Society and the Professional Lawn Care Association of America.

Forty-six percent of companies in attendance at the show do an annual business volume of more than \$500,000. More than 20 percent do an annual volume of more than \$3 million.

"Survey results recognize GIE for its key role in bringing industry manufacturers together with the qualified professional consumer," says Eleanor Ellison, GIE trade show manager.

The show also features numerous seminars and workshops of interest to landscape contractors, professional grounds managers and lawn care operators.

The 1994 Expo and education conference is scheduled for St. Louis, Nov. 14-17. For more information, contact the show office at (404) 973-2019.

SERVICES PERFORMED BY GIE '93 ATTENDEES

Lawn/landscape management.....	67 percent
Chemical services.....	51 percent
Landscape installation.....	45 percent
Landscape design/build.....	28 percent
Irrigation service.....	23 percent
Tree services.....	11 percent
Garden centers/nurseries.....	9 percent
Government & institutions.....	6 percent
Other related services.....	17 percent

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IND-47082 2/94

Circle No. 118 on Reader Inquiry Card

Fruit fly battle won, control measures begin in Calif. town

CORONA, Calif.—Pesticide spraying to control the Mediterranean fruit fly has begun after a court victory by the Cooperative Medfly Project.

Control measures commenced the evening of Feb. 15, as three helicopters dumped a mixture of malathion and corn syrup bait over Corona and portions of nearby Norco for about four hours.

City officials were against the control measures, saying the spraying posed a risk to residents.

The state Supreme Court refused to hear an appeal of a lower court ruling that said the spraying could go on as earlier planned.

According to Larry Cooper, spokesman for the Medfly Project, a study by the University of California estimates damage to agricultural crops from unchecked fruit fly populations at \$1 billion a year.

About 500 million sterile Medflies were to be released weekly in a 1,500-sq. mile area over parts of Los Angeles, and Orange and San Bernardino counties, as another means of controlling the fruit fly numbers.

Researcher not staying quiet about new earplug design

BLACKSBURG, Va.—A Virginia Tech engineer and graduate student have come up with a new earplug design that is a perfect fit for the human ear canal.

According to human factors engineer, John Casali, the custom-fitting earplugs use a foaming material within the ear canal of the wearer. The patented, custom-foam ear piece is designed to be inexpensive and easy to make.

Casali is the director of the Auditory Systems Laboratory, the only university teaching and research facility in the U.S. accredited for the evaluation of hearing protectors.

For more information about the earplugs, call (703) 231-5073.

Science tries to change how plants taste to pests

UNIVERSITY PARK, Pa.—Researchers in Penn State's College of Agricultural Sciences are looking for ways to make insects turn up their antenna at their favorite foods by altering the way plants taste.

"The chemical senses, taste and smell often are the key to insects' survival, says Dr. James Frazier, professor and head of Penn State's department of entomology.

Frazier and his colleagues have found naturally-occurring compounds that make plants taste terrible to pests, and now are studying how the compounds might be used in pest control.

"These chemicals could be sprayed on plants as today's pesticides are, but they would protect the crop simply by making it taste bad to the larvae," says Frazier, who also admits that man will never declare final victory in the war against pests.

"After thousands of years, we have yet to eradicate a single insect pest," Frazier says. "Insects eventually overcome every-thing science has thrown at them."

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Circle No. 106 on Reader Inquiry Card

Total quality: never cheap, but possibly 'inexpensive,' landscaping panel says

RESTON, Va.—According to its Crystal Ball Report XV, the Associated Landscape Contractors Association (ALCA) believes that "many contractors make a profitable business serving the low-priced market," and that "something can be inexpensive and still be Total Quality."

The report, titled "Team Building and Measurement in the Landscape Industry," is a product of ALCA's Crystal Ball Committee, chaired by Tom Lied of Lied's Nursery, Sussex, Wis.

"We discussed the fact that not all successful landscape contractors...are as enthused about Total Quality Management as is the Crystal Ball Committee," Lied says. "In fact, TQM has recently received some bad press."

"The Crystal Ball Committee decided that TQM may be a contradiction. All we learned leads us to believe that *leadership* replaces *management* in a total quality

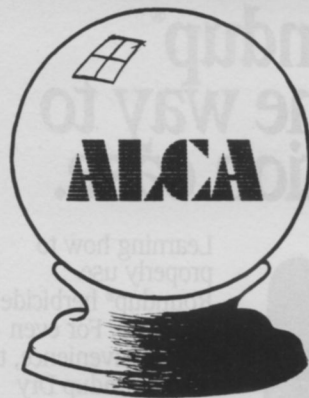
company."

The report does admit, however, that the industry has really begun to sell the value of quality landscape service: "Attractiveness, timely response, thoughtful customer service at a fair price is what the customer is seeking. It has begun to show in many facets of our business."

The 78-page document also deals with employee empowerment, team building, and team tools and measurements. It concludes with recommendations.

"Employee empowerment...is not a simple task," the report states. "It requires that the owner, executive or manager *let go* of some of the reins. Total Quality takes the combined talents and resources of everyone in the company."

The report also recommends establish-



ing self-directed work teams. "Unlike other committees or teams," it says, "a self-directed work team is actually an autonomous group working with minimal or no supervision. They can be put into an area of responsibility for sales, manufactured product, produced product, etc."

Finally, the committee says shared knowledge is a key to success. "Team members must know how they are doing," it suggests. "Share job experience, share customer satisfaction with team members, and foster a creative and positive attitude among team members," the blue-ribbon panel continues.

Copies of Crystal Ball Report XV, and the three previous reports dealing with Total Quality Management in the landscape industry, are available from ALCA for \$7.50 each. To order, write ALCA, 12200 Sunrise Valley Dr., Suite 150, Reston, VA 22091; or phone (703) 620-6363.

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Garry Vitt (right) accepts a certificate of award from Curtis Clark, pendimethalin product manager at American Cyanamid.

Lawn Doctor owner receives \$250,000 worth of herbicide

WAYNE, N.J.—Lawn Doctor owner Garry Vitt won't have to worry about fighting troublesome weeds for the next 10 years.

In one of the lawn care industry's largest product give-aways, Vitt was awarded a 10-year (up to \$250,000) supply of pendimethalin, a pre-emergence herbicide. The prize will be supplied by American Cyanamid, O.M. Scott and Lesco.

"I've used pendimethalin for over eight years and look forward to relying on this product for at least another 10," Vitt says.

The presentation was made at the 1993 Green Industry Expo in Baltimore.

"This special give-away was an opportunity to reward one lucky lawn care company for its loyalty and commitment to the industry," says American Cyanamid product manager Curtis Clark.

Vitt owns Lawn Doctor franchises in Colorado Springs and Pueblo, Colo.

HOT STUFF

Dimension herbicide rights sold

PHILADELPHIA—Dimension herbicide (common name dithiopyr) will be sold to Rohm and Haas Co. by the Monsanto Co. The two principles signed a letter of intent for the transaction on Feb. 1.

Monsanto will support product sales and services until the sale, which is expected at mid-year.

Dimension is sold in the U.S., Canada, Japan and Australia for use on turfgrasses. It is designed to be used by golf course superintendents, lawn care operators and landscapers to control crabgrass and other problem weeds. It is available in liquid, clay granule and fertilizer formulations.

Monsanto will concentrate on control products for agricultural crops rather than turf, according to product director Jim Budzynski. "Monsanto's difficult decision to divest itself of this chemistry is based on the desire to focus on products that have technical fits in key agricultural crops such as corn, soybeans and wheat," Budzynski told *LANDSCAPE MANAGEMENT* at the golf course superintendents' conference in Dallas last month.

"This acquisition underscores our long-term commitment to the agricultural chemicals business," says Rohm and Haas president John Talucci. "These products, and related assets, are very compatible with our market presence and strength."

Financial terms of the agreement were not disclosed.

Emissions are 'negligible'

BALTIMORE—Air emissions from two-cycle lawn, garden and forestry products are "negligible," according to a report from the Portable Power Equipment Manufacturers Association.

The PPEMA found that volatile organic compounds (VOCs), carbon monoxide and nitrous oxide were "negligible when compared to all other sources of these air emissions. (Such) emissions from...chain saws, trimmers, brushcutters and blowers are not a major source of air pollution."

For instance, VOC emissions from portable lawn and garden products in the U.S. are only 0.8 percent of the total.

"It would take 439 years of emissions from a professional chain saw to equal one year of emissions from a passenger car," the PPEMA said.

The report was prepared by the consulting firm of Heiden & Associates. For details contact PPEMA at (301) 652-0774.

Preemption bills becoming more numerous

MADISON, Wisc. and DES MOINES, Iowa—Preemption bills have gained impetus in two more states—Wisconsin and Iowa—during recent months.

The laws bar local governments from enacting their own pesticide regulations, forcing them to follow state mandates and making it easier for lawn and landscape companies to legally apply pesticides.

In Wisconsin, Gov. Tommy Thompson signed AB607 into law on Dec. 14, 1993.

"We won easily in the Assembly," notes Russ Weisensel of the Wisconsin Forestry, Rights-of-Way and Turf Coalition, "but we almost lost it in the Senate. Without agricultural interests, we probably wouldn't have had enough support."

The Wisconsin law actually allows local bills, but they must be sent to the state Department of Agriculture for review.

In Iowa, after passing by a wide margin in the state House of Representatives, Gov. Terry Branstad signed the bill into law on Feb. 8.

"We thought it would be a 15-vote margin going into the House vote," notes Steve Cook, director of association affairs for the Iowa Golf Course Superintendents Association. "But it wasn't even that close." In a 65-32 vote, the Iowa House agreed with the Senate's version of the bill despite heated debate.

"The vote went pretty much along party lines," Cook notes. "It was a very emotional debate from the Democratic side—dogs getting killed and so on—but one that pretty much fell on deaf ears."

CLINTON AND THE 103rd CONGRESS

A report by Allen James, Responsible Industry for a Sound Environment

WASHINGTON—When Congress adjourned late last year, the 103rd session ended a stormy, but productive, first year in office for Pres. Bill Clinton.

The President was helped by his come-from-behind win on the North American Free Trade Agreement, which gave him a good finish despite a disastrous start.

In his dealings with Congress, Clinton did much better than it would appear. When he took a political stand on an issue, he prevailed 88.6 percent of the time, the highest for a president's first year since Dwight Eisenhower's in 1953.

Much of this harmony can be explained by the political changes resulting from the 1992 election. Democrats campaigned on

the mantra of ending the Republican-Democrat gridlock, and they gave Pres. Clinton the traditional honeymoon period. On many issues, Clinton simply agreed with what Congress wanted to pass and took the credit.

On more difficult issues, Clinton was successful, but with a high cost to his image: hurt by the gays-in-the-military snafu, the loss of his economic stimulus package, and the amount of money spent for pork-barrel deals. (Clinton's let's-make-a-deal" style allowed members of Congress to obtain extraordinary political favors for votes, including dams, banks, aircraft carriers and presidential visits.)

Clinton alienated relations with

Republicans on a number of issues by relying solely on Democrats to pass his tax-and-spend proposals, then shifting gears and depending mostly on Republicans to pass NAFTA, which angered many Democrats.

In order to govern effectively over the next three years, the President will have to build a coalition of moderate Republicans and Democrats, without constantly trading political favors and by developing a more cohesive domestic and foreign policy.

—Allen James is executive director of RISE, a group of pesticide manufacturers and distributors that supply the green industry.

Will electricity be 'the way to go' for golf course greensmowers?

LINCOLN, Neb.—You read it here first: the first all-electric triplex greensmower has been introduced to the golf course maintenance industry by Ransomes America.

The Ransomes E-Plex, unveiled at the Golf Course Superintendents Association of America trade show in Dallas last month, is designed for quiet, pollution-free operation.

During a press breakfast held during the show, Ransomes vice president Doug McCormick called the E-Plex "a quantum leap" in the golf course equipment industry.

This development could signal a new era in environmentally-friendly outdoor power equipment design with electric power becoming a universal option.

Equipped with a 48-volt industrial electric motor, the E-Plex draws its energy from eight 6-volt, 244 AH golf cart-style batteries. It can operate up to three hours on a single charge. Maximum mowing speed is 3.7 mph while its top transport speed is 7.5 mph.

"In most cases," says Peter Wuhr, Ransomes

product manager, "the mower can do 18 holes (on one charge)."

Wuhr says the batteries last from one to two years, depending on conditions and care. He adds that the cost of the batteries is paid for in 175 days from other savings.

The extra weight from the mower's batteries makes it 30 lbs. heavier than a fuel-powered model. The company says the trade-off is in fuel costs, noise reduction and elimination of fuel or oil leaks.

"Not only is this new mower environmentally friendly," says McCormick, "but the quiet motors allow crews to get on golf courses earlier in the morning. This is particularly important for courses that are part of private residential developments."

When asked by LANDSCAPE MANAGEMENT editors whether the green industry can expect to see an electric mower for fairways, too, in the near future, Wuhr said it was "always a possibility."

The total cutting width of the E-Plex is 62 inches.



McCormick: E-Plex is 'a quantum leap.'



Wuhr: Batteries charge in six hours.

Turf resource guide is being developed

ATHENS, Ga.—The Turfgrass Science Division of the Crop Science Society of America is compiling information for a "Turfgrass Management Teaching Resource Guide."

The guide will be helpful to those involved in turf education. The various resource materials to be included are videos, slide sets, computer software, computer services, books, periodicals and other teaching resources or aids such as irrigation components, plant and seed specimens, posters, etc.

If you know of any potential teaching aids that should be included, please send complete information to Dr. Keith J. Karnok, Dept. of Crop & Soil Sciences, Plant Science Building, University of Georgia, Athens, GA 30602; or phone him at (706) 542-0931.

Correction

■ To the editor:

I appreciate your reference to trends that I said may have some impact on golf course maintenance in the future, as noted in the January issue. I'd like to take credit for those insights, but—more accurately—my predecessor with GCSAA, Steve Cadenelli, had made those predictions back in 1991.

Of course, I am in complete agreement with Steve on those "future directions" and, indeed, we are already realizing all of them to some degree.

William R. Roberts

St. Andrews Corp.

Grosse Pointe Woods, Mich.

INFO CENTER

Selected books and videos for the industry

EFFLUENT IRRIGATION... "Wastewater Reuse for Golf Course Irrigation" is available for \$55 from Lewis Publishers, 2000 Corporate Blvd., NW, Boca Raton, FL 33431. It includes system design, monitoring concerns, retrofitting for recycled water and successful case studies. The book's editorial review committee included James Snow, Dr. Michael Kenna and Dr. Kimberly Erusha of the USGA Green Section, Mike Henry of the University of California and Dr. Charles Peacock of North Carolina State University. Pre-paid orders are postage-free. Visa, MasterCard and American Express orders are accepted. For more information or to order, phone (800) 272-7737.

THE THREE R'S... "Reduce, Reuse, Recycle" are the key elements of a 12-page booklet from the Rodale Institute Research Center and Troy-Bilt Manufacturing that answers questions homeowners most often ask about managing yard waste. Topics covered are clippings, the use of chipper/shredder/vacuums, and bin and sheet composting. For a copy of "The 3-R Yard Care System," or for more information, write to Garden Way Inc., 102nd St. & 9th Ave., Troy, NY 12180.

BUSINESS MANAGEMENT... Noted author and lecturer Charles VanderKooi has written "Completing the Circle," which answers business problems. Topics included are estimating, field performance, employee motivation, administration and money management. According to VanderKooi, "this is a companion book to 'Estimating and Management Principles for Landscape Contractors.'" Copies are \$39.00 each, plus \$3 shipping and handling. Visas and MasterCards honored. To order, write VanderKooi & Associates, P.O. Box 621759, Littleton, CO 80162 or phone (303) 697-6467.

CHEMICALS IN THE SOIL... The American Society of Agronomy and the Crop Science Society of America have combined to produce SSSA Special Pub. No. 32 entitled "Sorptions and Degradation of Pesticides and Organic Chemicals in Soil." The 260-page book is a technical look at the relationships between sorption

and degradation of anthropogenic compounds in soils. It is available by sending \$30 to SSSA/ASA, Book Order Dept., 677 S. Segoe Rd., Madison, WI 53711-1086.

PLANT QUARANTINES... The American Association of Nurserymen, in conjunction with the National Plant Board and USDA-APHIS, is marketing "Federal & State Quarantine Summaries," which contains clear, concise summaries of general shipping requirements and quarantines enforced by the USDA's Animal and Plant Health Inspection Service (APHIS). The binder also includes quarantine information for all 50 states and Puerto Rico. Send \$20 (ANN members) or \$25 (non-members) plus \$2.50 shipping to: AAN, 1250 I St., NW, Suite 500, Washington, DC 20005. To order via Visa or MasterCard, phone (202) 789-2900.

ACROSS THE BOARD... Wiley Publishers has a wide range of technical publications available in subjects like plant pathology, weed science and pest management. To order a catalog, phone (800) 879-4539.

ORNAMENTAL PLANTS... The fourth edition of "Manual of Herbaceous Ornamental Plants" by Steven Still contains 384 color prints, twice as many as in the widely-used third edition. Price is \$38.80 for the paper edition and \$48.80 for the cloth. For more information, contact Stipes Publishing, P.O. Box 526, Champaign, IL 61824; (217) 356-8391.

ENERGY EFFICIENCY... Landscaping could save U.S. homeowners \$10 billion a year, according to the U.S. Department of Energy. That point is brought home in "Energy-Efficient and Environmental Landscaping" from Appropriate Solutions Press. It gives landscape designs for the four major climate zones in the U.S. and detailed instructions on proper plant placement. Chapters are on water-efficient landscaping, landscaping for wildlife, landscaping with native plants. Cost is \$19.95 postpaid. To order, write Appropriate Solutions, Dover Road Box 39, South Newfane, VT 05351 or phone (802) 248-7441.

GREEN INDUSTRY EVENTS

What's going on
in the industry

MARCH

15-16: Tree Appraisal Workshop, Country Inn, Waukesha, Wis. Phone: (303) 466-2722.

18-20: ALCA Student Field Days, University of Tennessee, Knoxville. Phone: (703) 620-6363.

22: Turfgrass Equipment and Supplies Field Day, College of the Desert, Palm Desert, Calif. Phone: Mel Robey, (619) 346-6102.

22-23: Turfgrass, Landscape and Sports Turf Institute, Cal Poly, Pomona, Calif. Phone: Linda Knoche, (619) 723-0947.

24: Sports Turf Managers Association Midwest Chapter annual meeting, Schaumburg (Ill.) Golf Club. Phone: (708) 439-4727; (708) 360-4750.

25-26: Florida Certified Landscape Contractor Exam, Valencia Community College-West, Orlando. Phone: (407) 345-8137.

APRIL

10-14: American Landscape Showcase, Taipei, Taiwan. Phone: (407) 843-3487.

11-12: Southeastern Turfgrass Conference, Tifton, Ga. Phone: Waldene Barnhill, (912) 386-3353 or Brenda Poston, (404) 229-8125.

17-20: American Society of Golf Course Architects annual meeting, Pan Pacific Hotel, San Francisco. Phone: (312) 372-7090.

23-24: California Certified Landscape Technician Test, Pierce College, Woodland Hills, Calif. Phone: Kim Heckes, (616) 448-2522.

MAY

1-3: Menninger Sunbelt Tree Conference, Hotel Royal Plaza, Lake Buena Vista, Fla. Phone: (407) 345-8137.

18-20: Color Magic '94, Walt Disney World, Orlando, Fla. Phone: (407) 345-8137.

JUNE

5-7: Tree City USA National Conference, Lied Conference Center, Arbor Day Farm, Nebraska City, Neb. Phone: National Arbor Day Foundation, (402) 474-5655.