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your turf management
program, this is
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Bentgrass tees, greens, and overseeded turf. And it's the most economical fungicide per day of control on the market.

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Turf & Specialty Products
Division, 5966 Heisley Road,
P.O. Box 8000, Mentor, OH
44061-8000.**



Always follow label directions carefully
when using turf chemicals.

*Registered trademark of ISK Biotech Corporation.

The cornerstone of your turf management program.

Table 2

**Influence of micronutrients and nitrogen fertilizer*
on creeping bentgrass cutting green stimpmeter ratings.**

IRON SOURCE	MAY		JUNE		AUGUST			SEPTEMBER		
	28	5	11	19	14	21	28	13	20	25
Agri-Plex For-X	70.2	71.0	75.7	80.7	74.9	84.5	81.1	69.3	78.2	70.8
Agri-Plex Fe 8%	69.0	67.1	74.4	79.4	69.3	79.5	77.2	61.5	72.5	66.3
Sprint 138 Fe	66.1	65.2	74.4	80.1	69.9	79.7	77.9	60.3	70.8	65.7
Sprint 330 Fe	64.9	67.1	70.8	76.5	66.5	76.5	75.4	59.9	71.9	64.3
FeSO	68.6	65.7	72.1	76.4	69.8	81.0	76.1	61.5	71.1	64.6
MnSO	69.5	69.5	76.2	81.1	72.5	84.3	80.1	65.7	76.6	68.9

The stimpmeter reading is the distance, in inches (vs. feet) a golf ball rolls on a green when using a USGA stimpmeter.

*There is no statistically significant difference among products.

Source: Dr. Michael Agnew, Iowa State Univ.

Iron from page 40

However, as a soil application, spring is the optimal time to apply iron supplements because spring rains will move the nutrient into the rootzone. In addition, spring applications ensure that iron will be available during the early flush of growth.

Why chelated iron?—Using a chelated iron supplement is particularly beneficial when applying iron into the soil. Experts describe chelated iron as similar to the protective shell of a nut.

As a chelate, iron is protected and stabilized, to make it available for use by the

turf for longer periods.

“Golf course superintendents, particularly those who have soil with high pH, should consider using a chelated iron source,” says Dr. Agnew.

“From the earliest stages of growth, the result is a healthier, hardier plant.”

Knowledge of lifecycle vital for control of white grubs

■ Skunks feasted on the grubs buried in the roots of the turfgrass surrounding the corporate office building in suburban Cleveland.

The damage, mostly in the low, moister areas of the property, reaffirmed the adage: to control a pest, first learn its lifecycle. This is particularly true of white grubs since they're below the soil surface. This also makes them harder to kill.

Typically, beetles that develop into white grubs—Japanese beetle, masked chafers, European chafer—lay their eggs in the soil in June or July. The eggs absorb moisture from the soil otherwise they won't grow and develop. The tiny first instar larvae needs sufficient moisture, too.

In fact, research into the lifecycles of white grubs in recent years stresses the importance of soil moisture. That's why poor control usually occurs when chemical controls are applied on drought-stressed turf in mid-summer. The white grubs have moved deeper into the soil, in effect, out of reach of the control.

Tasty summer meal—But by mid-summer 1991, the grubs at this showcase of a 10-acre corporate office site had grown large and juicy enough—and remained close enough to the soil surface—to attract skunks. The night-feeding skunks devastated about six patches of turfgrass, destroy-

ing a 10-by-30-yard oval patch of turfgrass in a depression adjoining a 3-acre marsh. This ribbon of turfgrass separates the natural, marshy area from a patio where company employees lunch if the weather is nice. Everyone in the building watched as the turfgrass damage, worsened by a mid-summer drought, grew.

The skunks also dug up turfgrass in a scattering of smaller areas, although they did no scavenging in the less intensively maintained, non-irrigated turfgrass fringing of the property.

The on-site turfgrass manager removed the dead grass and thatch, and treated the grub-infested areas of the property with diazinon. After the application, he watered the product into the soil. He said the treatment was successful. Skunk predation tapered off. He reseeded the devastated areas. After a mild winter and wet spring and early summer, the grounds are green and healthy.

They're back—However, he's pretty sure that white grubs began feeding on turfgrass roots earlier this spring than usual. Adequate rainfall in late spring and early summer is another reason why he began checking the roots of his turfgrass for evidence of white grubs earlier than he normally would.

He, like other turfgrass managers,

establishes a threshold to determine if he will apply an insecticide or not. Healthy turfgrass will sustain a certain population of white grubs before damage becomes visible.

However, if and when a manager determines that a control is needed, he or she must make a decision about control product, the method of application and the timing of application.

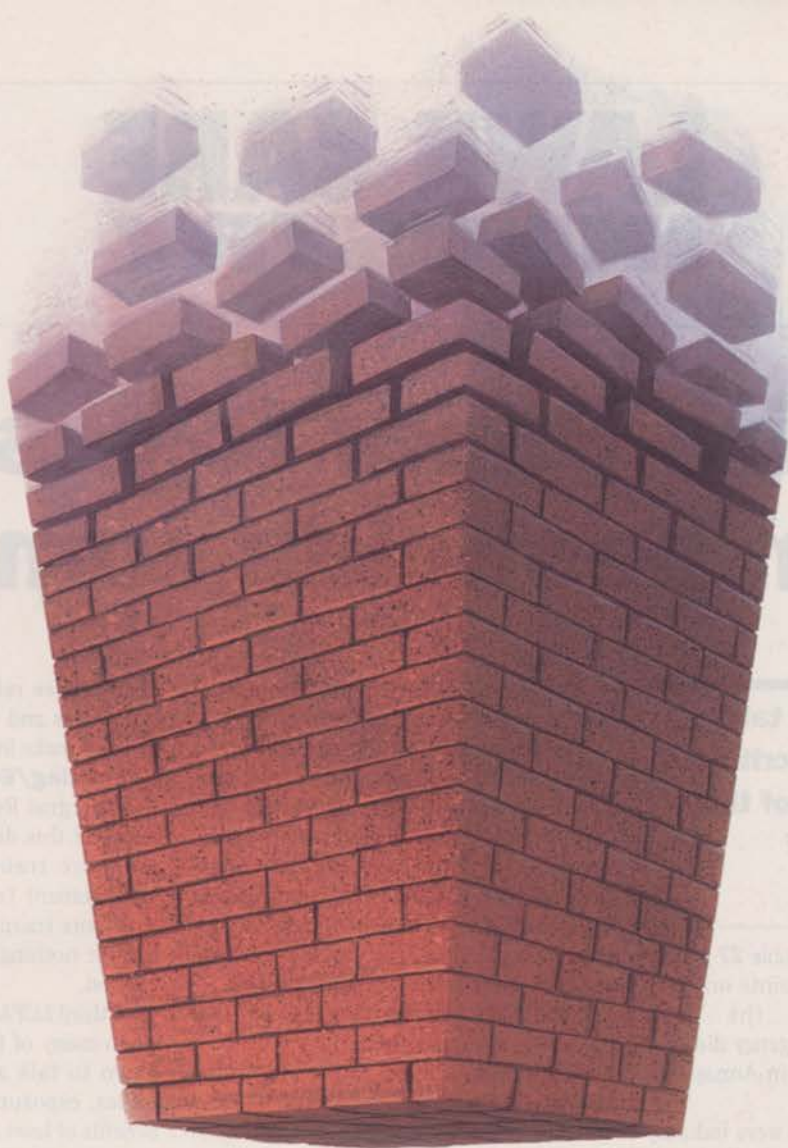
For typical weather (when is weather ever typical?), the best time to treat for white grubs is just after small larvae grubs emerge. This could be any time from mid-July through late summer. The tiny grubs are closest to the soil surface then. They're feeding.

As fall approaches the larvae molt. Falling soil temperatures cause the grubs to burrow deeper into the soil to spend the winter. When the temperature rises again in the spring, they work their way upward again and feed for several weeks, just a couple of inches below the soil surface.

In late spring or early summer, the grubs, in the pupal stage, quit feeding for several weeks. Then mid-June through July they change into adult beetles, emerge and burrow into the soil to lay eggs.

Check with your local extension agent for optimal grub control times.

—Ron Hall



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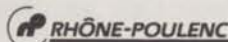
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LAWN CARE INDUSTRY

White Paper to result from pesticide summit

A day-and-a-half of talk finds industry and critics agreeing on some of the broader aspects of pesticide use.

■ It would be hard to assemble 27 people with more disparate viewpoints on lawn care chemicals. But the U.S. Environmental Protection Agency did in a two-day, mid-May talkfest in Annapolis, Md.

Represented in the group were industry (applicators, golf course and suppliers), trade organizations, government officials, anti-chemical activists and regulators.

It's called the Lawn Care Pesticide Advisory Committee (LCPAC), and the weight of its opinion is the heart of a "White Paper" which should be ready sometime this month. The paper will be distributed to LCPAC members. Then, apparently, it will be given to state regulators who, if they elect, can use it as a baseline of sorts for future lawn care regulation. The White Paper will also contain views of those who disagree with majority opinions.

This was the LCPAC's first chartered meeting. (It first met by invitation only this past February.)

The May meeting dealt with posting/notification, registries, lawn care advertising, and education and training.

Members agreed on some of the broader lawn care issues, disagreed on most others.

Posting and Notification—Some LCPAC members, including several pro-lawn, leaned toward a strong national standard, negating the need for local regulations. Others favored state primacy, while Jay Feldman, National Coalition Against the Misuse of Pesticides, argued vehemently against denying local jurisdictions the ability to make their own pesticide laws.

Most at the meeting seemed to feel that homeowners should post too.

Registries—Almost to the person the LCPAC felt that registries should be open and not require medical certification of those who claim to be chemically sensitive. But when the pre-application notification was discussed, the group fragmented on specifics.

Advertising—Pro-industry members of the LCPAC found themselves on the defensive through much of this discussion, particularly when one committee member read aloud a letter from a prominent lawn care company to a customer. The LCPAC member described the letter as an example of an industry member trying to mislead a customer on pesticide safety. This demonstration created some discussion, but little heat.

LCPAC then learned that the Professional Lawn Care Association of America (PLCAA) had prepared a new pub-

lication (see related story) outlining the statements and claims application companies can make in support of their services.

Training/Education—Shiela Daar, Bio-Integral Resource Center, directed much of this discussion toward the need for more training of Integrated Pest Management techniques. Others agreed that more training opportunities are needed, but nothing solid arose from the discussion.

A third LCPAC meeting is set for the fall when many of the same members will sit down to talk about pesticide labeling issues, exposure methodologies and the benefits of lawn care.

PREVAILING ATTITUDES OF THE LAWN CARE PESTICIDE ADVISORY COMMITTEE

	YES	NO	DIVIDED
Local regulation			✓
Homeowner posting			✓
Medical cert. for registries		✓	
Pre-notification			✓
Advertising legislation			✓
More training	✓		

EPA's Kim promised an industry grade card (a spectator's wry observation, not Kim's) at the fall meeting. Kim said he should have data from the unannounced inspections of lawn care companies being undertaken this summer—10 surprise inspections in each state.

—Ron Hall

ELSEWHERE

**The 'safest' words
to say to clients,
p. 46**

**Best materials
for composting,
p. 48**

**Ways to reduce
deer tick habitat
p. 48**

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T & S Services, Germantown, WI

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- **H. Layton Paul**, Public Works Director
Thomasville, NC

"After treating with Roundup one time, I eliminate the use of a weed-eater all season."

- **James Rhoden**, Superintendent,
Deerfield Country Club, Weston, WV

"It eliminates trimming totally. No more hand weeding. Thanks."

- **John A. Lucas**
President, Lakes Region
Landscaping, Inc.
Laconia, NH

"My lawn mowing crews carry Roundup pre-mixed in a spray bottle, so they can treat grass and weeds in crack-n-crevice."

- **Mark Davis**, Owner, AAA
Yard Care, Spokane, WA



"We just did a job for the airport and I didn't have to go back to see if it worked. Roundup always does."

- **Patricia Ann McCurry**
Owner, The Lawn Dr
Lawton, OK

"I really appreciate the lower cost of Roundup because it helps me hold the line on my contract jobs."

- **Rusty Holt**, Owner, Property
Management Services, Greensboro, NC

"We use Roundup to trim around trees and prevent damage from line trimmers. This saves labor and money, not to mention trees."

- **Slade Strickland**, Director of Parks Recreation and
Landscape Development, Addison, TX



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Dormant Lieberman bill gets facelift; readied for 1993?

■ Summer 1992 on Capitol Hill is fading. Federal legislative action aimed at lawn/landscape chemicals appears unlikely in spite of late-spring revisions to S. 849, the lawn care notification bill introduced by Sen. Joe Lieberman (D-Conn.) in 1991.

Sarah Walzer, of Lieberman's office, tells LANDSCAPE MANAGEMENT that subcommittee members will try to have a mark-up of the bill this summer.

"They'll be marking up something that isn't going anywhere this summer anyway," a D.C. insider with close ties to the specialty chemical industry says. "For 1993, who knows?"

Revisions of S. 849:

- 1) **Applicators will notify** all abutting neighbors, in writing, of the first application each year at a particular site. Thereafter, the applicator would only be required to notify those who have placed themselves on the registry.
- 2) **Applicators will notify** occupants of the application site, neighbors on abutting property, and anyone on the chemically sensitive registry within 800 yards.
- 3) **No requirement** for advance notice of indoor applications, except to parents who have requested such notice in schools (notified by schools, not applicator). The bill covers only indoor applications to public buildings or multi-occupancy buildings.
- 4) **All applicators**, including homeowners, must post chemical lawn applications. The packaging of consumer chemicals will explain the sign posting duties and include the necessary signs. Or they'll be available in stores which sell the products.
- 5) **Gone is the requirement** to post a sign 72 hours prior to a chemical application.
- 6) **Applicators will mark** indoor applications with signs at each entrance to the building, and to mark outdoor applications with signs around the perimeter of the property, at each entrance to the property, and at each specific area of application on the property.
- 7) **Schools below college level** and daycare facilities must establish a registry of parents who want notice, offer parents the opportunity to register, and notify registered parents 72 hours prior to applications. Applicators would give schools information about the products they'll be using, then the schools can inform any parents requesting information.
- 8) **In large applications**—those requiring notice to 30 people or more—the applicator may notify people in any reasonable manner such as radio or newspaper advertisements, or sign posting in the area.



—R.H.

New industry brochure outlines just what an LCO can tell a client

■ In the brave new world of the 1990s, government seemingly will not only dictate what lawn application companies can do, but what they can say.

The process is well underway. For example, no longer can a lawn application company describe its service (either in writing or in conversation) as "safe", "non-toxic", "EPA-approved". These are dangerous words. These are just three of several phrases likely to get a lawn care company in trouble with regulatory officials.

The Professional Lawn Care Association of America (PLCAA) lays out the new *politically correct* language of the lawn application industry in its brochure *What You Should Know About Lawn Care Products and Services*. The publication, presented as a series

of questions and answers, serves as both guide for lawn care marketers, and as a handout to lawn care customers, says Tom Delaney, PLCAA government affairs liaison.

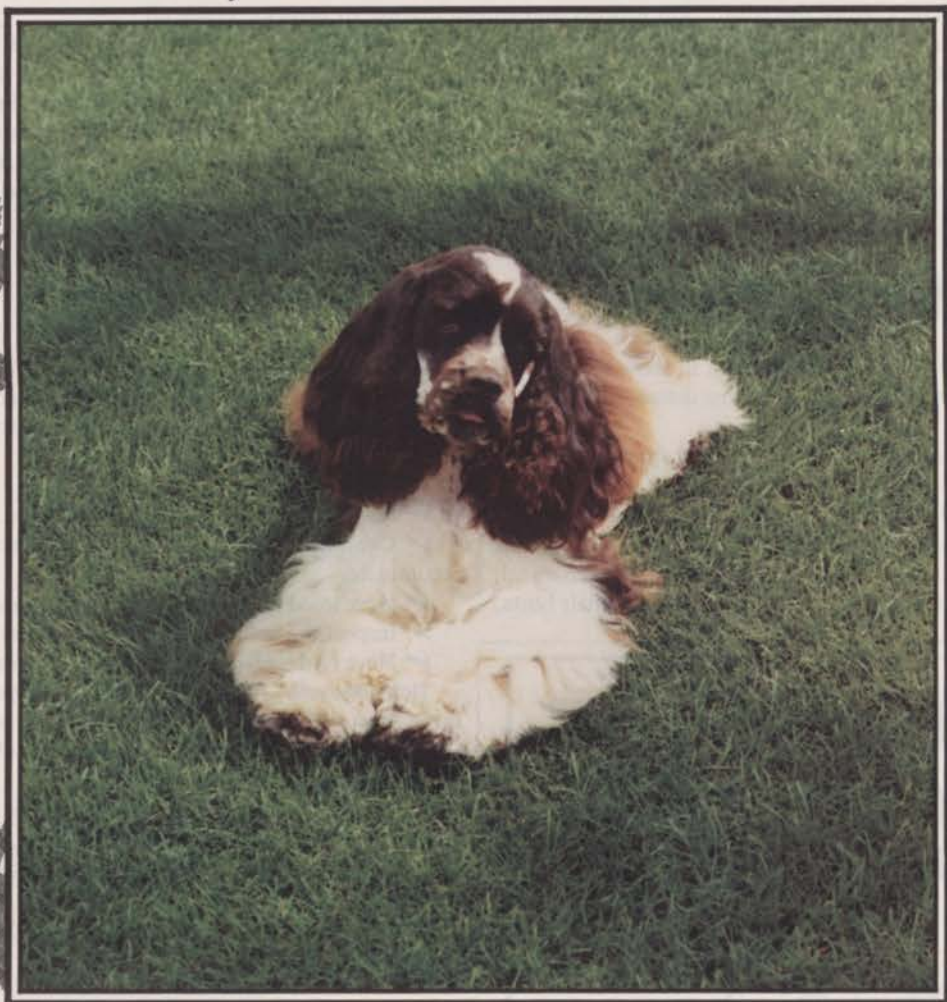
In effect, it outlines what an application company can tell a client.


The brochure represents months of collaboration between PLCAA and federal agencies, especially the Federal Trade Commission (FTC) and the Environmental Protection Agency (EPA). Both agencies have been critical the marketing of some lawn care companies, specifically relating to the safety of pesticides.


What You Should Know was written in behalf of PLCAA and the industry by Hal Zeve, Lawn Doctor, Matawan, NJ. Lawn Doctor supplied the brochure to their dealers earlier this spring. PLCAA's 1,000 members learned of the publication in the association's newsletter.

Any LCOs wanting a sample copy of the brochure should write to PLCAA, 1000 Johnson Ferry Road, NE, Suite C-135, Marietta, GA 30068-2112. Send a stamped, self-addressed envelope.

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Compost pile shouldn't be a garbage disposal

■ Not all natural material belongs in a compost pile.

Dave Williams, a horticulture specialist with the University of Illinois Cooperative Extension Service, advises against putting fatty food wastes such as meat or bones into a compost pile. They attract rodents, raccoons, flies and other pests.

Cat and dog manures aren't good com-

post material either. They contain pathogens which can survive the composting process and spread disease to plants where the compost is used, says Williams. Nor is it a good idea to try to compost diseased plant material or plants suffering severe insect infestation either.

Not For Compost Pile—butter, bone, pet manure, cheese, chicken, fish scraps,

lard, mayonnaise, meat, milk, oils, peanut butter, salad dressing, sour cream, vegetable oil.

Can Be Used In Compost Pile—aquatic weeds, bread, coffee grounds, egg shells, evergreen needles, fruit, fruit peels and rinds, garden wastes, grass clippings, leaves, paper, sawdust, straw, sod, tea leaves, vegetables, wood ash, wood chips.

Ways to reduce deer tick habitat

■ Lyme disease is a serious health problem in some areas of the country. It's also the most common tickborne disease in the United States.

Lyme disease is caused by a bacteria spread from one host to another by the deer tick.

Brian Bret, Ph. D., says the control of Lyme disease provides "an ideal opportunity" for an integrated pest management approach. He says control methods must include mechanical, physical and chemical methods aimed at deer ticks and their hosts.

Reduce the risk—Here, as printed in *Hole Notes*, a publication of the Minnesota Golf Course Superintendent's Association, are the steps Bret outlines, for making property less desirable tick habitat:

- ✓ Keep lawns mowed.
- ✓ Keep weeds cleared and shrubs trimmed.
- ✓ Clean up leaf piles and organic debris and do not allow it to accumulate.
- ✓ Move wood piles away from the house and play areas.
- ✓ Inspect the house for possible entry sites for rodents.
- ✓ Move bird feeders away from living or play areas.

Tick lifecycle—The deer tick has a two-year lifecycle. It goes through four life stages—egg, larvae, nymph, and adult.

In late spring, early summer the female adult deer ticks drop off their hosts and lay eggs on the ground.

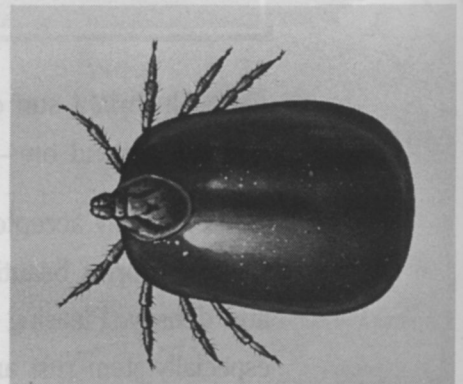
Soon after hatching, the six-legged larvae, mostly in leaf litter and in vegetation on the ground, find a host, often a white-footed mouse. The larvae pick up the Lyme disease spirochete from infected hosts, usually mice.

The larvae feed two or three days on the host, then drop off on the ground where it overwinters. The next spring, it molts into an eight-legged nymph.

By early or midsummer, the population of the nymphs peak. They climb grasses and weeds. This is when they're most likely to attach themselves to humans or pets. They feed on the host for a couple of days before dropping to the ground. By early fall, nymphs are molting into adults.

Adult ticks climb shrubs, weeds and tall grasses and attach themselves to humans, dogs, deer, etc. Again, they gorge themselves for a few days. And, again, they drop off and overwinter, only to start the cycle again in the spring by laying eggs.

The Lyme disease bacteria can be spread by either the deer tick nymph or adult.



The female tick engorges with blood to ensure the subsequent laying of eggs. Eggs are laid in the spring.

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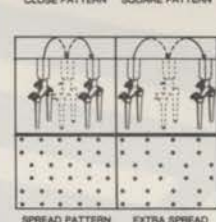
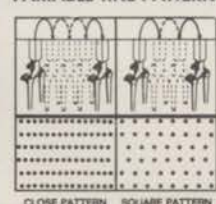
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Useful literature and video offered to LM readers

PHONE COURTESY... "Landscape Telephone Techniques," a self-paced home study program, is available from the National Landscape Association. The kit offers more than 150 practical examples of what to say in various situations. Sections are aimed at the owner/manager, secretaries/receptionists and salespeople. Price is \$69 for NLA/AAN members, \$99 for non-members. To order, send check to: NLA Publications, 1250 I St. NW, Suite 500, Washington, DC 20005. Credit card (Visa or MasterCard) orders can be faxed to (202) 789-1893.

PERSONNEL MANAGEMENT... A sample handbook for setting policy, writing job descriptions, developing pay scales and handling other golf course personnel management issues is available from the GCSAA. It covers work schedules and pay, attendance, performance reviews and many other related subjects. To order, GCSAA members should send \$10, non-members \$15, to GCSAA Membership Dept., 1421 Research Park Dr., Lawrence, KS 66049-3859.

FRONT-LINE MANAGEMENT... "Getting it Right: What It Takes to Become a Good Front-line Supervisor," by Joseph Carbone, is a newly-published book that describes ways to meet and manages the challenges faced daily by front-line supervisors. Written in two parts, topics covered include: reducing ambiguity when giving job assignments, managing expectations, maintaining credibility, rule enforcement, keeping peace, etc. "Getting it Right" costs \$7.50 per copy (plus sales tax); orders of more than 10 cost \$6.75 per copy; for 100 or more, cost is \$6 per book. Contact: Front-Line Super-

visor, Publications Dept., P.O. Box 267, Lansing, NY 14882-0267.

SAFETY EDUCATION PROGRAM... The Toro Company and the St. Paul Fire and Marine Insurance Co. have developed a comprehensive operator safety education program for golf course superintendents. The program addresses 28 safety areas related to commercial cutting equipment, and covers safety procedures before and during operation. The program is composed of a video tape, audio tape, written manual and follow-up testing material. Contact the Toro Co., Commercial Marketing Services Dept., 8111 Lyndale Ave. South, Minneapolis, MN 55420-1196.

PESTICIDE DIRECTORY ...Thomson Publications has released its newly-revised "1992 Pesticide Directory," by Lori Thomson Harvey and W.T. Thomson. It contains listings of the basic control product manufacturers and formulators with their key personnel, regional and district offices, managers, and a list of products. Cost is \$49.95 plus tax. Contact Thomson Publications, P.O. Box 9335, Fresno, CA 93791; (209) 435-2163.

PLANTS AND PEOPLE ..."Plants for People—The Psychological and Physiological Effects of Plants" is available from the Associated Landscape Contractors of America (ALCA). The bibliography lists all of the research references currently on file that deal with how plants affect people psychologically. Free to ALCA, \$20 for non-members. Write to ALCA at 12200 Sunrise Valley Dr., Suite 150, Reston, VA 22091; or phone (703) 620-6363.