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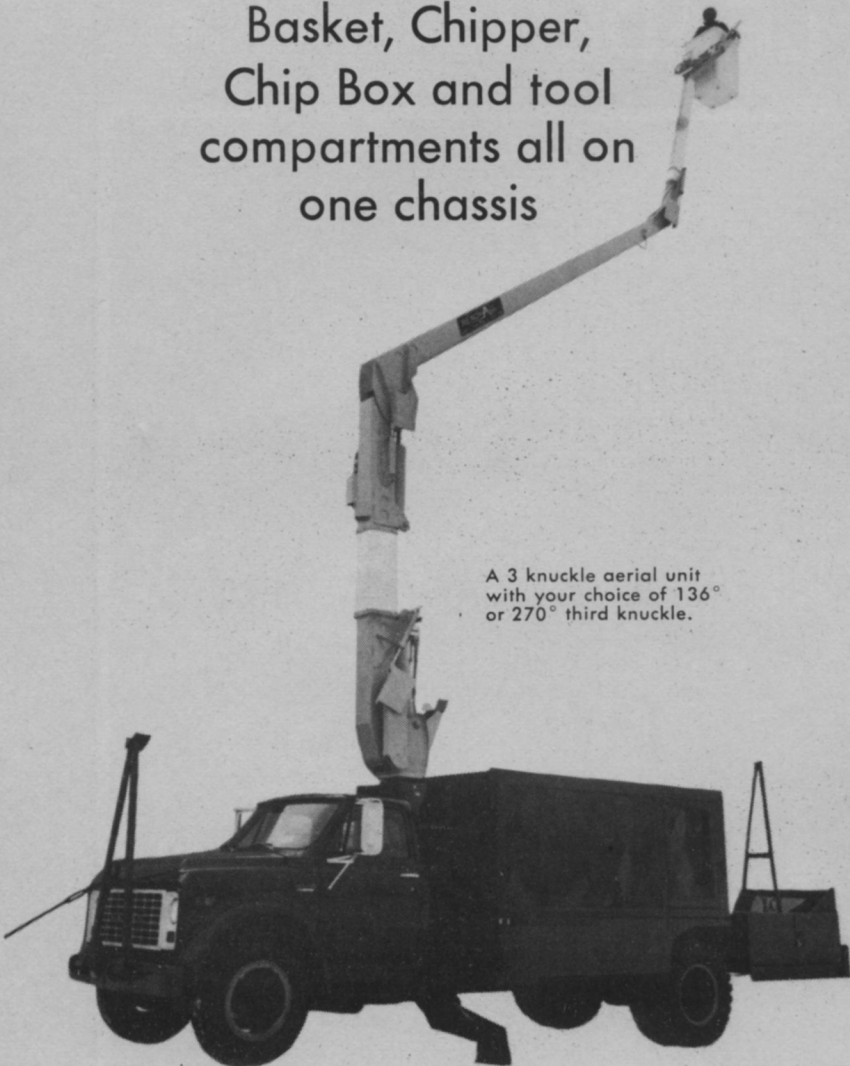
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**THURICIDE IS SCIENCE'S ANSWER** to the professional tree man's problem of gaining effective

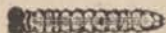
control over gypsy and oak moth larvae—without affecting other forms of life. Thuricide's powerful active ingredient (*Bacillus thuringiensis*) is derived from nature herself. It brings *sure death* to leaf-eating worms, yet there is no risk of toxic drift or residues.

**ATTACKS WORMS' GUTS**—Once worms ingest Thuricide-sprayed leaf, their digestive systems are quickly destroyed, feeding stops, and death is *inevitable*. Even if worms seem to hang around after spraying, no worry, they're actually starving! Man, birds, beneficial insects and pets, however, are left untouched by Thuricide's unique and selective "target action". For full particulars, see your Thuricide distributor. Or write Crop Aid Products, International Minerals & Chemical Corporation, Libertyville, Illinois 60048.

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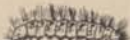
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U.S./trees & shrubs



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U.S./trees & shrubs



TENT CATERPILLAR  
U.S./trees & shrubs



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# WEEDS TREES and TURF

Volume 12, No. 1 January, 1973

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## Turf Management — Products, Budgets & Philosophy 14

Tony Caranci, well-known in New England as the superintendent's professional, talks turf management for superintendents. He tackles each facet of course upkeep with assurance and aggressiveness. Today's superintendent can benefit greatly from his time-proven experience.

## Iron For Turfgrass 16

The objective in turfgrass production is one of producing chlorophyll. While iron is not a constituent of chlorophyll, it is essential in the chlorophyll-producing mechanism. Albert E. Ludwick, extension assistant professor, soil, Colorado State University discusses the need for iron in turfgrass maintenance.

## These Managers Whipped Weevil Worries 18

*Poa annua* bluegrass may be a weed to most superintendents, but on Long Island, N.Y. it makes an acceptable turfgrass. That is, until the hyperodes weevil shows up. Learn how two superintendents keep weevil populations in check with Diazinon.

## Velvet Bentgrass, The Putter's Delight 20

Richard Hurley, University of Rhode Island, tells how Kingstown Velvet Bentgrass can make your greens fit for a king to play on.

## 1973 Golf Outlook 22

Here's an annual report on the state of the golf industry. Author, Harry Eckhoff, east coast facility development consultant, National Golf Foundation, predicts another great year of growth in this dynamic area.

## In-Ground Feeder Keeps Trees Healthy 26

## Nematodes — Could Your Turf Be Their Home 28

When turfgrass does not respond as it should to established and proven maintenance procedures, don't overlook nematodes as the cause of the problem. Bill Haven, a West Virginia superintendent, has lived through this problem. He found the solution in Dasanit.

## He Plows A Path For Safety 32

## They Put The Hush On Brush 58

|                             |    |                      |       |
|-----------------------------|----|----------------------|-------|
| Editorial                   | 7  | Arborist Shop Talk   | 43    |
| Government News/Business    | 10 | Sod Industry Section | 44    |
| Industry People On The Move | 24 | New Products         | 48-49 |
| Meeting Dates               | 31 | Advertiser's Index   | 58    |
| Insect Report               | 39 | Classifieds          | 59    |
| Green Industry Newsmakers   | 40 | Trimmings            | 60    |

## The Cover

Here's a familiar scene. And it won't be long until nearly every superintendent will be spraying his course for *Poa annua*, crabgrass and other undesirables. Our cover for January features the Oakland Hills Country Club, headquarters for the 54th PGA Championship. Superintendent Ted Woehrle keeps a year-round vigil on his course to make sure it is in top condition.

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# TURF NOTES

SPRING 1973

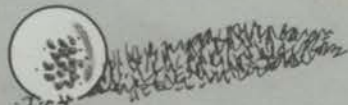
## NITROFORM<sup>®</sup> organic nitrogen *the professional turfkeeper...*



**On tees and fairways, use Blue Chip.** Blue Chip<sup>®</sup> fertilizer is for tight-fisted professional turf men. It helps keep costs down because it's a long-lasting, slow-release organic nitrogen . . . concentrated to 38%. You'll apply it less often than natural organics and save plenty on labor, equipment-use and time.

Look at fertilizer cost alone, and Blue Chip is still your economical buy. Because it's so concentrated, a ton of Blue Chip gives you about 6 times the nitrogen of a ton of conventional organic nitrogen.

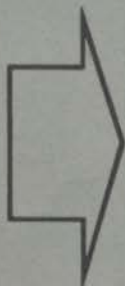
Blue Chip is even more pleasant for workers and golfers . . . odorless and dustless . . . easy handling and even spreading. Put it to work on your course this year! **BLUE CHIP<sup>®</sup>** *The coursekeeper*



**On greens, use Powder Blue.** Powder Blue<sup>™</sup> is the powdered form of Nitroform<sup>®</sup> nitrogen for spray application. It's the only sprayable organic nitrogen. Powder Blue is perfect for greens because it rinses readily into dense turf and won't be picked up by mowers or lawn sweepers. Powder Blue is the same 38% slow-release, long-lasting nitrogen as Blue Chip. It's such a worker we call it the greenskeeper.

**POWDER BLUE<sup>™</sup>**  
organic nitrogen  
*The greenskeeper*

USE THIS COUPON to request the Nitroform program recommended for your area and the booklet that helps you compare the costs of organic nitrogen products.



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- Please send Turf Notes Number 101-1 giving the Nitroform program for my area.
- Please send information on Azak for pre-emergence crabgrass control.
- Please send the booklet that shows how to compare the costs of Nitroform and conventional organics.

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Twenty pounds per 1,000 square feet is recommended to build up the nitrogen reserve as quickly as possible when starting a Nitroform program. Thereafter, apply annually the pounds of Nitroform per 1,000 square feet recommended for your area. Split applications are usually recommended with the heaviest application before the most important growth cycle of the grass. For cool-season grasses—bluegrass, fescue, and bent—apply  $\frac{2}{3}$  in the fall and  $\frac{1}{3}$  in the spring. For warm-season grasses—Bermuda, dichondra, zoysia, centipede and St. Augustine—apply  $\frac{2}{3}$  in the spring and  $\frac{1}{3}$  in the fall.

## WHAT DO YOU DO ABOUT CRABGRASS?

The best way to keep it out is to nourish desirable grasses with Nitroform and crowd out crabgrass and weeds. But if you have a crabgrass problem, use Azak<sup>®</sup>. It's an effective, low-cost, pre-emergence crabgrass control. Disperses readily in water and is compatible with most fertilizers and pesticides. One 12½ pound bag of Azak 80-WP covers one acre.

**Note:** Azak is not recommended for use on newly seeded turf—use only on established turf areas.

| SUGGESTED<br>RANGE OF<br>ANNUAL<br>NITROGEN<br>FEEDING<br>FOR MAJOR<br>TURFGRASSES | TURFGRASS   | POUNDS OF NITROGEN PER THOUSAND SQUARE FEET PER YEAR |   |   |   |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |
|--|---|--|---|---|---|----|----|----|----|----|----|----|----|--|--|--|--|--|--|--|--|--|--|
|  |   | 2  | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 |  |  |  |  |  |  |  |  |  |  |
|  | HARD FESCUE   | █  |   |   |   |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |
|  | SHEEP FESCUE  | █  |   |   |   |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |
|  | CENTIPEDEGRASS  | █  |   |   |   |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |
|  | BAHIAGRASS  | █  |   |   |   |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |
|  | CARPETGRASS   | █  |   |   |   |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |
|  | ST. AUGUSTINEGRASS  | █  |   |   |   |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |
|  | COLONIAL BENTGRASS  | █  |   |   |   |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |
|  | CREEPING BENTGRASS (vegetated & seaside)                                    | █  |   |   |   |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |
|  | PENNCROSS CREEPING BENTGRASS (seeded)                                       | █  |   |   |   |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |
|  | ZOYSIA (meyer, emerald, common)   | █  |   |   |   |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |
|  | BLUEGRASS—FESCUE (mixtures)   | █  |   |   |   |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |
|  | KENTUCKY BLUEGRASS  | █  |   |   |   |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |
|  | PENNLAWN CREEPING RED FESCUE  | █  |   |   |   |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |
|  | MERION KENTUCKY BLUEGRASS (and mixtures)                                    | █  |   |   |   |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |
|  | KENTUCKY 31 FESCUE, ALTA, GOAR'S  | █  |   |   |   |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |
|  | DICHONDRA   | █  |   |   |   |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |
|  | COMMON BERMUDAGRASS   | █  |   |   |   |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |
|  | IMPROVED BERMUDAS—(TIFLAWN, TIFFINE,<br>TEXAS strains, U-3 SUNTURF, ORMOND) | █  |   |   |   |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |
|  | FINE LEAF BERMUDAS—(GENETIFT,<br>UGANDA-GRASS, TIFGREEN)                    | █  |   |   |   |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |

█ For Southern areas only.

### CHECK THE TABLE TO SEE HOW MUCH NITROGEN YOUR TURF NEEDS.

The most common types of turfgrass are listed in the table, along with pounds of nitrogen required per year to keep them in top-quality condition.

To determine the pounds of Nitroform required to supply the annual nitrogen requirements above one pound per year, multiply the pounds of nitrogen needed as given in the table by the factor 2.6.

For the specific Nitroform program recommended for your climate, use the return postcard to request the edition of Turf Notes Number 101 for your section of the country.

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## Editorial

### Applicator's Dilemma

"Mother, may I go down to swim? Yes, my darling daughter. Hang your clothes on a hickory limb, but don't go near the water!"

This old childhood poem has been exhumed because the applicator of environmental protection chemicals is in a similar plight. Never before has he had so much and yet so little.

The positive facts speak for themselves. Thirty-eight states currently enforce the licensing of applicators through various applicator use laws. Several other states require permits or registration within the state. The Federal Environmental Pesticide Control Act of 1972 has become law. The organized voice of the applicator, the International Pesticide Applicators Association, Inc., has pledged a more active role in meeting both interior and exterior goals.

However, one negative fact indigenous to the state use laws appears to stifle most any attempt to perpetuate the importance of today's applicator in improving the environment. Currently, only three states authorize the training of applicators as a part of the administration of the state application and use law. While we do not know that training is actually being accomplished, Colorado, Oregon and South Dakota have at least made provisions in the law to conduct courses for applicators. Another notable exception is Nebraska. The state legislature recently passed a resolution to expand at the local level the educational program in the use of chemicals by farmers and ranchers. Hopefully this would also include professional applicators.

We submit that training is a function of education, a process as old as mankind. It is appalling, therefore, to discover that 46 states have taken the attitude of "don't pay any attention to it and maybe it will go away."

Unless you are skilled in the application of chemicals, most candidates for license may never get one. We recently asked several applicators how they obtained their license. One said he kept taking the exam until he passed it. Another mentioned something about picking the brain of a licensed professional. A third said he applied chemicals on the farm in a state that exempted farmers from license. He noted that there really wasn't much similarity between applying chemicals from a tractor seat and spraying a yard bordered by valuable shrubs.

We believe that licensing and training must be a joint venture. The Federal Environmental Pesticide Control Act has provisions for training which will be implemented with the various states. But this may take several years to become fully operational. We would suggest, as a interim, that each

*(continued on page 43)*

# All Yours



## FYLKING KENTUCKY BLUEGRASS

U.S. Plant Patent 2887

The ultimate in beautiful lawn turf when you insist on Fylking, the low-growing, ground-hugging, fine-textured grass. It produces an abundance of side shoots, and has a dense root system that strangles weeds and creates rich, green cushiony turf of unrivalled loveliness. More disease and drought resistant, Fylking has proven superior in years of international tests and actual use. It thrives cut at  $\frac{3}{4}$  inch (even low as  $\frac{1}{2}$  inch) making backyard putting greens practical. Ask for 0217<sup>®</sup> Brand Fylking Kentucky bluegrass lawn seed or sod at your local wholesale seed or sod distributor.

Another fine product of Jacklin  
Seed Co., Inc.





## Government News / Business

New environmental laws that saw legislative action in 1972 will have impact on your business in 1973. Three Acts which fill EPA Administrator William D. Ruckelshaus' quiver with barbed arrows include: The Federal Noise Control and Abatement Act of 1972, The Federal Water Pollution Control Act Amendments of 1972, and The Federal Environmental Pesticide Control Act of 1972.

The Federal Trade Commission has taken issue with three manufacturers of environmental protection chemicals (EPC) for deceptive or unfair safety claims in the advertising of their products. It charges that advertising for an EPC is deceptive unless the manufacturer includes warnings that appear on the label. FTC will also buy the statement, "This product can be injurious to health. Read the entire label carefully and use only as directed." FTC's position is that any product which contains the skull and crossbones on the label must also have the skull and crossbones on all advertising.

If you do EDITH like I do EDITH, the world would be a safer place. Exit Drills In The Home (EDITH) could reduce the number of deaths from fires drastically. Check your home for secondary escape routes, escape ladders from second floors and smoke detectors. Drills should be practiced until each person is capable of exiting safely.

Several cities around the country have been slapped with a building moratorium in an effort to solve waste disposal problems. The crisis is particularly evident in Florida. But research underway points strongly to the feasibility of discharging treated effluent over farmland through a sprinkler irrigation system. The effect is that plants and other vegetation absorb the nutrients. Animals feeding on the plants thereby complete the nutrient cycle.

David T. McLaughlin, president of The Toro Company, has charged that service is industry's most neglected aspect of management. Speaking before the National Association of Service Managers, he placed part of the blame on his audience for not presenting their case more aggressively and persuasively to management. The consumerism movement has dramatized management's "blind spot" towards service, he said. Some think consumerism is a fad that will go away. "It's not," he declared. "It's inevitable, enduring and, to a large extent, a creature of our own making." He offered four principles as a guide: make service everyone's business; make service profitable, as a marketing tool in a positive sense; and give to service its deserved recognition as a profession.

Chemical ecology is receiving more than just a little attention. A non-profit organization called Terra Society has been formed to fill the need of the scientific community, the media and the general public for a comprehensive and authoritative source of information in the broad area of chemicals and their effects on the environment. The two key functions of the organization are research and development, and education and dissemination of information. Of particular interest to the "green industry" is the available information on pest control to specialists in the areas of public health, agriculture, environmental sciences and other professionals. If you need information, contact the Society at P. O. Box 110, Mt. Prospect, Illinois 60056.