So economical you can't afford to do without it. Nobody can afford pesticide-drift. That's why we made a drift-control spray additive anybody can afford. For as little as a cent a gallon of spray volume, aerial applicators, ground contract applicators and others can cut drift to reduce risks, increase safety.

Lo-Drift mixes quick and easy with herbicides and many other pesticides. You just add one pint per 100 gallons of water, and you're ready to go. (For extra thickening, you can go up to one quart per 100 gallons.) No special nozzles, no special mixing or spraying equipment needed.

Lo-Drift can be put through almost any spray applicator, no matter how small or large. Won't corrode equipment, fast, simple clean-up. Non-toxic too.

Lo-Drift is not a foam, not a particulating agent. It's an emulsifiable polymer that gets the job done easier and more economically than ever before.

**LO-DRIFT**

**SPRAY ADDITIVE**

APICHEM PRODUCTS, INC., AMBLER, PA
Product and people — these two things make Ditch Witch the leader in the underground construction equipment field! Ditch Witch pioneered the service line trencher and now it fills the needs of such a wide variety of users that Ditch Witch outsells all its competition combined. Ditch Witch quality doesn’t just happen — it comes from the efforts of a team: management and engineers ... factory workers and liaison men ... and an outstanding dealer organization. All are dedicated to seeing that Ditch Witch stays the leader. Their pledge to you is to continue to make and sell the best possible product and to serve you, and all Ditch Witch customers, to the best of their ability.

FOLLOW THE LEADER!

... offering a full line of trenching equipment from 7-HP to 65-HP.

CHARLES MACHINE WORKS, INC., P. O. Box 66, Perry, Oklahoma 73077
A one-unit operation for tree service work. Basket, Chipper, Chip Box and tool compartments all on one chassis.

Hydraulically operated chip boxes, either side or end ejection.

REACH-ALL Model 5050 3K aerial basket with hydraulically powered 12" chipper, a hydraulic ejection box and tool boxes. All assembled as one complete unit.

REACH-ALL increases your working area with its modern 3 knuckle design and includes fiberglass lower boom insert.

EXCLUSIVELY MANUFACTURED BY

REACH-ALL

436 Calvary Road
Duluth, Minnesota

Phone 218-728-5138 for the name of the distributor in your area.

We will custom build to your special requirements.
The gypsies are coming—ready or not!

Be ready this year with THURICIDE—the proven microbial insecticide!

WIDELY USED AND PROVED—Thousands of forest acres have been treated with Thuricide for control of gypsy moth larvae and other leaf-eaters. Professional arborists and nurserymen have used it with outstanding success. It is the leading microbial insecticide—worldwide—for protection of agricultural food and other crops.

COMPATIBLE, READY-TO-MIX LIQUID—Thuricide comes to you in concentrated liquid form. There are no tedious mixing problems, no danger of nozzle clogging. Thuricide is highly stable, non-phytotoxic to foliage, and can be mixed with other insecticides.

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.

USED NATIONWIDE BY ARBORISTS FOR CONTROL OF THESE LEAFEATERS, TOO!

- OAK MOTH LARVAE
- CANKERWORM (inchesworm)
- RED-HUMPED CATERPILLAR
- FALL WEBWORM
- TENT CATERPILLAR

Thuricide

Number One Name in Microbial Insect Control!
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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
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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.

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

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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.

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**NITROFORM®**

organic nitrogen

the professional turfkeeper...

**On tees and fairways, use Blue Chip.** Blue Chip® 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!

**On greens, use Powder Blue.** Powder Blue™ is the powdered form of Nitroform® 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.

---

**COMPLETE COUPON AND MAIL • NO POSTAGE REQUIRED**

- 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.

*(PLEASE TYPE OR PRINT)*

Name ____________________________

Title ____________________________

Company _________________________

Address __________________________

WTT _________________ Zip __________
FAIRWAYS, AIRFIELDS, ATHLETIC FIELDS, CEMETERIES, PARKS AND ALL TURF AREAS NEED NITROFORM®

the professional turfkeeper

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 ⅔ in the fall and ⅓ in the spring. For warm-season grasses—Bermuda, dichondra, zoysia, centipede and St. Augustine—apply ⅔ in the spring and ⅓ 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®. 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 RANGE OF ANNUAL NITROGEN FEEDING FOR MAJOR TURFGRASSES

<table>
<thead>
<tr>
<th>TURFGRASS</th>
<th>POUNDS OF NITROGEN PER THOUSAND SQUARE FEET PER YEAR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Hard Fescue</td>
<td></td>
</tr>
<tr>
<td>Sheep Fescue</td>
<td></td>
</tr>
<tr>
<td>Centipedegrass</td>
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<tr>
<td>Bahiagrass</td>
<td></td>
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<tr>
<td>Carpetgrass</td>
<td></td>
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<tr>
<td>St. Augustinegrass</td>
<td></td>
</tr>
<tr>
<td>Colonial Bentgrass</td>
<td></td>
</tr>
<tr>
<td>Creeping Bentgrass (vegetated &amp; seaside)</td>
<td></td>
</tr>
<tr>
<td>Penncross Creeping Bentgrass (seeded)</td>
<td></td>
</tr>
<tr>
<td>Zoysia (meyer, emerald, common)</td>
<td></td>
</tr>
<tr>
<td>Bluegrass—Fescue (mixtures)</td>
<td></td>
</tr>
<tr>
<td>Kentucky Bluegrass</td>
<td></td>
</tr>
<tr>
<td>Pennlawn Creeping Red Fescue</td>
<td></td>
</tr>
<tr>
<td>Merion Kentucky Bluegrass (and mixtures)</td>
<td></td>
</tr>
<tr>
<td>Kentucky 31 Fescue, Alta, Goar's</td>
<td></td>
</tr>
<tr>
<td>Dichondra</td>
<td></td>
</tr>
<tr>
<td>Common Bermudagrass</td>
<td></td>
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<tr>
<td>Improved Bermudas—(Tiflawn, Tiffine, Texas strains, U-3 Sunturf, Ormond)</td>
<td></td>
</tr>
<tr>
<td>Fine leaf Bermudas—(Genetift, Uganda-Grass, Tifgreen)</td>
<td></td>
</tr>
</tbody>
</table>

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.
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)

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.