

It's taken forty years and countless ill-conceived attempts for mankind to come to grips with one fundamental truth about imported fire ants. No matter how concerted the effort, no matter how ingenious the attack, they cannot be eradicated. However, they now can be controlled by Triumph® insecticide.

In university tests, Triumph killed an average of

HOW TO EXTINGUISH A FIRE ANT.

lived counterparts, callbacks, what Triumph remains with Triumph is money.

94 percent of

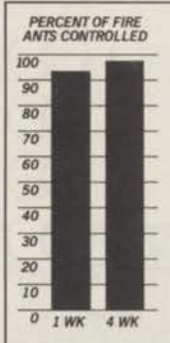
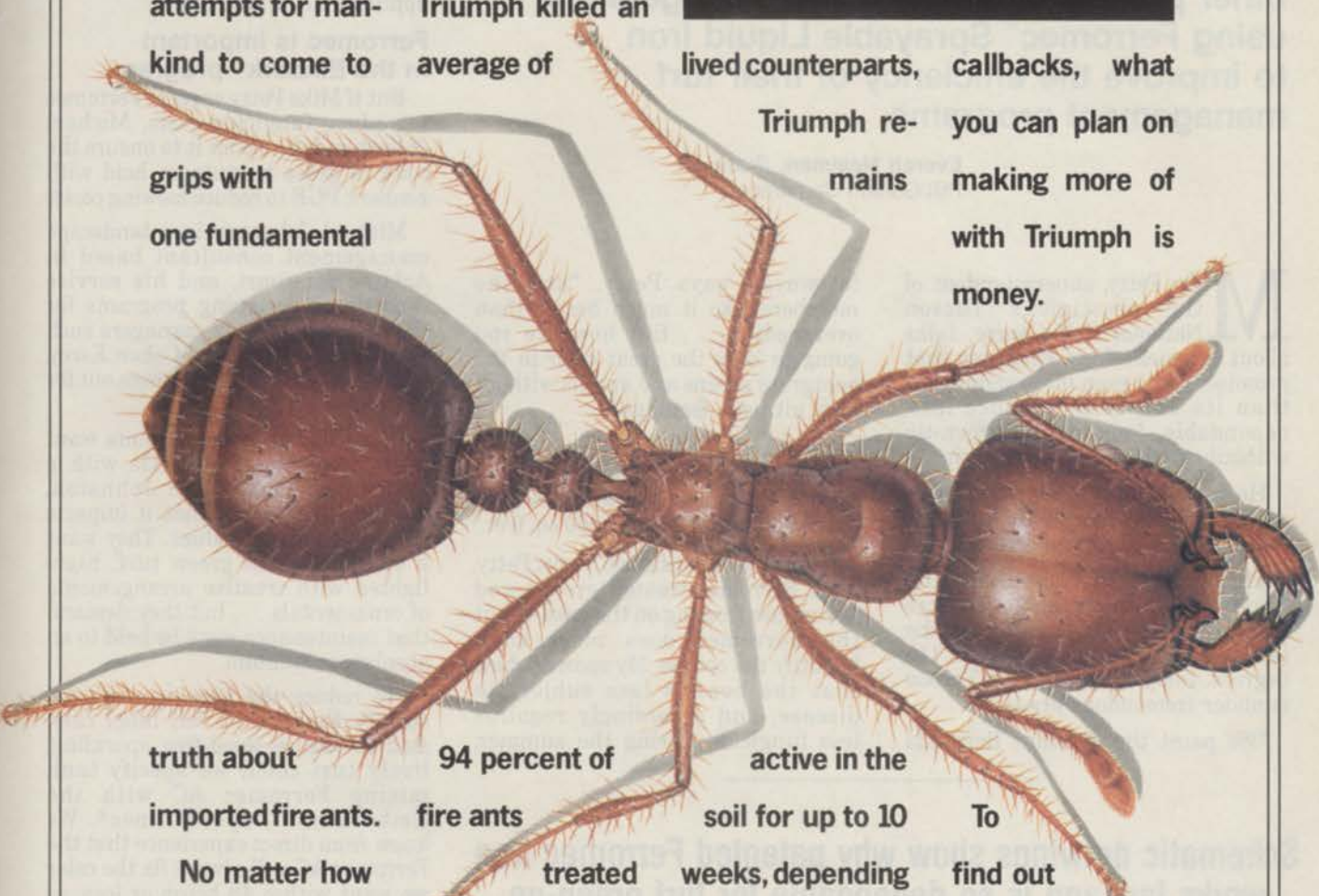
fire ants treated within one week of application. Better still, unlike its short-

active in the soil for up to 10 weeks, depending on the target pest.

To find out complete details, contact your turf products distributor or Ciba-Geigy marketing representative.

Which means that instead of more applications, instead of more

TRIUMPH



Average of 3 trials, Mississippi State University, 1989

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Fast, dependable green-up without unwanted growth

Read how golf course superintendents and other professional landscape managers are using Ferromec® Sprayable Liquid Iron to improve the efficiency of their turf management programs.

Everett Mealman, President
PBI/Gordon Corporation

Mike Petty, superintendent of the prestigious Tucson National Golf Course, talks about a benefit from Ferromec that promises to be even more significant than its ability to produce fast, dependable, long-lasting green-up without causing excessive mowing.

He sums it up this way: "Ferromec applications, rather than nitrogen, reduce susceptibility to disease."

The weather in Tucson is really tough on bentgrass. It freezes frequently, and in the summer the temperature can get up to 115 degrees. Indeed, bentgrass in Tucson is under tremendous pressure.

"We paint the dormant Bermuda

fairways," says Petty, "and the members like it much better than overseeding . . . But how are you going to keep the great color in the bentgrass greens and aprons without high nitrogen feedings?"

Petty answers his own question by saying that he sprays the greens and aprons 26 times a year with four ounces of Ferromec per 1,000 sq. feet.

"It does a beautiful job," says Petty. "The Ferromec-treated greens and aprons are frosting on the cake — but the Ferromec does more than beautify the course. My records show that the bent is less subject to disease, and accordingly requires less fungicide during the summer,

when I spray it regularly with Ferromec, as opposed to high applications of nitrogen."

Ferromec is important in the Embark® program

But if Mike Petty expects Ferromec to reduce fungicide costs, Michael Johnston depends on it to ensure the color of grass he puts on hold with Embark PGR to reduce mowing costs.

Michael Johnston is a landscape management consultant based in Asbury, Missouri, and his service consists of designing programs for commercial property managers such as Trammell Crow and Cohen Esrey, who then put Johnston's specs out for bids.

"More and more, our clients want their properties to sparkle with a manicured look," says Johnston, "because they know that it impacts directly on rental values. They want a carpet of lush green turf, highlighted with creative arrangements of ornamentals . . . but they demand that maintenance costs be held to an absolute minimum.

"To reduce the mowing costs, we specify Embark at full label rate. And to assure weed-free sparkling, lively turf color, we specify tank mixing Ferromec AC with the Embark and Super Trimec®. We know from direct experience that the Ferromec AC will always fix the color we want within 48 hours or less, so the color is in place before the Embark kicks in and puts the grass on hold."

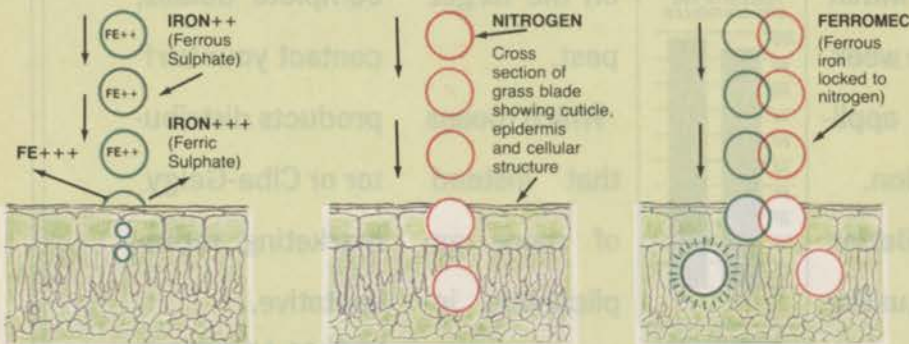
Ferromec works! You can depend on it! But that's not necessarily so of all sprayable irons, according to Tom Garvey, who has a Servicemaster franchise in El Cajon (San Diego), California.

Garvey caters to upscale homeowners who insist on color but hate the necessity of too much nitrogen, too much irrigation, and too much mowing.

"When I saw with my own eyes what George Toma was able to do with Ferromec at Jack Murphy Stadium for the '88 Super Bowl, I decided to try it," says Garvey.

"Today we spray Ferromec every seven weeks at a rate of five ounces

Schematic drawings show why patented Ferromec iron works fast and is so dependable for turf green-up



Iron is essential for the synthesis of chlorophyll — no iron, no green. But grass doesn't like the *taste of iron* and is very reluctant to ingest it. Furthermore, iron must be in the ferrous ++ state to efficiently create green color, and it tends to revert to the inefficient ferric +++ state when exposed to oxygen.

On the other hand, turfgrass loves the *taste of nitrogen* and ingests it with gusto. Nitrogen-induced growth, of course, will pull iron out of the soil and thus create green color, but the amount required to produce color will result in abnormal growth, which in turn causes unwanted mowing and exposure to disease.

Ferromec is a Complex of ferrous sulphate and nitrogen, which locks the iron in the usable ferrous state. Grass loves nitrogen and readily ingests Ferromec, thus delivering the color-producing iron. But at the 5-oz. rate, only .063 pounds of nitrogen per 1,000 sq. ft. is delivered by Ferromec, and excessive growth does not occur.



Tom Garvey has built his Servicemaster franchise lawn care business in El Cajon, California on the basis of five ounces of Ferromec per 1,000 sq. feet every seven weeks. Green is the name of the game: green grass, green uniforms; and green stuff in the wallet. "But be sure it's Ferromec," warns Garvey. "Substitutes don't always work fast enough or last long enough."

per 1,000 sq. ft., and the results are so positive that the very backbone of our business is word-of-mouth from customers whose friends and neighbors have asked them how in the world they keep their grass so green without all that mowing."

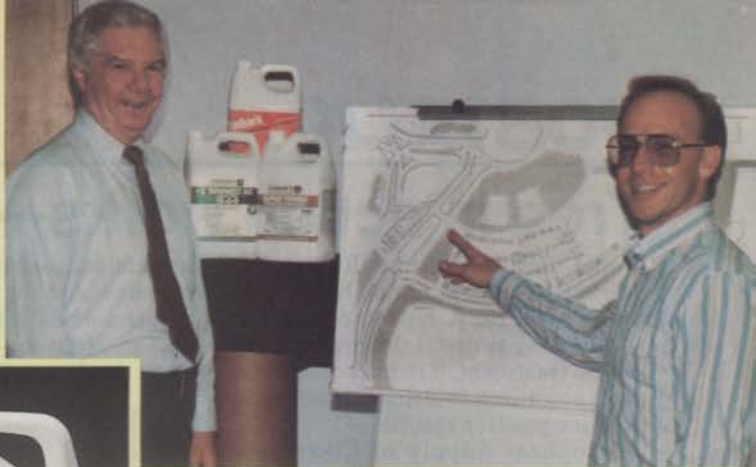
Ferromec works when regular irons fail

But Garvey goes on to say that, for his program, it *has* to be Ferromec. "Last year our distributor was temporarily out of Ferromec, and we tried a substitute brand that was advertised as *just like Ferromec, only less expensive.*"

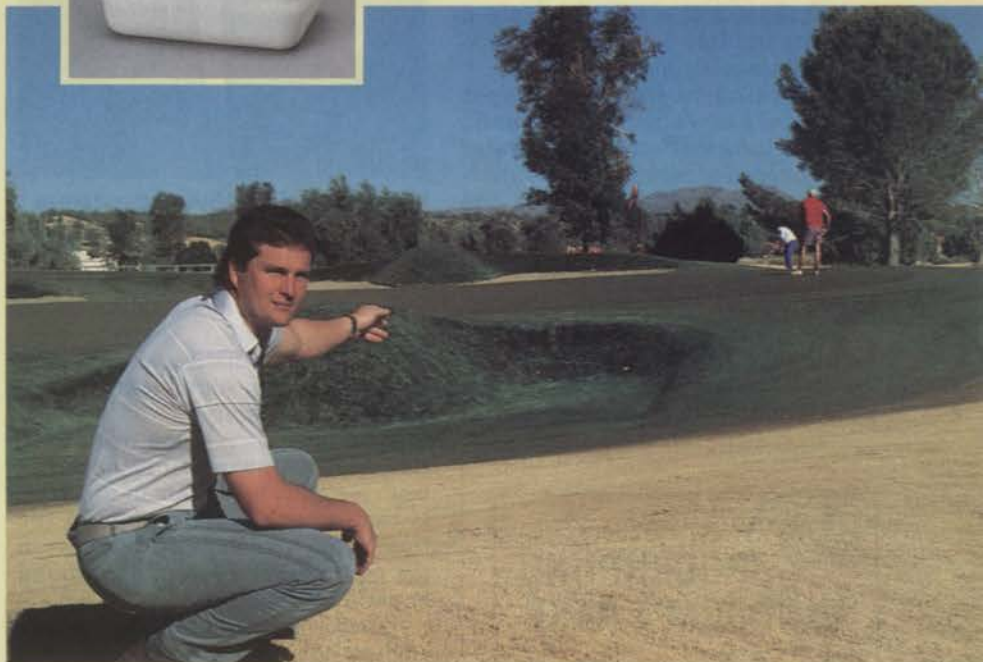
"What a lesson I learned," says Garvey. "Five ounces of the substitute iron did nothing. A repeat of five more ounces was needed to get the kind of green we're accustomed to, and the color only held up for four weeks, versus the six weeks we get from Ferromec."

Why is Ferromec so fast, and so dependable, and so long lasting? It's because of the patented nitrogen-iron bonding process. To satisfy your professional curiosity, we suggest you spend a minute with the schematic drawings on the opposite page, which explain its unique activity.

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Michael Johnston (right), landscaping consultant, shows Everett Mealman a rough preliminary design for a commercial landscaping institution. "Someday this will be a beautiful layout," says Johnston. "The grass will be a lush vibrant green, and yet will only require a minimum of mowing because our specs will call for a Ferromec/Embark/Super Trimec program."



Mike Petty, superintendent of the Tucson National Course, paints his dormant Bermuda fairways with a turf colorant and sprays the bentgrass greens and aprons 26 times a year with four

ounces of Ferromec per 1,000 sq. feet. He loves the color and insists that Ferromec applications, rather than nitrogen, reduce susceptibility to disease. (Foreground is unpainted rough.)

Need more information?
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Tree injection works—when done well

Proper diagnosis of tree illnesses requires that strict attention be given to the tree's history, type and location.

Once the cause is determined, injection treatment, if required, must be done according to strict guidelines to produce positive results.

Lanphear Supply of Cleveland, Ohio, recently sponsored a tree injection seminar to examine proper tree diagnosis and injection treatment.

Tim Johnson of Artistic Arborists, Phoenix, Ariz., believes there may be something in a tree's past that has a direct effect on its present condition. These factors include whether the tree is newly planted or long established; the source of the plant; date of planting and tree condition; soil type and maintenance history.

According to Johnson, proper tracking of a tree's history also should include information on the water source, speed of percolation, fertilization programs, pruning, disease and pest history and on-site environmental conditions.

How does it look?

"Then you must look at the plant itself," says Johnson. "Look at its appearance, which includes the root zone, trunk, canopy, flower or fruit

production, and the overall healthy appearance of the tree."

When examining a tree's roots, for example, Johnson says to take into account the degree of root flare, root de-



Lauren Lanphear: Soil temperature is the most critical factor to consider during tree injections."

velopment, color and stability in the ground.

Trunk examination should consider bark color, soundness and evidence of prior injury.

With inspection of the tree's location, determine whether care has been periodic, haphazard or frequent. Is there much activity around the tree? What was the area used for in the past? Was it a forest, playground or parking lot?

When you look at the site, Johnson advises, look at a number of soil characteristics: soil type, pH, moisture, oxygen level, compaction, salt content, percolation, temperature and hardness.

Proper injection

Lauren Lanphear, president of Lanphear Supply, is a disciple of the Mauget system of tree injection. One of the benefits to the system is that minimal depth is required.

"With the Mauget system, drilling is usually done at 1/4-inch," says Lanphear, "whereas some injection systems require drilling as deep as three inches.

"But even a tiny drilling requires that you wound the tree, so care must be taken.

"Be aware of drilling into non-living tissue," advises Lanphear. "Your most active tissue is going to be located directly inside the bark, in the non-functional xylem."

Avoid injecting into decayed areas;

chemical activity will cease.

Citing research from the University of Illinois, Lanphear says wounds that are 3/8-inch in diameter invariably close within one year.

Avoid injections into root valleys. "The mid-root flare area is the best place to inject," says Lanphear, "followed by the lower root flare or the root itself.

"The stem or trunk, or below or beside an existing wound are the least desirable injection sites."

Timing: spring is best

Injection treatments are most effective when done in spring.

"Later in the year, you'll get less closure," advises Lanphear. "If you inject in fall or early winter, realize that there's a lot of fungal spores in the air at that time of year, and you can expose the wound to greater risk."

Mid-day injections are more effective than those performed in early morning or late afternoon.

High air temperature (75°F), low humidity and sunlight are also desirable.

"The lower the humidity, the less pressure there is on the transpiration system," says Lanphear. "And sunlight helps raise the intake pressure inside the xylem."

Look at the family tree

Genetics impacts wounding to a great degree. "It controls compartmentalization," explains Lanphear. "You have to become familiar with which trees respond better to wounds. Among species, one will be better than another. Between species, some trees we describe as short-lived trees: willows, cherry, cottonwood."

This is when prior injury can tell a tale.


"Look at old pruning wounds or areas where branches have naturally broken off," says Lanphear. "If it's clear that a tree doesn't close its wounds quickly, that's a tree you might not want to inject. Also, monitor the trees you inject. Do not inject a tree if it's cracking or bleeding.

The most critical factor of all, says Lanphear, is soil temperature.

"When we inject a tree, we're plugging into the tree's natural uptake system. Soil temperature is what activates that uptake. Root activity ceases at temperatures below 30°F.

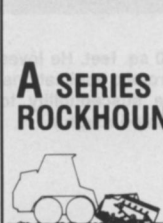
"At 50°F and above," says Lanphear, "the transpiration system is at full go."

—Terry McIver □



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Circle No. 125 on Reader Inquiry Card

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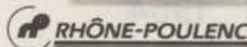
It's also tough to putt around. Fortunately, there's an easier solution, because the best grub control you can buy comes in a bag: CHIPCO® MOCAP® brand 5G pesticide. In fact, studies at a leading university show that CHIPCO® MOCAP® brand 5G delivers up to 97% effective control of white grubs. Plus, superior control of chinchbugs, sod webworms, bluegrass billbugs, black turfgrass Ataenius and mole crickets. And, you can use CHIPCO® MOCAP® brand 5G pesticide with confidence on nearly all types of turfgrass, including Bent, Bahia, Bermuda, Centipede, Fescue, Kentucky Bluegrass,

St. Augustine, Zoysia and Perennial Rye species. Need another reason for choosing CHIPCO® MOCAP® brand 5G? Then, consider this: CHIPCO® MOCAP® brand 5G provides this outstanding control for up to five full weeks. That saves time, trouble and money. So, let the Army worry about gas mileage. Get the most effective grub control money can buy with CHIPCO® MOCAP® brand 5G pesticide. Available at your turfcare chemicals supplier today.



Chipco MOCAP 5G

Brand Pesticide



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PRODUCTS

Hydraulic dump unit ready for use in green industry

E-Z Dumper, the original hydraulically operated dump unit for pickup trucks is designed to hold and load up to 2 tons of material.

The unit will dump on command and in seconds you can unload what would take an hour to unload by hand.

Valley Manufacturing, Inc. says



the E-Z Dumper can hold and unload up to 4,000 lbs. or two cubic yards of firewood, topsoil, gravel, mulch, grain, or other material, depending on the weight-carrying capacity of your truck.

No alterations are required for most trucks. The unit easily installs into truckbeds with just a few bolts.

The fully hydraulic unit operates on any standard 12-volt truck battery. **Circle No. 191 on Reader Inquiry Card**

Turf spray vehicle has strongest boom

Smithco has introduced a turf-spray-dedicated vehicle with what is described as the strongest spray boom available. Its spray system features precise application, measurement, and control.

The Spray Star's 20-foot boom comes in three models, with raindrop or tee-jet models.

Its 160-gallon capacity, fiberglass tank is designed with an ultra-low profile for maximum visibility and operator safety.

The prime mover's ground speed ranges up to 11 mph.

An optional computerized control system monitors ground speed and application rate. Other options are a foam marker system, protective operator cab, electric cargo dumping system, Viccon spreader attachment and new "equalizer" boom which can be controlled electrically from the oper-

ator's seat. The boom is adjustable from 20-16 feet for close tight areas such as greens and tees.



Circle No. 192 on Reader Inquiry Card

Fertilizer products contain penetrant, wetting agent

Lebanon Total Turf Care introduces Country Club 18-4-10 and Country Club 18-5-9 with Naiad soil penetrant for use on greens, tees, fairways and other professionally maintained turf areas.

These unique product formulations combine Lebanon's two most popular fertilizer grades with an effective wetting agent designed to increase absorption in water resistant soil surfaces.

Country Club 18-4-10 with Naiad is formulated to fertilize turf areas effectively and enable water to spread uniformly over soil surfaces and through

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resistant soil structures.

This product has a 90 percent organic, homogeneous fertilizer base with 10 units WIN (water insoluble nitrogen), combined with the Naiad wetting agent. It is specially formulated for rapid penetration into the roots.

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ASSISTANT MANAGER OF GROUNDS MAINTENANCE. Vassar College seeks an individual to supervise and plan the work of the Department of Grounds Maintenance. The department is responsible for the maintenance of 1200 acres including the 450 acre central campus. Applicants must possess strong written and oral communication skills, have three to five years experience as a grounds and landscaping supervisor in a college setting, and a college degree (preferably in horticulture or landscape design: related experience considered). Must hold or be able to obtain N.Y. State Pesticide Applicator's License. Send resume and names of three references to: Director of Facilities Operations, Box 25, Vassar College, Poughkeepsie, N.Y. 12601. AA/EO Employer. 5/90

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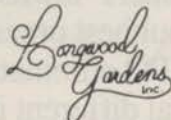
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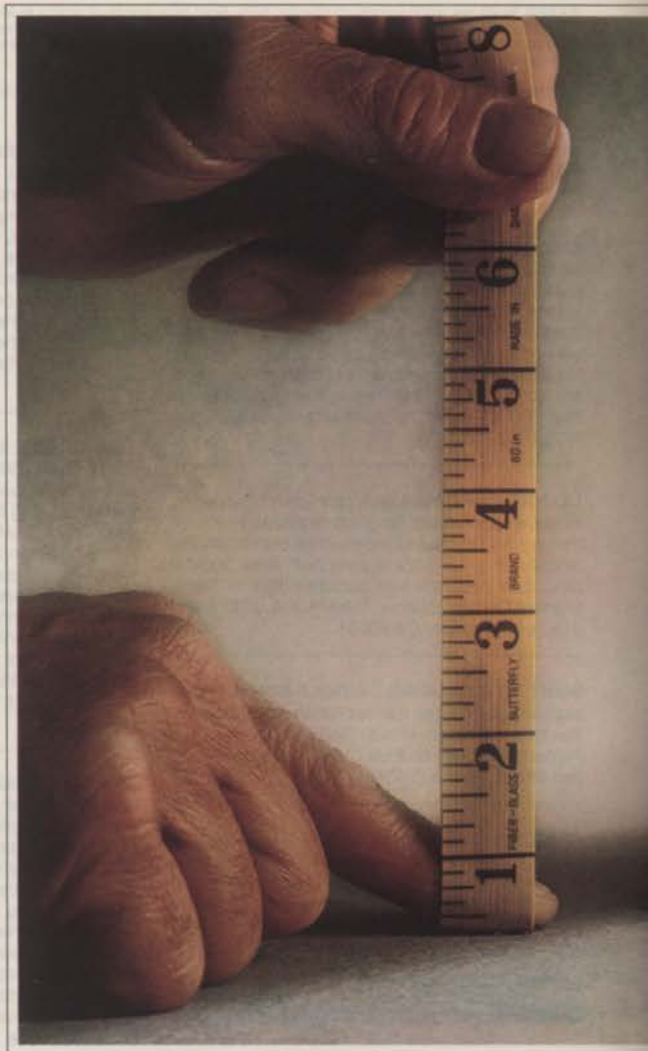
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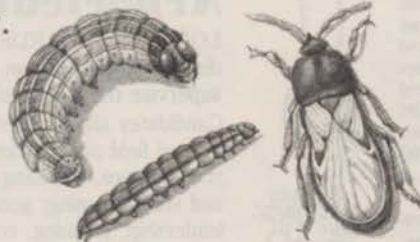
Weigh the alternatives. New TEMPO uses approximately 80% less active ingredient than the leading insecticide. Which means there's approximately 80% less chemical for you to carry around. And 80% less chemical to impact the environment.



How To Size Up

Measure the effectiveness. TEMPO is a broad-spectrum, advanced-generation pyrethroid.

In simple terms, TEMPO effectively controls the surface-feeding insects attacking your customers' lawns. Plus, TEMPO controls the toughest ornamental pests. So using TEMPO eliminates the need to stock several different insecticides.



TEMPO effectively controls surface-feeding pests like cutworms, armyworms, chinch bugs, and sod webworms.

Here's another good reason to put TEMPO in your tank. More and more of your customers have a growing concern about Lyme disease. TEMPO effectively controls the deer tick which carries the Lyme disease virus.

Calculate the cost. TEMPO is the first affordable pyrethroid labeled for use on home lawns. Better yet, it's competi-