



Manhattan II helps smooth out the roughs at Inverness

Tom Walker on Endophyte:

"Using Manhattan II perennial ryegrass with endophytes gives me a biological alternative to managing chewing/ sucking insects. I have seen no damage from these insects, even though I have not applied insecticides. It makes good sense to work with nature whenever possible."

INVERNESS CLUB, TOLEDO — Superintendent Tom Walker chooses Manhattan II to overseed roughs at this prestigious club because of its wear resistance, quick establishment, dark green color and drought and disease tolerance. But Tom finds Manhattan II's big plus is *density*. Manhattan II actually produces more leaves per plant, an economy sometimes overlooked.

This increased basal tillering, coupled with Manhattan II's lower crown help 'heal' shallow divots by spreading laterally. This is why Manhattan II is used to overseed the range tees at Inverness, too.

Manhattan II was developed to take the abuses hard use areas demand, and look good while doing so. Give it a divot. Rough it up a bit. Manhattan II can take it. Just ask Tom Walker at Inverness Club.



Watch the 1993 PGA Championship from Inverness Club, August 12-15.

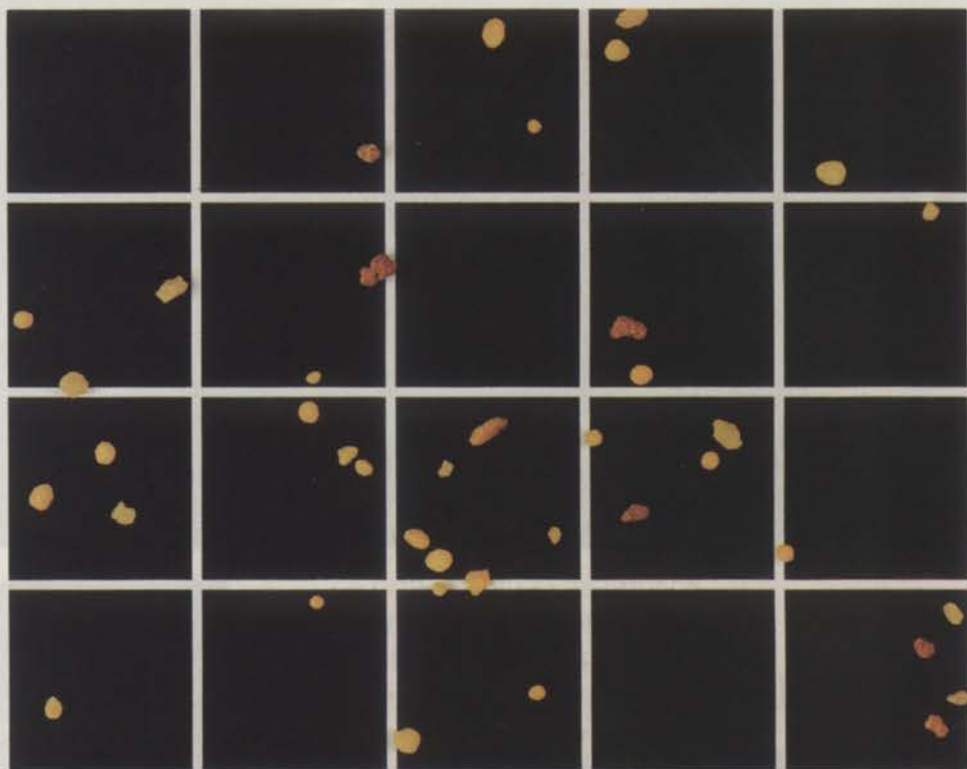
Turf Merchants

33390 Tangent Loop, Tangent, OR 97389
Outside Oregon 800-421-1735
503-926-8649/FAX 503-926-4435

Manhattan II

Turf-Seed, Inc.

PO Box 250, Hubbard, OR 97032
800-247-6910
503-651-2130/FAX 503-651-2351



Particle distribution pattern for typical blended product.

For maximum you need the finest par

SCOTTS fertilizer-based pendimethalin products are the most widely used preemergent combinations. And for three very fine reasons.

● The particles are smaller and more consistently sized than typical competitive physical blends, reducing segregation potential while providing up to 8 times the coverage per square inch. That better coverage means

fewer application breaks with more effective control of grassy and broadleaf weeds. Field tests show that poorly formulated combination products may sacrifice preemergent weed control by up to 15% or more.

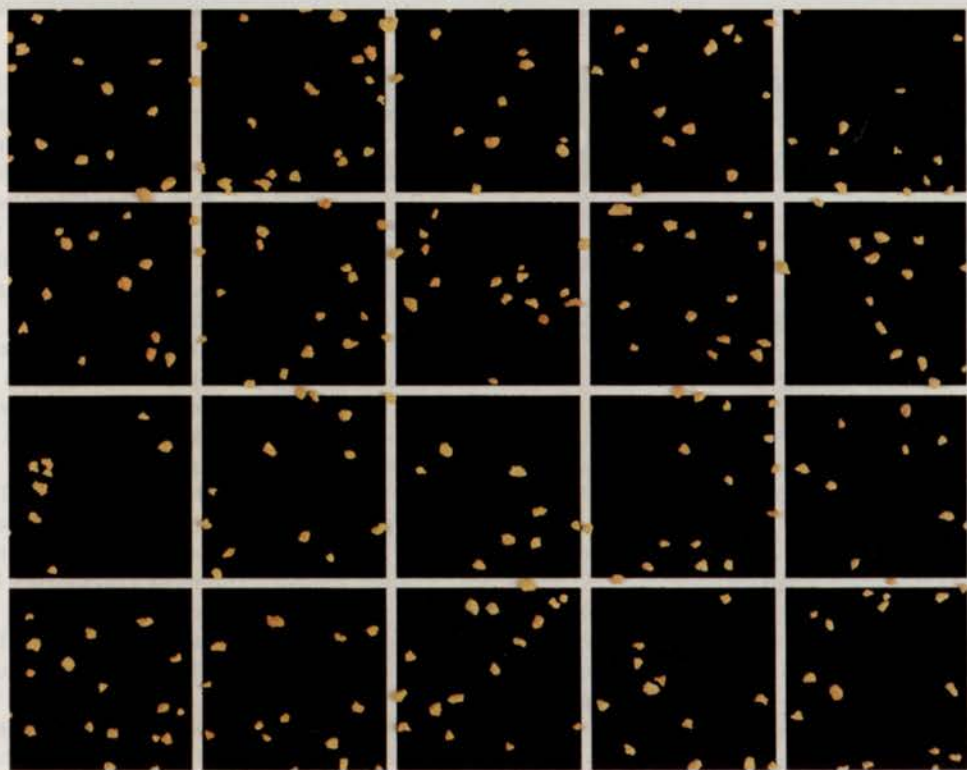
● No other preemergent herbicide can match pendimethalin's combination of broad spectrum weed control, control effectiveness and season-long performance.

Preemergent Control Comparison

	Crabgrass	Goosegrass	Foxtail	Poa Annua	Oxalis	Spurge	Henbit	Chickweed
pendimethalin	H	H	H	M	H	M	H	H
proflaminate (Barricade)*	H	M	H	M	NR	M	M	M
dithiopyr (Dimension)*	H	M	H	M	H	M	M	M

H - High M - Medium NR - Not registered (Based on Scotts/university data)

* Barricade and Dimension are trademarks of Sandoz Limited and Monsanto Company respectively.



Particle distribution pattern for SCOTTS[®] methylene urea fertilizer/pendimethalin product.

weed control, particles money can buy.

Season-long crabgrass control is just one consideration, and pendimethalin answers it. But pendimethalin also outperforms other preemergent herbicides on tough-to-control weeds like goosegrass and oxalis.

Now SCOTTS fertilizer-based pendimethalin line also features Poly-S₂ technology, the most efficient and cost-effective turf fertilizer ever developed. This exclusive technology offers programmed, flexible release rates and more predictable response. It's virtually dust-free. And it's available only from SCOTTS.

Offering a broad line of different fertilizer/pendimethalin products, your SCOTT Tech Rep is ready to help you select the formulation that best meets your needs.

For more information, contact your SCOTT Tech Rep today. Or call 1-800-543-0006.



Pendimethalin Plus Fertilizer

'No-dicker' dealerships

■ No-dicker dealerships—where the sticker price is the only price—are catching on. They could revolutionize the way cars and trucks are sold, according to a new study.

The market research firm of J.D. Power & Associates of Agoura Hills, Calif. says new-vehicle dealers who skip the haggling are better liked and busier than traditional dealers.

Ninety-two percent of the dealers surveyed said their sales have increased since they adopted the system.

Among the differences customers like is avoiding the negotiation process with sales people while trying to sort through a maze of rebates and incentives, says Doris Ehlers, the J.D. Power account executive who conducted the study.

"We gave people the statement: 'I dread negotiations' and asked for a yes or no answer," she says. "Sixty-eight percent of the people answered yes." (The corollary: 32 percent of buyers don't mind haggling.)

No-negotiation car prices are like any other retail item: subject to frequent change. The J.D. Power study showed 33 percent of one-price dealerships changed prices as factory incentive programs changed, 29 percent changed based on inventory conditions, 14 percent changed weekly, 14 percent changed to sell more vehicles, and 10 percent changed every two or three days.

However, the J.D. Power study also showed that 54 percent of one-price dealers still haggle on trade-ins.

Kessen. Total miles per year, how many drivers, and what it will be hauling are key, he says.

"A lot of landscaping and lawn care companies are running their pick-ups long and hard," Kessen observes. "The length of service you get out of your vehicle depends on the number of drivers and amount of regular maintenance. I've had people destroy a truck in one year and others that get 150,000 miles or more."

Other considerations—Some other things to consider:

Size selection: Don't pick the truck that can handle those giant loads you haul three or four times a year. It's more economical to select the size suited to average loads, and then rent for the occasional large payloads.



Kessen: How are you going to use your pick-up?

Watch when you're comparing payloads to compare "apples to apples." Some manufacturers will give you the vehicle's payload capacity, others will give you Gross Vehicle Weight Rating

(GVWR). Here is how they compare: Payload equals GVWR (found on inside left door panel) minus Curb Weight (in manufacturer's specs) minus Passenger Weight (including driver).

Driving area: Suburban stop-and-go driving versus highway hauls makes a big difference when it comes to selecting transmissions, gear ratios and axle sizes.

Body type: The cheapest tailgate won't save you any money if it takes your crew longer to load the truck. Considering the cost of labor and workmen's compensation today, it may be more economical to spend more for an easy-loading model.

Simplicity: Are tilt-away steering columns and exotic engines really necessary? How much extra time and money will it cost to fix these items if they break down?

Ease of handling: Does the model make backing into driveways a major project? You want the truck that's wide enough for your loads, but not so big that it's a tricky ride down narrow streets.

Trade-in value: Unless you're into the habit of running them into the ground, some day your truck will end up on the market. Which models best retain their resale value?

Dealer reputation: The best "bargain" often isn't. What do other customers think of the dealer's service and reliability? He's the most crucial link between you and Detroit.

Lease or buy—Whether you choose to purchase the vehicle outright or lease it over a period of months will make a difference on your next income tax statement.

"Leasing programs have become more popular," notes Kessen, "mainly because, then, businesses know exactly what their program is. When leasing, though, annual mileage is a big factor."

Lease payments in a non-financing lease for equipment purchases are all deductible as they are paid or incurred, so cash outlays match expense deductions.

If purchased, however, equipment is generally depreciated over five years, regardless of the down payment amount. You are also usually allowed to deduct up to \$10,000 of the price in the first year. The remainder is conventionally depreciated like this: 1st year=20%; 2nd year=32%; 3rd year=19.2%; 4th year=11.52%; 5th year=11.52%; 6th year=5.76%.

—Jerry Roche

Accessory costs

■ Here is an approximation of what you can expect to pay for certain non-standard equipment:

Air conditioning	\$800
AM/FM stereo	\$300
Anti-sway bar	\$75
Auto trans. air cooler	\$100
Automatic transmission	\$800
Bed liners	\$250
Extended cab	\$800-\$1700
Heavy duty shocks	\$100
Larger engine	\$300 and up
Limited-slip rear axle	\$200
Upholstery & trim	\$1,100

Ask About
NO PAY 'TIL
MAY 1, 1993
Thru Participating Dealers

Full 10" overhang makes trimming a breeze.

Get the most out of every ride—even around tricky traps and planting beds—with the generous 10" overhang of the 1684D. One of a complete family of Tri-King™ triplex mowers from Jacobsen.



More choices in agile, compact, high-production mowing.

Select a 16 hp gas, mechanically driven reel unit with 71" cutting width, or 16.5 hp diesel, hydraulically driven models in either 72" or 84" cutting widths.



All three feature your choice of 5 or 10-blade reels that can be switched from fixed to floating simply by removing a bolt. Plus, foot-operated reel lift allows the operator to keep both hands on the responsive steering yoke for fast, precise cross-cutting.

New standard features.

The 1672D & 1684D now come equipped with on-demand, all-wheel drive and power backlapping standard for the ultimate in triplex performance and



value, and the Tri-Kings' wide stance, lightweight design treads softly on delicate turf.

Ask your Jacobsen dealer for a complete demonstration.

THE PROFESSIONAL'S CHOICE ON TURF.

JACOBSEN
TEXTRON

Jacobsen Division of Textron, Inc.

Circle No. 116 on Reader Inquiry Card

HANG TEN

Balance nutrients for early fertilization

Organics, 'bridge products' and coated fertilizers now offer more choices.

by Tony Koski, Ph.D.
Colorado State University

■ Late-season fertilization is common in most cool-season turf programs, and even in some warm-season programs. However, quality turf cannot be sustained without some kind of early-season fertilization.

Certainly, applying too much N in spring causes more mowings and increases the likelihood of turf diseases. Concerns about the potential for water contamination via run-off and leaching force us to more closely consider N sources, application rates, and in which situations we should—or should not—be using that fertilizer.

Stimulate color, not growth—This is a good rule-of-thumb for the average turf that is not subjected to intensive wear. On a heavily-used soccer field, however, N must be applied more frequently to stimulate the growth that promotes better wear

tolerance and speeds recovery from intense foot traffic. Common sense must be used in determining frequency and amount of fertilizer to apply. The proper amount will vary with species, desired quality level, and what the turf is used for.

Some turf managers rely on residual activity of fertilizer sources to carry them from one application to the next.

In Table 1, note that those fertilizers which promote rapid greening possess short residual activity, and that the potential for fertilizer burn is higher with these quickly-available sources. On the other hand, the quickly-available N sources are less affected by temperature and are less expensive per pound.

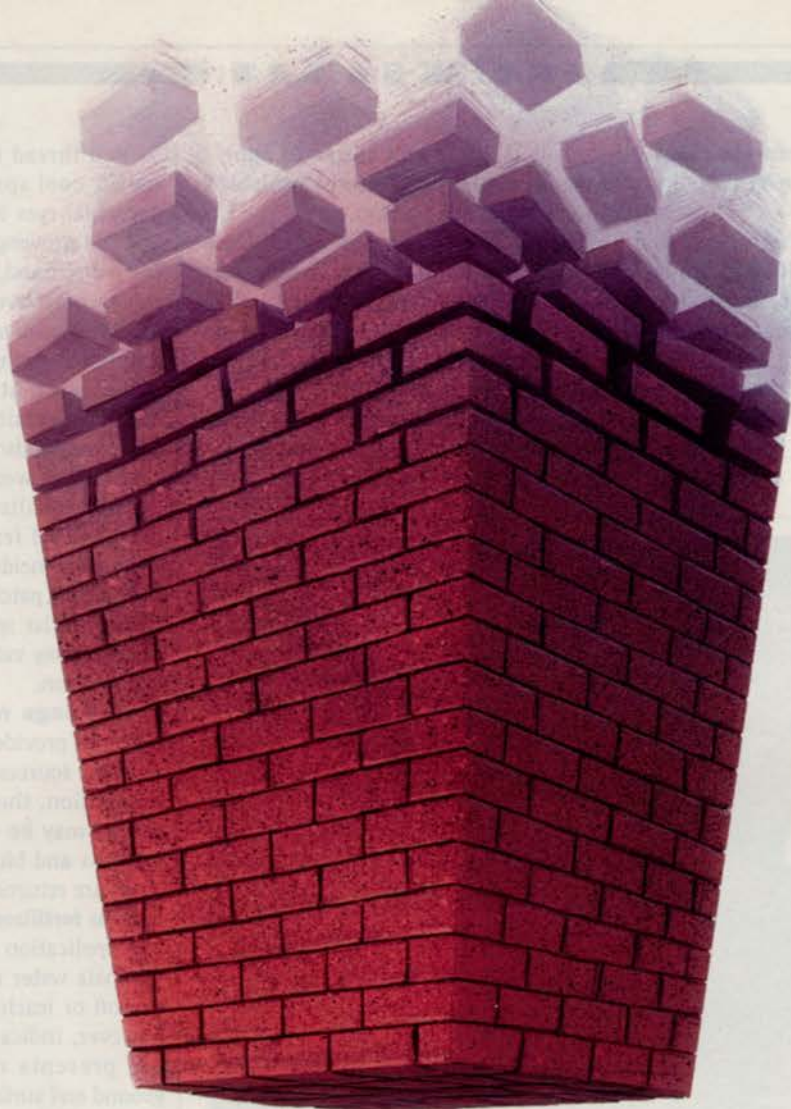
Slowly-available N fertilizers provide more even feeding and longer residual activity than fertilizers like urea or ammonium sulfate. However, some slow-

TABLE 1
CHARACTERISTICS OF NITROGEN FERTILIZERS

Fertilizer name	Analysis	Source of N	Moisture dependence	Low temperature response	Residual N activity	Salt index (per N unit)	Leaching potential
Quickly-available N fertilizers							
Ammonium nitrate	33-0-0	ammonium nitrate	minimum	rapid	4-6 weeks	3.2	high
Ammonium sulfate	21-0-0	ammonium sulfate	minimum	rapid	4-6 weeks	3.3	high
Ammonium phosphate	18-46-0	diammonium phosphate	minimum	rapid	4-6 weeks	1.6	high
Urea	46-0-0	urea	minimum	rapid	4-6 weeks	1.6	moderate
Slowly-available N fertilizers							
Slow-release sources							
Sulfur-coated urea	22-38% N	urea	moderate	mod. rapid	10-15 weeks	NA	low
Once	24-35% N	urea, nitrate, amon. N	moderate	mod. rapid	15-36 weeks	NA	low
Polyon	11-44% N	urea, potassium nitrate	moderate	medium	4-12 weeks	NA	low
Scotts Poly-S products	16-40% N	urea, methylene urea	moderate	medium	12-24 weeks	NA	low
Slow-soluble sources							
IBDU	31-0-0	isobutylidene diurea	high	mod. rapid	10-16 weeks	0.2	mod.-low
Ureaform reaction fertilizers							
Nitroform	38-0-0	ureaformaldehyde	high	slow	10-30 weeks+	0.3	very low
Fluf	18-0-0	urea/ureaformaldehyde	moderate	medium	6-10 weeks	NA	low
Nutralene	40-0-0	methylene ureas	moderate	medium	10-16 weeks	NA	low
Methylene urea	39-0-0	methylene ureas	moderate	medium	7-9 weeks	0.7	low
Coron	28-0-0	urea/methylene ureas	minimal	mod. rapid	7-9 weeks	NA	moderate
N-Sure	28-0-0	triazone/urea sol.	minimal	mod. rapid	6-9 weeks	NA	moderate
Natural organic fertilizers							
Ringer	6-1-3	blood, bone, seed meals	high	medium	10-12 weeks	0.7	low
Sustane	5-2-4	composted turkey waste	high	medium	10-12 weeks	0.7	low
Milorganite, Terrene	5-6% N	activated sludge	high	slow	10-12 weeks	0.7	low

Inclusion of products does not imply endorsement, nor does exclusion imply criticism.

Source: Dr. Koski



...And it's low-dust, too.

Now the powerful turf insecticide that lets you lower the boom on damaging grubs comes in an even more convenient, low-dust formulation. Introducing new CHIPCO® MOCAP® brand 10G pesticide.

CHIPCO® MOCAP® brand 10G works fast to knock out subsurface insects before they can inflict damage. Then, its broad-spectrum activity goes after surface feeders like chinch bugs and the larval stages of sod

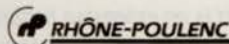
webworms and billbugs. And, applied at the nematicide rate, CHIPCO® MOCAP® is one of the most effective nematicides you can buy.

Best of all, you now get all this time-proven turf pest control in an easier-handling, low-dust formulation. CHIPCO® MOCAP® brand 10G pesticide. Available from your turfcare chemicals supplier today.

New Low-Dust Formulation

Chipco® Mocap® 10G

Brand Pesticide



Rhone-Poulenc Ag Company, 2 T.W. Alexander Drive, Research Triangle Park, NC, 27709 For additional product information, please call: 1-800-334-9745. CHIPCO and MOCAP are registered trademarks of Rhone-Poulenc. As with any crop protection chemical, always read and follow instructions on the label. ©1992 Rhone-Poulenc Ag Company

ly-available fertilizers may provide a slow initial green-up, especially under cool, dry spring conditions.

Slow response can be offset with high rates (1.5 to 2 lbs. actual N/1000 sq. ft.) of the slowly-available sources, as is often done with straight ureaform and natural organics.

This is one of those rare instances in which more than 1 lb. of N/1000 sq. ft. can be safely applied. Unless you wish to adhere to a strictly natural organic pro-

gram, it is wiser and easier to apply a blend of quickly- and slowly-available N sources in the early season.

The resin-coated product called "Once" allows you to fertilize once in the spring and yet provide even greening throughout the growing season. This fertilizer has performed impressively in three years of testing at Colorado State University.

Disease control—Over- or under-fertilization, especially in the spring, can result in turfgrass disease problems.

Red thread can be a problem during moist, cool springs on fine fescue and perennial ryegrasses if they are under-fertilized and not growing at a satisfactory rate. On the other hand, diseases like stripe smut can become severe if susceptible Kentucky bluegrass cultivars get too much fertilizer during the spring.

Research at Cornell University and other universities shows that nitrogen sources may also help suppress certain diseases. That work suggests that natural organic fertilizers and composts, when used as turf fertilizers, can sometimes reduce the incidence or severity of diseases like brown patch, necrotic ring spot, red thread, dollar spot and pythium root rot. Success may vary depending on fertilizer and location.

Clippings return nutrients—Grass clippings provide legitimate and important nutrient sources when returned to lawns. In addition, the severity of rust and red thread may be dramatically reduced on ryegrass and bluegrass lawns where clippings are returned.

Use fertilizer responsibly—Any fertilizer application has the potential to contaminate water resources through surface run-off or leaching. Continuing research, however, indicates that careful fertilizer use presents negligible risk to most ground and surface water sources.

Using water-soluble fertilizers on sandy soils with high precipitation or irrigation rates greatly increases the potential for groundwater contamination.

Run-off from turf sites probably presents little hazard to water quality. However, sloppy application of fertilizer onto hard surfaces like driveways and streets will obviously present a problem when that fertilizer (which often is a pesticide carrier) is carried into storm drains with precipitation.

The responsible applicator will guard against this altogether, or clean up any mistakes by sweeping up the mis-applied material.

Benefits of other nutrients—Remember to test for and maintain adequate potassium levels for your soil type. Research shows that potassium can be an important enhancer of wear, heat and drought stress on both cool- and warm-season species. Try reducing the amount of N you use by making iron a more important part of your standard fertility program.

—Dr. Koski is an extension turfgrass specialist at Colorado State University's Department of Horticulture.

"We're Very Pleased"

with the performance of Oregon Turf Type Tall Fescue. The quality is excellent and its durability and low maintenance make it superior for athletic fields."

— Steve Renko and Tom Turley,
Mid-American Sports Complex, Shawnee Mission, Kansas

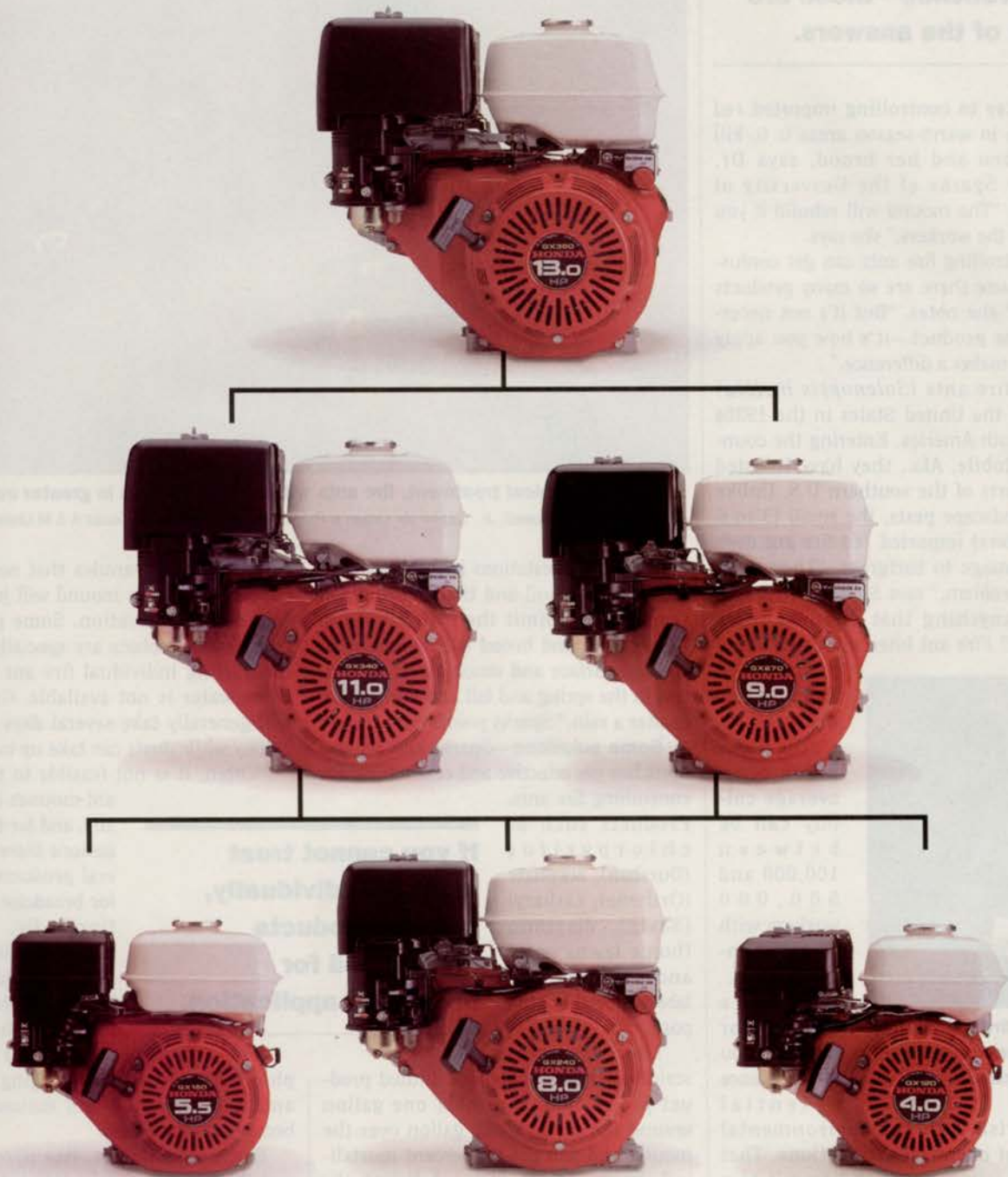
TURF • TYPE
OREGON TALL FESCUE

Complete games are played on this field seven days a week (sometimes twice a day) and it still looks great! With Oregon Grown, Turf Type Tall Fescue seed you're getting fresh, pure seed of the highest quality—and more fun from your turf. Contact your seed dealer for seed from the world's largest producer of Turf Type Tall Fescue seed—Oregon.

OREGON TALL FESCUE COMMISSION
866 Lancaster Dr. SE, Salem, Oregon 97301
Phone: (503) 585-1157

Circle No. 124 on Reader Inquiry Card

The power structure at Honda.



At Honda, we believe power is good. But more power is better. And our multi-purpose engines are no exception. They offer you all the power you want. And they're designed to perform a multitude of tasks. Flawlessly. So if you need an engine, look to the organization that offers you more power: Honda. For your nearest dealer call 1-800-426-7701.

© 1991 American Honda Motor Co., Inc. For optimum performance and safety, please read the owner's manual before operating your Honda Power Equipment.

HONDA
Power
Equipment
Engines

Controlling fire ants in the South

Baits, dusts, broadcast sprays, mound injections and drenches—these are some of the answers.

■ The key to controlling imported red fire ants in warm-season areas is to kill the queen and her brood, says Dr. Beverly Sparks of the University of Georgia. "The mound will rebuild if you only kill the workers," she says.

"Controlling fire ants can get confusing because there are so many products labeled," she notes. "But it's not necessarily the product—it's how you apply it—that makes a difference."

Red fire ants (*Solenopsis invicta*) came to the United States in the 1930s from South America. Entering the country in Mobile, Ala., they have infested many parts of the southern U.S. Unlike most landscape pests, the small (3 to 6 millimeters) imported red fire ant does little damage to turfgrass. "They are a people problem," says Sparks. "They will attack anything that disturbs their mounds." Fire ant bites will cause white pustules to form on humans.



Sparks: fire ant control a long term program, over months.

health risk with the environmental impact of chemical applications. That decided, you must then commit to a long-term program.

You can temporarily control fire ants with chemicals. However, if you stop treatment, the fire ants will probably re-infest the area, perhaps at levels exceeding the original infestation.

One of the key principles in control-

ling fire ant infestations is that they tend to seek warm soil and that freezing soil temperatures limit their distribution. "The queen and brood will be closer to the soil surface and much easier to control in the spring and fall and immediately after a rain," Sparks points out.

Some solutions—Sparks says mound drenches are effective and economical for controlling fire ants.

Products such as chlorpyrifos (Dursban), acephate (Orthene), carbaryl (Sevin), diazinon (home lawns only) and others are labeled for this purpose.

The basic prescription is two gallons of diluted product per mound. "Sprinkle one gallon around the mound, one gallon over the mound and you get 90 percent mortality," she points out. "Do not disturb the mound before application, though."



After first chemical treatment, fire ants will re-infest an area in greater numbers.

Photo by Harry N. Howell, Jr., Center for Urban & Public Health Entomology, Texas A & M University.

ling fire ant infestations is that they tend to seek warm soil and that freezing soil temperatures limit their distribution. "The queen and brood will be closer to the soil surface and much easier to control in the spring and fall and immediately after a rain," Sparks points out.

Some solutions—Sparks says mound drenches are effective and economical for controlling fire ants.

Products such as chlorpyrifos (Dursban), acephate (Orthene), carbaryl (Sevin), diazinon (home lawns only) and others are labeled for this purpose.

The basic prescription is two gallons of diluted product per mound. "Sprinkle one gallon around the mound, one gallon over the mound and you get 90 percent mortality," she points out. "Do not disturb the mound before application, though."

The main drawback to drenches is that they kill by contact and may require several days to be effective.

Granular products and dusts can also be used. Bendiocarb (Turcam), chlorpyrifos and diazinon (home lawns) are also

formulated as granules that need to be watered in, or the mound will just move to a different location. Some products containing acephate are specially labeled for dusting individual fire ant mounds when water is not available. Granulars will generally take several days to kill a colony while dusts can take up to a week.

"Often, it is not feasible to treat fire

ant mounds individually, and for these situations there are several products labeled for broadcast application," Dr. Sparks notes. She lists granular or liquid formulations of chlorpyrifos, isazophos (Triumph) and isofenphos (Oftanol) to kill foraging worker ants and prevent small mounds from becoming established.

Some insecticides, like pyrethroids and chlorpyrifos, can be injected directly into the mounds. "However, at \$1 to \$1.50 per mound, this is a very expensive control procedure," Dr. Sparks says.

Liquid fumigants—methyl chloroform (MC96) in particular—have also proven effective. One to two ounces of the liquid poured into the mound rapidly

If you cannot treat mounds individually, several products are labeled for broadcast application.