

THE FORD DIFFERENCE

AN ENGINE THAT
RUNS COOLER
BECAUSE IT WORKS
WITHOUT SLEEVES.



We're going to show you Ford tractors are *better* by showing you their *differences*.

Look at this difference. Ford engines are missing something found in many competitive engines: cylinder *sleeves*. "Dry" sleeves retard heat flow. Causing rings and pistons to run hotter—wear out

faster. "Wet" sleeves can *leak*. Spilling coolant into engine oil and causing serious trouble.

Ford engines are sleeveless. They have no sleeves that can retard heat flow or extra seals that can leak. Elimination of sleeves means more rigidity in the block—greater precision

in cylinder bore. That's why Ford tractors run cooler, stronger, longer!

Your Ford tractor dealer will show you *all* of the Ford differences. Be sure to watch these pages for more!

NUMBER ONE ON WHEELS
FORD TRACTOR

Your Ford industrial tractor and equipment dealer is listed in the Yellow Pages under "Tractors" or "Construction-Equipment." See him for information on how to buy, lease, rent or finance.



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It Blows...It Dusts...and It Sprays...Better! Because It's a STIHL!



This is the STIHL SG-17 Mist-Blower that Everyone is Talking About!

It blows, dusts and sprays dry and liquid chemicals, etc. to kill weeds and insects; to fight plant and tree diseases and to perform many related jobs in the garden, on the farm and in nurseries.

It has also proven very versatile for spraying at construction jobs, blowing leaves and debris in sport stadiums, parks and recreation

areas, in spraying cattle and dairy buildings and many new uses are being discovered every day.

You'll be amazed at its perfect balance and ease of handling and also at its very, very easy price. See for yourself. It's a STIHL!

»Newest from the Makers of the World's
Finest Chain Saws«



STIHL American, Inc.

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Hayward California 94541,
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We'll put our weed control crew



up against yours any day!

Would your crew promise (and deliver!) effective control of many weeds for as little as ten cents per thousand square feet?

Would they promise not to damage or weaken any growing stock they are cleared to handle?

Would they keep on working around the clock, month after month?

If not, turn the weed control job over to our crew. You couldn't ask for better, more dependable help!

Elanco Products Company, a division of Eli Lilly and Company, Dept. E-455, Indianapolis, Indiana 46206, U.S.A.



Balan
Treflan
Dymid



(Balan®—benefin, Elanco)
(Treflan®—trifluralin, Elanco)
(Dymid®—diphenamid, Elanco)

WEEDS TREES and TURF[®]

Volume 11, No. 3 March, 1972

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The Pesticide Future Is Brighter 10

Arsenicals have long been used by The Green Industry in controlling undesirable vegetation. Cecil F. Kerr, Chipco Turf Products Manager, Rhodia, Incorporated, Chipman Division, in a guest editorial points out the need for these materials and what members of the industry should do to permit the continued use of arsenicals.

Chemicals Reduce Maintenance Costs For Maryland Highways 14

Agricultural chemicals are reducing labor and equipment costs on Maryland highway rights-of-ways. Richard C. Moffett, chief agronomist, Maryland State Highway Administration tells how he implements chemicals into modern ROW maintenance.

Herbicides Keep Jacksonville Drainage Ditches Open 16

Keeping drainage ditches open permits fast run-off of water. Drainage ditches in the Jacksonville area once required much labor and mechanical maintenance. C. C. Holbrook, division Superintendent, Streets and Highways for the City of Jacksonville reports on a new chemical program that keeps vegetation in check.

Chemical Weed Control Cuts Labor Costs In Half 19

Nurseries with weed problems are turning to chemicals as a labor saving device. Many find they can reduce labor costs for hoeing by as much as 50 percent.

Industry's Role In Weed Science 22

Dr. Glenn C. Klingman, director of plant science, Eli Lilly and Company, projects industry's role in weed science for the next quarter century. He comments on the continued need for industry research and undergraduate and graduate university training in the discipline of weed science.

Southern Weed Science Society Report 30

Biological Control For Gypsy Moth 57

Gypsy Moth, directly accountable for the defoliation of more than a million acres of trees last year, can now be controlled with the use of a biological compound called Thuricide HPC. Field trials in Pennsylvania have shown this product to be effective in gypsy moth control.

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The Cover

Modern railroad rights-of-way maintenance includes vegetation control with effective herbicides. Our cover shows a Myers rights-of-way sprayer mounted on a railway car. Chemicals sprayed by this maintenance crew will keep weeds and brush from encroaching on railroad ballast.

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Dacthal... drives crabgrass and *Poa annua* off the course.

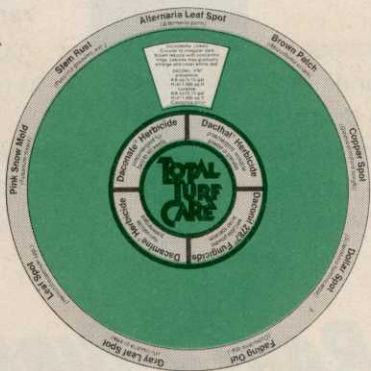
Dacthal preemergence herbicide drives out over 20 annual grassy and broadleaf invaders, including crabgrass and *Poa annua*. It prevents weeds—kills the seeds as they germinate.

One application in early spring controls most problem weeds. Spray Dacthal W-75 wettable powder. Or, spread convenient G-5 granules. Either method does the job. Just read and follow label directions.

Dacthal won't leach out with frequent waterings. Yet, it degrades in one season... is *not* persistent in the soil!

Send coupon for a helpful Total Turf Care dial on turf diseases and weeds. Just dial your problem, read the answers.

BE DIAMOND SURE!



**Diamond Shamrock
Chemical Company**
A UNIT OF DIAMOND SHAMROCK CORPORATION

FREE! WTT-3

Agricultural Chemicals Division
Diamond Shamrock Chemical Company
300 Union Commerce Building
Cleveland, Ohio 44115

Gentlemen:
Please send me _____ Total Turf Care dials.

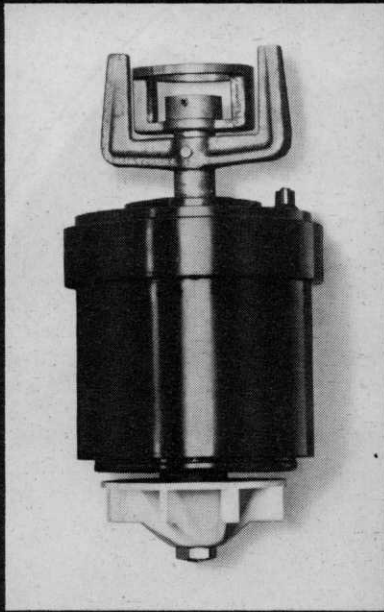
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Position _____

Street or PO Box _____

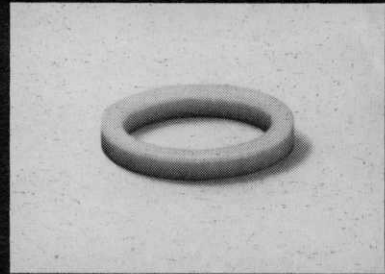
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Normal cost of replacement part
for a gear-driven sprinkler:

\$13.00 to \$47.00



Normal cost of replacement part
for a Rain Bird impulse sprinkler:

45¢ to \$1.50

No wonder we sell more sprinklers.

Rain Bird sprinklers don't know when to quit. That's why the vast majority of millions we've sold since the late Thirties are still going strong.

But everything breaks down sooner or later. Nice thing about our sprinkler heads is that when they do break down, it usually costs from 45¢ to \$1.50 to fix them. That's the cost of a new wearing ring that's designed to take the brunt of the wear.



A gear-driven head is a very different story. A \$13.00 to \$47.00 story. Because that's what the parts normally cost for repairing a gear-driven sprinkler. (It's more than repair. You generally have to replace the entire sealed gear unit.)

The next time you've got a gear-driven sprinkler head up for repair, put it up for replacement instead. With a Rain Bird impulse sprinkler.

RAIN BIRD®

GLENDORA, CALIFORNIA 91740

For More Details Circle (136) on Reply Card

Now "zero-in" on gypsy moth and other tree defoliating worms!

HIGH POTENCY PERFORMANCE Thuricide® bacterial insecticide offers professional tree men a unique and effective weapon in their war against worms. Brings sure death to gypsy moth larvae, spring & fall cankerworm, fall webworm, oak moth larvae, tent caterpillar, red hump caterpillar. Packs more kill power (International Units of Potency) than any other insecticide of its type. Yet Thuricide does not affect man, birds, bees, pets or wildlife!

UNIQUE TARGET ACTION Thuricide's naturally-occurring active ingredient (*Bacillus thuringiensis*) must be eaten to be effective. Even then, it kills only specific target worms by destroying the digestive system. Feeding stops almost immediately after ingestion. So don't worry if you see some worms around after spraying. They're not eating. They're starving to death! There is no toxic risk from drift or residue. And Thuricide will not burn leaves.

PROVED THROUGH USE Thuricide is no johnny-come-lately product. Eight years of use on over 2,000,000 acres of food crops have made it the number one name in biological insect control. Extensive tests on forests, shade trees and ornamentals have proved outstandingly successful. The label lists specific registrations and rates. Write Crop Aid Products, International Minerals & Chemical Corporation, P. O. Box 192, Libertyville, Illinois 60048.

Thuricide® BACTERIAL INSECTICIDE



Sure... Clean... Selective!



For More Details Circle (138) on Reply Card

The ominous cloud of legislation concerning the Federal Environmental Pesticide Control Bill that hung over the House until early November last year has now moved over the august chambers of the Senate. The 91 Congressmen led by John G. Dow (D-New York) who opposed the Bill to the end are now silently working with their Senate counterparts to breathe more restrictions into the use of pesticides.

Those of us in the Green Industry who communicated with our Representatives and who testified in Washington are well aware that this Bill had more problems than a golf superintendent with a push mower on an 18-hole course. However, we congratulate these people for their effort in turning an unworkable and unrealistic Bill into workable legislation.

But the job is not complete. The bell for round two has sounded. Opponents, Senators Edmund Muskie, Phillip Hart and others, will be leading the fight to win votes from environmentalists who want tougher restrictions on the use of pesticides. Without help, this Bill could set an uncharted course in troubled Senate waters.

We must bring to fruition a law that is workable, a law that restricts but doesn't impede, a law that we can live by. Effort and assurance is still

needed by those Senators fighting for just legislation. What can we do? A number of opportunities exist. A letter in triplicate to EPA Administrator, William Ruckelshaus, stating your concern on this issue will help. Testify before the Senate committee, if asked. Band with organizations such as the Southern Weed Science Society in making recommendations to the passage of the Bill.

The debate at this point is not whether the Bill is good or bad. We think that the version that left the House is good for several reasons. One is that better trained industry people will be at the field level—supervising and doing the work. Another is that licensing applicators represents more business for the operator. Lastly, licensing applicators will bring more professionalism to the Green Industry.

The Senate Committee on Agriculture and Forestry is now sifting the Bill through finer screens than most chemicals are sprayed through. The pressure to force the Bill for signature by the President must come from the pump of the Green Industry. Our horsepower as voters and ultimate users of this legislation must be united to get the job done.

BEAUTIFUL



I Am Curious (green)

Like beautiful girls, Fylking Kentucky bluegrass lawns offer so much more... beautiful color, texture and easy to love and care for. Abundant sideshoots coupled with a thickly branching root system produce an unusually luxuriant turf of thick, cushiony velvet. More disease and weed resistant, drought and traffic tolerant, Fylking has proven superior in 12 years of international tests. It thrives cut at 3/4 inch (even low as 1/2 inch) and makes backyard putting greens practical. Ask for the beautiful one, 0217® Brand Fylking Kentucky bluegrass lawn seed or sod at seed and garden supply centers and sod landscape distributors.

Another fine product of Jacklin Seed Co., Inc.

You, too, should be curious about this magnificent young beauty among lawn grasses. 0217® Brand Fylking Kentucky bluegrass is a great green because it greens up earlier in spring, stays green longer in fall. Curiously, Fylking thrives when cut at 3/4 inch (even as low as 1/2 inch) making possible backyard putting greens with no special care required. Its curious name, Fylking, refers to its quality of dense root growth that crowds out weeds. It's a Swedish word because Fylking was discovered in Svalof, Sweden, and developed in America. Internationally tested, Fylking has proven superior over a 12-year period. Fylking is more disease-resistant, produces no seedheads, takes heavy traffic and resists drought. Get curious about this wonderful lawn. It's available as seed or sod at most seed and garden supply centers and sod landscape distributors.



Exciting! Especially in lawn grass! 0217® Brand Fylking Kentucky bluegrass thrives on low cutting. This is the one lawn grass you can cut low enough for a home putting green, yet without special care. Everyone who owns a putter would like a private backyard practice green so they could cut a few strokes off their game!

Fylking has many outstanding attributes. It forms a dense, luxuriant turf that strangles weeds. It's more disease-resistant, takes hard use, resists drought, greens up earlier in spring, stays greener in summer, greener longer into fall. It has been internationally tested more than 12 years and proven superior. Ask for the low-cut beauty in seed or sod. 0217® Brand Fylking Kentucky bluegrass is now at most seed and garden supply centers and sod landscape distributors.

U.S. Plant Patent 2887
Another fine product of Jacklin Seed Co., Inc.



PERFECT!

Right now, we think we have the world's most perfect turf variety (and model). 0217® Brand Fylking Kentucky bluegrass seeds germinate enthusiastically, grow a lush, deep green lawn with a thick turf. And here's where the perfection is appreciated by the people who must grow and care for lawns: Disease and drought resistance! Dense turf crowds out weeds. Fertilizer and water requirements are always modest when cut between 3/4 - 1 1/2 inches. (Can be cut low as 1/2-inch for home putting green.) Next lawn, or to renovate your old lawn, specify the perfect one, 0217® Fylking Kentucky bluegrass, now at most seed and garden supply centers and sod landscape distributors.

Another fine product of Jacklin Seed Co., Inc.

U.S. Plant Patent 2887

FYLKING
FYLKING
FYLKING
FYLKING
FYLKING
FYLKING
FYLKING
FYLKING

Remember the name you're going to hear. It's 0217® Brand Fylking bluegrass lawn is so special. It forms a dense, more disease and drought resistant. Greens up greener longer. Fylking low as 3/4 inch, even home putting green years of international testing. Ask for Fylking and garden supply centers and sod landscape distributors.



Another fine product of Jacklin Seed Co., Inc.

Fylking Has Both

First, Fylking is outstanding in performance: beautiful, rich velvet turf so thick it crowds out weeds, is green earlier and later. More disease and drought resistant, can be cut low as 3/4 inch, even 1/2 inch for home putting greens.

Second, Fylking is nationally known. It's becoming one of the most popular, new, low-growing lawn turf varieties in the country. Fylking is advertised nationally in all of the key trade publications and the top daily newspapers. Complete sodding, seeding and technical brochures are provided free on request. For the finest quality turf, insist on 0217® Fylking Kentucky bluegrass, available at your local wholesale distributors.

FYLKING KENTUCKY BLUEGRASS
U.S. Plant Patent 2887

Another fine product of Jacklin Seed Co., Inc.

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Your inquiry will be forwarded to the manufacturers in whose products you are interested.

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**ART EDWARDS
EDITORIAL DIRECTOR**

Your first step to healthier turf



1 Spring is the time to take it



Leaf Spot problems caused by overwintering spores of *Helminthosporium* spp. can spoil the health and beauty of your turf this spring. So can Rust and *Rhizoctonia*.

But if you apply TERSAN[®] LSR now, you can break the *Helminthosporium* spp. cycle before it becomes a costly problem. You stop Leaf Spot before the "melting" or "fading" out stage. And Rust and *Rhizoctonia* don't get a chance to damage your turf.

The application of TERSAN LSR to tees, greens and fairways in the spring is the first step in the Du Pont TERSAN 1-2-3 Disease Control Program. The program that prevents or controls all major turf diseases on all common grasses throughout the entire year.

The TERSAN 1-2-3 Disease Control Program is effective, economical and entirely non-mercurial. It has been proven by hundreds of professional turf men throughout the country.

For complete details on the program and a supply of TERSAN fungicides, see or call your golf course supplier today.

With any chemical, follow labeling instructions and warnings carefully.

DU PONT TURF PRODUCTS
REG. U.S. PAT. OFF.

IN JULY of 1970, the New York State Department of Environmental Conservation issued a list of seventy-two restricted chemicals. The original intent of the new regulation was that these restricted chemicals would be applied only by a custom applicator. In the original document, chlordane could be used only for termite control. Arsenicals were restricted to four pounds of active ingredient per acre. Mercury compounds and DDT were banned completely.

Golf course superintendents had lost most of their valuable, needed tools to maintain beautiful golf courses.

Several superintendents, associations and researchers wrote letters to the New York Commissioner of Environmental Conservation defending tri-calcium arsenate, chlordane and mercurial compounds. Researchers explained the expertise, knowledge and responsibility that professional golf course superintendents possess.

New York changed their recommendations to allow usage of calcium arsenate, lead arsenate and chlordane on turf by permit. The program is sound. Better utilization of chemicals will result from their sensible approach. They have recommended changes for restricted chemicals for 1972 that will allow professional managers' use of restricted chemicals. They have attempted to develop uniformity between requirements of several states and the Federal Government.

Several golf course superintendent associations, leading turf researchers, distributors, over fifty golf course superintendents and the Executive Committee of the Golf Course Superintendents Association of America wrote letters to the Director of Pesticides Regulation Division, Environmental Protection Agency, Washington, D. C. These letters were in defense of the usage of tri-calcium and lead arsenate to control **Poa annua** on greens and fairways. They reported that bent, bluegrass, zoysia, bermuda and fescue grasses are extremely tolerant to arsenical formulations. They pre-

THE PESTICIDE FUTURE IS BRIGHTER

By **CECIL F. KERR**
Chipco Turf Products Manager
Rhodia, Incorporated
Chipman Division
New Brunswick, N.J.

Guest Editorial

sented evidence that phosphates and arsenates are either fixed or absorbed by plants. Both phosphorus and arsenicals remain harmlessly in surface soils. They do not contribute to pollution of lakes and streams.

The Federal Environmental Protection Agency, Office of Science and Technology and USDA Arsenical Review Committees have outstanding scientists as members. We are confident that needed products will be allowed for use by permit for application by professional turf managers.

Dr. Paul Alexander and the Executive Committee of the Golf Course Superintendents Association of America wrote to the Director of Pesticides in Washington supporting arsenicals, stating: "The Golf Course Superintendents Association of America represents over 2,400 golf course superintendents. We are firmly convinced that these men, because of their educational backgrounds, actual agronomic experience and professional integrity, are extremely well qualified to use the chemical tools which are vital to the growth and management of fine turf."

The members of our association should write to our state and federal agencies expressing their views of pesticide usage. The federal arsenic and lead committees are still evaluating the need for these materials. Write to:

Director, Pesticides Regulation
Div.
Environmental Protection Agency
Washington, D. C. 20250
RE: F. R. Arsenic and Lead Notice

In your testimony, state the need for arsenicals, rates used, and weeds controlled. Point out that arsenicals remain on the soil surface and do not leach into lakes and streams. Birds are repelled by arsenicals and do not eat either lead or calcium arsenate. No injury or loss of life has occurred with proper arsenical usage. Request continuance of the wise use of needed tools to manage beautiful golf courses.

The review committees will thoroughly and intelligently examine our testimonies.