
CHIPCO TURF HERBICIDE MCPP
CHIPCO TURF HERBICIDE MCPP
CAUTION: Keep Out of Reach of Children
CHIPCO TURF HERBICIDE "D"
CHIPCO TURF HERBICIDE "D"
CAUTION: Keep Out of Reach of Children
CHIPCO THIRAM 75
CHIPCO THIRAM 75
TURF FUNGICIDE
CAUTION:
CHIPCO SPOT KLEEN
CHIPCO SPOT KLEEN
CHIPCO TURF KLEEN
CHIPCO TURF KLEEN
CAUTION: Keep Out of Reach of Children
Do NOT Store with Foodstuffs
CHIPCO BUCTRIL
CHIPCO BUCTRIL
For the Control of Certain Broadleaf Weeds in Newly Planted Grasses for Sod or Seed Production
CAUTION: Keep Out of Reach of Children
Do NOT Store with Foodstuffs
CHIPCO SPREADER-ACTIVATOR
CHIPCO SPREADER-ACTIVATOR
FOR TURF and ORNAMENTAL SPRAYS
CAUTION:
CHIPCO MICROGREEN LIQUID
CHIPCO MICROGREEN LIQUID
A blend of metal organo complexes of iron, zinc, manganese, and copper for the correction of turf nutritional deficiencies
CAUTION: Keep Out of Reach of Children

Buy a Chipco® something, get a Chipco® something else absolutely free.

Why are we doing this?

To help you save money. But, we have something else in mind, too.

Chipco is the best group of products you can use for an effective turf management program.

And we know once you use Chipco anything, you'll soon be using Chipco everything else.

If you buy:	You get free:
24 lbs. Chipco Spot Kleen	1 gal. Chipco Turf Herb. MCPP ($ 9.85 value) Or 6 lbs. Chipco Thiram 75 ($ 6.84 value) Or 1 gal. Chipco Spread Act. ($ 6.70 value)
10 gal. Chipco Buctril	6 lbs. Chipco Thiram 75 ($6.84 value) Or 1 gal. Chipo Turf Herbicide MCPP ($9.85 value) Or 1 gal. Chipco Turf Kleen ($7.52 value)
30 gal. Chipco Turf Herb. MCPP	1 gal. Chipco Buctril ($18.54 value) Or 3 gal. Chipco Turf Herb. D ($13.62 value) Or 15 lbs. Chipco Thiram 75 ($17.10 value)
15 gal. Chipco Turf Kleen	1 gal. Chipco Spread Act. ($6.70 value) Or 1 gal. Chipco Turf Herb. MCPP ($9.85 value) Or 6 lbs. Chipco Thiram 75 ($6.84 value)
10 gal. Chipco Microgreen Liquid	1 gal. Chipco Turf Kleen ($7.52 value) Or 1 gal. Chipco Spread Act. ($6.70 value) Or 1 gal. Chipco Turf Herb. MCPP ($9.85 value)

Chipco Buctril® controls broadleaf weeds in newly planted grasses for sod or seed production.

Chipco Turf Herbicide MCPP controls clover, chickweed, knotweed and other surface creeping weeds and is safe and effective for use on most bent grasses.

Chipco Turf Kleen controls broadleaf and surface creeping weeds with a wider margin of safety around trees and shrubs.

Chipco Spot Kleen is a new systemic fungicide for control of dollar spot, Fusarium blight, large brown patch, copper spot, and stripe smut.

Chipco Thiram 75 prevents and controls large brown patch, dollar spot and snow mold.

Chipco Microgreen Liquid provides long lasting deep green color, more root growth and less desiccation.

Chipco Turf Herbicide D is a general purpose broadleaf herbicide ideally suited where economical control is desired.

Chipco Spreader Activator is a superior adjuvant to increase the efficiency and effectiveness of turf chemicals.

Note: offer expires April 1, 1974.

Chipman Division of Rhodia, Inc., 120 Jersey Avenue, New Brunswick, N.J. 08903

Rhodia
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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!

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

WEEDS TREES and TURF®

"Serving The Green Industry"

Volume 13, No. 3 March, 1974

The Cover

Photomicrographs are used by scientists to probe the unseen. Our cover this month takes the reader into the unknown. This is an extreme exposure to a turfgrass disease that plagues almost every superintendent and maintenance man in the business. For details on this unusual picture, see our cover story "Probing The Unseen" on page 10.

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Strength that cuts it: Ford Flail Mowers.

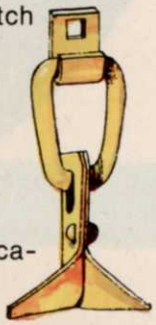
Ford flail mowers, inside and out, are built to handle tough, punishing work! Drive-line features heavy-duty components like banded V-section belt drives . . . high-capacity bearings . . . rugged gearbox. Welded frame braced by full-width torque tube maintains gear and drive alignment wrapped in a high-strength

sheet steel housing. Available with optional rear bumper, right-end bumper guard, gauge wheels, and steel or rubber gauge rollers. Ford flails are built to take it! And servicing is easy.

Blade hanger lets you remove one blade at a time. Bolt-on design makes blade removal and reattachment fast and easy.

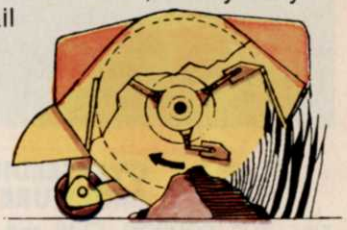
Improved flail-safe design. Protective configuration of the heavy steel rear shield is designed to prevent straight-line ejection of material from under the mower housing, regardless of cutting height.

Three cutting widths. 62-inch, 74-inch, and 88-inch models are available to match your tractor power and mowing needs. All offset for ease of mowing close to trees and other obstacles.



Widen the range of flail mower applications. Rugged Ford flails improve mowing results even in some areas where you are now using rotary cutters and cutterbars.

See the versatile, heavy-duty Ford flail mower line at



your Ford tractor and equipment dealer. He is listed in the Yellow Pages under "Tractor Dealers" or "Contractors' Equipment & Supplies". See him for information on how to buy, lease, rent, finance.

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FORD TRACTOR

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Editorial

Let's Put The Railroads To Work

Decline in rail transportation of goods may soon take a swing in the opposite direction, if Federal Highway Administrator Norbert T. Tiemann has his way.

Speaking out in what amounts to the first positive stand for sensible movement of goods over long distances, he predicts that pressures of growth and shortages of energy will dictate greater use of railroads in the future. Pressures for increasing the current size and weight limits on motor carriers, pressures to develop separate rights-of-ways for passenger and freight vehicles, pressures to develop other modes of freight transportation—all these and others are causing the present Administration to once again turn to America's most economical transportation system.

Why the delay? Box cars (freight units) coupled end to end and pulled by a single power source represent rolling economies in fuel, space and efficiency. For long distance terrestrial hauling, railroads have always been the most economical mode.

Yet, during our lifetime, changes in technology have nurtured the maturity of transportation systems such as airplanes, pipelines, autos and trucks. Industry's race to develop, build, compete, expand and profit has perpetuated the long-haul-by-truck-to-save-time concept.

So when railroads began slipping off their mighty throne, multi-wheeled leviathans lumbered onto highways built originally for passenger traffic and skimmed the gravey off the long haul, high ticket value items. The result is that in 1972, combinations of trailer and semi-trailer vehicles totaling 990,000 traveled almost 47 billion miles and consumed over 8.5 billion gallons of fuel.

In short, we now have paid dearly to buy those few hours of precious time.

Administrator Tiemann now has proposed that we develop a long-range solution. He suggests shifting freight from roads to rails in a coordinated system of freight transportation. To carry his idea ahead motor carriers would perform pick-up and delivery services, and short-haul intercity movements. Intermodal terminals could be jointly operated. Railroads would handle the line-haul portion of long distance movements. Thus ". . . railroads become the wholesalers of transportation . . . while motor carriers would become, in effect, retailers of transportation," he says.

The Green Industry stands to gain from this directly. Greater use of railroads will necessitate more and better maintenance of rights-of-ways. The possibility of separate highways for motor carriers moving freight short distances creates more miles to be patrolled in vegetation care. Terminals will mean bareground weed control to reduce the chance of fire, etc. Landscaping will be needed. Tree and ornamental care possibilities emerge.

American railroads. Who needs them? We all need them.

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Brand Broad-Spectrum SYSTEMIC Broadleaf Herbicide

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MOST EFFECTIVE SAFE HERBICIDE

One early application of Broad-Spectrum TREX-SAN™ will kill the weeds that plague you now, thus also preventing their seeding and re-appearance next year. TREX-SAN combines the unique weed-killing properties of 2,4-D, MCPP and DICAMBA — their synergistic action in TREX-SAN provides the safest, most effective single herbicide known. We've seldom found a broadleaf weed TREX-SAN won't control. Yet it provides an extra tolerance of safety to fine turf and ornamental plantings when applied as directed. A single gallon of TREX-SAN treats *four full acres* to save you *money* . . . Single applications in spring and fall save you *time* . . . in achieving complete weed control. Order TREX-SAN from your Mallinckrodt distributor today.

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THE COVER

Probing The Unseen

Feeling like Gulliver in this Lilliputian world known only to mortals with microscopes, we must stare with awe at the marvels of nature. What you see on this page and also on the cover of this issue represents man's ability to penetrate the unseen.

These are spores and mycelium of *Helminthosporium sativum*. They were trapped in this photomicrograph taken by Dr. Houston B. Couch, professor and head of the department of plant pathology and physiology, Virginia Tech. Technically this disease of turf is also known as *Helminthosporium sorokinianum*. But commercial turfgrass managers know it better as leafspot.

This particular strain is perhaps the most destructive of the many Helminth strains. It most commonly affects Kentucky bluegrass, annual bluegrass, creeping bentgrass and creeping red fescues. It should not be confused with melting out, a characteristic identified by *Helminthosporium vagans*. Rather, leafspot actually blights the lamina (extended parts of the leaf). This causes a sudden collapse and drying of the leaf blade, after which the leaves blanch to a light straw color.

How fast does this occur. The photo you see here contains only a few isolated spores. In turf, millions of those spores can germinate within a very short time. During warm, humid weather, leaf blighting may occur with four or five days from the time of initial infection. It's been reported that leafspot is temperature related. The higher the temperature the greater the damage resulting from the disease.

Leafspot survives the winter as dormant mycelium (the chainlike structures in the photo) in infected plants and infested debris such as thatch. It initially develops on this dead tissue, but can just as easily develop on dead tissue of growing plants. According to Dr. Couch, on Kentucky bluegrass leaves, spores germinate in 30 to 40 minutes from the onset of optimum environmental conditions.

Carbohydrate levels as a factor of plant nutrition are not of importance in determining the proneness of Kentucky bluegrass to Helminthosporium leafspot. Tests have shown that the susceptibility of Kentucky bluegrass to leafspot increases with increasing rates of nitrogen fertilization.

How can you control leafspot? Cultural practices including fertilization and mowing should be practiced. Seed varieties exhibiting some resistance to leafspot have been developed; more will be coming. Fungicides are available to effectively control the spread of the disease. Among the many are: Dyrene, Daconil, Thiram, Zineb, Tersan LSR, Acti-Dione, and others.

Disease Control Planning Is Needed

On many golf courses disease control was a relatively simple business until irrigated fairways and the new systemic fungicides came along. Since then life has become more complicated every year.

In the good old days of dry fairways, drought damage overshadowed disease problems, thus, the greens and sometimes tees were a superintendent's only worry.

Irrigated fairways created 30-40 acres of potential "sick grass." A single fungicide application to fairways may involve an investment from $500 to as high as $6,000.

The older metallic fungicides such as the mercury to cadmium materials and even organic protectants such as

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