



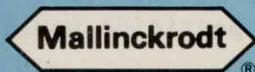
for
weed free turf
TREX-SAN

BRAND
BROADLEAF HERBICIDE

One TREX-SAN™ application in spring, and one in fall will actually control more than 35 different broadleaf weeds, while maximizing chemical safety to turf and ornamentals. TREX-SAN is a unique combination of 2,4-D, MCP P and DICAMBA. The synergism of this three-way combination gives you complete weed control with a cost-in-use that's less than that of most other broadleaf herbicides, when product and labor savings are considered!

TREX-SAN stops **BEDSTRAW, BLACKMEDIC, BUCKHORN, BURDOCK, CHICORY, CHICKWEED, CLOVER, DANDELION, DOCK, GROUND IVY, HENBIT, KNOTWEED, PLANTAINS, POISON IVY, POISON OAK, PURSLANE, RAGWEED, SHEEP-SORREL, SHEPHERD'S PURSE, SPEEDWELL, SPURGE, THISTLE, WILD CARROT, WILD GARLIC, WILD LETTUCE, WILD ONION, YARROW** and many more!

Order from your Mallinckrodt distributor today!



MALLINCKRODT CHEMICAL WORKS
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Jersey City • Los Angeles • Montreal





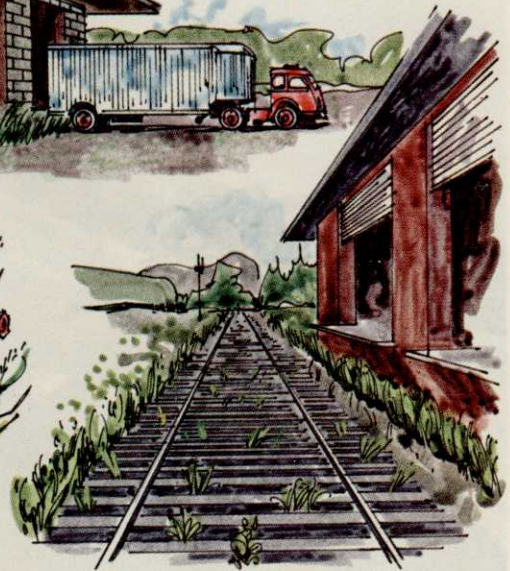
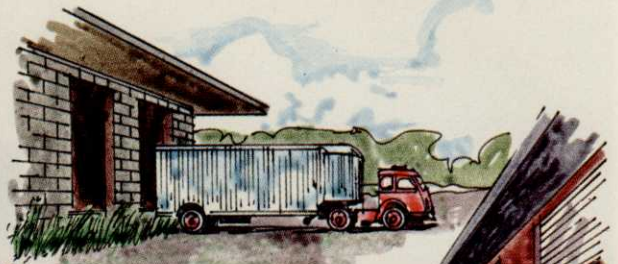
Secretary of Agriculture Earl L. Butz recently announced a technical breakthrough in the control of tree diseases such as Dutch elm disease and wilts of oak and maple. The technique combines a method of making the chemical benomyl, manufactured by the Du Pont Company, more soluble, with a means for rapidly injecting the chemical directly into the tree, rather than through soil. The Secretary said that research conducted by the Forest Service has indicated that this system not only has economic and physical advantages, but could largely avoid the environmental pollution hazards associated with other methods of chemical application.

ICI America Inc. has filed with the Federal Trade Commission a consent order calling for divestiture of company explosives and aerospace divisions within three years. Edward J. Goett, president of ICI America pointed out that the consent order was agreed to for settlement purposes only and is not an admission that any law has been violated. The Order calls for disposal of all properties of the Atlas explosives and aerospace divisions.

Secretary of the Interior Rogers C. B. Morton has designated one of the key persons in each of the five regional offices of the Interior's Fish and Wildlife Service to serve as environmental specialist. Each will be responsible for reporting on major projects that have potential for altering or degrading the environment, including activities such as oil well drilling, mining, highway construction and pesticide applications. Cited the President's Environmental Message of last month which placed heavy emphasis on protection of the Nation's wildlife heritage.

National Safety Council to provide complete information on compliance with the Occupational Safety and Health Act. One communications medium will be the NATIONAL SAFETY NEWS, the Council's monthly publication. March issue will be devoted to the subject. More than 4 million business establishments and almost 60 million workers are affected by the law. Of 9,300 inspections conducted by the Department of Labor during the first 6 months after the act went into effect, compliance officers determined that only about 20 percent were found to be in full compliance.

Senate committee hearings on the proposed Federal Environmental Pesticide Control Bill begin March 7. Latest change to the legislation will affect farmers and commercial agricultural chemical applicators. A new amendment now would allow the "certified applicator" (license holder) to control and supervise pesticide use without being physically present at the time. Before, the concern was that every person applying a restricted pesticide would be required to have a license.



Needless maintenance costs are growing all around you!

Eliminate unsightly weeds from your plant site and you'll slash needless operating costs. Weeds increase the rate of equipment deterioration, interfere with work crews, and create fire and safety hazards.

Two effective and economical ways of eliminating weeds are 1. a chemical herbicide program handled by a professional custom applicator or 2. formulated products on a do-it-yourself application plan.

Either way the cost to you is much smaller than hand cutting operations.

Just be sure to specify Du Pont HYVAR® bromacil weed killers. Applied in early spring, a single application of bromacil stops weeds from becoming costly problems throughout the year. You benefit by getting long-term residual control—for a fraction of the cost for mechanical or hand trimming methods.

Starting your program early is important. So call your nearby custom applicator or distributor now and ask for complete details on a Du Pont weed control program.

With any chemical, follow labeling instructions and warnings carefully.



DuPont weed and brush killers keep fences, storage yards around buildings, and other areas free of unwanted vegetation for months at low cost.



INDUSTRIAL HERBICIDES

HYVAR® X bromacil weed killer **HYVAR® X-L** bromacil weed killer **AMMATE® X** weed and brush killer

For More Details Circle (134) on Reply Card



Early spraying with agricultural chemicals on highway rights-of-ways can reduce maintenance costs later in the year. Here, maleic hydrazide, a growth regulator, is being sprayed on slopes to reduce vegetative growth. Highway crews find chemicals eliminate much tedious work.

Chemicals Reduce Maintenance Costs For Maryland Highways

REDUCED maintenance costs on expanding highway rights-of-ways are becoming a reality through the substitution of agricultural chemicals for costly labor. With the rapid expansion of today's modern highway systems, maintenance engineers and others are constantly looking for new ideas and ways to economize.

While mowing remains a principal method of highway vegetation management, highway engineers find that integrating chemicals into the maintenance plan often brings a better return on the maintenance dollar.

This is proving to be true with the Maryland State Highway Administration. Modern concepts in land management of ROW are being implemented thanks to the progressive thinking of the Bureau of Landscape Architecture headed by Charles R. Anderson, Bureau Chief and Richard C. Moffett, chief agronomist. He and Donald B. Cober, agronomist,

have developed and incorporated the use of chemicals into the maintenance plans of the state's seven districts encompassing nearly 5,200 miles of ROW.

"We don't advocate the use of any chemical unless it actually improves the appearance of the highway," says Moffett. "Agricultural chemicals are used to achieve economies in roadside maintenance. If we spray weeds and brush or make an application of a growth regulator, it is done to lower cost, increase safety and modernize an existing method of maintenance, either hand or mechanical."

Moffett's other reasons for using agricultural chemicals are indicative of his training in weed science and agronomy. "It is not necessary today to maintain all the highway acreage with mowing machines. Some of these areas can be eliminated from a regular maintenance schedule," he says. Areas that can have a reduced standard of maintenance are left to return to the vegetation of the adjacent area. Certain areas might be

more pleasing to the passing motorist if they are permitted to return to the natural vegetation, thus eliminating work for a labor force.

One of the first jobs that Moffett tackled in selling the concept of chemical vegetation control was select and train applicators. Few, if any, men had knowledge of chemicals. Most were equipment operators or on the promotional list for road foremen. Of these, Moffett picked those who were interested in advancing themselves and willing to enter a challenging new field.

"We started with fellows familiar with agricultural practices and trained them in equipment," he says. "But that didn't work out well. Now we take equipment operators and teach them about vegetation control with chemicals."

He brings these people in and conducts classes. "These men are taught to think," says Dick Moffett.

"I tell them that they are an elite group. They must know at all times
(continued on page 28)



Ag-Organics Department, Midland, Michigan 48640

Dursban insecticide. Bugs have another name for it.

They call it "The Unsurvivable One!" Because nothing wipes out chinch bugs, sod webworms and many other serious turf pests like DURSIBAN* insecticide. And DURSIBAN insecticide won't leach. It has excellent residual activity. It's safe, too, for all common turf grasses. And economical—you get more bugs for your buck, because so little goes a long long way. Ask your Dow distributor or your contract applicator for "The Unsurvivable One!"

*Trademark of The Dow Chemical Company



DOW CHEMICAL U.S.A.

Herbicides Keep Jacksonville Drainage Ditches Open

By C. C. HOLBROOK

Division Superintendent, Streets & Highways
City of Jacksonville, Florida

IMPROVED maintenance of over 4000 miles of drainage ditches with no increase in cost to the taxpayer has been the objective of a new weed control program initiated a year and a half ago by the City of Jacksonville. Now with two growing seasons behind us on our new program, we know we can accomplish this goal, without any increase in our manpower requirements.

It has not been a case of getting our men to work harder; it's really been a case of upgrading manpower skills and teaching our crews to be more effective. And the new in-

gredient we have introduced is the concept of safe chemical weed and brush control. Our basic material used to date has been Ammate X weed killer — a safe compound that can be applied to growing vegetation for seven or eight months out of the year in our area.

Where once we depended almost entirely on mechanical cutting or hand trimming of weeds and brush in our drainage ditches, now we have successfully switched to chemicals as a prime tool for keeping the ditches free of dense growth. This growth has always been a problem

for us. It contributes to flooding in wet, rainy weather, it harbors pests, rodents and snakes almost all year round. But we have learned that chemical weed and brush control can open a new dimension for us in economic ditch maintenance.

Jacksonville is recognized as the largest city in the U.S. with 850 square miles inside the city limits. A number of factors, aside from size, tend to complicate normal surface drainage problems. On the one hand, we have heavy annual rainfall — more than 53 inches in an average year — and at least part of this is likely to come in severe tropical storms. We have an unusually long growing season — the active period is about ten months. We have a high water table and essentially flat terrain. As a consequence the city has developed an extensive system of drainage ditches to prevent flooding and damage to grounds, buildings and household goods. Without the ditches, water damage would run into the millions of dollars — even in a moderately heavy storm.

(continued on page 42)



Clean main ditch has been kept free of brush by application of Ammate X two months after dragline operation. The ditch bottom, slopes and berm were sprayed. Dead vegetation has been removed allowing good water flow. Mowing will permit grasses to thrive on slopes and berms.



**“Get rid of
those weeds.”**

**“What are you
spraying?”**

Geigy herbicides can satisfy both sides.

It's tough being the man in the middle when you're armed only with excuses.

Geigy herbicides give you something better. Answers.

Answers to all kinds of weed and vegetation management problems.

Answers that should satisfy both sides: Those concerned about stopping weed pollution, and those concerned about what you're spraying.

How? After Geigy herbicides do their job, nature breaks them down. This helps you enhance the environment without injuring it. Which makes your job easier. And more satisfying.

You've got AAtrex[®], Princep[®], Atratul[®] and Pramitol[®] to choose from. In wettable powder, emulsifiable, pelleted and granular forms. Each is suitable

for various jobs and conditions. But all give long-term, effective performance. Singly or as the foundation for combinations of chemicals.

So if you'd like help in planning a vegetation management program that gives you answers, not excuses, please send this coupon to: The Industrial Weed Control Department, Geigy Agricultural Chemicals, Division of CIBA-GEIGY Corporation, Saw Mill River Road, Ardsley, New York 10502.

Name _____

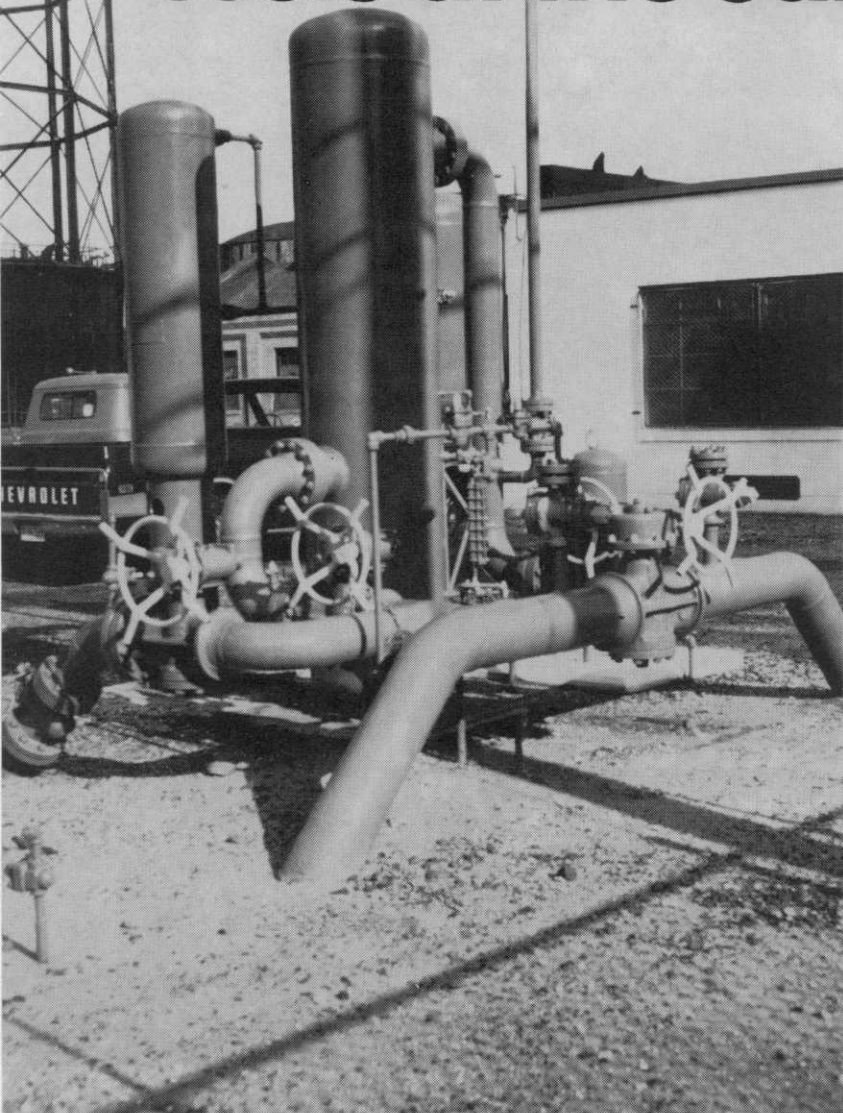
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Company _____

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How to control weeds and costs at the same time.



In industrial applications, as shown here, Tandex controls weeds along fence lines, parking areas, ditches, pipelines, sidings, storage areas, tank farms, and sign posts.



Weeds are expensive.

They are everything from a fire hazard to a haven for unfriendly rodents.

They can corrode a fence line.

Make people sick.

Destroy the drainage efficiency of a railroad's right-of-way.

Millions of man-hours and thousands of machines are fighting the war against weeds.

A very expensive war.

Weeds hit some harder than others

The weed onslaught is particularly damaging to such operations as railroads, utilities, oil fields and highways, as well as general industry.

This message is especially addressed to operations like these—it is a message about Tandex®, the soil sterilant that can drastically cut the cost of weed control programs.

Tandex—what it is and what it does:

Tandex is a urea-carbamate compound that's demonstrated exceptional control over weeds, grasses, vines, brush and the hard-to-kill woody species.

Tandex does its weed-killing job by being absorbed through plant roots.

Once applied, Tandex can last a whole season, or longer. Yet it's relatively non-hazardous to man, animals or fish.

A distinct advantage of Tandex is its stability in the soil. Put another way, this means it has minimum lateral movement—which reduces the danger to nearby trees and shrubs you *don't* want to lose.

Tandex can be sprayed or applied in dry granular form. It can also be combined with other herbicides for special control situations.

For more information, write to Industrial Chemicals Dept., Niagara Chemical Division, FMC Corporation, Middleport, New York 14105.

Tandex®

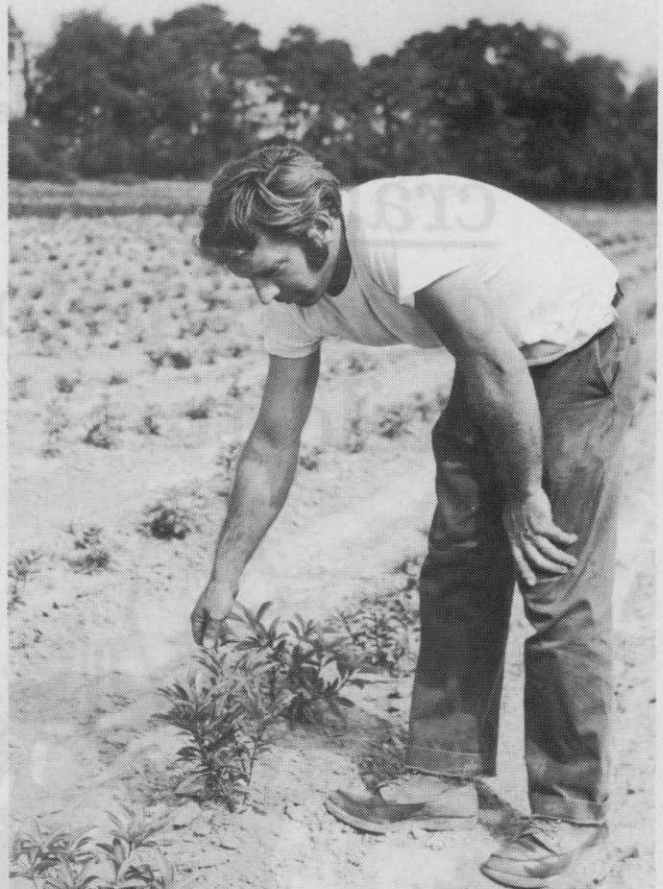
Herbicide

It gets to the root of weed problems

Industrial Chemicals Dept.,
Niagara Chemical Division,
Middleport, New York 14105
Tandex® is a registered trademark
of FMC Corporation.



Chemical Weed Control Cuts Labor Costs In Half



Fred Platt, manager of the Robert W. Baker Nursery at Simsbury, Conn., examines a plot in one of the fields that makes up the 300 acres nursery. He used Princep and Enide plus cultivation for weed control.

MANY NURSERIES have reduced their labor costs by 50 percent—or more—with chemical weed control. It's the no-hoe way to go.

That's the story at the Robert W. Baker Nursery, near Simsbury, Connecticut. Fred Platt, who's manager there, states that before making the switch to herbicides he had men hoeing around the junipers, yews, and pines on the nursery's 200 acres.

"Last year we had 30 men doing the hoeing and other field work. This year we have 13. We've cut costs more than half with chemical weed control," Platt says.

Thanks to modern herbicides, he had a field that needed no hoeing this past summer, while another field required only one light hoeing by 10 men in about two hours. Yet, Platt still believes in cultivation for new and established fields.

With labor and other operating costs rising, nurserymen like Fred Platt have turned to herbicides as a less expensive, more convenient

method of weed control—and one that is less injurious to nursery stock than the usual hand mechanical methods.

Platt has been using such chemicals as Eptam, Princep, Treflan and Enide. At the Baker-owned Atlantic Tree Service nearby, Princep and paraquat are used to control weeds between the 10 ft. rows of several varieties of large shade trees.

"We've used Princep for five years, and the only problems we've experienced were the result of our own mistakes—improper calibration of equipment or miscalculation of the weather. It does a great job of keeping broadleaf weeds out, and we don't put it on heavy," Platt explained. He goes light on application to insure against plant injury.

At the Baker Nursery they use about two tons of the granular chemical and 100 pounds of the wettable powder a year. "We're getting great results with the granules. If

you get them on at the right time, they work," he said.

Platt has gone to fall applications because spring land conditions often hinder field work. An application of a combination of two herbicides last November led to the no-hoe condition on one field of established nursery stock.

"If I continue to get such results this next year, we won't apply in the spring except for new fields," Platt said. The granules need moisture to break them down, so Platt sometimes applies over snow and gets good weed control, where a summer application without rain "is useless."

Dr. John Ahrens, of the Connecticut Agricultural Experiment Station, Windsor, sees a greater shift to fall applications with little spring use of the herbicides.

"Several herbicides or herbicide combinations can be safely applied in the fall to control weeds in nur-

(continued on page 26)

BANDANE[®]

crabgrass

control helps

build turf

Equally important, Bandane does not injure your established turf or disturb other grass stands. Extensive tests and years of experience by homeowners and institutions have proved the high, selective, pre-emergence efficiency of Bandane on lawns without thinning the turf or inhibiting rhizome development. This allows turf to thicken and develop its own built-in crabgrass resistance.

Bandane is the only pre-emergence crabgrass chemical (within the same performance range) that may safely be applied to established turf at the *same time* as over seeding.

You don't have to add a soil insecticide when you use Bandane. Bandane controls the common soil insects that normally weaken turf. Nor do you need to be overly concerned about skin irritation or injury to animals or humans. Bandane has a very low mammalian toxicity rating.

Bandane comes in 50-lb. bags of 15% granules. It can be applied with any standard granular application equipment.

