KEEP GRASS GREEN

WITH

V-C 13

KILLS NEMATODES AND CHINCH BUGS

V-C 13 is the ideal liquid product to use to protect turf from nematodes and chinch bugs. Nematodes are tiny, thread-like worms that attack grass roots and stunt or ruin growth. Fertilizer, water and good care are wasted when nematodes wreck grass roots. Chinch bugs are death on green grass. They actually suck the life out of grass stems. The grass turns yellow and then brown, as it dies. V-C 13 is a practical, easy way to destroy nematodes and chinch bugs. It provides powerful, long-lasting control of these destructive pests. And V-C 13 is safer to use, lower in toxicity than chlorinated hydrocarbon preparations. It's easy to keep grass green with V-C 13. Get it from your supplier or write to the address below for full information.

V-C Chemical Company
A DIVISION OF SOCNY MOBIL OIL COMPANY, INC.
401 East Main Street • Richmond, Virginia 23208 • Phone: 648-011
Control hard-to-kill perennial and annual weeds and grasses with new Hyvar® X-WS bromacil weed killer. Vegetation in the foreground and to the left above was effectively controlled with one application of "Hyvar" X-WS; area in right background was not treated. Maintenance cost is reduced by using long-lasting, effective "Hyvar" X-WS.

Easy-to-use "Hyvar" X-WS controlled weeds and grasses around the fence line. Once stirred into solution "Hyvar" X-WS doesn’t require additional mixing or agitation. It’s easily applied with simple equipment such as knapsack type sprayers. Expensive hand clipping is eliminated when you use "Hyvar" X-WS.

Fire-hazardous vegetation was controlled with Hyvar® X bromacil weed killer in the lumber yard area above. "Hyvar" X is a wettable powder formula for use in sprayers equipped with adequate agitation. After application "Hyvar" X gives the same effective control as new "Hyvar" X-WS. All Du Pont weed killers are non-volatile, non-flammable, non-corrosive and low in toxicity to man and animals when used as directed.

Moisture-holding vegetation that tends to rust expensive equipment was controlled here with Karmex® diuron weed killer. "Karmex" is a versatile weed killer that gives long-lasting economical control of unwanted vegetation. By removing undesirable weeds and grasses in storage and other areas with "Karmex," employees’ working conditions are improved and tool and material losses are decreased.

WEEDS!
A menace to everyone/profits for you

There’s money in weeds, if you’re on the right side of them. Du Pont weed killers make custom weed control jobs easy, effective and profitable for you. Check the typical problems pictured above. Chances are you’ll see similar ones within a mile of where you’re standing, and that you can solve them with Du Pont weed killers.

In addition to weed control, Du Pont Ammate® X weed and brush killer and Dybar® fenuron weed and brush killer offer your customers effective brush control. "Ammate" X is non-volatile... brush near crops or desirable plants may be sprayed without harmful fume damage when it’s used as directed. On light-to-medium stands of brush, easy-to-use pellets of "Dybar," applied right from the package, do an effective job. For complete information, mail the coupon to Du Pont today.

On all chemicals, follow labeling instructions and warnings carefully.

WEED & BRUSH KILLERS

Du Pont—Industrial and Biochemicals Department
Room 2311
Wilmington, Delaware 19898

Please send me more information on Du Pont Weed and Brush Killers.

Name ____________________________
Company ____________________________
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Better Things for Better Living... through Chemistry
Ethion kills chinch bugs... ends destruction to lawns, parks and fairways. Ounce-for-ounce no pesticide outperforms it. Tests show just one application gives outstanding results and provides total control. And Ethion is easy-to-use, safe, economical, long lasting. U.S.D.A.-approved to curb sod webworms, halt mites in Bermuda grass, too. Write or call your supplier today for details.
KILL CRABGRASS BEFORE YOU SEE IT!

1. kills crabgrass
2. feeds grass
3. kills insects

Triple-acting to end lawn headaches in one easy application. Kills crabgrass when it sprouts. Contains Dacthal for pre-emergence control. Packed with fast-acting, long-lasting nitrogen to green-up grass in a hurry and keep it that way. Triple-acting Nutro Crabgrass Killer kills insects, too... eliminates chiggers, ants, grubs and other pests.

A product of SMITH-DOUGLASS
We had a telephone call recently from a contract applicator in Midland, Michigan, who was disturbed about a proposed city ordinance, apparently on the verge of enactment, which would:

(1) permit spraying elm trees for control of Dutch elm disease “with effective pesticides such as DDT and methoxychlor” only during the dormant period, which was in turn defined as “that period in the autumn when the elm tree has shed at least 95% of its leaves until March 1st of the following year;”

(2) permit spraying for any purpose during all other times provided that sprays contain no DDT, TDE, methoxychlor, chlordane, dieldrin, toxaphene, aldrin, BHC, endrin, or lindane.

While it is probable that the legislators who were about to pass the law meant well, it seems to us such legislation is not in order until specific proof of harm from summer spraying can be demonstrated. As most vegetation maintenance professionals know well, these chemicals are, and have been, under close scrutiny by the U.S. Department of Agriculture, but there has been no label change which would prohibit use of the chemicals (in accordance with the label itself) in the period in question. The applicator who called us was naturally upset, since, as he pointed out, frequently because of weather or other reasons, the applicator must spray after March 1.

Fortunately, the Midland City Council, we were informed, postponed its decision on the bill so that the proposition could be investigated further before prohibiting the chemicals.

The decision to postpone action was, we understand, partly a result of the efforts of the applicator who phoned us, requesting our opinion by wire for presentation to the Council. He also told us he had obtained statements from other organizations which hoped the Midland City Fathers would hold off their vote until methodical, unimpassioned investigation could be carried out. This action by an industryman is commendable, and we urge our other readers to be sure to speak up should local authorities threaten to ban, without thoroughly understanding the facts, the chemicals which are used frequently for contract spraying.

Any action other than postponement on the part of the Council would have been unfair to Midland, and the residents there who have a right to the most effective safe control of vegetation pests currently available.
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When Writing to Advertisers Please Mention WEEDS TREES AND TURF
RENOVATION is a term used by turfgrass managers to describe a process or program of renewal of a turfgrass area. Generally speaking, renovation can be classified into three categories. These categories simply represent degrees of intensity of renovation.

1. **Complete renovation** is performed when a turfgrass area has deteriorated so badly that the existing vegetation is not worth saving.

2. **Fall renovation** helps turfgrass that needs rejuvenation after a season’s intensive use. Such areas still have reasonably good turf but need to be renovated to insure continued growth.

3. The third form of renovation is really **management**. This type of renovation is set up on a continuing basis, keeping up with the problems as they occur.

Before we get into a discussion of these three forms, we should analyze why renovation is necessary at all.

Turfgrass areas are subjected to many forces which are contrary to normal grass growth. Usually, turfgrass plots deteriorate because of the lack of a complete maintenance program. Everything must be in balance. Adverse weather, disease, and overuse are also factors which contribute to turfgrass deterioration. One of the major factors adversely affecting turf is soil compaction. We pound and compact the soil with heavy mowing equipment. We ride over it and we stomp the soil with our feet. We use the areas when the ground is wet, and we puddle the soil. These compacting forces destroy soil structure, reducing it to a solid mass. Roots cannot grow in a soil unless there are spaces for them to move through. Water cannot penetrate a compacted soil. Fertilizer remains on the surface and is washed away.

When soils are compacted under turfgrass areas, the root system becomes shallow, and the plants become weak. Weeds gradually take over. Many weeds are by nature more aggressive than turfgrasses and can grow in a compacted soil. However, even weeds cannot grow when soil becomes severely compacted. When weeds are present, they should be looked upon as indication that something is basically wrong. Getting rid of the weeds is not a solution to the problem, unless the cause itself is corrected.

Generally speaking, there are five basic reasons why a turfgrass area deteriorates and is invaded by weeds. They are:

1. the soil; 2. the grass; 3. the nutrition; 4. the water; 5. the management program itself.

The soil must be open and porous. The grass should be the right one for the climatic area and use. The nutrition should be adequate to support the crop. The water should be adequate to sustain plant requirements, neither too much nor too little. The management program should be properly planned to maintain the turf at all times.

Any one or a combination of these factors that are not right will weaken a stand of turfgrasses. Therefore, before renovation is begun, turf managers must seek out the basic causes of deterioration. Only after this has been done should a program of renovation be initiated.

**Complete Renovation**

When a turfgrass stand is in extremely poor condition and what little turf that is there is not worth saving, then a complete renovation program should be considered. Sodium arsenite or an equivalent material is applied about one week prior to aerification. Usual rate of sodium arsenite is about 35 pounds per acre. This material will kill the existing vegetation. A week later, the aerator, equipped with 1-inch open spoons, is set at full depth, and the area is aerified at least 10 times. Each time the plot should be aerified from a different direction. Aerification will loosen the soil 3 to 4 inches deep. After aerification, the required amount of fertilizer (and lime if needed) is applied. This is followed by dragging with a heavy flexible-
this is highly desirable. With good planning, these procedures can be worked into a regular routine. True, these operations require more manpower, but when carefully analyzed, we usually find that we have spread this manpower requirement throughout the growing season, rather than requiring a concentrated effort at one time.

Regardless of the type of renovation you choose, always remember to check the five points we discussed earlier in this article. When renovation is necessary, you can be sure that something went wrong. Was the soil compacted or not properly drained? Was it the right grass for your region and use? Was nutrition adequate for the grass? Was the area continually over-watered? Was the turf managed properly, with correct mowing height and frequency of cut?

Too Much Grass?

If the management program is successful, then you must be prepared for another problem. This problem is too much grass. Well-managed turfgrass can produce an excessive amount of top growth which develops into what is commonly called thatch. This material consists of clippings, dead leaves of grass plants, and stems. As this material accumulates on the surface of the ground and under the living grass blades, it forms a thatch layer. This layer can effectively prevent water from penetrating to the soil; it filters out fertilizer and harbors disease organisms. When thatch accumulates, it must be removed or decomposed. A regular program of aerification will bring up soil cores, which when crumbled act as a top dressing. When this soil is in intimate contact with accumulated thatch, it helps it to decompose. Vertical mowers are also used to remove thatch physically. These machines, unlike conventional mowers, cut vertically into the turf, rapidly removing the dead material.

On turfgrass plots where renovation is needed, vertical mowing is necessary if excess thatch is present. For complete renovation, the dead turf, after chemical treatment, is completely removed by this process, which in turn is followed with aerification.

For fall renovation, the vertical blades are set two to three inches apart to remove some of the accumulated thatch. Vertical mowing in a management program is effected periodically, while grass is actively growing, to control thatch as it forms.

Modern chemicals and equipment have made renovation a great deal easier than it was in the past. This operation can now be done with reasonable assurance of success. Modern turfgrass management, obviously, is a science. Anyone charged with this responsibility should become familiar with each new technique in order to produce top quality turf.
Delegates to the 20th North Central Weed Control Conference at Michigan State University were introduced to the first really new crabgrass control compound to be developed since the advent of organic preemergence materials. Michigan State hosted the annual event at its Kellogg Center for Continuing Education on the East Lansing campus Dec. 14-16.

The race is on, too, for a no-drift weed and brush control chemical which can be applied safely from the air, delegates learned. Several companies previewed or reviewed their wares which range from heavy materials applied with special equipment to liquids which solidify on contact with plants.

Techniques for industrial and rights-of-way weed and brush control were freely aired. Conferences were pelted time and again with the idea that control efforts must be programmed and planned well in advance for best results. There is no cure-all chemical which will control all weeds in all climates, during all seasons, under any conceivable conditions.

Year by year weed conference agendas have included more and more nonagricultural weed control techniques. The volume of commercial pursuits was evident at this 20th NCWCC meeting since the programmers rearranged the schedule so that current meetings could be easily chosen for those not involved in agriculture, and the 329 delegates budgeted their time and managed to make all sessions in their particular disciplines.

Product Previews

Perhaps the most exciting session of the first day's program was the "New Products from Industry" presentation, if one can count on the reaction of delegates as an indicator.

A product which especially stirred conference was DuPont's new selective preemergence herbicide, Tupersan. Mark B. Weed of DuPont's Experiment Station described the soon-to-be-marketed product.

"An outstanding feature of Tupersan's active ingredient, 1-(2-methylcyclohexyl)-3-phenylurea, is its selective ability to eliminate certain annual seedling grasses from stands of other grasses," Weed began.

He showed slides which illustrated that Tupersan had selectively removed smooth and hairy crabgrass from Kentucky bluegrass plots. Uniquely, Tupersan is applied at the time of seeding, when a new bluegrass lawn is planted.

"Bluegrass, red fescue, and bentgrass seeds have germinated and grown in soil containing eight times the recommended dose for annual grass control," Weed explained. In addition to the crabgrasses, Tupersan is claimed to remove foxtails, downy brome, barnyard grass, witchgrass, and nimblewill from a number of cereal grains and from turf, when applied before weed or grass germination at planting time.

A 50% wettable powder formulation, called Tupersan Weed Killer, will be sold early in '65. Among other products of interest to WTT readers are Maintain and Hibor, just released by U. S. Borax and Chemical Corp., Los Angeles, Calif. J. T. Hallett of U. S. Borax Research introduced the products.

"Maintain is an emulsifiable compound containing Tritac, bromacil, and a low-volatile 2,4-D ester," Hallett began. "It is designed to control grasses, annual broadleaves, deep-rooted perennials, and vine species around industrial sites for extended periods." Maintain is claimed to offer quick knockdown of broadleaf weeds and season-plus control of hard-to-kill species.

Hallett also described Hibor, Borax's new ready-to-spray herbicide designed primarily for railroad use. Hibor consists of a combination of sodium chlorate, sodium metaborate, and bromacil. Again, Hallett indicated the combination would give rapid knockdown and a significant residual. "Hibor is sold in tank-car quantities and is a useful herbicide (Continued on page 20)