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New exclusive AMCHEM METER-MISER™ automatically applies the exact amount of herbicide for maximum vegetation control.

No measuring — Just add contents of Meter-Miser herbicide container to water in 5 gallon applicator tank. Machine applies right amount of spray on every square foot — when pushed at normal walking speed.

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Lightweight and mobile — Pushes easier than lawn mower. No hose to drag, no weight to carry. One tankful covers 4,840 square feet. Full 36-inch swath. Special accessory 18-inch applicator disc attachment available for 72-inch swath or for through fence spraying.

Low cost operation — No waste... Save money with liquid herbicides. Maintenance free... corrosion-proof materials.

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A. FENAMINE herbicide—top kills growing vegetation and prevents regrowth of germinating weed and grass seed for a full season or longer. Kills Russian thistle, puncture vine and kochia.

B. SUPER-D WEEDONE® — Latest and most effective combination of herbicides for broadleaf weed control on turf.

C. AMIZINE herbicide — Full season or longer control of germinating weeds and grasses. Top kill growing vegetation plus residual action in soil. Apply any time during growing season.

Meter-Miser herbicide formulations are fast-acting—kill tops and roots. Cleaner to handle than granules, or liquid concentrates for high pressure applications. Costs up to 50% less than dry-applied formulations. Hundreds of uses in grounds maintenance — substations, parking lots, storage areas, fencelines, driveways, turf, etc.
Now that we're using Copper Sulfate, our water problems are very few

reports Mr. John Courchene, Director of Water Quality for the Seattle Water Department

Seattle uses copper sulfate to treat not only the 725 acres but also the 7 mile shoreline of its primary storage and sedimentation reservoir. “Our primary objection to using other algae control chemicals is the difficulty of application,” Mr. Courchene says. “When you total the cost of chemical purchase and application, copper sulfate is less expensive.”

Seattle has been using copper sulfate for water treatment since 1940. At that time, they used approximately 20,000 pounds per year; in 1963, they used 70,000 pounds; in 1964—92,000 pounds. Mr Courchene says, “We usually treat the entire lake in fall, winter and spring. During the other months we generally make shoreline applications. At one time we had a problem with Isoetes, an aquatic rooted plant which rises to the surface and drifts over the lake. Before using copper sulfate we had to rake the shoreline, which proved expensive. Now that we apply copper sulfate from winter through spring, this problem is virtually eliminated.”

While water can be treated by simply dragging a burlap sack of copper sulfate crystals behind a rowboat, labor costs frequently suggest more efficient procedures. The Seattle Water Department has designed and built two specialized pieces of distributing equipment. For the treatment of the lake itself, a large, bronze, mesh-screened hopper was constructed. Copper sulfate is fed into the submerged screen hopper which is mounted on the stern of a power launch. The boat is steered over parallel courses approximately 100 feet apart. Prop wash spreads the copper solution out over an area approximately 100 feet wide. For shoreline application, a portable blower is mounted on a truck and a belt of copper sulfate 30 to 50 feet wide is blown out over the shoreline from the truck as it is slowly driven along the top of a dike that encircles the lake.

The Seattle reservoir, when full, holds about 11 billion gallons of water, of which about 4.6 billion gallons are available to intake. “We use the available water figure when determining how much water we wish to treat. The amount of copper sulfate is determined by the quantity of water, water temperature and number and types of algae present. Both shallow and deep samples are collected each week from six sampling stations, as well as from the reservoir’s source of supply and its distribution system. There is no industrial contamination and, now that we’re using copper sulfate our water problems are very few.”

For assistance on your water problems, Phelps Dodge Refining Corporation—one of the world’s major producers of copper sulfate—can supply the following: Information on systems and equipment developed and used by water works and commercial applicators; literature, containing data and chemical formulas; technical assistance in algae and water weed control. Write: Phelps Dodge Refining Corporation Information Service, 300 Park Avenue, New York, N. Y. 10022.
Save your horse, Paul... AZAK® was used!

Apply Azak pre-emergence herbicide to established turf while crabgrass seeds still are sleeping, and not even Paul Revere could arouse them. Azak penetrates the seeds when germination begins, and stops initial growth. Non-leaching, one application lasts through the germination period.

Azak is economical. A 12.5-lb. bag of wettable powder covers one acre, or 43,560 sq. ft. Azak is safe for established lawn and other ornamental turf. And, Azak is low in toxicity to warm-blooded animals and is practically odorless.

Produced as an 80% wettable powder (Azak 80-WP), it can be sprayed in conventional equipment. Azak is formulated as a granular product for use in mechanical spreaders. It is also combined with other pesticides and fertilizers for multi-purpose products.

AND USE NITROFORM® TO FEED TURF

Nitroform® slow-release ureaform feeds turf and solves storage problems, too. Unlike low-analysis organic fertilizers, Nitroform contains 38% nitrogen. Stored in the soil, it doesn't leach away, but goes to work when turf and plants need nourishment. Nitroform is available as granular Blue Chip® for conventional spreading, and as Powder Blue® for spray application. And, it won't burn when applied as recommended.

Hercules Turf and Horticultural Products

For further information write: Agricultural Chemicals, Synthetics Dept., Hercules Powder Company, Wilmington, Del. 19899, or contact these sales offices: Boston, Massachusetts • Brownsville, Texas • Chicago (Oak Brook), Illinois • Dallas, Texas • Fresno, California • Greenville, Mississippi • Louisiana • Missouri • Montgomery, Alabama • Orlando, Florida • Phoenix, Arizona • Raleigh, North Carolina • San Francisco, California • Vancouver, Washington.
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WEEDS TREES AND TURF
FORMERLY WEEDS AND TURF

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Minimum Prices, Too?

Legislation recently passed by Congress, which became effective January 20th, will have its effect on contract applicators. Under the new law, contractors must also abide by minimum wage, fringe benefit, and working conditions rules set by the Secretary of Labor.

Any CA now servicing federal property, or contracting to do vegetation maintenance and control work at new federal building sites, will fall into this category. This is true, however, only for contracts in excess of $2,500.

Wage scales will likely be determined by the highest union rate in the area, or lacking that, by the Federal Minimum Wage Law.

Fringe benefits will be set by the Secretary of Labor. Working conditions cannot be dangerous to either the health or safety of employees.

This law also states that contractors must post a notice of compensation required under the law at work sites.

Failure to abide by the wage or fringe benefit laws will make a contractor liable for all payments to employees. Contracting agencies will have the power to either withhold funds due the CA for payment to the employee, or be able to cancel any contract. The government will also be able to bring suit against contractors to recover remaining amounts of underpayment.

The National Labor Relations Board and the Secretary of Labor will establish provisions which the new Service Contract Act requires. These requirements must be followed and clearly outlined in all new contracts.

Many contract applicators fall under the jurisdiction of the NLRB, and are already required to pay the Federal Minimum Wage. Generally, the NLRB will cover you if you buy or sell goods in excess of $50,000 per year out of state.

Add these newest requirements for doing business to the higher Social Security taxes, as a result of Medicare, which became effective last month, to the detail required by increased federal and state pesticide use and licensing regulations, and you may wonder when you'll have any time and money to actually get out to do any of the vegetation work all these laws apply to. In addition, of course, the added expense of doing business is either going to come out of profits (if there are any left), or prices must be raised. And yet price cutting still prevails. Wonder if they'll ever get around to establishing minimum prices? But . . . .

that's against the law, too!

WEEDS TREES AND TURF is the national monthly magazine of urban/industrial vegetation maintenance, including turf management, weed and brush control, and tree care. Readers include "contract applicators," arborists, nurserymen, and supervisory personnel with highway departments, railways, utilities, golf courses, and similar areas where vegetation must be enhanced or controlled. While the editors welcome contributions by qualified freelance writers, unsolicited manuscripts, unaccompanied by stamped, self-addressed envelopes, cannot be returned.
Here's how easy it is to get long-lasting control of nematodes and soil insects that ruin turf

• A single spray of Nemagon® Soil Fumigant kills root-choking nematodes all season.
• A single application of dieldrin insecticide controls root-pruning insects for years.

The facts that follow quickly explain the essential value of controlling soil pests with Nemagon and dieldrin; their flexibility and ease of use; why the root protection they provide far outweighs the cost of treatment.

Nematode control with Nemagon
Nemagon works as a pre-planting application or on established turf. It fumigates the root zone to kill the nematodes (microscopic worms, not insects) that can infest soil in fantastic numbers. All damaging species are controlled and reinfection will normally not occur for a year or more.

Without the root knots and lesions caused by nematodes, water and soil nutrients can pass freely through roots. Turf can respond fully to fertilizer and irrigation. Risk of stunting, poor appearance and dead patches is eliminated. So is the risk of a reseeding or resodding.

Nemagon is easily drenched into soil following a spray application. There’s no need for special equipment and grass isn’t disturbed. Easy-to-follow directions are printed on every package.

Soil insect control with dieldrin
Dieldrin controls all species of grubs, including the larvae of Japanese and June beetles. It can be used ahead of time to prevent damage from ever starting. Or you can apply dieldrin to stop an infestation when discolored turf indicates that soil insects are pruning roots and limiting the crop’s access to fertilizer and water.

Dieldrin can be applied any time after soil warms up. Effectiveness usually lasts 3 to 5 years. Control is so thorough that grub-eating moles and rodents can’t find food in the treated area and leave.

Dieldrin can be put on in fertilizer, or in granular form. Liquid concentrates and wettable powders are available for spray use and drenching.

Full details on using dieldrin for control of soil or surface insects are on every package label.

Nemagon and dieldrin are both available as branded products of well-known manufacturers and sold where you normally buy insecticides, and other turf maintenance products.

For more information, write Shell Chemical Company, Agricultural Chemicals Division, 110 West 51st St., New York, New York 10020.

Follow label directions carefully when using any pesticide.
Tricks of the Tree Trade

The tree trade has more than its share of "tricks." By tricks we refer to things more of a physical nature than to the scientific knowledge which every man engaged in tree care should have.

Country Boys: Instinctive Climbers

We prefer country boys, though the breed has about run out. They climb as if it were instinct. It is said that a veteran woodsman is recognized by the way he uses his feet. He never puts a foot down without knowing where he is putting it. He is not conscious of watching his feet; it's instinctive. So these good climbers use both their hands and feet.

Secondly, country boys know how to use a saw and fell a tree. The same sure-footed principles are applied to removal of a limb or treetop. And, of greater importance, good country climbers know trees and the qualities of their wood in all stages of growth from sapling to giant when they are green or dead.

Use Tree Virtues

Quality of wood, as it relates to strength characteristics, is of prime importance in tree operations and safety maintenance.

For example, never trust a dead pecan limb as a foothold when climbing, regardless of its size. Even though pecan limbs are very strong when alive and green, dead pecan limbs snap and break easily and offer very little, if any, support. Galls and hollows, and other faults affect the strength of wood in many trees. The criterion then is: know your tree before you climb it; use its virtues; avoid its hazards.

Tree Hinge Cushions Fall

The "hinge cut" is the most useful trick available to tree workers. Though widely used, there are still many good operators who do not understand and use it fully. A tree worker's "hinge" is the bark and sapwood of the tree, and its strength varies with every tree as well as with its size and age.

Use of the hinge begins with tree felling. A tree or limb will swing on a hinge just as a gate swings on a hinge, the only difference being that a gate swings horizontally and a tree swings vertically when cut. A hinge is
formed when a single, incomplete cut is made in a tree or limb.

The traditional method of tree felling is a "fall cut"; a cut made on the "fell" side of the tree a little below a cut made on the opposite side. The fall cut helps to throw and direct the tree's fall. When the fall cut is used, a tree falls free with the impact of all its weight. This can be hard on

the customer's lawn, walk, or driveway.

With a hinge, a fairly large tree can be laid down like a lamb. The ease with which a tree or limb may be leveled to the ground by a hinge, depends upon the tree and tensile strength of its wood. Hinge cuts should not be tried on trees which have been dead so long they are rotten or "bone brittle." Green hickory, pecan, American or Chinese elm, hackberry, maple, and oaks, one inch or more in diameter, can be pulled over on a hinge and laid down without damage even to shrubs or flowers. Any

tree, except a brittle dead tree, even a giant tree can be felled on a hinge with only a slight impact if a fall cut is used.

Limbs Hinged And Cut For Pinpoint Landing

Perhaps the most useful phase of hinging is in the daily job of limb removal over buildings, power lines, and other obstacles. Frequently we have taken down huge limbs piece by piece, or have swung them 45 degrees to the side before they were lowered. We use the hinge if the tree is not too brittle and will hinge.

To rig a limb for hinge cutting, we put a guy rope through a high crotch in the treetop and tie one end of the rope as far out as possible on the limb to be cut. The other end is anchored to some solid object (stake, tree trunk, or another worker). The

weight of the limb is kept on the rope until we are ready to lower it, and we prevent breaking the hinge until the limb is removed completely. After the "hinge cut" is made and while the limb, still attached by its bark hinge, hangs supported by the guy rope, a snatch rope is used to swing the limb to a position where it can be lowered. Then the limb is lowered with tender guidance and the hinge is finally cut. The whole side of a huge tree often can be cleared by one rigging. Climbers can maneuver limbs
**GARDEN TOOLS**

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SNAP-CUT No. 1149 $7.95

New, light weight, heavy duty anvil type lopping shears. Alloy metal handles. 100% guaranteed. Cuts limbs up to 1 1/4" diameter.

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The original anvil type pruner. A terrific tool. Cuts up to 3/4" branches. All parts replaceable.

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8 foot $5.95
10 foot $6.50
12 foot $6.95

TITIAN LOPPING SHEARS

No. 528 — $8.98

Double cut "drawn in" cutting action. All forged, improved bolt and nut joint. Through tang handles.

NEW, FINEST EVER PRUNING SAWs

No. 1922 22" blade—$6.65

Fastest, easiest cutting saws for orchard use. Swedish steel blades. Complete line of 6 models covering all requirements up to chain saw work.

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---

Ropes tied to trimmed branches, one near the cut (C) end and another near the tip, allow tree surgeons to "cradle" a limb's fall so it will land without harm to customer's property, in this case a flower bed.

suspended by a rope, with a slight push or tilt, to the most exact landing position. Thus workers and such obstacles as buildings, lines, or flowers are protected.

**Undercut To Avoid Bark Strips**

Tree surgeons employ the “undercut” to avoid stripping bark from beneath a limb. Hinge cuts always strip and are used where a lower cut is to be made or where stripping does not matter such as when the entire tree is to be removed. Not only is the undercut a trick to avoid bark stripping, it is a method we use when we want a limb to fall “dead” or straight down without swinging; often called a dead fall cut. Both the butt and leafy ends of limbs hit the ground at the same time. Thus, limbs do not hit on the springy end and jump into a window glass or pounce on shrubbery.

The undercut is used also in the “jump cut” to avoid stripping. An undercut is made as deeply as possible on the underside of a limb about one inch

Nylon rope (N) stretch qualities are used for those big bruisers that lean over structures, fences or lines. A portable pulley system hooked up to a winchlike "come-along" (C) is used by the surgeon to hoist lumbering trees on their hinge (H) in a safe direction away from buildings.