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Old Technique ... 
New Look

By RICHARD D. LOCKE
E.I. DuPont de Nemours, Inc.

Dateline, Missouri ... Better brush control on distribution lines with savings in use of critical oil and economy in line maintenance ... this is the big news that is emerging from the experience of electric co-ops. Maintenance engineers in this state have been fine-tuning their brush programs to get maximum return out of maintenance budgets.

A new look has been taken at a
familiar technique — basal stem application of herbicides to unwanted brush and small trees growing under lines on the right-of-way. The new look includes full use of an outside contractor and expanded use of Hyvar X-L bromacil weed killer, a water-soluble compound that needs no oil yet provides needed, durable control of a wide range of species. This compound can be used without harm to wildlife and the environment, but in addition to energy savings, it provides for an applicator improvement since there is no messy oil to permeate clothing or spray crews.

There are more than 60 electric co-ops in Missouri, but the highlights of their brush experience can be summarized through the report of a southeastern Missouri cooperative.

“Brush control has been our biggest maintenance problem,” notes John B. Barker of the Ozark Border Electric Co-op in Poplar Bluff, Mo. “We have been searching for new and better ways to control root regeneration on our rights-of-way. We have needed an economical, effective program and ideally one that could be safely handled by an outside applicator, whose specialists would be up to date on new compounds. This would avoid troubles with various herbicide-oil combinations.”

Right-of-way maintenance for Missouri electric co-ops is a specialty of Townsend Tree Service which has a regional base in Fredericktown, Mo., and which keeps thirty-five crew on the road most of the year, working on co-op rights-of-way. Townsend offers a variety of mechanical and chemical services to help keep brush and tree growth under control. The firm works on contract to many of the Missouri co-ops, and over the past two decades has helped to bring new brush control knowledge to most of the co-ops in the state.

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in our handling of tree and brush control with the electric co-ops," comments Jay Cheatham, area supervisor and salesman for Townsend Tree. "We start carefully with a new chemical like Hyvar X-L. In 1971 we began to use it on some fence rows, under co-op distribution lines where there were crops nearby, yet where we could be sure to avoid any washing. The control was excellent when we used the basal stem application technique. We have avoided regrowth."

The same approach has been followed by John Barker's crews at Ozark Electric: "We have used X-L for spot spraying of oak, willows and elm — our quick regrowth species. We have also used it on some line spraying. In 1973 we were in our second year of experience. How to use any chemical is a vital element in brush control. You must learn what it will do before expanding use," concludes Barker, who has 28 years of service with Ozark.

The basal stem treatment season is somewhat longer than that for foliage treatment. Townsend crews have found they can spray for as much as eight months out of the year. Spraying is handled by any member of a Townsend four-man crew. But a foreman in this crew is likely to have up to 15 years experience, and Townsend people are constantly getting added training, oriented to safety and environmental concerns.

During trimming periods, crews are cautioned about the application of Hyvar X-L to areas containing roots of valuable trees that are growing adjacent to the right-of-way. This product is a potent tree killer and injury may result if crews do not exercise caution.

During the first year with the bromacil compound, one Townsend crew did most of the basal stem spraying. Standard practice has been to mix 3 gallons in 100 gallons of water and then apply one to two fluid ounces per tree stem that is 2 to 4 inches in basal diameter. The base of the tree should be wet to runoff. Last year, three crews were using it steadily, on distribution lines in Missouri, with some spot spraying by others. By next year Jay Cheatham hopes to extend the use of this material, as he develops added knowledge of its characteristics.

"We should get longer, more economical control plus some energy savings as we learn more about X-L," says Cheatham. "The basal spray technique looks very promising for precision control of troublesome trees and brush, under fence-row distribution lines. We have had no re-sprouts on trees treated in 1971, indicating good control of roots of species that are always stimulated by mechanical cutting.

Using the basal stem technique, a single tree and brush crew can apply up to 400 gallons in a day, along electric distribution lines, according to Cheatham. That covers up to five acres and is usually equivalent to almost two brush miles of line. Costs will naturally be variable, depending on brush and tree population. One co-op indicates that a figure of about $60 per acre or $216 per brush mile was about average in their experience, but in some areas the cost was a good deal higher.

The shift from co-op crews to outside contractor crews holds promise for better line maintenance in cases where engineers and managers have needed more flexibility in scheduling brush control work. Outside contractors have been able to focus their attention on new, economical ideas. They have worked to keep up to the minute on these ideas. And they are able to funnel new technology to control brush and trees without repetitive start-up delays and with assurance of environmental protection. Specialized service like this can help maintenance engineers keep their budgets down — and in these days of energy shortages, the proper use of bromacil weed and brush compound delivers oil savings as well! That's a nice kind of a dividend for anyone in the utility field.

Tree solution on fence-line right-of-way is seen in this 20-foot black locust tree. It received basal stem application of "Hyvar" X-L in 1971. Early fall check in 1973 shows no regrowth.

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The name that works for you.
COMMERCIAL SOD growers in Delaware are now being shown a remarkable new production system which promises to cut growing time from two years to a year or less. The system, which uses plastic netting as a sod base, was developed by Dr. William H. Mitchell, extension agronomist at the University of Delaware.

The normal sod production cycle in the Delaware area requires about two years — from initial seeding through establishment phases and finally to lifting and reseeding. In many cases, says Mitchell, turf grasses will be attractive and marketable in a period of six months. But they can't be lifted until a year or more later because of sod weakness. It is costly to maintain sod fields for this additional growing time. In fact, this factor has much to do with limiting the sod market to people and organizations with higher incomes.

There's another problem that goes along with traditional sod production techniques. This is the loss of topsoil. Removal of topsoil is inevitable in sod development. With its loss the producer is faced with progressively declining productivity of his fields and higher operating costs.

Mitchell has been experimenting with a system which helps shorten the production cycle at the same time it reduces topsoil loss. His system involves the use of plastic netting as a sod base. The netting makes harvests possible within months of seeding by providing the necessary tear strength for new sod. It also permits sod removal with considerably less topsoil.

Two types of netting are being tested. The first — VEXAR — is a product of the Film Department of E. I. DuPont de Nemours and Company. The other — DELNET — is manufactured by the New Enterprise Department of Hercules, Inc. Both materials have proven quite effective in field tests so far.

Mitchell has developed a very efficient technique that permits growers to lay netting and plant turf seed in one simple rototiller operation.

(continued on page 30)
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*Source: Plant Variety Protection Office, U.S. Dept. of Agriculture

Insect Report

TURF INSECTS

BANKS GRASS MITE
(Oligonychus pratensis)
NEW MEXICO: This spider mite and Dolichotetranecus suminarii taken from Bermuda grass near Malaga, Eddy County, where grass almost white from severe feeding.

BLUEGRASS BILLBUG
(Sphenophorus parvulus)
NEBRASKA: Damage to bluegrass lawns appeared statewide. In Lincoln and Omaha areas (Douglas and Lancaster Counties) larvae ranged 0-40, average ranged 10-18, per square foot in infested areas with about 50 percent of larvae pupated.

GRASSHOPPERS
KENTUCKY: Adults and nymphs averaged 260 per 100 sweeps in Larue County, 430 in Warren County in roadside grasses, mostly rescues.

SKIPPER
(Thymelicus lineola)
MICHIGAN: Larvae common and damaging grass hayfields in Chippewa County. Heavy in wet areas and areas of sparse stand, where up to 4-5 per timothy plant noted. Heavily infested areas in some fields treated and some fields suffered losses. Larvae observed feeding in old hayfields and fence rows, and migrating into corn at Presque Isle, Presque Isle County. Also observed at Alpena, Alpena County, in small grains and grasses. Larvae about full grown, pupation expected soon. Only one generation occurs per year.

BENEFICIAL INSECTS

LADY BETTLES
KANSAS: Scarce in southwest district sorghum fields; few found in north-central district. In sorghum heavily infested with Rhopalosiphum maidis (corn leaf aphid) in Riley County, Hippodamia convergens (convergent lady beetle) averaged 2 adults, 2 larvae, and 0.5 egg mass per plant. OKLAHOMA: Lady beetles, mainly H. convergens, averaged 10,596 per acre in Tillman County cotton.

TREE INSECTS

JACK PINE BUDWORM
(Choristoneura pinus)
MICHIGAN: Moderate to heavy on pines in Clare County; infestations heavier than for past 10 years. Most larvae pupated. Adult emergence underway in Lake County.

SPRUCE BUDWORM
(Choristoneura fumiferana)
NEW HAMPSHIRE: General emergence underway. Adults taken throughout southern area at lights.

FRUIT TREE LEAFROLLER
(Achips argyrospilus)
CALIFORNIA: Heavy larval populations defoliated native buckeye trees at Bakersfield, Kern County. This is first season this occurred.

ELM LEAF BEETLE
(Pyrrhalta luteola)
CALIFORNIA: Heavy populations infested elm trees at location in Dixon, Solano County. OKLAHOMA: Heavy defoliation of elms noted in several counties.

WOOLLY ELM APHID
(Eriosoma ulmi)
NEVADA: Very light and scattered on elms in Reno, Washoe County. This is a new State record.
Lush, green grass. Leafy, shady trees. Vigorous, healthy shrubs. It takes them all to make parks and commercial landscapes inviting. These Chemagro pesticides make the groundskeeping chores a lot easier—and more economical. Because they provide dependable control of diseases and insects that destroy the natural beauty of turf and ornamentals.

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Gives trees, shrubs, flowers the power to 'bite-back' when sucking insects try to destroy foliage. Prevents dripping honey-dew that spots autos parked under shade trees.

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Chemagro Division of Baychem Corporation, Box 4913, Kansas City, Missouri 64120.
Princeton Manufacturing Company builds three basic models of sod harvesters which cut and palletize sod in one operation. The most recently developed model is designed with maximum flotation to permit operation in extremely soft conditions.

The technique is especially efficient since it takes advantage of the way in which soil is thrown back during normal operation of the rototiller. So simple is the whole setup that it requires a single pass over a field — thus cutting down on both labor and fuel costs.

Last fall Mitchell demonstrated his system on an acre of land at the Sandtown farm of Bill Coleman, a Delaware sod producer. Sod on that acre is now well established and ready for harvest. Samples of the six-month-old sod have tested to a pull strength of up to 200 pounds. Two-year-old sod without netting often has a test strength of 75 pounds or less.

The agronomist says there’s still work to be done to perfect the new system. The economic advantages for sod production with plastic netting have to be more exactly established, for one thing. There are a lot of factors to consider — cost of netting, land value, time required to complete the sod production cycle and percentage of recovery of salable sod.

But it looks now as though the system can double sod production by cutting growing time in half. And this is a powerful argument in its favor. It’s no wonder that Mitchell is starting to get requests from other area sod growers to demonstrate the new technique on their farms, too.

The Princeton Sod Harvester had its origin at Princeton Turf Farms of Hightstown, New Jersey, where Wiley Miner worked extensively to create a much-needed mechanized method of cutting and palletizing sod in one operation. From that beginning, in cooperation with Miner, the harvester was further developed and modified by the owners of Eastside Nursery, Inc., of Canal Winchester, Ohio. In August of 1972, the principals of these two sod-producing firms, with Syl Schloesser as manager, formed Princeton Manufacturing Co. The new company operated initially at Canal Winchester, Ohio.

Harvesters have since been built and sold to volume-producing sod growers throughout the U.S. The company has offered remodeling services to purchasers of the originally-designed harvesters as well as new models designed to meet the individual needs of these customers. The harvesters have been so well accepted that expansion of the manufacturing facility has been necessary. The plant and offices are now located at 2625 Johnstown Road, in Columbus, O. Its location, adjacent to Port Columbus, provides excellent shipment facilities for servicing the needs of the customers.

The company builds three basic models. The model No. 4816 is designed to produce 16” wide sod, where vegetative regrowth is required, or where weight due to thickness of cut or sand conditions require small pieces for handling. The model No. 4020, designed as a new ‘standard’ in mineral soil sod production, cuts 20” wide slabs, 40” long. The 40” square pallets enable maximum yardage to be trucked per weight and width restrictions in most states.

The company’s latest development has been their model No. 4824 harvester which is designed with maximum flotation, to enable operation in extremely soft conditions, such as peat or muck soil. It cuts 24” by 48” slabs and permits palletizing of 100 yard pallets.

All current models include ‘counting’ devices to create uniform pallets as well as an automatic weighing system to assist in permitting maximum trucking efficiency. Flotation tires prevent damage to uncut sod on this harvester which is designed for the sole purpose of producing palletized sod.

The company intends to remain cognizant of the needs of the Sod Industry and is working not only on new and better ways of sod harvesting but on additional allied equipment for the industry, also.