



Linda Treichel of Penn Central's Cleveland Research Center staff, inspects the root system of Crownvetch. The low-growing, vine-like plant may be, according to the railroad's researchers, the answer to the rail industry's weed control problem. Penn Central Photo.

to seed Crownvetch on slopes up to 10 feet in height (slope measurement) and achieve establishment on gradients of  $\frac{1}{4}$ :1," they added.

At a second symposium, in 1968, Ross and Rodgers reported on four points of minor contention that exist: (a) Crownvetched roadsides are not attractive; (b) winter coloration is objectionable; (c) extensive mileage is monotonous; and (d) vetch smothers out and impedes regeneration of native plant material.

To answer the first point, they reported that in 1967 an estimated 1,500 to 2,000 unsolicited complimentary and informational contacts were received. To cut down on the mail load, numerous signs have since been installed along highways.

Ross and Rodgers contend that since Crownvetch is "golden brown" for a five-month period in Pennsylvania (of which two months are normally under snow) and winter tourists are fewest and least concerned with roadside scenery, the dormant unattractiveness factor is negligible.

Concerning monotony, they cited research that indicates highway pavement takes up 28% of the visual field at 60 mph and does much to channel views and distant panorama. "In Pennsylvania with the varying topography created by valleys, mountains, and rolling farm-

land, the problem of any specific roadside vegetation becoming monotonous is quite remote."

While Crownvetch does smother out grasses and weeds, Ross and Rodgers said there is plenty of evidence of a large number and variety of plants establishing themselves in Crownvetched roadsides where adjacent seed trees were present.

Ross and Rodgers reported that based on 1966 figures, Crownvetch seeding cost \$213 per acre (exclusive of mulching)—a unit cost, they said, identical for seeding other grass seed mixtures.

Continuing their evaluation, Ross and Rodgers stated:

"The fertility requirements for Crownvetch are about as undemanding as any plant known to the Department. It responds favorably to liming and fertilization, but also does a remarkable job many times when completely neglected. The principal concern then must necessarily be establishment.

"The economics of Crownvetch in design and construction must be fairly obvious to all by now. While flatter highway slopes were always the cry of people dealing with erosion, today that cry is sounded by those dealing with more rigid roadway safety standards. Crownvetch has clearly demonstrated its ability to stabilize slopes 2:1 and steeper.

"This ability has greatly reduced the need for massive slope plantings of shrubs and vines. For example, 300 erosion control shrubs on 5-ft. centers would cover 7,500 sq. ft. at a cost of some \$300, while the same areas could be seeded with Crownvetch for about \$36 plus a similar amount for mulching.

"All this ties in beautifully," they concluded "with the two most significant considerations before those individuals concerned with roadside maintenance today, namely (1) how to provide the most attractive and effective erosion control measures with minimal maintenance and (2) restore the naturalistic effect as quickly and economically as possible before traffic demands necessitate widening or relocation of the roadway."

**OCTOBER:  
Big Tree  
Chippers**

# FALL FERTILIZATION FACTS

**FALL IS** the season for heaviest fertilization of **COOL-SEASON GRASSES** such as bluegrass, fescue, and bent. Weather conditions are right for maximum development of crown, rhizome, and stolon; soil moisture and temperature are best for efficient use of fertilizer; grass has less competition from weeds and traffic.

**FALL** fertilization is important to **WARM-SEASON** grasses too. They also need help to recover from summer damage and to be strengthened for the winter months ahead.

**FERTILIZER** choice should be Nitroform® organic nitrogen. It provides slow, steady feeding right up until temperature stops growth. Non-leaching, Nitroform stays in the soil to get turf off to a good start in the spring.

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# ACCIDENTS AND FIRES

## How Much Profit Are You Losing?

By J. L. SHOPEN  
Director of Safety  
Farmland Industries, Inc.  
Kansas City, Mo.

### Concerning That New Employee

1. Has his physical examination been approved?
2. Has the employee been shown where he can get the necessary safety equipment, such as goggles, masks, hard hats, etc.?
3. Does he know where the fire fighting equipment is located?
4. Does he know how to use it?
5. Is he familiar with the particular hazards connected with his duties?
6. Is he familiar with the routine of reporting all injuries promptly to the first aid section?
7. Does he know how to call the fire department, ambulance, doctor, or police in case of an emergency?
8. Has he been told about your company's interest in promoting safety?
9. Has he been thoroughly instructed in his duties?
10. Has he been instructed to report all unsafe conditions to his superior immediately?
11. Has he been advised that working safely will benefit both himself and the company in various ways?

**S**OME SAY that in 1970 and the years to follow it is going to be more difficult to make a profit. Costly interruptions from any source could mean the difference.

The particular source to which I refer is that caused by fires and accidents. Many employers do not realize the tremendous financial loss potential ahead because they fail to take some basic precautions in these two areas.

Most management personnel agree that programming for fire and accident controls are fine from the humanitarian standpoints. However, often obscured is the fact that these control programs may produce unanticipated revenue for the employer on an annual basis.

Obscure, also is the *real cost* of fire and accident losses. An employer who loses his property through fire can never fully recover his losses with insurance. He still is going to lose the trade of some customers, for example, who, because of the fire, must necessarily bypass his firm for others. Safety specialist H. W. Heinrich has determined that paid medical bills for employees are far from being the total cost of an industrial accident. Heinrich has found that a so-called *incidental cost* is *four times as great*. (See fig. 1.)

#### Fire Prevention

Management problems multiply when fire experience is bad. Insurance costs increase. Tremendous disadvantages are imposed upon operations when fire occurs. The alternative is a major fire prevention effort.

A fire department inspection is extremely helpful in eliminating fire hazards. Visits by firemen also familiarize them with the layout of your business. Such knowledge enables the department to attack a fire with greater effectiveness — when they know plant layout, equipment, and products handled.

#### What If Fire Occurs?

Fires may occur despite your best efforts. Adequate equipment is then vital, from portable first aid extinguishers to bigger units, such as 150 lb. dry chemical equipment. Consideration might be given to installing fire hydrants on the property.

Information on spacing and placement of fire extinguishers can be obtained from most fire insurance carriers. Or, your local fire department can advise you.

#### Fire Training

Every employer should assure that his employees are knowledge-





## ANTICIPATE the Hazards!

able in fire fighting. Most fires can be controlled within the first five minutes — if proper fire-fighting equipment is available and well-trained employees are present.

In other words, the trained employee will see that the fire department is called; he also will take immediate action to control the fire. Often he will be successful before firemen arrive.

The employee should have basic knowledge of the chemistry of fire, so he understands the fire-fighting principles involved, depending on the type of fire he is fighting.

When fire department personnel are used to train employees, a dual purpose can be served. Your employees learn how they can fight fires; the firemen become familiar with your business layout.

A system should be worked out to insure that fire extinguishers are checked at periodic intervals. Equipment should be serviced at least once a year. Use of detailed check sheets for fire inspections is helpful.

### Accident Control

Accident prevention must be an integral part of operations if a pro-

gram is to be successful. Management support at every level is vitally necessary. Last, but certainly not least, the program requires the enthusiastic cooperation of employees. Some methods employed to attain these objectives include:

**PRE-EMPLOYMENT PHYSICALS**—A good physical examination prior to employment is a must to get on the right track to prevent accidents.

An applicant with a herniated disc, a severe heart condition, etc., may trace all his troubles to the employer without prior knowledge of such conditions.

Has the individual drawn disability compensation? If so, from whom, for what, when, of what duration? Does the individual have any health impairment — allergies, lung disease, etc.? These and other points in the analysis of the individual's qualifications are important when choosing him for a specific job.

**EMPLOYEE ORIENTATION**—The new employee must be aware of dangerous areas within a plant. He must have a thorough knowledge of safety equipment required. He must be trained in his particular job assignment. Stressing personal cleanliness is a most important part of the control program.

A safety manual or safety literature pertinent to the job should be given to the new employee.

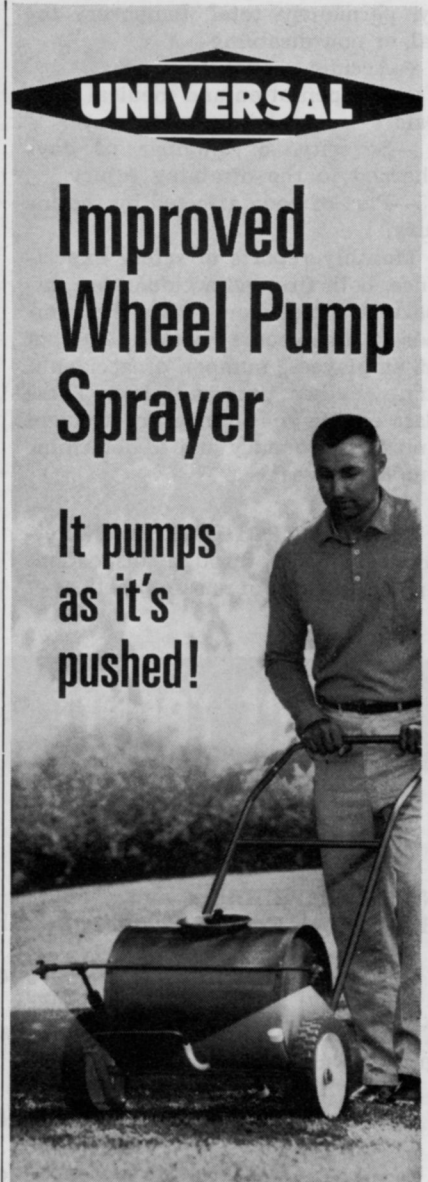
**KEEPING RECORDS**—A good record system is of paramount importance in determining progress in accident prevention. Such records do not need to be elaborate, but they must be complete. A master file should be kept for every accident receiving a physician's attention. Good injury files should include this information:

- Date of accident.
- Classification; in other words, fatality, permanent partial disabili-

### Fig. 1 Case history of accidents on building construction job.\*

Number and description	Compensation and medical cost
3 Fractures and contusions .....	\$106
18 Rivet burns, cuts, bruises .....	76
21 Falling materials .....	15
30 Slips and falls .....	12
<b>Incidental Costs</b>	
Time lost by injured employees, paid directly by employer .....	\$116
Time lost by other employees .....	310
Time lost by foremen and superintendent .....	78
Property damage .....	158
Payment of forfeits (two days) for failure to complete job on time .....	200
Portion of overhead-cost loss during delay .....	75
<b>Total cost of compensation and medical aid .....</b>	<b>\$209</b>
<b>Total additional incidental cost, paid directly by employer .....</b>	<b>937</b>

\* Basic Philosophy of Accident Prevention, H. W. Heinrich.



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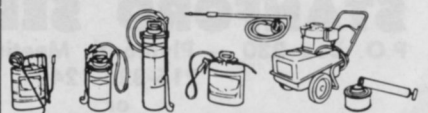
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ty, permanent total, temporary total, or non-disabling.

—Accident cause.

—Compensation and medical costs paid.

—Severity, or number of days charged to the disabling injury.

—Part of body affected by the injury.

Monthly reports of safety experience, both fire and accident, are important. These would state the number of man-hours worked, number of employees, number of accidents, and whether time was lost. These data enable you to measure accident and fire frequency and to determine emphasis areas.

**STIMULATING INTEREST**—Personal contact, through inspections and corrections of unsafe practices or

working conditions, is important. Employee safety meetings held on a regular basis are of value. Programming must be thorough, varied in approach, interesting and informative.

One effective technique, for example, is to use 35mm slides to visually point out deficiencies — such as poor housekeeping, or failure to wear protective equipment. A Polaroid camera also can easily and quickly capture visual proof.

Safety awareness among employees can be maintained with signs and posters, constantly changing. A safety sign indicating the number of days worked safely with no disabling injuries is an ever-present reminder to each individual.

Perhaps the most important avenue to achieving safety consciousness is a recognition program for out-

standing safe work performance. This program might include both individual and group awards, such as pins, plaques, banquets, or written commendations.

#### Employer Benefits

Can money be saved through a safety program? Of course. Insurance companies grant rate credits when accident experience is good. Conversely, in the face of a continuing poor accident record, the insurance carrier has only two recourses — raise the rate, or cancel the risk. In either case, the employer is in trouble.

No program, however, no matter how well-planned and organized, will succeed without the real key — *Follow Through*.

## insect report



### TURF INSECTS HAIRY CINCH BUG

(*Blissus hirtus*)

NEW HAMPSHIRE: Very numerous, lawns brown in Hillsborough County. Migrating into houses.

### SOUTHERN CINCH BUG

(*Blissus insularis*)

TEXAS: Heavy infestations numerous in St. Augustine grass lawns in Brazos County.

### INSECTS OF ORNAMENTALS

#### A SPIDER MITE

(*Platytetranychus thujae*)

NEW HAMPSHIRE: Collected on arbovitae at Durham, Strafford County. This is a new state record.

#### BAGWORM

(*Thyridopteryx ephemeraeformis*)

GEORGIA: Severe in scattered location in much of Piedmont area. OKLAHOMA: Heaviest in 35 years on evergreens in Mayes County. Moderate to heavy in most

areas. TENNESSEE: Damage moderate to heavy across state. Damage very heavy to native cedars in some central areas. TEXAS: Heavy, about 200 per pyracantha bush in Kinney County. Very heavy on post oak trees at Franklin, Robertson County.

### TREE INSECTS HICKORY TUSSOCK MOTH

(*Halisdota caryae*)

OHIO: Statewide on maple, oak, and crab apple trees. Moth activity heavy earlier in season, and damage expected to be more severe this year.

#### SADDLED PROMINENT

(*Heterocampa guttivitta*)

NEW HAMPSHIRE: Defoliation extensive on thousands of acres; particularly troublesome in recreational areas in Carroll County.

#### MIMOSA WEBWORM

(*Homadaula anisocentra*)

PENNSYLVANIA: Aerial survey indicates nearly 100 percent defoliation to honeylocust throughout Greene County. MISSISSIPPI: Moderate on mimosa in Lowndes, Oktibbeha, Webster, and Montgomery Counties.

#### A SPITTLEBUG

(*Clastoptera arborina*)

COLORADO: Heavy on junipers from Pueblo, Pueblo County, to Ft. Collins, Larimer County. As high as 3-6 per foot of branch, 3 times level of 1968. Controls recommended.

#### FALL WEBWORM

(*Hyphantria cunea*)

MICHIGAN: In second instar. Nests 1.5-2 feet long on apple, birch, and oak. Severe damage of ornamental trees anticipated if not controlled. INDIANA: Webs beginning to appear in Marion County. NEW HAMPSHIRE: First instars on linden in Merrimack County July 14. Small web on elm in Strafford County July 15.

WISCONSIN: Webs more noticeable statewide. Hosts include tag alder, pin cherry, dogwood, and alpine currant. MINNESOTA: Tents with second and third instars common on alder in northern area; also on apple, Juneberry, and aspen.

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# Beetle Eats Aquatic Weed

By ROBERT N. HAMBRIC, Aquatic Biologist  
Texas Parks and Wildlife Department  
Houston, Tex.

**E**NDEMIC to Argentina but introduced to this country some 70 years ago, perhaps on the ballast dump of sailing ships, Alligatorweed has now infested thousands of acres.

Efforts to control the plant have included dredging, burning, flaming and flooding, and spraying with various herbicides. The degree of plant control has often been both negligible and disappointing.

The Entomological Research Division of the United States Department of Agriculture was asked to search for insects that might act as a biological control. Researchers soon began host specificity tests on a flea beetle of the genus *Agasticles* in its native habitat near Buenos Aires, Argentina. This beetle, perhaps assisted by several other agents, apparently prevents alligatorweed from becoming a major pest plant in South America. Extensive tests in that area indicated that the insect fed and completed its life cycle on the host plant only.

The first shipment of flea beetles was received in the U.S. at the Entomology Research Laboratory at Albany, Calif., for additional study. Further testing there confirmed the beetles total dependence on alligatorweed for food as well as the plants hollow stem for important phases of the reproductive cycle.

In the spring of 1964, the first release of beetles was made on alligatorweed at the Savannah National Wildlife Refuge in South Carolina. Additional releases were made later there and in other southern states including two Texas sites in May 1967.

The small black and yellow beetles multiply rapidly and spread readily from the release site to adjoining stands of alligatorweed. The female generally lays one cluster of eggs per day, throughout her productive period of about 45 days, which develops through several immature stages into sexually mature adults in about 25 days. Several generations per year are normally produced. Flea beetles prefer areas of high humidity and mild temperatures, but have overwintered in areas where temperatures dropped considerably below freezing.

Although the initial study has been of short duration, some aspects of the project in Texas are promis-

ing. Flea beetles appear to have a spring and fall population peak at Dam B Reservoir and Murphree Wildlife Area, which are the initial release sites of Southeastern Texas. During these periods of abundance, the insects have affected considerable temporary damage on rather extensive areas of alligatorweed and

have populated adjoining areas. In 18 months, the 1,000 insects initially released have multiplied many times and have advanced several miles up the slough and along the shoreline. The major point of speculation is how well can the imported flea beetle adapt to local environmental conditions.

The next few years of observation and research will, hopefully, yield information showing a high degree of successful adaptation by the beetle and perhaps its importance as a major biotic suppressant on the rapidly expanding alligatorweed in the South.

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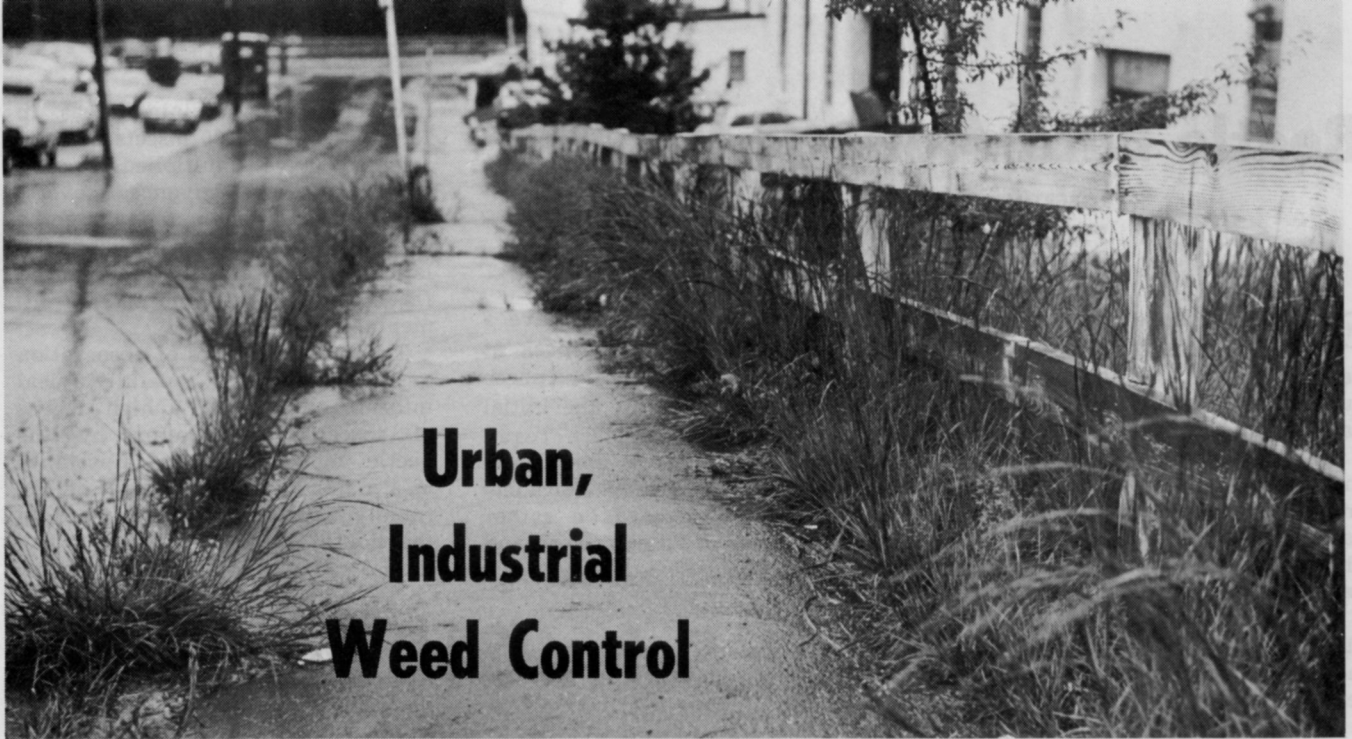
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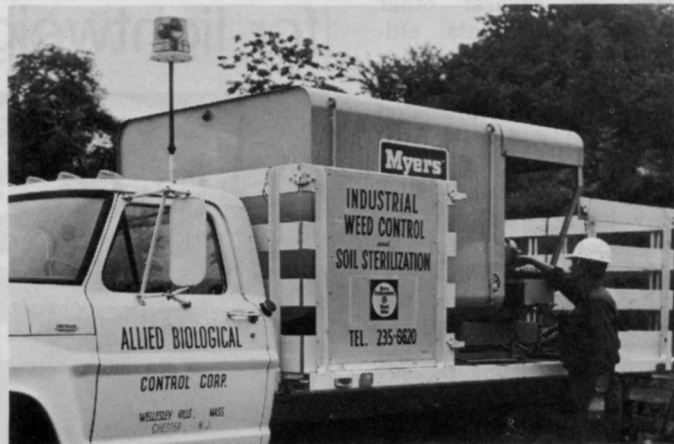
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## Urban, Industrial Weed Control

### *How Allied Biological Control Approaches Problems*



Late in the summer, a community's appearance goes to pot. Weather's hot and dry. Everything moves slower — except weeds. It doesn't need to be that way. A season-long weed control program prevents weeds from taking over, trash from collecting, fires from starting, and so on. That's the story Allied Biological Control Corp., Wellesley, Mass., keeps telling — with success. Albert Trusas, field specialist, checks out a truck before it leaves on a clean-up mission. Karmex diuron did the neat roadside job.

**C**LEANER, more attractive industrial and commercial plant grounds are in prospect for New England firms. Improvements can be achieved economically through planned programs of chemical weed control. These programs offer great potential for helping to relieve fire hazards, eliminate unsightly trash and establish an exterior plant appearance that will help stimulate positive employee attitudes and performance. These improvements can help also to spark public interest in community clean-up programs.

That's the view of industrial specialists who have been following nationwide weed and clean-up programs. And it is the conviction, too, of Jason M. Cortell, graduate biologist

from Boston University, vegetation consultant and president of Allied Biological Control Corporation, of Wellesley. Cortell's 10-year-old firm specializes in prescription weed control for plant sites, for roadsides, and for aquatic areas.

#### **Solved Airport Bird Problem**

When the subject of weeds comes up, Jay Cortell has an amphibious expertise that has proved useful to major airport and turnpike authorities as well as to maintenance superintendents, engineers and executives of utilities, construction companies and various individual plants throughout New England. Nearly a decade ago, for example, when Logan International Airport

was plagued by huge flocks of birds that were responsible for a tragic takeoff crash of an Electra, the Massachusetts Port Authority called in Cortell as a consultant. Wildlife and bird specialists had been trying numerous approaches to the problem of too-many birds on airport property, but it was Cortell who came up with a practical solution that moved the birds away from marshes and grassy areas adjoining the runways. And the solution was a planned program of vegetation control, involving chemical weed and brush killers. These simply eliminated the overly-attractive airport feeding grounds for the birds and the birds moved out.

Cortell has since been called in to



help Kennedy and LaGuardia Airports with similar bird and vegetation problems. He has developed special equipment and techniques for controlling unwanted aquatic and marshland weeds. Today he has expanded his operations and interests to include terrestrial or "dry-land" weed control programs. And he is bringing new knowledge and dedication to the problem of weed and brush control that bedevils many firms in the Northeast.

#### Industrial Sites and Roads

Weed problems on industrial sites and roads in New England are both numerous and complex. Cortell's firm uses a variety of contact and residual-type chemical weed killers to tackle the problems. The contact chemicals are fast acting; they work through plant foliage and in effect "burn out" the weeds. The residual-type, such as "Hyvar" X bromacil weed killer or "Karmex" diuron weed killer, work through a weed's root system. The chemical weed killer is applied when weeds are small or have not yet appeared above ground. Natural rain carries the herbicide into the soil, where it goes to work on weed roots. And so weeds are destroyed, and germination of new weeds is prevented, usually for a full growing season. This provides long-lasting, economical weed control — and it can often be achieved through single application of a residual-type herbicide.

The Allied Biological seasonal program for effective weed control in industrial sites starts with a survey of the existing weed problem. A written program is developed and reviewed with a firm's management. Proper timing of herbicide application is an integral part of the program and this phase, of course, is Allied's responsibility. The initial application of residual herbicides normally occurs in the spring and it is followed later by a "spot" or "follow-up" herbicide treatment. And finally, comes a recommendation for continuing attention to weeds in succeeding years.

When a firm like Allied steps into the picture, most area business and government executives have found they can stop worrying about weeds. Chronic late summer and early fall infestations of weeds can be halted before they start, primarily because chemical weed know-how has been brought to bear where and when it counts.

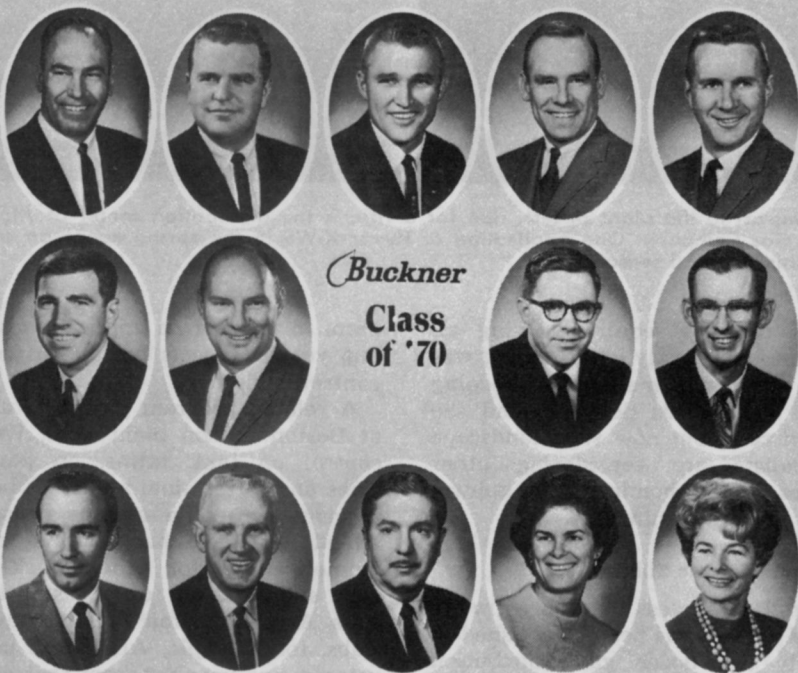
Experience in Greater Boston suggests what chemical weeding can do. During the past several years, for

example, Allied Biological has been using or recommending "Hyvar" X-WS (a water soluble form of bromacil) for bareground weed and grass control around the Logan Airport landing lights and in areas adjacent to airstrips. Another chemical — dalapon or "Dowpon C" — has been used for phragmites in bogs near the runways. And 2,4-D is applied for control of certain broadleaved weeds in grassy areas.

Jay Cortell has helped other state and local agencies deal with weeds. He has consulted with the Metropolitan District Commission

on problems in parks and recreation areas. He has used "Karmex" diuron weed killer to control guard rail weed and grass growth for the Massachusetts Department of Public Works. This treatment, started in the spring of 1969, after several years of experience with alternate materials, has proved to be outstanding. A two-foot band of "Karmex" was applied under more than 1900 roadside miles of guard rail in April and May. Adjacent gutters and abutments were also treated with the herbicide. So effective was the application that treated

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In contrast to the plant at left, ripe for a fire, is the distribution center of Algonquin Gas Company. One application of Hyvar X-WS in the spring keeps an area like this clean all season.

areas did not require mowing all season long. Costly hand cutting was once the only method of keeping grass and weeds down around the guard rails, but now state landscape specialists are considering other places where chemical weed control may offer advantages.

#### Gas and Electric Utilities

Similar success in bare-ground weed control has been established in nearly two dozen gas distribution sites of the Algonquin Gas Transmission Company. These sites are located from Portsmouth to Fall River. They are relatively small and about two or three tennis courts in size; but Algonquin wants a weed-free and grass-free surface inside its protective fence. And Allied has been able to keep weeds completely out by applying "Hyvar" X bromacil weed killer in the spring—with follow-up treatments in early fall. But the need for these follow-up treatments has been dropping sharply. So now Allied is initiating a three-year herbicide cycle in which each Algonquin distribution site will receive a treatment with "Hyvar" X bromacil weed killer for two years—then no treatment at all in the third year. Cortell expects this pro-



gram to provide an application saving, yet he expects no loss in weed control quality.

A related program has been used at Boston Edison plant sites. Weed control on tank farms, on power slabs and in terminal areas has been extremely effective and, as a result, Allied Biological has received recommendations for other work on rail sidings and on construction sites. Around Boston Edison's power slabs, for example, Allied has been using a two-year program that calls for a seven-pound-per-acre application rate of "Hyvar" X the first year. This is followed by a four-pound-per-acre rate the second and following years. Where ornamental plants are close by, Cortell usually treats with other chemicals, i.e. Casoran, Paraquat.

#### Radar Installations

Allied Biological handles weed problems for the radar "dishes" at MIT's Lincoln Laboratory and also for plant sites and for new parking and drive areas for new plant units. The aim, in the latter situation, is to prevent tough weeds from popping through pavement. "Hyvar" X is applied at a relatively high rate—20 to 30 pounds per acre—before the

pavement goes down to avoid cracking of paving by weed growth.

#### Multi-Benefits in Weed Control

It is sometimes difficult to compare costs of controlling weeds with an outside firm vs. control with in-plant labor. Maintenance supervisors are agreed, however, that when you try to control weeds in the Northeast on a do-it-yourself plan, the plan has such low priority that the job rarely gets proper attention. Untrained people back away at overgrown vegetation **after** it has become an eyesore. The result is an untidy look outside the plant—and there is little chance that this appearance can help develop a positive on-the-job attitude in a plant's work force.

Environmental concern is currently developing in many New England communities. Plant managers and maintenance supervisors have been faced with rising costs in labor; and many are now turning to chemical weed control as a practical, economical approach to vegetation problems. This has become interesting even for small to medium-sized plant sites through organizations like Allied Biological Control.

"We take a positive approach to the weed control problem," says Jason M. Cortell. "We take over the problem, we plan the treatment at the right time, then we get back after the treatment to be sure things work out right."

Cortell's ideas do indeed work out for industrialists who want clean, attractive plant sites, rail spurs, parking areas and related facilities. They not only build a better work environment for employees, but they also eliminate fire hazards in the dormant season.

"In one sense," notes Cortell, "weed control with residual herbicides like "Hyvar" X bromacil weed killer seems almost too easy—or too simple. If you have the know-how and the equipment and it is used at the right time, you can treat a full acre of ground in half an hour or less. The job is done quickly and cleanly. And it lasts a full season. But this is not the place for an amateur, or the inexperienced man. Herbicides must be carefully applied. A professional applicator has what it takes to get the most out of the residual weed killers. They should go on in the spring, before weed growth really starts. The professional is really equipped to help a plant executive save time and money—and so he takes the annual weed nuisance off a man's worry list."



# meeting dates

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

**Michigan State University** Northern Michigan Turfgrass Field Day, Traverse City Country Club, Sept. 9.

**Virginia Polytechnic Institute** Turfgrass Field Day at Blacksburg, Va., Sept. 9 and 10.

**Helicopter Association of America** eastern operators management seminar at the Holiday Inn, Media, Pa., Sept. 9-12.

**Sprayorama '70 Pacific Northwest Pesticide Applicators, Inc.**, annual meeting, Thunderbird Motel, 1401 N. Hayden Island Dr., Portland, Ore., Sept. 10-12.

**1970 Illinois Turfgrass Field Day** and open house at the turf plots of Lincoln Avenue one mile south of Florida Avenue in Urbana, Sept. 11.

**Turf and Ornamentals Day**, Ohio Agricultural Research and Development Center at Wooster, Sept. 15.

**University of Minnesota Technical College Fall Horticultural Day**, Waseca, Sept. 20.

**60th Convention, California Association of Nurserymen**, Yosemite, Sept. 22-24.

**National Association of Professional Gardeners** 56th annual conference, "Salute to the Gardeners of the

Future," The Carolina Hotel, Pinehurst, N.C. Sept. 22-24.

**California Park and Recreation Society** fall Park Operations Workshops. 9:30 a.m. to 3:30 p.m. Region 1 — Sept. 29 at Civic Center at Los Gatos; Region 2 — Oct. 1 at Holmes Playground at First Street and Platt Avenue, Fresno; Region 3 — Oct. 1 at California State Polytechnic College, 3801 West Temple Avenue, Pomona.

**Roadside Development** 29th Annual Short Course, Department of State Building, 65 South Front St., Columbus, Ohio. Oct. 5-9.

**Florida Turf-Grass Management Conference**, Flagler Inn, University of Florida, Gainesville. Oct. 6-8.

**10th Annual Southern California Turfgrass Equipment and Materials Educational Exposition** at Brookside Park, Pasadena, Oct. 14-15.

**Texas A&M University** 5th annual Industrial Weed Control Conference, on campus at College Station, Tex., Oct. 19-21.

**Louisiana Turfgrass Association** annual conference at the Holiday Inn, Alexandria. Nov. 4-5.

**10th British Weed Control Conference** at Hotel Metrople, Brighton, Sussex, England. Nov. 16-19.

**Metropolitan Washington, D.C., Shade Tree Conference**, Lubber Run Recreation Center, 300 N. Park Drive, Arlington, Va. Nov. 19.

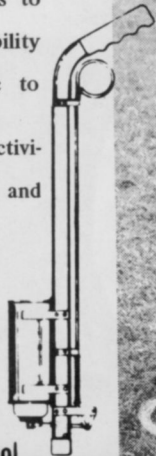
**Ohio Turfgrass Conference and Show** at the Cincinnati Convention Center. Dec. 7-9.

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