

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 | | |

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.

Michigan Pesticide Association fall conference at the Jack Tar Hotel, Lansing. Nov. 4 and 5.

10th British Weed Control Conference at Hotel Metro-pole, 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.

National Aerial Applicators Association fourth annual conference at the International Hotel, Las Vegas, Nev. Dec. 7-10.

North Central Weed Control Conference 25th meeting, Phoenix Hotel, Lexington, Ky. Dec. 8-10.

Rutgers University, New Brunswick, N. J., second term of winter turf course. Jan. 5 to Mar. 12.

Georgia Golf Course Superintendents Association annual meeting at Callaway Gardens, Pine Mountain. Jan. 10-12.

Mid-Atlantic Association of Golf Course Superintendents turf conference at the Holiday Inn, Howard and Lombard Sts., Baltimore, Md. Jan. 11-12, 1971.

University of Nebraska annual turf conference, Lincoln. Jan. 13-15.

Rutgers University, New Brunswick, N. J. three-day lawn and utility turf course. Jan. 18-20.

Southern Weed Science Society 24th annual meeting at the Sheraton-Peabody Hotel, Memphis. Jan. 19-21.

Rutgers University, New Brunswick, N. J. three-day golf and fine turf course. Jan. 20-22.

Associated Landscape Contractors of America ninth annual meeting and trade exhibit at the Royal Orleans Hotel, New Orleans. Jan. 24-30.

Virginia Turfgrass Conference at the Sheraton Motor Inn, Fredericksburg, Va. Jan. 26, 27.

The Northwest Horticultural Congress at the Portland Memorial Coliseum. Jan. 28-30.

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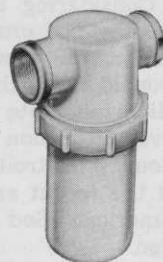


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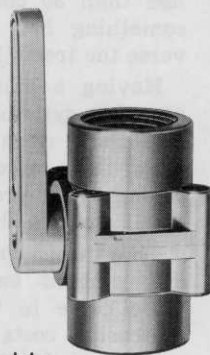


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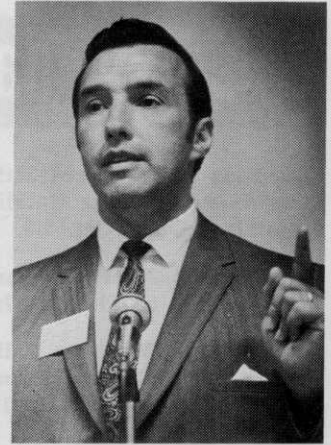
3/4" valves are available with ports threaded 3/4" or 1" NPT female, or with sockets for 3/4" or 1" plastic pipe.



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HOW DO YOUR PRODUCTION COSTS MEASURE UP?



Michigan sod producers discovered recently that they were dangerously close to not making any real profit.

While they were getting paid for their labor, they found they would have been financially ahead had they sold their farms and placed the money in a bank to draw interest.

Considering that Michigan is the leading sod-producing state in the nation, the news is a bit startling. Donald D. Juchartz, director of the Michigan State University Cooperative Extension Service in Wayne County (Detroit), gave the full story at the recent annual meeting of the American Sod Producers Association.

Leading growers who had watched the field price of sod shrink from \$1.00 per yard (Merion in 1948) to less than 30 cents in 1969 decided something had to be done to reverse the trend, he said.

Having a more sophisticated accounting system than most producers, they were getting red flags from their accountants who were saying "your profit margins are too small and are shrinking each year."

They were particularly alarmed and puzzled because the drop in price came in the face of rapidly increasing costs and during a constant period in which the demand for sod exceeded supply.

They noted, Juchartz reported, the repeated occurrence of new growers needlessly cutting prices to get into the market. They were aware also that producers generally had succumbed to "winter jitters" and had reduced prices at the beginning of a new season.

Why had growers collectively allowed such a trend? Juchartz suggested that lack of communication was a big reason. "Over the years, the sod business had been highly profitable, and growers were say-

ing 'We're going to run our own business,'" he said. There was very little comparing by one grower with another."

As competition stiffened and costs went up while prices went down, they attempted to keep income at the same level by increasing sod acreage and sod sales.

What was missing, Juchartz continued, was the awareness that they needed to think like businessmen. "They were enjoying a good life, but they had forgotten that the name of the game is profit," he said.

The handful of sod producers who recognized the gravity of the situation determined that growers generally were operating in the dark concerning sod production costs. What was needed was a financial management education program to help the grower think like a businessman.

The leading sod growers worked with Juchartz to arrange the seminar. They were Bob Daymon, Emerald Valley Turf Nurseries, Gregory; Bob Hozak, Tech Center Sod Farm, Fowlerville; and Ted Bosgraaf, Blue Grass Sod Farm, Hudsonville.

Juchartz called in three Michigan State agricultural economists, Drs. Ralph Hepp, Myron Kelsey and Warren Vincent.

Together, the growers, agricultural economists and Juchartz developed then conducted a three-day intensive short course in February of 1969.

Here is how Juchartz described the meeting in a report to Michigan sod producers.

"There was considerable skepticism and little enthusiasm by growers during the first session. As the sessions went on and the facts were brought out, with most being supplied by the skeptics, a reverse in thinking was noticeable.

"An almost unbelievable change took place in the attitudes of the growers as one fact shed light on

another. They realized that this was being done, not for the benefit of one or two, but for the benefits it would bring to the overall industry.

"It was decided through the course of the meetings to develop a hypothetical, 200-acre 'Case Sod Farm.' While the Case Sod Farm was to be hypothetical, it would be based on facts supplied by the growers attending the meetings.

"This was done, with each item and every factor analyzed, discussed and dissected until there were no objections from any person there that the fact or figure arrived at was correct. As these facts and figures were accumulated, they were organized into the form of a financial and profit and loss statement for the Case Sod Farm.

"The results were startling to the group, even though they had supplied the facts.

"The Case Sod Farm Report showed that the cost of growing sod on the average farm in Michigan in 1969 was 29 cents per yard."

Among developments after the seminar, Juchartz continued, were the organization of a state association and the circulation of a market report on a weekly basis. Members reported such statistics as acreage planted and yardage marketed, price charged, etc. The figures were compiled and a report returned to participating growers.

The significance of the service, Juchartz reported, is that for the first time in history, sod prices held through the spring and summer of 1970. Growers estimated that the program brought them an additional half-million dollars in income.

The Case Sod Farm Report is reproduced in this issue as a guide for producers elsewhere to determine what their production costs might be. For, Juchartz concluded, "What has happened to Michigan may happen in other parts of the country."

CASE SOD FARM FINANCIAL STATEMENT

CURRENT ASSETS

| | |
|------------------------------------|-----------------|
| Cash | \$ 5,000 |
| Accounts Receivable | 2,000 |
| Supplies | 2,000 |
| Growing Sod (175 A's @ \$400/A) | 70,000 |
| Total | \$79,000 |

INTERMEDIATE ASSETS

| | |
|--------------------------|------------------|
| Machinery & Equipment | 105,100 |
| Accumulated Depreciation | (37,100) |
| Total | \$ 68,000 |

LONG TERM ASSETS

| | |
|--------------------------|------------------|
| Buildings & Improvements | 45,000 |
| Accumulated Depreciation | (9,000) |
| Land | 130,000 |
| Total | \$166,000 |

| | |
|---------------------|------------------|
| Total Assets | \$313,000 |
|---------------------|------------------|

CURRENT LIABILITIES

| | |
|--------------|-----------------|
| Total | \$20,000 |
|--------------|-----------------|

INTERMEDIATE LIABILITIES

| | |
|--------------|-----------------|
| Total | \$30,000 |
|--------------|-----------------|

LONG TERM LIABILITIES

| | |
|--------------------------|------------------|
| Total | \$ 83,000 |
| Total Liabilities | \$133,000 |
| Owner Equity | \$180,000 |
| \$313,000 | |

| | |
|------------------------|------------|
| Total Acres | 350 |
| Tillable Acres | 200 |
| Harvested Acres | 100 |

OPERATING RECEIPTS

| | Total Farm | Per Yard |
|--------------------------|------------|----------|
| Sod Sales (400,000 yds.) | \$120,000 | .3000 |

OPERATING EXPENSES

| | | |
|--------------|-----------------|--------------|
| Labor | \$47,800 | .1195 |
|--------------|-----------------|--------------|

| | |
|---|----------|
| 1—Owner-Operator | \$15,000 |
| 1—Full Time Man | 10,000 |
| 6—Apr. 15 to Nov. 15 (110/wk) | 19,800 |
| 1—Part Time Office | 3,000 |
| Above Includes Workmen's Compensation, S.S. Etc. | |

| | | |
|------------------------------|---------------|--------------|
| Power & Machinery | 24,250 | .0606 |
|------------------------------|---------------|--------------|

| | |
|--------------|--------|
| Depreciation | 13,100 |
| Repairs | 6,000 |
| Gas & Oil | 3,000 |
| Machine Hire | 2,000 |
| License | 150 |

| | | |
|------------------|--------------|--------------|
| Buildings | 6,100 | .0152 |
|------------------|--------------|--------------|

| | |
|---------------------------|-------|
| Depreciation | 4,500 |
| Insurance incl. Liability | 1,600 |

| | | |
|-------------|---------------|--------------|
| Crop | 17,300 | .0432 |
|-------------|---------------|--------------|

| | |
|-------------------------|--------|
| Seed | 5,000 |
| Fertilizer | 10,000 |
| Chemical Spray Material | 2,300 |

| | | |
|-----------------|---------------|--------------|
| Overhead | 20,550 | .0514 |
|-----------------|---------------|--------------|

| | |
|------------------------|--------|
| Utilities | 3,000 |
| Office | 1,000 |
| Legal & Accounting | 1,000 |
| Property Taxes | 2,100 |
| Travel & Entertainment | 500 |
| Interest | 11,000 |
| Supplies | 1,000 |
| Miscellaneous | 950 |

Bad Debts

| | | |
|---------------------------------|------------------|------------|
| Total Operating Expenses | \$116,000 | .29 |
| Profit before Taxes | \$ 4,000 | .01 |

FINANCIAL STATEMENT

| | |
|-----------------------------------|-----------|
| 1. Total current assets | \$ 79,000 |
| 2. Total intermediate assets | 68,000 |
| 3. Total long term assets | 166,000 |
| 4. Total Assets | 313,000 |
| 5. Total current liabilities | 20,000 |
| 6. Total intermediate liabilities | 30,000 |
| 7. Total long term liabilities | 83,000 |
| 8. Total Liabilities | 133,000 |
| 9. Owner Equity | 180,000 |

INCOME STATEMENT

| | |
|---------------------------------|---------|
| 10. Value of farm production | 120,000 |
| 11. Gross profit from operation | 19,000 |
| 12. Profit (Loss) | 4,000 |

FINANCIAL STATEMENT RATIOS

| | |
|--|------|
| 13. Current ratio (line 1 ÷ line 5) | 3.95 |
| 14. Intermediate ratio (line 2 ÷ line 6) | 2.26 |
| 15. Long term ratio (line 3 ÷ line 7) | 2.00 |
| 16. % current debt (line 5 ÷ line 8) | 15% |
| 17. % intermediate debt (line 6 ÷ line 8) | 23 |
| 18. % long term debt (line 7 ÷ line 8) | 62 |
| 19. Debt to total assets (line 8 ÷ line 4) | 42 |
| 20. % depreciation of machinery | 35 |
| 21. % depreciation of improvements | 20 |

INCOME STATEMENT RATIOS

| | |
|--|-------|
| 22. Return on owner equity (line 12 ÷ line 9) | 2.2% |
| 23. Return on assets | 4.8% |
| 24. Gross operating margin (line 11 ÷ line 10) | 15.8% |
| 25. Net operating margin (line 12 ÷ line 10) | 3.3% |

MANAGEMENT FACTORS

| | |
|--|-------|
| 26. Crop factors Costs Per Yard Sod Sold | .0375 |
| 27. Management Labor | .0820 |
| 28. Cash Labor | .0820 |
| 29. Power & Machinery | .0606 |
| 30. Buildings and Improvements | .0152 |
| 31. Crop | .0432 |
| 32. Overhead | .0514 |
| 33. Total | .2900 |

| | |
|---|----|
| 35. Harvest Acres as Percent of Tillable | 50 |
|---|----|



The "Great Northern," piloted by famous music conductor David Rose, hauls a load of Cal-Turf dichondra sod to the backyard of his Sherman Oaks, Calif., home.

Musician Hauls Sod by Train

It probably was one of the most unusual loads the rugged little train ever pulled, but the "Great Northern" hauled it willingly . . . right into David Rose's backyard.

It might seem strange to the average homeowner to have a locomotive and assorted freight cars in his backyard, but in this case the equipment was miniature. The load was fresh Cal-Turf dichondra sod, and the train, piloted by the famous music composer-conductor, was doing its part to help install a new back lawn at Rose's Sherman Oaks home.

Part of a project by Arklin Landscaping of Saugus, the sod was cut fresh at the Cal-Turf farm and Southern Headquarters in Camarillo, rolled, and shipped by truck to Sherman Oaks. There it was unloaded, placed on the small but sturdy flatcars and delivered "by rail" the rest of the way. The nine-ton load was moved easily behind the power-

ful engine. In fact, the miniature train proved to be more than just an interesting method of transporting the fresh sod. Because of the dimensions of the house and lot it was virtually the only easy way to get the sod from the front of Rose's home to the backyard.

The "Great Northern" mountain-type locomotive is only one of ten working engines Rose has in his "stable" of miniatures. They range in gauge size from 1½ to 7½ inches, and in scale from ½ inch to-the-foot up to 1½ inch to-the-foot. The smallest engine is only 12 inches long and weighs a scant 15 pounds, but the coal burner is capable of pulling up to three adults over the large layout, which includes more than 1,000 feet of track.

Rose has been involved in miniature railroading for 20 years, but he had to admit that the 3,000 square feet of Cal-Turf dichondra was one of the most unusual loads his "steamers" ever hauled.

Turf-Seed, Inc., Formed By Oregon Specialists

A new company has been formed in Oregon's Willamette Valley by Bill Rose, well-known seed grower and Dick Bailey, specialist in turf grass production. The firm to be known as TURF-SEED, INC. has set up headquarters in Woodburn, Ore., with a mailing address at nearby Hubbard, Ore.

The firm will contract seed production of the turf varieties for special uses such as intensive sports turf areas and high-quality lawn uses. In addition, the new firm plans varietal evaluation from the turf and seed production standpoint. According to Bailey, who will be general manager of the firm, the company will maintain extensive test plots for specialized turf varieties and perform consulting services for seed and turf.

Besides turf and turf seed sales, TURF-SEED, INC., will handle Crownvetch seed and plants as well as consult on the usage of Crownvetch. An unusual, but complimentary portion of the TURF-SEED program will be in the area of product development. One prospective new product now being manufactured and tested by the company is Fertil-mulch, a new concept in seed bed mulching.

Bill Rose, a veteran airforce pilot and a 1951 soils-major graduate of Oregon State University, more than 15 years' experience in specialty seed production.

Dick Bailey, a graduate of the University of Idaho, majored in business and agronomy. Also an airforce veteran, Bailey has been in the seed business for more than 15 years working in seed production, promotion and marketing.

Striped Smut Control Grants Go to Pennsylvania, Oregon

Merion Bluegrass Association has announced two research grants. Oregon State University, which has been doing such excellent work on the problem of stripe smut control, was given a grant of two years for further screening of systemic chemicals by Dr. John Hardison, in development of effective systemic fungicides.

In addition, the Pennsylvania Turfgrass Council received a grant of two years to cover application and management studies on stripe smut materials.

Leading Conservationist Backs Pesticide Use

One of the nation's leading conservationists supported the continued use of all pesticides in a speech at the annual meeting of the National Association of Farm Broadcasters in Washington, D.C.

Dr. Robert White Stevens, chairman and professor of the Bureau of Conservation and Environmental Science, Rutgers University, said, "There can be no progress from the out-of-hand banning of useful, effective and safe agricultural chemicals until there are equally efficient methods to replace them."

"Chemical controls," he continued, "are the only known effective method for depressing such pests as insects, disease, weeds, nematodes, and vermin."

According to Dr. White Stevens the use of pesticides and fertilizers in North America has resulted in the "most munificent, highest quality, cheapest, and safest food supply in man's long history."

Decrying attacks by his conservationist colleagues, he said that the "varied critics of scientific agricul-



"I'm not too fond of the way he sends you long distance."

ture accept its benefits and munificence while they blithely disrupt and destroy it without any valid suggestions as to how it can be replaced by methods of comparable efficiency and productivity."

He also told the Farm Broadcasters that "the current proposed depression in the use of agricultural chemicals can be defined as the triumph of superstition, prejudice and emotion over science."

Sod Heating Damage Cut by Close Mowing

The best way to keep sod from heating and deteriorating during shipment is to cut it at 3/4-inch, remove the clippings and keep the shipping temperature under 87 degrees.

A team of Michigan State University researchers concluded that most other attempts to control sod damage—including the use of a chemical respiration inhibitor—were not effective.

Drs. John King, now with the University of Arkansas, and James Beard, MSU turfgrass researcher, reported their findings at the annual meeting of the American Society of Agronomy.

They also noted that sod is less likely to tear when sod growers applied lower rates of nitrogen (150 pounds per acre per year) rather than normal recommended levels (215 pounds per acre per year). Root production was higher for sod produced with below normal nitrogen fertilization, thus the greater sod strength.

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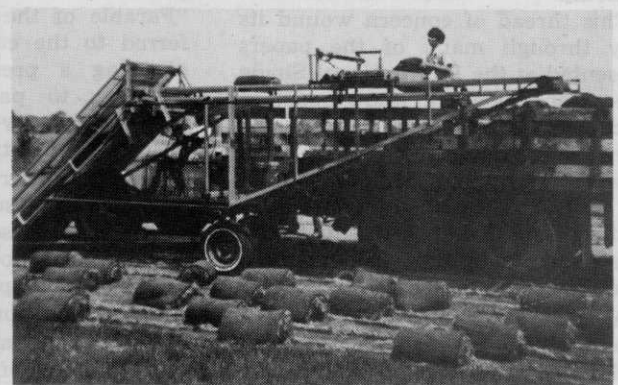
For years it has been used in overseeding programs because it retains excellent color in cold weather when Southern grasses are dormant.

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TREE CARE FACES INCREASING



EVEN THOUGH wide support could be generated for the position that trees are among the world's most important heritages, forces are at work that make preserving that heritage increasingly difficult.

This thread of concern wound its way through many of the papers presented at the International Shade Tree Conference in mid-August at Rochester, N. Y. The 46th gathering drew a record crowd of 851, surpassing the 1965 Washington meeting of 816. Thirty companies exhibited in Hotel Flagship-Rochester and about half demonstrated equipment in Genesee Valley Park.

According to some speakers, we have experienced over-reaction, and a short-sighted reaction to a condition described by Dr. James G. Horsfall as "an environment that's beginning to fight back."

The danger we must avoid as we deal with environmental problems, cautioned Dr. James Afflect, is that "We must not — we cannot let the human population be controlled by the balance of nature."

Parable of the Commons

While Dr. Horsfall's talk was not billed as a summary of the convention, it did serve to wrap up the alternatives that man has in regulating his surroundings to his benefit. Practically all of the papers presented fit into one of four

options that Dr. Horsfall suggested.

A plant pathologist, director of the Connecticut Agricultural Experiment Station and chairman of his state's environmental policy committee, Dr. Horsfall likened environmental problems to what he called the "Parable of the Commons." He referred to the early-day practice of allowing a prescribed number of villagers to pasture livestock on village property—"according to the carrying capacity of the commons."

When the carrying capacity of the commons is surpassed, problems will occur. In some areas, he said, there are just too many automobiles and too many people; consequently there is pollution of various sorts.

Options available to deal with the over-capacity of the commons, said Dr. Horsfall, are:

1. Applying science and technology to delay the collapse of the commons, or to increase the carrying capacity;
2. Educating the users of the commons on its proper use;
3. Limiting the use of the commons by legislation;
4. Limiting the users of the commons, or, in present terminology, getting the population in line with the environment.

Dr. Horsfall sees the greatest activity in the first two options, simply because "they do not interfere with our freedoms."

Though man is given dominion

over the environment in Genesis, Dr. Horsfall said, our age has become so extraordinarily complex that he no longer can do exactly as he pleases. Those today who seek the destruction of society without offering solutions to its ills "would starve to death before they could put it back together," he added.

Chemical Bans Shortsighted

As an example of the short-sightedness of the new breed of



OBSTACLES

Genesee Valley Park, Rochester, N.Y., appeared to harbor a giant metal octopus the day of field demonstrations for the International Shade Tree Conference in mid-August. Aerial lifts, such as the Skyworker, left, provided the roaming tenacles; and occasionally a whole tree was lifted from the ground, in this case by the big Vermeer tree spade.



ecologists, Dr. James Affleck, general manager of the agricultural division of American Cyanamid Company, cited one result of the DDT ban — forest defoliation by the gypsy moth.

“My home state (New Jersey) has had a 20-fold increase in two years, from 5,000 acres defoliated in 1968 to well over 100,000 this year. According to the USDA, the gypsy moth last year defoliated 260,000 acres of woodland in the U.S., three

times the acres destroyed the previous year.”

Plant protection experts, he said, point out that a single defoliation has been known to kill white pines, spruce, and hemlock. Two defoliations can kill most hardwoods.

Defoliated forests also increase fire and erosion hazards, adversely affect stream flow, reduce land and recreational values and destroy wildlife habitats.

This seemingly missionary zeal to ban broad spectrum pesticides currently in use will lead to more serious disasters, he continued, to include reduced food production and increased famine.

Dr. Affleck stated Cyanamid does not produce or market DDT or any of the other persistent, chlorinated hydrocarbon pesticides currently under fire and expects to profit from their curtailed use. However, he said, “I must warn that we are moving far too rapidly to restrict the use of these products before we have developed others to take their place.”

He termed the “balance of na-

ture” a continuing series of catastrophes in which life forms are wiped out by disease or starvation.

Not all our environmental problems are pollution problems, he stated. “If we can be a little patient, we will solve most of our problems in the area of pesticides.”

In the meantime, he urged his listeners to stimulate correct use of today’s chemicals, to take an active role in the scientific and political arguments in which environmental problems will be measured and solutions devised and accepted; and to speak out against unreasonable, unscientific, or unfounded attacks on the “vital elements of today’s life.”

Policy on New Pesticides

Dr. Ernest A. Walker of the pesticide registration division of USDA’s Agricultural Research Service, reported on what Secretary of Agriculture Clifford Hardin said his department will be looking for as new pesticides are being registered:

—The period of time and the conditions under which the product will persist in the atmosphere;

—Whether the product is likely to be moved out of the area of use because of solubility and mobility, and what potential effects may be anticipated;

—Whether the product is transformed into other chemicals which might have adverse effects on the

Some aerial lifts were old friends to ISTC members, such as the Hi-Ranger from Mobile Aerial Towers. Others were hopefully new friends, one being the Versalift at near left. Joseph M. Cordero, left, is president of Versalift Sales Co. Asplundh Chipper Co. and Baker Equipment Co. also demonstrated lifts.





environment, and on living man, useful vertebrate and invertebrate animals, and on useful vegetation; —Whether there is a need for the product for essential uses for which there is no alternative available;

Systemic Fungicides for Trees

As with most controversies, there are some positive results emerging from the pesticide-pollution-environment arena. Several papers reflected the spurred research effort across the country, much of it attacking old problems from new directions. In the words of Dr. Horsfall, renewed effort is taking place to delay the collapse of the commons or to increase its carrying capacity, that is, Option No. 1.

Dr. Winand K. Hock reported on systemic fungicides for controlling vascular disease in shade trees, such as Dutch elm disease, oak wilt, verticillium wilt, and mimosa wilt.

“Our approach to control these diseases has always been indirect,” said Hock. “We rely heavily upon insecticides to control vectors; sanitation to remove sources of infected wood and to destroy breeding haunts; fumigants to sever root grafts; and fertilization and other cultural practices to offset effects of the disease.”

Legislation against insecticides and sanitation costs are forcing us to seek alternatives, he said, including the development of agents that have a decisive impact on the pathogens themselves.

Hock said that although recommendations cannot yet be made nor have products been registered, “finally, we appear to be on the threshold of developing such materials.”

At Virginia Polytechnic Institute, Hock reported, symptoms of Dutch Elm disease were retarded in America elms treated with either benomyl or thiabendazole prior to inoculation with *Ceratocystis ulmi*. Benlate is the trademark name of benomyl, owned by DuPont Company, Wilmington, Del.; Mertect is the tradename for thiabendazole, owned by Merck Chemical Company, Rahway, N. J.

Connecticut Agricultural Experiment Station found that benomyl reduced foliar symptoms of *C. ulmi* an average of 89% and that protection lasted 10 weeks, more than

Richard E. Abbott, out-going ISTC president tries a Limb-Lopper under the watchful eye of sales representative Bob Bennett. Below, Francis F. Darrow checks out a Homelite saw to see that everything is working properly.

enough time to protect the trees throughout their maximum period of susceptibility.

Dr. Hock reported of successes with benomyl also at the Delaware, Ohio, Shade Tree Laboratory, where he is stationed. Elm seedlings, one, two and three years old, were treated twice a week with 200 ml of either a 500ppm or a 1,500ppm active aqueous suspension of benomyl applied as a sand drench. After four applications, each tree was inoculated with spores of *C. ulmi*. Seedlings then received eight additional benomyl treatments. Five days following the final treatment, the seedlings were examined for foliar symptoms and stem sections were cultured to determine the presence of *C. ulmi*. The results:

“Forty-three percent of the untreated plants exhibited symptoms of Dutch Elm disease compared with 1.7% of the treated plants,” reported Dr. Hock. “Even more striking was the contrast between treated and untreated trees in attempts to isolate *C. ulmi* from the wood. We were unable to isolate the fungus from any of the 60 treated plants; whereas, we isolated the fungus from 80% of the untreated trees.”

Urban Forestry Education

Canada has taken a lead in educating the public concerning the proper development and use of the tree commons. Prof. Erik Jorgensen of the University of Toronto talked about the urban forestry education program that has evolved “since programs of planting trees other than for lumber production began sometime in the 1860s or 70s.”

Urban forestry curriculum has been added to the Shade Tree Research Laboratory, established in 1962 as a part of the Faculty of Forestry, he said.

Jorgensen defined urban forestry as a “specialized branch of forestry that has as its objective the cultivation and management of trees for their present and potential contribution to the physiological, sociological, and economic well-being of urban society. These contributions include the over-all ameliorating effect of trees on their environment, as well as their recreational and general amenity value.”

In shorter terms, he described it as tree management in an entire area influenced by and utilized by the urban population.

In 1965, Jorgensen said a graduate course in urban forestry was added. Course lectures and seminars, heavy on student participation, focus on:



Chips fly from a Mitts and Merrill chipper, one of three demonstrated. Others were the Asplundh chipper and the Wood/Chuck, made by Safety Test & Equipment Co.

—The interaction between trees and their environment;

—Cultivation and maintenance of trees under different environments;

—Human relationships to the environment and especially to trees.

Urban forestry was first offered as an undergraduate course in 1969, for the first time bringing forestry students and landscape architects together. The value of this academic marriage, Jorgensen said, is that it "opens the eyes of the students to his responsibilities to society as a whole. He learns to understand that the growing of trees is far more than the mere production of wood products."

Among research projects under way, Jorgensen discussed the vegetative reproduction of trees. Work is promising with maples, he said. Several clones have been established

and are operated as "living tree shows."

Eventually, tree growers would get cutting material from clonal plantings from commercial nurseries. Disease-resistant varieties of elms might be propagated in this manner, he said. "And we hope to get one or two frost-resistant honey locust from 6,000 seedlings."

Present objectives, Jorgensen said, "are to conserve and propagate the valuable material — in particular, their genes. Later we might use the material for breeding by hybridization."

Concluding, Jorgensen reminded that urban forests are unique in that they are man-made. They lack over-all design and statement of purpose for proper management.

"It is none too early for us to learn to appreciate and manage our urban forests," he said. "It takes 100 years for maple to mature, but it can be

destroyed in a few minutes. It cannot be resurrected, for there are no instant mature trees."

Tree-Removal Cost-Sharing

One of the major problems of managing the urban forest, compounded by Dutch Elm disease, is tree removal. Granger Green, operations superintendent, outlined the cost-sharing tree removal program that his company, Rochester Gas and Electric Company, participates in.

With thousands of dead elms and maples in the city and the cost for removing a typical big tree determined to be around \$475, a cost-sharing program seemed a necessity, Green said. Since tree removal would benefit the telephone company and homeowners, these groups were approached and accepted the idea. Tree removal costs had been borne entirely by the telephone, gas and electric utilities, Green said, so the largest hurdle was re-educating the public. Television was used, but on-the-spot discussions with homeowners were most successful, he said. About 90% were happy to share the cost, Green added. Monroe Tree Surgeons, Inc., received the contract for actual tree removal. The system works this way:

A Monroe Tree representative contacts the homeowner to obtain written approval for cost-sharing and to estimate the price of removal. Then light and telephone representatives visit the site to determine who benefits most and therefore who pays the bigger percentage of the cost. Usually each utility will share between one-fifth and one-third of the cost, Green said.

"We've been very satisfied," Green said. "A 50% reduction in

(Continued on page 38)



Fred Micha, vice-president of sales, Monroe Tree Surgeons, was general chairman for the 46th ISTC record meeting. Leadership for the coming year is, from the left: John A. Weidhaas, Jr., of Blacksburg, Va., vice-president; Dr. E. B. Himelick of Urbana, Ill., executive director; H. M. Van Wormer of Richmond, Va., president-elect; Richard E. Abbott



of Canton, Ohio, immediate past president; J. A. Kimmel of Toronto, Canada, president; Dr. L. C. Chadwick of Columbus, Ohio, executive director emeritus; and E. C. Bundy of Urbana, Ill., executive secretary. Dr. Dan Neely, not pictured, is the new editor of the ISTC newsletter.



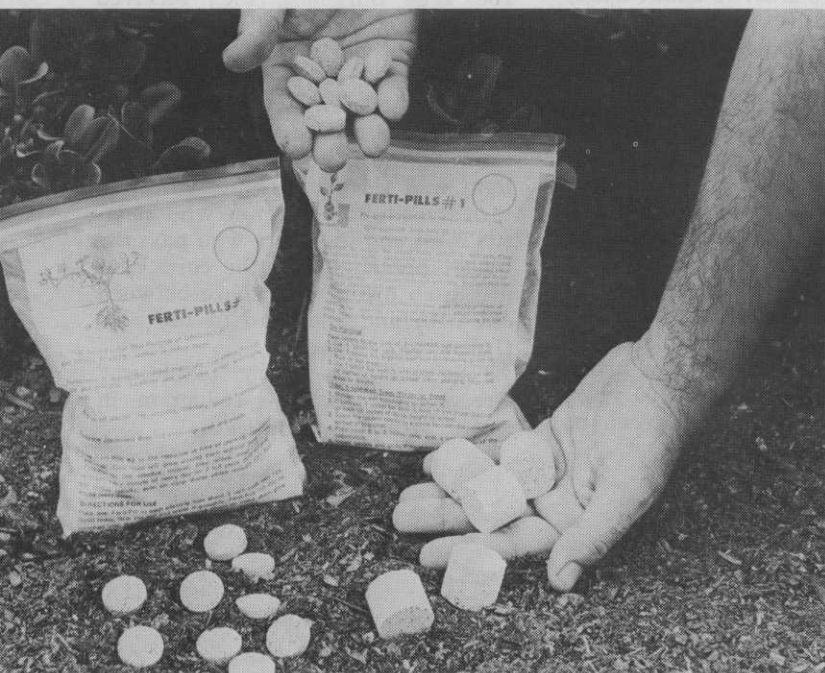
SCARIFIER/TRACTOR COMBINATION, Waldon, Inc., Fairview, Okla.

The Waldon Scarifier is designed to work on the three-point hitch for the Waldon 5000 tractor and will work on any category 1, 3-point hitch. The Waldon Scarifier features three heavy-duty shanks and points as standard equipment and more may be added. The frame of the scarifier unit is also available with chisel plow shank and teeth. Excellent for ripping ground or blacktop or many other hard materials. For more details, circle (701) on the reply card.



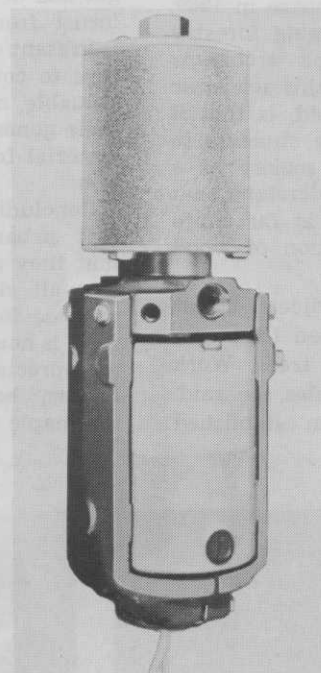
LAKE DYE, C. B. Dolge Co., Westport Conn.

Turn your muddy water hazard and ponds to bright blue or blue green with non-toxic Dolge Lake Dye. It will not harm fish or other wildlife; will help keep down algae. This powder can be stored indefinitely without deteriorating. Put in 2 pounds per acre of water 4 to 5 feet deep. Use more if the pond is deeper—or if you want deeper color. It's long-lasting, keeping a pond attractively colored for several months, if there is no outlet. For more details, circle (702) on the reply card.



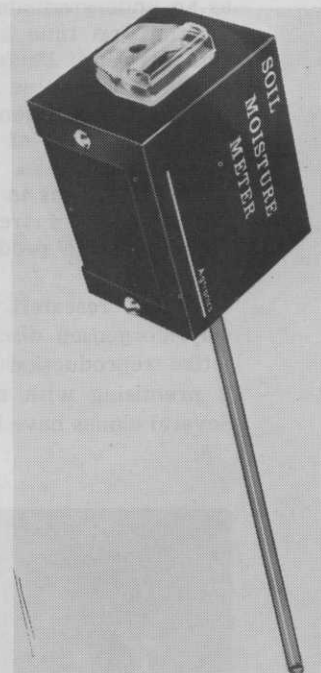
FERTI-PILLS, Butler's Mill, Inc., San Diego, Calif.

Ferti-pills have range of uses from window-box gardeners to orchard developers. The tablets are designed to break down slowly, over a two-year period, providing both major and minor nutrients to the root zone. In its new form, it has produced immediate acceptance from homeowners and gardeners. The tablet form was originally developed by Agriform International Chemicals, Inc., 13 years ago for landscapers, nurseries, and other commercial gardeners. For more details, circle (705) on the reply card.



SPRAY HEAD, Beeco Products Co., Fort Washington, Pa.

BEECOMIST spray head offers precise control of droplet size from 2 to 60 microns for low-volume or ultra low-volume application. A metal sleeve driven at high speed by electric motor determines droplet size and volume of application. Unit is suitable for air-blast sprayers and fixed-wing aircraft and helicopters. For more details, circle (706) on the reply card.



SOIL MOISTURE METER, Agtronics Mfg. Co., Barstow, Calif.

Insert Agtronics probe. Moisture content registers instantly. Reading of 5 is saturation; 0 is bone dry. A chart on the back of unit translates meter reading to action requirements, for different plant groups. Unit can be calibrated in the field, but comes ready to use, equipped with a regular AA battery. All metal construction. For more details, circle (707) on the reply card.