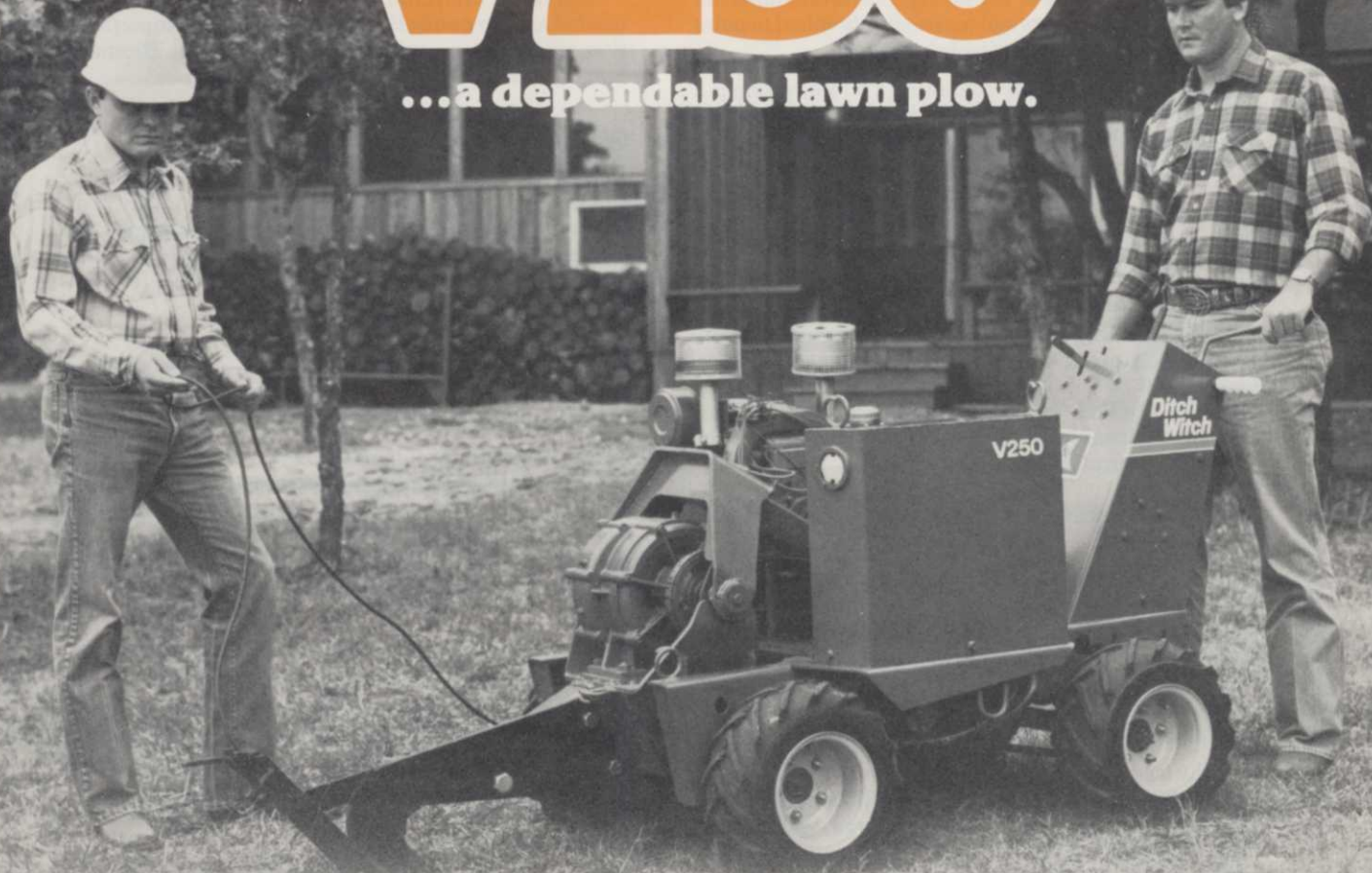


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Ditch Witch

VEGETATION MANAGEMENT

By Roger Funk, Ph.D., Davey Tree Expert Co., Kent, Ohio

Q: Last winter many of my young trees were damaged by mice. Several years ago we used a chemical to paint the trunks but I can't remember its name.

A: The product probably contained Thiram, which is a taste repellent registered for use against mice. One application applied before damage starts should protect the plants during the dormant period.

Q: How can I easily tell if the trees I bought from a local nursery are really Chinese elm and not Siberian elm? I do not have any horticultural training.

A: The easiest way to identify the two species is the time of flowering. Siberian elm (*Ulmus pumila*) blooms in spring before the tree leafs out, whereas, Chinese elm (*Ulmus parvifolia*) blooms inconspicuously in the fall. Also, the buds in the axils of the leaves of Siberian elm are noticeably larger than those of Chinese elm and have a purplish coloration.

Q: How can I prevent sapsucker feeding on hemlock trees?

A: Sapsuckers are protected under the Migratory Bird Treaty Act so I wouldn't attempt anything too drastic. If practical in your situation, you might protect the feeding area with hardware cloth or burlap wrap.

Q: What can be done to protect a tree from an oil spill over a fairly large portion of the root system?

A: If the tree is small, it could be replanted in a new location after washing contaminated soil from the roots. There is no practical way to treat large, established trees. Stimulating more rapid biodegradation of the spilled oil by drill-hole aeration (which also helps replace oxygen utilized by the microorganisms), fertilization and liming to correct an acid soil reaction may be helpful.

Q: What can be done to improve the condition and appearance of trees injured by broadleaf herbicides applied to a lawn?

A: There is no specific treatment to alleviate the injury. In most cases trees recover and will appear normal in two or three years. Pruning the affected branches may help the appearance of the tree. Additional water may also be helpful, but it would probably be best not to fertilize the trees until they show signs of recovery.

Q: Our maintenance crew mistakenly applied a herbicide containing Bromacil around the base of some trees. What can be done to protect the trees from injury?

A: Since Bromacil is water soluble, water should NOT be applied. Water would help distribute the herbicide throughout the root zone, increasing the potential for injury.

Activated charcoal can be distributed over the treated area to neutralize the chemical. Soil incorporation gives better results since much of the Bromacil may have already penetrated into the soil.

Q: What will control moss in a lawn?

A: Chemicals such as copper sulfate, ammonium sulfate, and mercurous chloride will temporarily control moss but it will return unless the conditions for turfgrass growth are improved. Factors which favor moss are heavy shade, poor drainage, low fertility, scalping, and improper soil pH.

Q: Several of the lawns that we service are full of mounds of soil which I was told were caused by crayfish. How do we get rid of them?

A: Crayfish are a problem on poorly drained soils with a high water table. If it is not practical to improve the drainage, contact your local cooperative extension agent about the status of chlordane. A dilute solution poured into the holes has reportedly been helpful in ridding an area of crayfish.

Q: We have all heard or read the advantages of top-dressing. What about discussing the problems?

A: Top-dressing applies a thin layer of soil on established turfgrass to help control thatch, smooth the soil surface, and facilitate more rapid recovery from stresses. Top-dressing can also change the characteristics of the rooting environment which may have a detrimental effect on rooting.

The most serious problem associated with top-dressing is the formation of soil layers. When a soil is used for top-dressing which is a different type than the underlying soil, a layer of interface is formed. Interfaces resist penetration of water and inhibit gaseous exchange between the soil and atmosphere, thus restricting root growth.

The use of sand as a top-dressing on a clay soil requires special attention to minimize the effect of layering. Current evidence suggests that once sand top-dressing is initiated, continued use of sand is necessary to prevent future problems. In addition, if coring is practiced to allow sand incorporation in the coring holes, the cores from the holes should be removed.

If the existing soil has favorable characteristics, the use of a similar soil for top-dressing will eliminate the problem of layering.

Send your questions or comments to: Vegetation Management c/o WEEDS TREES & TURF, 757 Third Avenue, New York, NY 10017. Leave at least two months for Roger Funk's response in this column.



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SOD PRODUCER NEWS

Study determines effects of fungicides on thatch and pH

Different fungicides induce significant variations in thatch accumulation, according to research of Dr. Smiley, assistant professor of turfgrass pathology at Cornell University.

After testing 14 fungicides and one nematicide on Kentucky bluegrass turf through three seasons of application, Smiley found that some spur significant accumulation of thatch while others cause little or no accumulation.

"Our results indicate that decomposition of thatch was possibly impeded through the inhibition of microbial activities by unfavorable pH environment and/or by direct toxicity of the fungicides," said Smiley.

He said that decomposition of sulfur-bearing fungicides contributed sufficient acidity to inhibit the decomposition of thatch and these acidification processes explain the magnitude of thatch accumulation in most instances.

The study prompted Smiley to say that too often fungicide choice is made only by taking immediate cost and target pathogens into consideration, without considering the long-term effects which the fungicide may have.

Sod roof makes good insulator, attracts international attention

An Encino, CA, couple caught the attention of many people passing by and news media from different countries when they installed 3,000 feet of bluegrass sod on their roof.

JoAnn and Kenneth Cowans spent seven years researching the project, especially the subject of transpiration cooling. Their whole purpose behind installing the sod roof was the tremendous cooling and cost benefit it provides. Their electric bill has been cut by

half to two-thirds since the sod was put in, and the temperature in the house during the winter months is milder.

Mowing takes about two hours and is a challenge. Peaks and a network of irrigation lines on the roof can be easily damaged. The bluegrass itself is susceptible to heat damage and fungus, and the Cowans require professional help.

Help comes from the company who grew the sod, Pacific Green Sod, Camarillo, CA. President Richard Rogers said, "This was probably the most publicized 3,000 feet of bluegrass we ever grew." The story appeared on the front page of the Los Angeles Times, was the subject of two television interview, and drew media calls from Canada and Europe.

Pennsylvania Turfgrass Council builds display for museum items

Funds from the Pennsylvania Turfgrass Council and collected turfgrass memorabilia are helping to build a new area of museum pieces on the Penn State University campus.

The council, which has grown to about 400 members, is funding the cost from membership dues, trade shows, and turf schools. All types of turf equipment, donated by golf course superintendents and other grounds managers, have accumulated to warrant their own housing.

Dr. Joseph Duich, professor of turfgrass science and liaison between the council and university, said some of the items date back to the early days of turf equipment. These include early sod cutting equipment, sickle mowers with two blades, old spiking and brushing equipment, early aerifiers, punches, fertilizers, spreaders, and seeders. Turfgrass students are sandblasting the metal and refinishing the equipment.

Dutch expects that the building will be constructed by the end of the year.

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landscape height at maturity is between 45 and 55 feet, although native plants have been found reaching heights of 110 to 120 feet. Its rate of growth is somewhat slower than White Spruce. Soils with much gravel don't bother *P. orientalis*. When used in the Midwest, some form of winter protection is desirable. Some plantmen have reported Oriental Spruce is more graceful than Norway or White Spruce, but in our experience, Norway Spruce is hard to beat.

Colorado Spruce (*P. pungens*) is one of the most widely-used spruces throughout the Midwest. In fact, it is almost overused. It is broadly pyramidal with a stiff horizontal branching, often reaching 40 to 50 feet in height with a 15- to 25-foot spread at maturity. *P. pungens* is native to the Southwestern United States and the Rocky Mountain area. Colorado Spruce grows in a wide range of soils, thriving in well-drained fertile soils but tolerating heavier clay soils of the Midwest. The needle is 3/4 to 1 1/2 inches long and glaucous-green. The desired plant has a steel blue foliage color. *P. pungens* is very susceptible to *Cytospora* canker, often succumbing in the first 15 to 20 years. In fact, there are few *P. pungens* in Central Michigan which are not affected at 30 years of age by *Cytospora* canker, which, of course, leads to general decline or death.

One of the most outstanding cultivars of Colorado Spruce is 'Honnell' (*P. pungens* 'Hunnelliana').

It is dwarf, somewhat conical, and silver to deep blue in color. It grows at a greatly reduced rate while integrating well into most intimate or home landscapes. 'Koster' Blue Spruce (*P. pungens* 'Kosteriana') is a sharp, deep blue cultivar, and quite formal. Its habit of growth is normal for Colorado Spruce, but can be narrow. A deep blue color distinguishes its attractiveness.

Most spruce are truly sentinels in the landscape. They grow best alone or in small groupings. The few companion trees to spruce would be large pines, e.g., White Bark Pine (*Pinus albicaulis*), Eastern White Pine (*P. strobus*), Austrian Pine (*P. nigra*), or Eastern Redcedar (*Juniperus virginiana*). Spruce are very effective in large-area landscapes; Norway Spruce is outstanding. These trees show good tolerance to salt spray and adapt well to Midwestern soils. If there is any one spruce overused, Colorado Blue Spruce would highlight the list. Not only does *P. pungens* have many insect problems, but *Cytospora* canker often results in premature death of the tree. Colorado Spruce may be striking or outstanding in the Far West (dry), but in the humid Great Lake States, it should be used with caution. If spruce are desired in the home or small-area landscapes, then the many cultivars — *P. abies* 'Remonti,' 'Kosteriana,' or 'Nudiformis' — should be considered.

WTT



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WT&T PRODUCTS

Easy-hitch snow plow reduces operator fatigue, contains a sealed valve for protection against snow and salt, and has a triple filter with built-in relief valves and by-pass system. Its hydraulics mount either directly to the hitch



frame, keeping hose lengths short and neat, or inside engine compartment to protect from the weather. Console sets neatly on the dash with only one wire entering the cab area. Model PV 200 (shown) is one in a line of plows from Swenson Spreader Co.

Write 701 on reader service card

Hydroconstant variable speed drive on pumps and fans offers an economical way to transform a relatively con-

stant input speed into a variable output speed, thus conserving both energy and money. Many different models are available from the manufacturer, Peerless Pump.

Write 702 on reader service card

Owatonna Mfg. Co., Inc. has introduced its 441 Mustang loader which has a load rating of 1,400 pounds (diesel) and 1,325 pounds (gas). It comes with either a 107.4-cubic inch (1,760 cc) Perkins or a 44-horsepower (1,600 cc)



Ford engine that are both liquid-cooled. This compact machine digs, scarifies, lifts, carries, and plants.

Write 703 on reader service card

W-W Grinder Inc. has produced the W-W PS-325-3 power sprayer for spraying jobs, such as weed and insect control, lawn and garden fertilizing, and application of dormant oils and or-



ganic pesticides. Four wheels make it portable and easy to hand tow or hitch to garden tractors. Standard features are a no-rust polyolefin tank with a 25-gallon capacity and a 3-horsepower Briggs and Stratton gasoline engine. Its spray pattern reaches 25 feet.

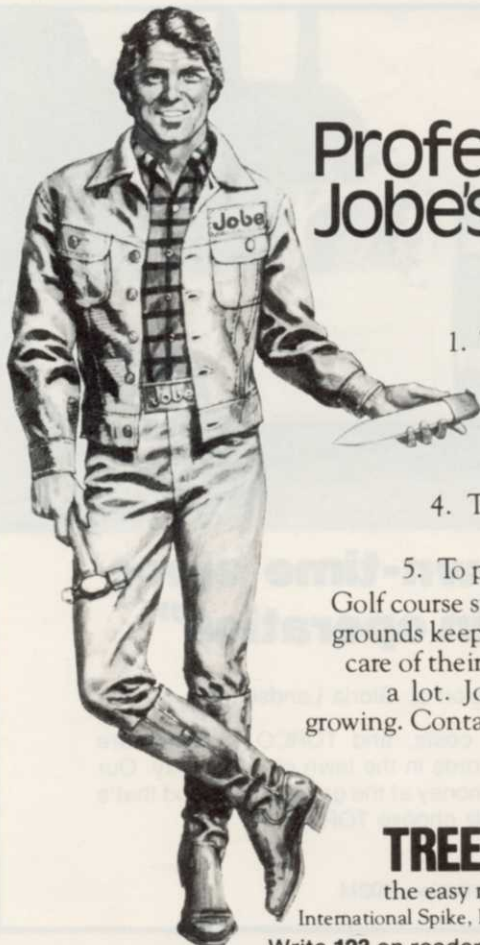
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Power lawn aerator, model 1703, opens a narrow furrow with its tines to aerify an 18-inch swath. The machine, from Feldmann Engineering &



Manufacturing Co., Inc., has an automatic single lever hand release clutch for forward and neutral, fold down handle, lift grip, and weighs 60 pounds.

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Sand and salt spreader E-poke model TM 35, distributed in North America by Thomsen Products, Inc., is an ideal tow-behind spreader for sidewalks, bicycle paths, and pedestrian malls. The



44-inch wide machine incorporates a low center of gravity to help eliminate potential tip-overs and spreads a three-foot pattern with abrasives, salt, calcium chloride, or urea.

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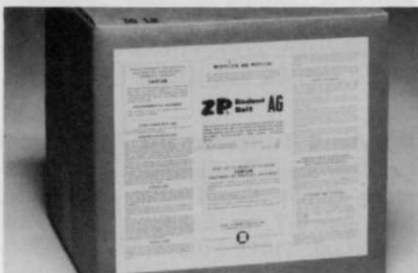
Firewood splitter MX-400 from LaFont Corp. is designed with a tubular steel frame, large hydraulic oil reservoir, automatic or semi-automatic cycles, safety returns, a 13-inch wedge, 4-inch



cylinder, and 24-inch wood lengths. It allows operation while still hooked to your car. Standard equipment includes taillights, safety chains, 1 7/8-inch ball hitch, and fenders.

Write 707 on reader service card

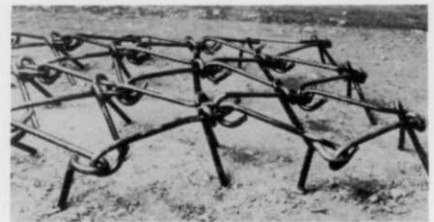
Bell Laboratories, Inc. has received EPA registration for its ZP Rodent Bait AG for control of ground squirrels, prairie dogs, voles, rats, and mice. It kills rodents on rangelands, rights-of-way, golf courses, parks, and other out-



door areas in one feeding. It applies by hand or broadcast by ground sprayers or aircraft.

Write 708 on reader service card

Flexible tine harrow from Fuerst Brothers, Inc. contains a series of seven 6-inch steel tine teeth, each 3 1/2 inches long and linked together in a blanket-like effect to properly incorporate herbicides into the soil. It has no rigid



frame and can snake over the contours of the ground. Harrow comes in widths of 4 1/2, 8, 10, 12, 16, 20, and 24 feet.

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Panasonic's new hand-held 30X microscope with its own built-in light source is tailor-made for pest control diagnostics and high impact sales presentations in the field.

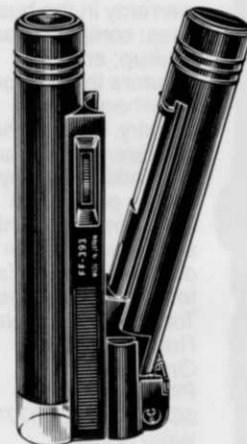
It's a great little unit! The microscope is compact. Only 5 1/2" long and folds up into a handy leatherette carrying case. . . small enough to tuck into your pocket.

When you are ready to use it, simply unfold the scope and its AA battery-powered light source comes on. The lamp even has a blue filter to give you a sharper, more vivid image!

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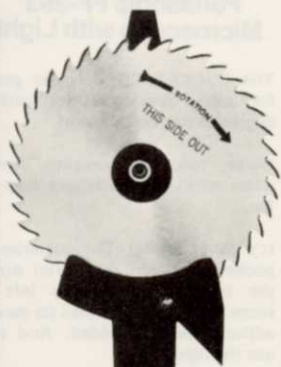
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14th Annual Delaware Turfgrass Conference, Hercules Country Club, Hercules Road, Wilmington, DE, **Dec. 1**. Contact Dr. William Mitchell, Plant Science Dept., University of Delaware, Newark, DE 19711, 303/738-2531.

Maintenance Symposium for ALCA, Washington Plaza Hotel, Seattle, WA, **Dec. 1-3**. Contact Associated Landscape Contractors of America, 1750 Old Meadow Road, McLean, VA 22102, 703/821-8611.

Turfgrass Conference, Rudder Conference Center, Texas A&M University, College Station, TX, **Dec. 1-3**. Contact Richard L. Duble, Soil & Crop Sciences Dept., Texas A&M University, College Station, TX 77843, 713/845-4826.

26th Annual Convention and Chemical/Equipment Exhibition, Las Vegas Convention Center, Las Vegas, NV, **Dec. 1-4**. Contact J.W. Eisele, 8823 N. Industrial Rd., Peoria, IL 61614, 309/691-2870.

Symposium on Surface Mining Hydrology, Sedimentology and Reclamation, Lexington, KY, **Dec. 1-5**. Contact Sue H. Hill, conference coordinator, University of Kentucky, College of Engineering, Anderson Hall, Lexington, KY 40506, 606/257-3971.

Minnesota Park Supervisors Association winter meeting, Washington County Park Dept., **Dec. 2**. Contact Thomas Feltl, M.P.S.A. Secretary, 8200 Wayzata Blvd., Golden Valley, MN 55427.

Ohio Turfgrass Conference and Show, Ohio Center, Columbus, OH, **Dec. 2-4**. Contact John R. Street, Cooperative Extension Service, The Ohio State University, 1827 Neil Ave., Columbus, OH 43210.

Kentucky ISA Chapter meeting, Holiday Inn North, Lexington, KY, **Dec. 8-9**. Contact Ervin C. Bundy, ISA Executive Director, 5 Lincoln Square, P.O. Box 71, Urbana, IL 61801, 217/320-2032.

New Jersey Turfgrass Expo '80, Cherry Hill Hyatt House, Rt. 73, Cherry Hill, NJ, **Dec. 8-11**. Contact Dr. Henry W. Indyk, General Chairman, Soils & Crops Department, P.O. Box 231-Cook College, New Brunswick, NJ 08903, 201/932-9453.

The current issue of **WEEDS TREES & TURF** carries meeting dates beginning with the following month. To insure that your event is included, please forward it, 90 days in advance, to: **WEEDS TREES & TURF Events**, 757 Third Ave., New York, NY 10017.

National Arborist Association 6th Annual Technical Seminar, Hyatt Regency O'Hare, Chicago, IL, **Dec. 9-10**. Contact Robert Felix, Executive Vice President, National Arborist Association, 3537 Stratford Rd., Wantagh, NY 11793, 516/221-3082.

Irrigation Association of New Jersey Annual Convention meeting, Hyatt House, Route 70, Cherry Hill, NJ, **Dec. 9**. Contact Irrigation Assn. of NJ, P.O. Box 128, Dayton, NJ 08810, 201/329-6003.

Ohio Turfgrass Conference & Show, Dayton Convention and Exposition Center, Dayton, OH, **Dec. 9-11**. Contact Dr. John Street, 1827 Neil Ave., Columbus, OH 43210, 614/422-2592.

Residential Landscape Design Short Course I, Fisher Auditorium, Ohio Agricultural Research and Development Center, Wooster, OH, **Dec. 10-12**. Contact Fred K. Buscher, Area Extension Agent-Landscape Horticulture, Administration Building, OARDC, Wooster, OH 44691, 216/262-8176.

21st Illinois Turfgrass Conference and Regional Show, Prairie Capital Convention Center, Springfield, IL, **Dec. 16-18**. Contact Illinois Turfgrass Foundation, P.O. Box 501, Urbana, IL 61801.

Surface Irrigation Short Course, San Luis Obispo, CA, **Dec. 16-18**. Contact The Irrigation Association, 13975 Connecticut Ave., Silver Spring, MD 20906, 301/871-1200.

Western Association of Nurserymen, Trade Show and 91st Annual Meeting, Hilton Plaza Inn, Kansas City, MO, **Jan. 4-6**. Contact Ed Gray, Executive Secretary, Western Association of Nurserymen, 2215 Forest Lane, Kansas City, KS 66106, 913/236-5203.

Maryland Turfgrass 81, Educational Conference & Trade Show, New Baltimore Convention Center, Baltimore, MD, **Jan. 5-7**. Contact John Strickland, President, 11412 Pulaski Hwy., White Marsh, MD 21162, 301/335-3700.

Indiana ISA chapter meeting, Atkinson Hotel, Indianapolis, IN, **Jan. 6-8**. Contact Ervin C. Bundy, ISA Executive Director, 5 Lincoln Square, P.O. Box 71, Urbana, IL 61801, 217/320-2032.

The Irrigation Association Short Course, Rochelle Park, NJ, **Jan. 6-8**. Contact The Irrigation Association, 13975 Connecticut Ave., Silver Spring, MD 20906, 301/871-1200.

Residential Landscape Design Short Course II, Fisher Auditorium, Ohio Agricultural Research and Development Center, Wooster, OH, **Jan. 7-9**. Contact Fred K. Buscher, Area Extension Agent-Landscape Horticulture, Administration Building, OARDC, Wooster, OH 44691.

Institute for Agricultural Irrigation, California State University, Fresno, CA, **Jan. 5-16**. Contact the Irrigation Association, 13975 Connecticut Ave., Silver Spring, MD 20906.

Midwestern ISA chapter meeting, Sheraton O'Hare, Rosemont, IL, **Jan. 11-13**. Contact Ervin C. Bundy, ISA Executive Director, 5 Lincoln Square, P.O. Box 71, Urbana, IL 61801, 217/320-2032.

North Carolina State University Agricultural Chemicals School, McKimmon Center for Extension and Continuing Education, Raleigh Campus, **Jan. 12-13**. Contact A.D. Worsham, Chairman, Program Committee, Department of Crop Science, Box 5155, Raleigh, NC 27650.

Southeastern Pennsylvania Turf School & Trade Show, Westover Country Club, Jeffersonville, PA, **Jan. 13-14**. Contact Dr. William H. White, Philadelphia County Cooperative Extension Service, SE Corner Broad & Grange Streets, Philadelphia, PA 19141, 215/424-0650.

27th Rocky Mountain Regional Turfgrass Conference, Lory Student Center, Colorado State Univ., Ft. Collins, CO., **Jan. 15-16**. Contact Jack D. Butler, Dept. of Horticulture, Colorado State Univ., Fort Collins, CO 80523, 303/491-7070.

The New Hampshire Turfgrass Conference, Sheraton-Wayfarer Motor Inn, Bedford, NH, **Jan. 15-16**. Contact Dr. John M. Roberts, Extension Specialist, Turf, Dept. of Plant Science, Nesmith Hall, Univ. of N.H., Durham, NH 03824, 603/862-1200.

Mid-America Horticultural Trade Show, Hyatt Regency Hotel, Chicago, IL, **Jan. 16-18**. Contact Mid-Am, 4300-L Lincoln Ave., Rolling Meadows, IL 60008, 312/359-8160.

New York Arborists ISA chapter convention, Marriott Inn, East Syracuse, NY, **Jan. 18-20**. Contact Margaret Herbst, Executive Secretary, New York State Arborists, ISA Chapter, 230 Park Avenue, New York, NY 10017.

The Irrigation Association Short Course, Kansas City, MO, **Jan. 20-22**. Contact the Irrigation Association, 13975 Connecticut Ave., Silver Spring, MD 20906, 301/871-1200.

Western Pennsylvania Turf & Grounds Maintenance School & Trade Show, Howard Johnson Motor Lodge, Monroeville, PA, **Jan. 20-22**. Contact Philip L. Sellers, Allegheny

County Cooperative Extension Service, 311 Jones Law Building Annex, 311 Ross Street, Pittsburgh, PA 15219, 412/355-4275.

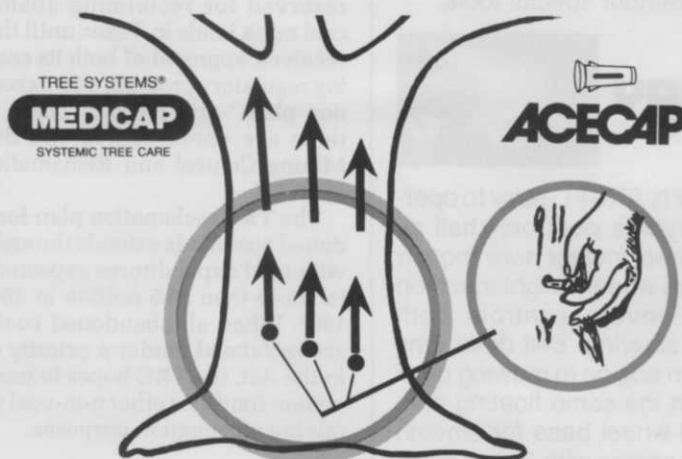
Southern Weed Science Society 34th Annual Meeting, Dallas Hilton Hotel, Dallas, TX, **Jan. 20-22**. Contact John R. Abernathy, Secretary-Treasurer, Texas Agricultural Experiment Station, Route 3, Lubbock, TX 79401.

Virginia Turfgrass Conference and Trade Show, John Marshall Hotel, Richmond, VA, **Jan. 20-22**. Contact John R. Hall, III, Extension Specialist, Turf, VPI & SU, 426 Smyth Hall, Blacksburg, VA 24061, 703/961-5797.



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The Land Reclamation Report

Texas gets approval of state reclamation plan

Texas has become the first coal mining state to receive approval of its reclamation plan from the Interior Department's Office of Surface Mining OSM.

Approval of the state plan submitted by the Texas Railroad Commission will entitle Texas to request up to \$1.7 million, said OSM Director Walter N. Heine. This is 50 percent of all reclamation fees collected from active coal mining operations in the state since Oct. 1, 1977, when the fee system went into effect, through Sept. 30, 1979. Texas can receive the funds after OSM has reviewed and approved the specific projects proposed.

"The \$1.7 million now available was reserved for reclaiming abandoned coal mine lands in Texas until the state received approval of both its coal mining regulatory program and its reclamation plan," said Heine. "These conditions are contained in the Surface Mining Control and Reclamation Act of 1977."

The TRC reclamation plan for abandoned coal lands extends through 1982, with total expenditures expected to total more than \$5.5 million in 1981 and 1982. When all abandoned coal lands are reclaimed, under a priority system in the Act, the TRC hopes to use reclamation funds for other non-coal related mining reclamation purposes.

Ranking study will help pick mining sites

A method of selecting sites for coal surface mines in areas where protection of environmental and cultural values is especially important will be developed for the Montana Crow Indian Reservation.

The Bureau of Mines has awarded a \$70,000 contract to Harvard University to rank the resources—economic, like coal and water, cultural, and environmental—of the area. The Bureau feels that such a plan would be widely useful to the mining industry in areas where sensitive factors should be considered before mining.

The 69,000-acre coal reserve area of the reservation has an estimated six bil-

lion tons of coal reserves. It is also a breeding ground for prairie dogs, deer, elk, hawks, golden eagles, and other wildlife; and contains tribal burial grounds, ruins, and rock art sites.

Coal production will reach 1.25 billion tons

Domestic coal production should increase by 62 percent over the next 10 years, according to a study by the Economics Committee of the National Coal Association.

The U.S. coal industry, which currently is able to produce at least 100 million tons more each year than is being used, will see production reach 1.25 billion tons annually by 1990 compared to a projected rise to 1.17 billion tons of consumption.

Major factors cited by the Economics Committee as affecting future growth include increased demand for electricity and steel, availability of nuclear power, supply and price of oil and natural gas, impact of environmental regulations, growth in U.S. coal's export market, and the rate of development of coal-based synthetic fuels.

Report shows advances in mine reclamation

Improvements in seven areas of surface coal-mine reclamation—from topsoil rock removal to the transplanting of vegetation—are summarized in a report of the Bureau of Mines.

The 80-page report consists of seven articles on recent advances in reclamation techniques, machinery, and research. It is illustrated with photos, tables, and diagrams.

Single copies of Information Circular 8823, "Surface Coal Mining Reclamation Equipment and Techniques, Proceedings: Bureau of Mines Technology Transfer Seminars, Evansville, Ind., June 3, 1980, and Denver, Colo., June 5, 1980," can be obtained free from: Publications Distribution, Bureau of Mines, 4800 Forbes Ave., Pittsburgh, Pa. 15213, 412/621-4500, ext. 342. Requests should specify the complete title and number of the report.