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LANDSCAPE CONTRACTOR NEWS

North Carolina groups combine meetings

Landscape contractors, landscape architects, and nurserymen in North Carolina have worked together to plan an annual meeting involving all three organizations.

The NC Landscape Contractors, the NC Chapter of American Society of Landscape Architects, and the NC Association of Nurserymen will be jointly sponsoring an annual meeting and trade show Jan. 4-6. The meeting will take place at the Radisson Hotel in Charlotte and the trade show will be held in the Charlotte Civic Center.

Interior Plantscape Association draws 500

The second gathering of the recently-formed Interior Plantscape Association attracted additional observers, exhibitors, and award winners to the group's annual meeting in Dallas.

Work sessions offered participants the chance to listen to experts, exchange ideas, and comment on personal experiences. Tom Ellis of 3D International in Houston delivered the keynote address which dealt with the interaction and conflicts of architects, landscape architects, and designers with interior plantscape professionals.

A panel of judges awarded 21 winners as the best examples of interior plantscaping design and maintenance in this country and abroad. Prizes ranged from less than $5,000 to more than $25,000.

Newly elected officers are: Tom Woodham, The Potted Plant, Atlanta, president; John Pignatore, Tropical Foliage, Inc., Jefferson Township, NJ, vice president/eastern sector; Michael Brief, Designers Plant Service, Santa Ana, CA, vice president/western sector; Barry Wood, Botanical Decorators, Silver Spring, MD, treasurer; and Carole Horowitz, Plantscape, Inc., Pittsburgh, secretary.

ASLA publicity reaches 160 million

Approximately 160 million viewers saw the public service announcements sponsored by the American Society of Landscape Architects, according to Edward Able, executive director of ASLA.

The three 60-second announcements were segments of the short movie, "A Legacy of Living," an award-winning educational film that teaches the public what landscape architects do and the aesthetic benefits of their work. It was submitted to the top 300 television stations in the U.S., whose response topped 160 million viewers.

"It exceeded what I hoped it would do," says Ed Able. "We are selling landscape architects and also selling the Green Industry. Selling a living environment helps produce business for all members of the Green Industry."

say officials at the Federal Dept. of Agriculture.

The states of New York, Connecticut, and New Jersey were hit the hardest. In New York, the hungry pests defoliated 2.4 million acres, more than 15 times the amount damaged in 1979. In New Jersey, mostly the northern part, gypsy moths defoliated 440,000 acres. In Connecticut, 272,000 acres — a substantial amount in the western part of the state — were defoliated.

Little has checked the ravage of the gypsy moth this year. The Agriculture Dept. experts say that next year may be even worse. The gypsy moths have left behind huge egg masses this fall which should hatch into caterpillars late next May and early June.

Foresters are planning their counter attack for next year, but suggest that fertilizing, watering, and pruning healthy trees may be the best prevention.

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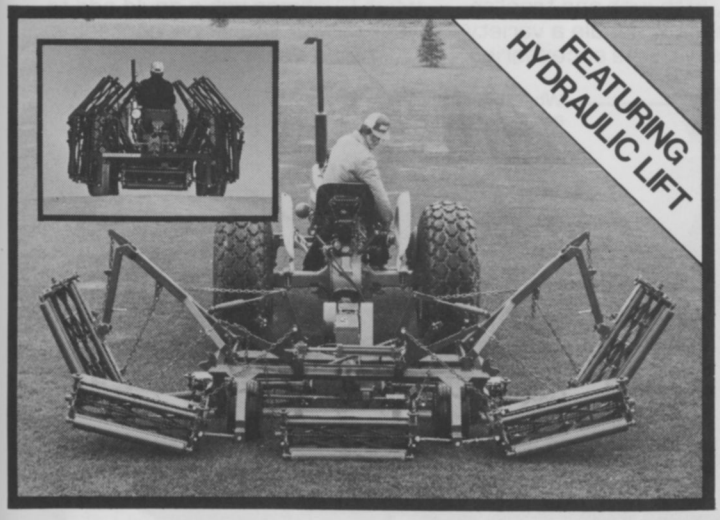

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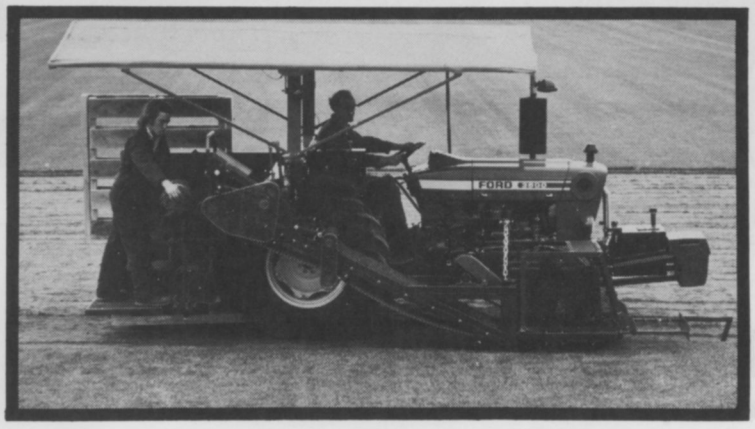

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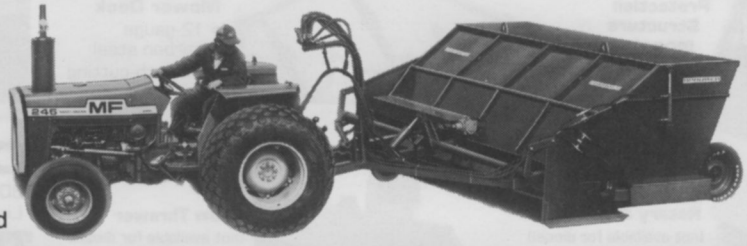

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Now, in addition to the 72" deck, we are offering a 60" mower deck for smaller jobs. In fact, with just one tractor you can now handle a variety of jobs with the accessories shown below. And this year the Front Line is also available with a diesel power engine.

Yes, Cushman has put even more into the Front Line mower this year, so you'll get more out of it in the years ahead. To find out more about what Cushman value could add to your mower operation, contact your Cushman dealer today.

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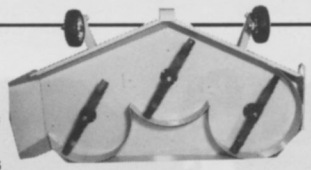

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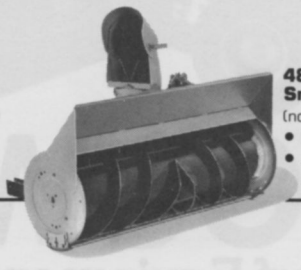

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EMPLOYEES

Nurserymen offer personnel workshop

The American Association of Nurserymen has developed a personnel management workshop to help its members learn how to manage and motivate employees.

The three-day course, known as the Professional Effectiveness Program, or PEP, has been conducted successfully in various parts of the country It will be held in Columbia, MD, Jan. 19-21 and again in Hyannis, MA, Feb. 17-19.

For information on the programs, contact Bob Fortna at the American Association of Nurserymen, 230 Southern Bldg., Washington, DC 20005, 202/737-4060.

COMPANY

Wisconsin Marine, Inc. changes name

Wisconsin Marine, Inc. of Johnson Creek, WI, manufacturers of Bob-Cat lawnmowers and snow throwers, has changed its name to Ransomes Inc.

The name change follows the development of a new corporation, which is a subsidiary of Ransomes Sims and Jeffries Ltd. of Ipswich, England. With this new affiliation, the company will retain its separate management and control.

"The new alignment of this corporation expresses our complete dedication to the lawn and turf industry," says Dane T. Scag, chairman of the board. "The same strong commitment to serve the industry exists in Ransomes Inc."

INGENUITY

Engineer proposes use for Silvex disposal

Home and garden fertilizer made with Silvex, which has been banned and must be disposed of, could be formulated with sludge to reforest land that's been ravaged by Mt. St. Helens, says a civil engineer in Portland, OR.

George Ward says his work shows that 99.9 percent of the herbicide, including the dioxin contained in it, will be completely degraded within 60 days after it is spread on the ground.

At a rate of 300 pounds per acre of the material, it will take nearly 29 million pounds to fertilize the most severely damaged area of the mountain. Approximately 36 million pounds of the Silvex-formulated fertilizer are now stored at different locations in the U.S. waiting to be disposed of.

GOVERNMENT UPDATE

President signs Regulatory Flexibility Act

President Carter has signed the Regulatory Flexibility Act (S. 299) which requires regulatory agencies to address the special problems of small businesses in any new regulations. In addition, agencies would have to review all existing rules which adversely affect a small business.

Railroad regulatory reform bill passes

The Railroad Regulatory Reform bill (PL 96-448) was signed into law in October.

Basically, the bill gives railroads greater price-setting flexibility with less interference from the Interstate Commerce Commission. The legislation also attempts to promote competition among railroads and protect those shippers who are dependent solely on railroads for their transportation needs.

President signs Crop Insurance bill

President Carter has signed the Federal Crop Insurance Act which was recently passed by both the House and Senate after a two-year battle.

The bill, sponsored by Rep. Ed Jones (D-TN) and Sen. Walter Huddleston (D-KY), was amended on the House floor by Congressmen Panetta (D-CA) and Coehlo (D-CA) to specifically include nursery crops.

Participation in this program is voluntary, but it could provide nurserymen with savings on their insurance. The bill states that the Federal government will pay 30 percent of the premium for coverage up to 65 percent of the normal crop yield. Private insurors will be able to underwrite this insurance.

Director of National Arboretum retires

Dr. John L. Creech, director of the U.S. National Arboretum and one of the world's best-known horticulturists, has retired.

Dr. Creech began his career with the Department of Agriculture in 1947, and has held several positions in the department's plant science programs. He is recognized as a world leader in the field of plant explorations for ornamentals, specializing in the wild and cultivated ornamental trees and shrubs of the Far East, particularly azaleas, camellias, and hollies.

Congress gets veto power on EPA regs

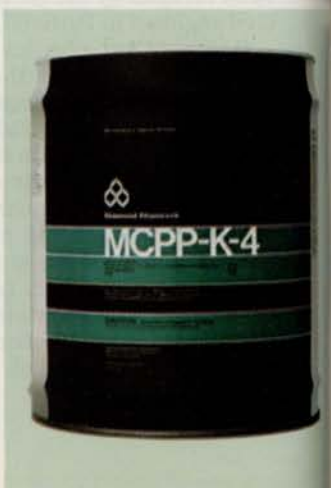
A House-Senate Conference Committee has granted Congress the power to veto certain Enviromental Protection Agency regulations.

The measure was approved to extend legislation, which is part of the Federal Insecticide, Fungicide and Rodenticide Act, through September 1981. Both the Senate and House of Representatives must approve the conference report and President Carter must sign it before it becomes law.

The legislative veto provision obligates the EPA administrator to submit proposed rules and regulations under the FIFRA Act for congressional review. If Congress adopts a resolution which disapproves an EPA rule or regulation within 90 days, it would not become effective.

The rule could also become effective after 60 calendar days of continuous sessions by Congress if no committee or House reports a concurrent resolution of disapproval, or if neither house adopts such a resolution.

How to get better turf next season.



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HOW TO BUILD AND THEN MAINTAIN A DURABLE, NATURAL ATHLETIC FIELD

By John Kerr, Associate Editor

Natural turf has become the preferred playing surface on athletic fields for many athletes and field managers. Yet both grow nervous when rain and extreme weather conditions cause sloppy footing and an unkept appearance. The proper construction and maintenance of an athletic field will produce a dense, tightly-knit, wear-resistant turf. Such a condition depends on good soil drainage and preparation, adequate fertility, the right kinds of grasses, proper design, and a sound maintenance program.

Drainage

The first step in the establishment of a new turfgrass area or improving established turf is drainage. Drainage must be considered in three different ways. These are: surface drainage, internal drainage, and subsurface drainage.

A field or any turfgrass area should be designed so that excess water moves quickly to open drains to flow into non-use areas or storm drains. On athletic fields this can be accomplished with a so-called "crown" so that the soil is higher in the center of the field. A one percent slope should be the minimum.

Internal drainage means that the soil used in the field or any specialized turfgrass area should be open and porous. In order for water to move internally, a soil mixture with a very high sand content is necessary. Sand content can be as high as 85 to 95 percent. This means that in new construction it is necessary to start with sand and add the necessary amount of soil.

Sub-surface drainage will remove excess soil water from periods of heavy rainfall and prevent waterlogging of the field. In order to provide adequate subsurface drainage, the subgrade should be contoured the same as the finished grade. A 3- to 5-inch layer of mixed gravel or cinders should be placed 12 to 24 inches below the soil surface to facilitate removal of excess moisture from the field.

"If internal soil conditions are poor, a little tile drainage (or slit plastic tubing) is very important," says Dr. John Harper, extension turf specialist at Penn State University. "For the high school low on funds, it is fairly inexpensive to dig an area and lay drain tiles." Many field managers are also laying a stone gravel blanket 4 to 6 inches deep over the tile lines. A fine pea gravel or coarse sand about an inch deep over the gravel blanket prevents the soil mix from washing into the gravel bed.

Improved football field looks professional, is easier to maintain, and provides players with safer, more attractive conditions. A good example is memorial field in State College PA.

Irrigation

After the problem of what to do with water within the soil has been solved, it must be decided how to regulate the amount of water applied to the soil. Barring nature's own allowance, an irrigation system can be installed that will provide the proper amount of moisture. The right system is one which will distribute enough water uniformly to meet the maximum needs of turf. An irrigation consultant should be sought to make the proper analysis and specifications for any site.

Many variables exist for choosing the right system. According to Dave Pagano, irrigation consultant of D D Pagano Inc., Tustin, CA, each area of the world differs in its demands for an irrigation system. Windy country necessitates setting up sprinklers in the same direction of the wind to maintain a regular diameter for the throw of water. Pagano doesn't think spacing should exceed 60 feet. "It should never exceed 60 percent of the diameter for spacing," he says. In desert or windy conditions, 50 feet is the maximum spacing with the reminder that the closer the spacing the more the system costs.

Under severe drought conditions turf will lose a quarter to a third of an inch of water per day. This is equal to about 200 gallons per 1,000 square feet. A good-quality loam soil will hold about 1,000 gallons of available water per 1,000 square feet to a 6-inch depth. Therefore, an adequate irrigation installation should be capable of supplying the turf with a minimum of 1½ inches of water about every 4 to 5 days in periods of extreme drought.

Other factors to consider are soil temperature — hot soil will corrode a steel pipe; type of water — some will necessitate using plastic over brass or steel; freezing temperatures — sprinkler design must be such that water drains out of heads; water scarcity — in areas like Southern California you need anti-drain valves; and soil type — clay or sandy conditions require varied application rates. Also, Pagano says, in the Midwest and East lightning rods may have to be installed.

Irrigation systems vary from padded pop-up types of sprinklers, spaced uniformly over the entire playing area, to occasional outlets on the perimeters. Traveling sprinklers with hose connections to perimeter outlets provide very satisfactory and efficient irrigation for athletic fields. These apply water uniformly over rectangular areas and can be adjusted readily to conform with wind direction and velocity. Lower initial costs of perimeter outlets may prove more expensive in the end, considering efficiency, additional labor, and equipment.

Cost cutting on an irrigation system may be hazardous. Pagano says that the only way is to use less expensive equipment, not space a system farther apart. Sometimes, thinner, lighter parts can substitute for heavier, industrial-built parts. But "If you skimp in design, you are defeating your purpose," says Pagano. "Nothing is worse than a poor sprinkler system."

Types of grasses

Wear tolerance is the vital feature for turfgrasses used on athletic fields. The improved grass varieties provide the greatest resistance to wear. Both ryegrass and tall fescue have a high fiber content, which provides increased wearability. Wear tolerance also increases when the amount of green vegetation per inch increases. Moderate amounts of thatch provide an extra cushion and improve wear tolerance.

Research done by turf agronomists at Michigan State University ranked the wear tolerance of the following turfgrasses when grown in their respective region of adaptations:

Ranking	*Warm Season*	*Cool Season*
Excellent	zoysia bermuda bahia	
Good		perennial ryegrass tall fescue Kentucky bluegrass
Medium	St. Augustine	red fescue
Poor	carpetgrass	creeping bentgrass
	centipede	colonial bentgrass *Poa annua* *Poa trivialis*

From *Turf Manager's Handbook*, Dr. W H Daniels, turf specialist and Dr. R P Freeborg, professional turf technician. Purdue University.

Fertilizers, Lime, and Other Materials

Building a good athletic field deeply depends upon the kind and quantity of materials to be used, how and when they are applied, and the manner in which the work is done, according to Dr. Harper. All of these things must be adjusted to the specific conditions of the individual job. The basic principles affecting the use of fertilizers, lime, and other materials, and the relationship of the kind and condition of the soil to methods of its preparation are vital factors in producing good turf at the lowest possible cost.

Soils vary widely in the quantities of available plant nutrient materials which they contain. Nutrients most likely to be deficient are nitrogen, phosphate, and potash. Soil tests, available through each state's agricultural extension service, will provide adequate information on the need for phosphate and potash. When tests show low levels of these materials, liberal applications should be made in preparing the seedbed for turf. Adequate quantities of phosphate and potash can be supplied by applications of 50 to 75 pounds per 1,000 square feet of 0-20-20 fertilizer or equivalent. The material should be applied prior to tillage and worked into the soil as deeply as possible.

Soil tests are not totally reliable for determining the quantity of nitrogen that should be used. They show only the quantity of soluble nitrate nitrogen present, which is utilized or lost very rapidly. Three basic guides exist for the use of nitrogen in turfgrass establishment: the needs of the grass itself, the kind of nitrogen applied, and the depth to which it is mixed into the soil.

To meet the needs of young grass seedlings, it is seldom necessary to apply a total of more than 1 pound of quickly available nitrogen per 1,000 square feet. This nitrogen may be exhausted quickly, requiring a reapplication within three to four weeks. The necessity for a second application in such a short time may be avoided by supplementing the initial application with an additional three to five pounds of nitrogen per 1,000 square feet derived from materials such as natural organics or compounds, which release nitrogen slowly.

It is best to apply fertilizers containing nitrogen just prior to seeding. These should also carry phosphate and potash, even though previous applications of these elements have been made. This will insure that liberal quantities of the nutrient materials will be available to developing seedlings. The starter fertilizer should be worked into the soil to a depth of not more than one inch. If a material containing nitrogen in soluble form is used, the nutrient ratio should be 1-1-1. If fertilizer containing 35 percent or more water insoluble nitrogen is used, the ratio of nitrogen to the other nutrients can be increased to 2-1-1 or 3-1-1. The material should be applied at a rate to supply three to five pounds of nitrogen per 1,000 square feet and proportionate amounts of the other elements.

The degree of acidity or alkalinity affects the activity of soil microrganisms, the availablity of plant nutrients, and the activity of disease-causing fungi. Without good microbial activity, high acidic conditions prevail, which encourage fungi growth.

Lime is the most economical and readily obtainable material for correcting soil acidity. Application rates should fulfill the total lime requirement. Lime should be applied prior to preliminary tillage and worked into the soil to a minimum depth of five to six inches.

Soil compaction — one of the most common causes of poor turf on athletic fields — reduces the rate of movement of air and water through the soil. These effects can be reduced by adding conditioning materials when the field is built. Sand and some form of organic matter are useful materials.

The quantity and quality of sand use will depend on the character of the soil to be treated. Heavy clays and silts may require as much as 50 to 60 percent sand by volume, mixed to a 5-inch depth, to improve their resistance to compaction while retaining the firmness necessary for good playing conditions. Graded sands with the fines removed are best adapted for use as physical conditioners.

Various types of organic materials, such as raw or cultivated reedsedge peats, effectively reduce soil compaction. They absorb much moisture and improve aeration of the soil. Where peats are used, it is seldom necessary to apply them at rates of over 10 percent by volume. Other types of organics which reduce compaction include raw sewage sludge, tannery wastes. seed hulls, and well-rotted sawdust. Because of their faster rate of decomposition, they work for a shorter period of time.

To gain the highest value from soil conditioners, they must be uniformly mixed into the soil to a

specified depth. Tools, such as rotary hoes, rotovators, or disks, can be used. When both peat and sand are being used, the peat should be spread first and the sand following to work the lighter peat into the soil.

Bed Preparation and Seeding Establishment

Seedbed preparation is the single most critical operation in constructing an athletic area, according to Dr. Harper. Improper seedbed preparation or preparation under adverse weather or soil moisture conditions may result in complete seeding failure. Working soils containing excessive moisture, especially with heavy equipment, will destroy the physical condition of the soil. Destruction of the soil's physical condition increases compaction.

"You need to get a good, firm seedbed," says Eugene Meyer, turf specialist at O.M. Scott & Sons, Marysville, OH. "If you don't prepare enough and large clogs are in the soil, you inhibit growth, whereas overworking the soil leaves you with a powdery, fine composition that is just as bad." Meyer prefers to get the soil between the size of a marble to a golf ball, leaving enough fines and open areas for seedbed germination.

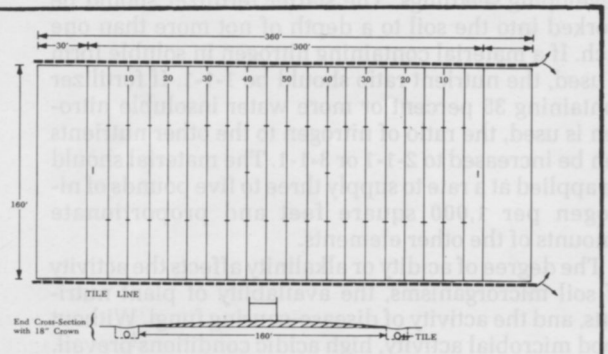

Figure 1 Field plan of football gridiron showing end section and tile lines.

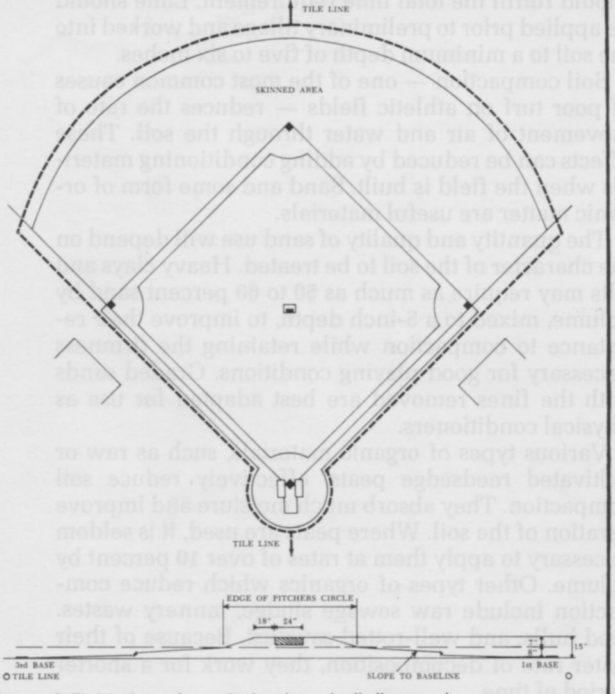

Figure 3 Field plan of regulation baseball diamond showing design of tile system.

Harper thinks that over tillage can also destroy the soil's physical condition. This is especially true with a rapidly revolving tine-type rotary tiller. Rotovators, on the other hand, are equipped with shovel-like cultivators which revolve relatively slowly. Plowing provides an acceptable method of tillage, provided care is taken to work out by disking and floating the uneveness caused by the furrows. Disking alone may be satisfactory for some soils.

The final seedbed should be a homogenous mixture of the original soil, physical amendments (sand and organic matter), lime, and fertilizer. When mixing sand and organic matter into the soil, the organic matter should be laid down first with the sand on top. Tillage tends to float the light organic material upwards while the heavy sand moves downward. Layers of any given material must be avoided.

Once the bed is prepared, a uniform application of seed is essential for proper density and coverage. This is best accomplished by using an accurate spreader that has been properly calibrated. Make certain that the spreader is set at the recommended rate. When seeding athletic fields, it's a good idea to seed in two directions — lengthwise at 1/2 the rate and widthwise at 1/2 rate. This will give much more uniform coverage and density. After the seed has been applied, it should be lightly mixed into the top quarter inch of soil. Pulling a short section of chain-link fence or flexible door mat over the seed area will accomplish this.

After seeding, apply a thin, uniform, weed-free mulch. Mulching will help conserve moisture and reduce seed loss due to wind and soil erosion. Manure, clean straw, salt hay, shredded bark, burlap bags, wood shavings, or peat can also be used as mulches. This material should be spread lightly across the seeded area so that the soil surface is visible at all times. If applied correctly, mulch need not be removed because it is easily chopped up with mowing equipment and decays rapidly.

Even though mulches are helpful, a full watering program should be followed. Water is extremely important to the new germinating seedlings. From the time of germination, the seedling is vulnerable to drying and must receive sufficient moisture until it is a well-rooted, established plant. Water twice and preferably three times a day and even more frequently on hot days with drying winds. A gently spray will prevent seed dislodgement and puddling but keeps the soil surface constantly moist.

Once the grass has been established, it should not be mowed until it has reached a height of 1½ to 2 inches. If mowed too early, the new seedling may be pulled from the soil leaving bare spots or ruts. Light equipment should be used on the first mowing, also according to O.M. Scott recommendations.

MAINTENANCE

A good maintenance program is just as necessary to insure athletic field turf of satisfactory quality as sound establisment methods. Without good maintenance practices, quality turf on athletic fields is impossible.

"Steady maintenance is the key to our field — everything it needs we do," says Don Bryan, field manager of Memorial Field in State College, PA. Under the direction of Merrill Sweitzer, director of grounds, the field has drawn applause from people throughout Pennsylvania. It is because of this acclaim that funds for operation of the field have not been cut back.