

Now - a shelter with that natural woodsy look - and plenty of protection.



new Standard shelterport

Combines modern design with a woodsy appearance to give it the just-right look that blends into any golf course.

Provides excellent weather protection. Extra roomy (8' x 8' floor area, 6' 11" high). Holds 8 to 10 people plus 2 Standard benches.

Rugged, rigid, triangular-design 2 x 4 construction with wood side panels. Shipped KD.

Unique metal joint connectors permit fast, easy erection on concrete slab. Wood base members of Shelterport provide form for pouring slab.

For full details on the Standard Shelterport, write for bulletin SP-78, STANDARD GOLF COMPANY, CEDAR FALLS, IOWA 50613.

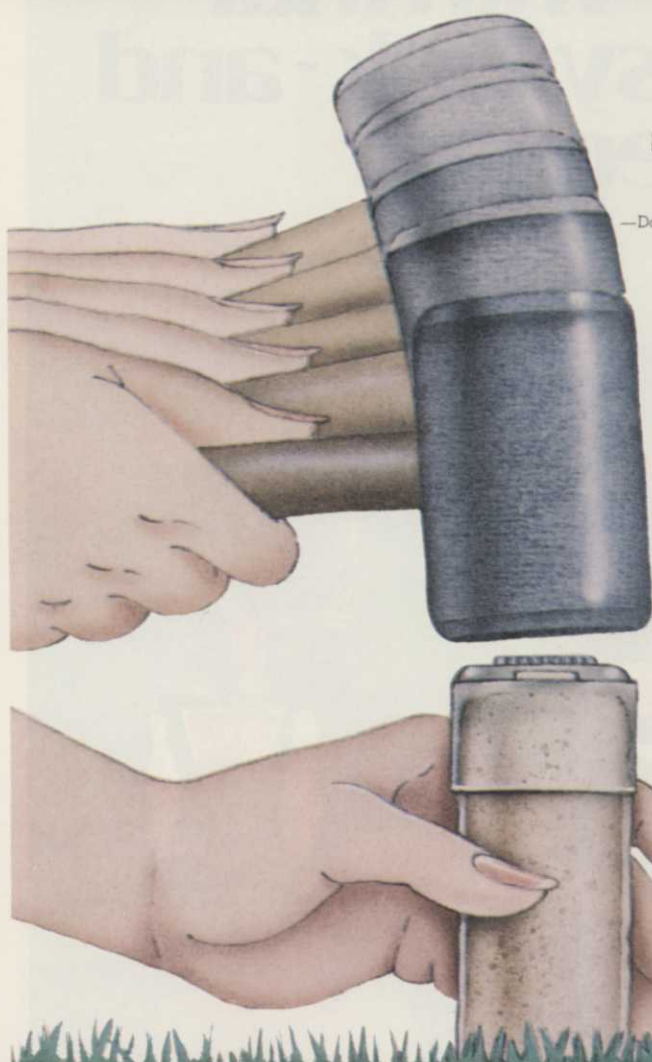
\$595⁰⁰

Sugg. Retail F.O.B. Cedar Falls, Iowa

On display, GCSAA Show, Island "C".

STANDARD **GOLF** *Pro-Line*

Hammer down the cost of professional tree care.



"The cost of using Jobe's Spikes is the same today as it was three years ago."

—Dave Ruhl, President, Wye Tree Experts, Inc.,
Wye Mills, Md.

Wye Tree Experts' installation service of Jobe's Spikes is a profitable solution for home

owners with a lot of trees to feed, and limited manpower to do the job. Spikes are quickly installed at the drip line at the rate of one Spike per inch of trunk diameter. Rainwater or soil moisture does the rest.

A tree feeding program with Jobe's Spikes is a logical extension of lawn care service.

Just as Jobe's Spikes are good for trees and shrubs, they're also good for lawn care services.

Jobe's Spikes provide the way to insure more complete service to customers, and to make more profit for themselves.

Customers like the quick response trees and shrubs show when they're fertilized with Jobe's Spikes.



Wye Tree Experts find Jobe's Spikes are easy and profitable to use.

Jobe's® Tree and Shrub Spikes feed trees in about one fourth the time, at less than half the cost of drilling. A 5" tree takes about 5 minutes labor. Compare that to 30 minutes to drill holes, plus the time and cost to apply 10 pounds of fertilizer.

Jobe's Spikes are a pre-measured amount of fertilizer formed into easy-to-drive spikes by means of a patented binder. The binder provides for uniform release of nutrients. Jobe's Tree and Shrub Spikes are 16-8-8. Evergreen Spikes are 12-6-8. Fruit Tree Spikes are 5-15-15. Jobe's Spikes are better than

broadcast fertilizer because the plant food gets to the tree roots without danger of run-off, burned turf or excessive leaching.

Call your local Jobe's distributor or order direct. \$30 per case (105 Spikes) prepaid, 5 case minimum. 15 or more cases, \$25 per case. 36 or more cases, \$22.50 per case.

Jobe's®
TREE & SHRUB SPIKES

The easy method for professional tree care.
International Spike, Inc.,
1081 Dove Run Road, Lexington, Kentucky 40502

GREEN INDUSTRY NEWS

Continued from page 12

University. A rhizotron is an underground facility which has windows that allow scientists to observe root growth and development.

The turf rhizotron will have 30 independent observation cells plus a 14-foot square, insulated and heated underground instrument room. Scientists will be able to monitor turfgrass roots and tops and the interactions between growth, climate and soil under actual field conditions in different soil types.

SOD

Nassau conference set for sod growers

All preparations are complete for



Three Lofts Seed dealers are off to the sunny, palm beaches of the Bahamas this winter as winners of Loft's "Bahamas for Two" promotion contest. The dealers and their wives will spend eight days and seven nights in the islands. Helen Piorkowski draws the winning tickets as (l to r) Jon Loft, Bob Oberschmidt and John Morrissey watch.

the American Sod Producers' Association Midwinter Conference, Feb. 12-15, at Nassau Beach Hotel in the Bahamas.

The theme of the conference is "helping the sod grower save dollars and do a better job in producing quality turf." Presentations will include "Tax Free Dollars You May

Not Be Getting", update on seed, metrics, and insurance.

Meetings are planned to end in the early afternoon to permit the sod growers to enjoy the islands.

For further information contact the American Sod Producers, 9th and Minnesota, Hastings, Neb. (402) 463-5691.



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C-200 gal.



Florida nurserymen offer cold pointers

The Florida Nurserymen and Growers Association has offered some pointers on protecting plants from cold damage. Wrapping plants with plastic seems to cause more severe damage than when the plant is left in the open, unless there is something between the leaves and the plastic. There are two ways to successfully protect plants with plastic.

One is to build a tent over the plant on a frame and place a 100 watt light bulb beneath the tent. The heat radiated by the bulb will protect the plant. If the plant is to be wrapped, use an old blanket with some insulating qualities before covering with the plastic material.

Thirty or forty thicknesses of newspaper wrapped around the graft of a citrus tree can give it protection for temperatures in the low teens. The top may freeze completely, but the graft will survive. You should remove the paper as soon as the weather warms.

If water is used as a means of

cold protection, at least ¼ inch per hour should be applied. Limb breakage from ice formation should be considered as a side effect of this method.

Regardless of the method of cold protection, some injury may result. Wait until new growth appears before doing any severe pruning. Although a plant may appear completely dead after a cold winter, do not be hasty in disposing of it. If there is a strong root system, the plant may revive. Give it sufficient time.

TREE

Echo expands distribution facility

The Kioritz Corporation of America and its Echo Chain Saw Division are going to be moving into new and expanded quarters this Spring in an announcement made by N. Rock Watanabe, President, Kioritz Corporation of America.

"The Echo Chain Saw Division, Kioritz Corporation of America has experienced growth, particularly

during the last three years," said Watanabe. "The facility that we have been leasing in Northbrook has efficiently served our needs, but the current level of business and the expected growth over the next three years necessitates the move to larger quarters."

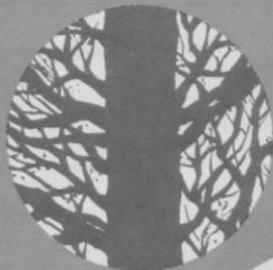
The new Kioritz facility, which will be located in Northbrook, Ill., will encompass approximately 42,000 sq. ft. of warehouse and distribution space, and an additional 4,000 sq. ft. of office space.

CHEMICALS

Insecticides may have tree uses

The USDA's Agricultural Research Service is providing \$7,000 to scientists at the Ohio Agricultural Research and Development Center for a two year study to determine if some insecticides currently registered for use on other plants might also be effective on orna-

Continues on page 58



TOUGH RUGGED HARDWARE for TOUGH RUGGED HARDWOOD

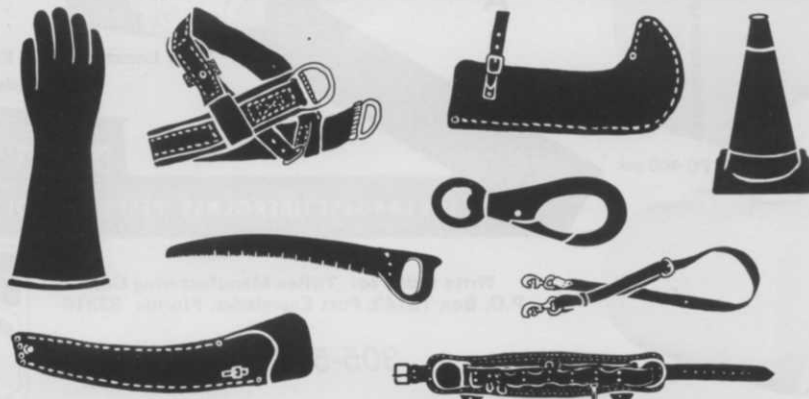
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You thought you were installing a sprinkler system. But now, you're the only course in town with a water hole on every fairway. Bordered by a swamp that's bordered by a bog.

So you reset all the controllers and hope for the best. Then you discover that *was* the best.

The next best is beige-colored greens so hard you can dribble a golf ball on them. And always there are little

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And something you can't get anywhere else... the one-of-a-kind Rain Bird expertise that stands behind every job.

So why get trapped by a system that's not up to par. You've already got all the water hazards you need.



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VEGETATION MANAGEMENT

by Roger Funk, Ph.D., Davey Horticultural Institute, Kent, Ohio

TREE

Q: *One of my customers is sore because two out of five Scotch pines I planted last fall died this spring, apparently by freezing. The five pines were planted as a border to the front yard, which faces south-west and slopes downward to the street. It is in a subdivision with very few trees. What can I do to avoid another loss this spring?*

A: Practically all plant injury blamed on excessive heat or cold is due to lack of water. Summer sun and dry winter winds cause leaf and stem cells to lose water faster than roots can replace it. Cells collapse and die and plants wilt as a result.

Winter desiccation is most severe on dry, exposed, windy, and sunny sites where surface runoff of water is high. Winter killing of trees and shrubs is common, following extreme and rapid fluctuations in temperature during late fall, winter and early spring. Sudden periods of bright sun, especially when coupled with warm, drying winds greatly increase the rate of the evapotranspiration. This occurs when root absorption is retarded or prevented by cold or frozen soil. Moderately hardy evergreens and deciduous landscape plants are frequently killed or severely injured by such conditions.

Roots are more likely to freeze in poorly drained soil than in well drained soils. Trees that are very susceptible to freeze damage in poorly drained soil include ash, elm, maple, and pine. Where necessary drains can be improved by installing tile or slit trenches and sloping the surface toward an open outlet. Tree root injury is most common during winters of light snowfall or in soil without grass, mulches, or other ground cover.

Winter desiccation injury appears on broad-leaf evergreens as an irregular brown scorching of the leaf tip and margin. On narrow leaf evergreens, the needles turn brown starting at the tips. These may later drop. Terminal buds and twigs dry out and become brittle and break easily when bent. Instead of leafing out properly in the spring winter injured deciduous plants may show die-back of the twigs and small branches or may even die.

To counteract desiccation during a dry autumn and early winter thoroughly water landscape plants, especially evergreens. The soil should be moist a foot or more deep. After watering, apply a three to eight inch mulch of organic material (e.g. sawdust, leafmold, wood shavings or chips). Mulching conserves soil moisture, prevents deep freezing, and averts the more serious alternate freezing and thawing that shears off feeding roots. It also

delays growth in late winter or early spring until the danger of frost is past.

Protect small evergreens and hedges against leaf scorch by erecting screens on the south and southwest sides of susceptible plants. Common windbreak screens are made of glass, burlap, canvas, plastic, or straw mats. Evapotranspiration losses can be reduced on evergreens by spraying the foliage, twigs, branches, and trunks with anti-desiccants such as Wilt Proof, MTF, and Foliguard in late fall. It may be necessary to repeat the spray during a mid-winter thaw if the temperature rises above 40 degrees F.

TURF

Q: *Although I'm in an area with little snowfall, there were an unusual number of days with temperatures below freezing last winter. This winter looks to be the same way. Last spring, I received an unusual number of calls from new homeowners who lost their lawns to what I think was heaving. Could you explain the causes of heaving?*

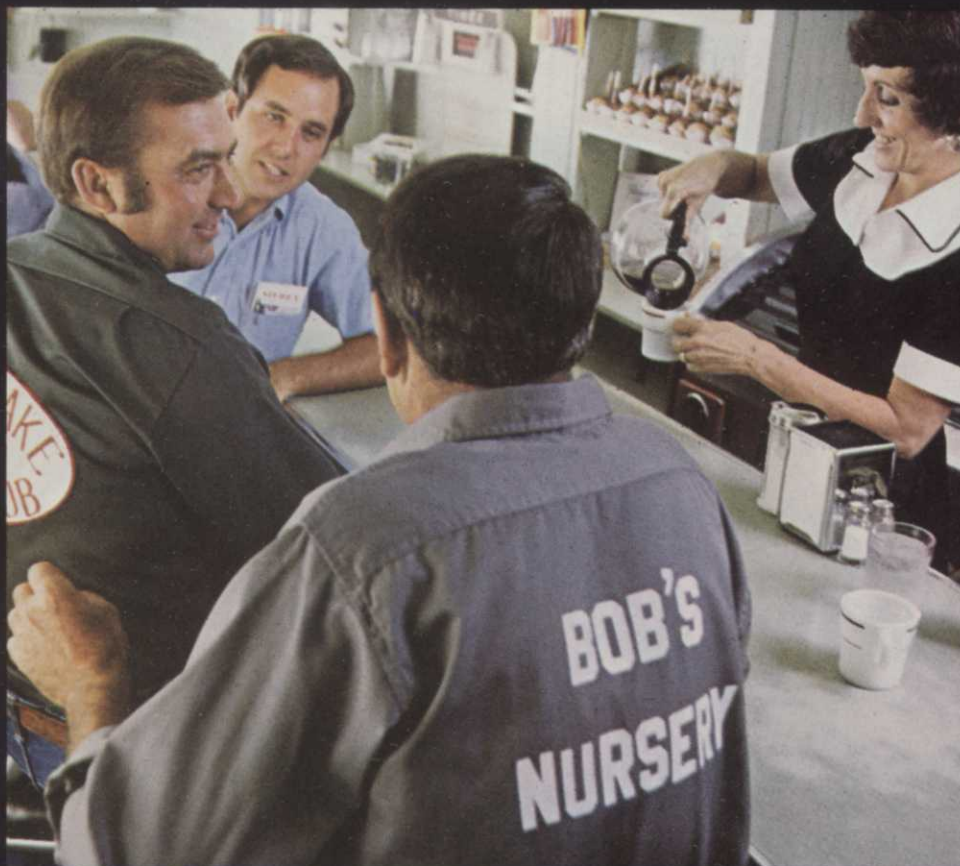
A: Contrary to popular opinion, frost heaving is not caused simply by the expansion of soil water as it freezes. When the temperature drops below freezing, ice forms on the soil surface. Water in contact with the lower surface of the ice layer eventually freezes if the temperature remains below freezing for long. As more water moves to the site of freezing, the ice layer is raised higher and higher causing the turfgrass plants to lift out of the ground.

Damage to established turfgrass is not usually severe, but frost heaving can cause significant injury to thin, poorly developed stands or late fall seeded areas. A well developed root system is a deterrent to heaving. Injury usually involves mechanical breakage of stem or root tissue or desiccation from exposure. Frost heaving is most common on fine textured soils having a high water content and no snow cover.

The potential for damage may be reduced by management practices conducive to deep rooting and by providing proper surface drainage. Injury to newly established turf areas may be avoided by good seed bed preparation, early fall seeding, and adequate soil fertility. Encouraging snow cover by the selected placement of screens may prove beneficial for small areas. A light rolling after the spring thaw, but not when the soil is too wet, will help correct the uneven turf surface caused by heaving and the resulting desiccation of crown tissue.

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bigger small
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instrumentation and a non-glare finish. Both hand and foot throttles are standard. There's a 3-point hitch (Category 1) for easy hookup of integral equipment. The seat is adjustable and fully cushioned for operator comfort; it tilts forward for weather protection.

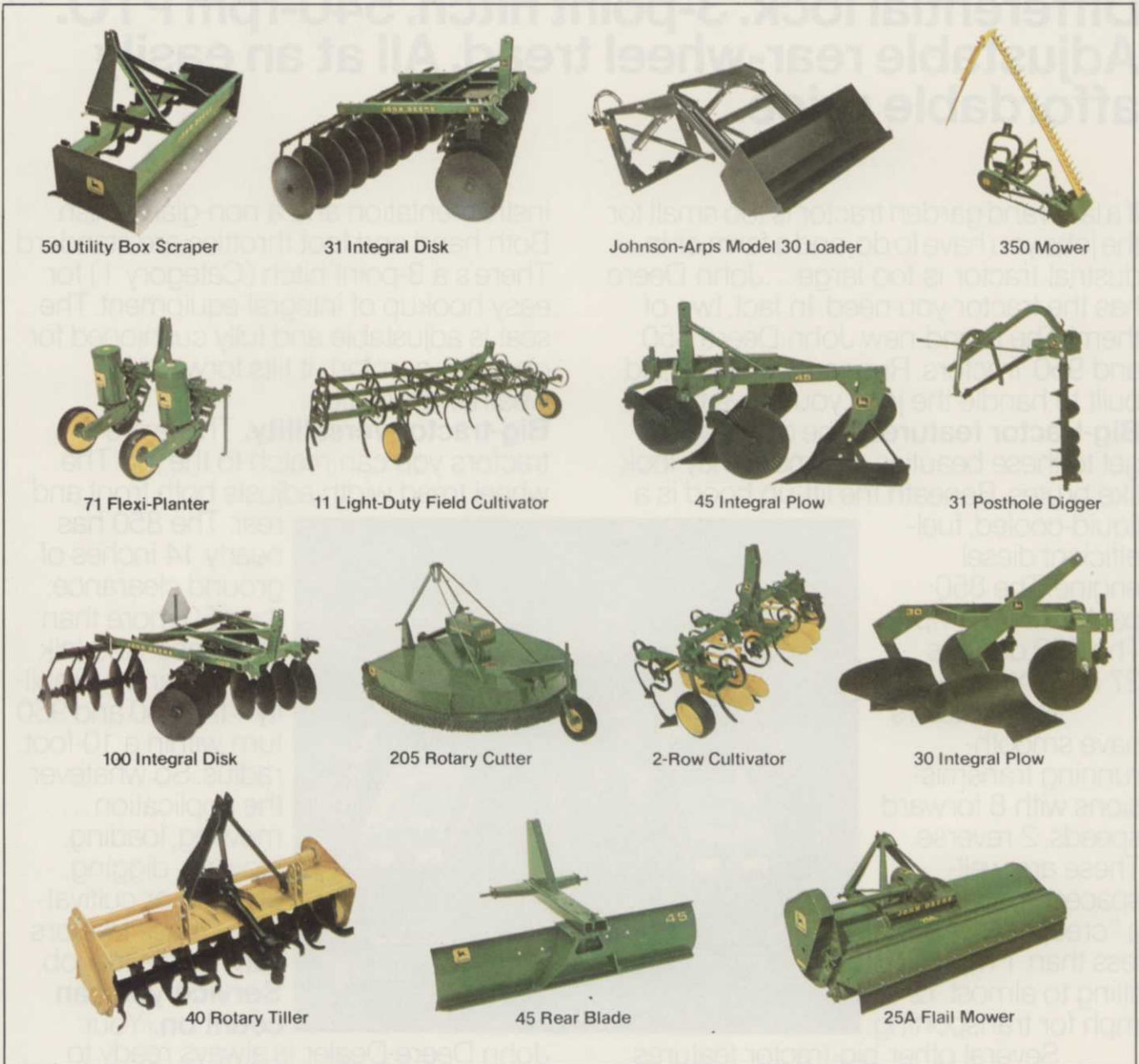
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