

Percent water penetration in inches of untreated versus treated soil.

case there were potential turf problems because there was too much water or too little water. And yet the approach to solving the situation has historically been aerifying and soil renovation. Though the soil condition is involved, the main cause of the turf losses outlined has been the high tensions of plain water.

It is essential for the growth of healthy plants and for the conservation of water that certain compensations be made to promote a more efficient and wise use of water.

As mentioned earlier, the use of soil wetting agents to change water by lowering its tensions is rapidly gaining recognition for the purpose of "Making Water Better." Under low-tension-water conditions, water percolates faster. Puddling is reduced. Run-off and evaporation losses are reduced or eliminated. University data using tensiometers indicated a reduction of 30 to 50% in water use requirements when using wetting agents. That could mean a 30 to 50% reduction in salts introduced when using high salt content water — an important factor in these western states. Erosion losses were reduced by 65% in these same tests — which were under the severe conditions of 6 inches per hour on a 30% slope. All this, simply using a wetting agent to compensate for water's few negative characteristics.

A statement that has often been heard is that we can't do anything about the problem of water pene-

Continues on page 44

repell water, resulting in wilting and turfgrass losses. Repellent areas require special hand labor and extra waterings to try to save the turf — and that can cost you money! Thatch can also inhibit the movement of plain water, consequently, the movement of nutrients and other chemicals, particularly soil insecticides, are limited, weakening the grass and resulting in-turf losses.

As we review these problems that can lead to turf losses, we note that they can be classified as WATER problems — not SOIL problems. In each

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VEGETATION MANAGEMENT

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

Q: Can sprayers be cleaned out after they have been used to apply Silvex?

A: We have not had good success in decontaminating large sprayers after the use of phenoxy herbicides.

Our standard procedure is to clean the sprayer with ammonia and then test clean water which has been pumped through the sprayer on tomato or bean plants. If no distortion occurs, the cleaning operation was successful. The process may have to be repeated several times. In the case of older equipment with pitted or rough internal surfaces, decontamination may not be practical.

The decontamination process is outlined below:

(1) Use one gallon of household ammonia per 10 gallons of water. Pump a small amount of ammonia solution through the system and let stand overnight. If applicable, disassemble nozzles and soak the caps, screws, etc., in the ammonia solution.

(2) Drain the material and flush the system twice with clean water.

(3) Circulate the third rinse water through the system and allow to stand overnight.

(4) Collect a sample which has been pumped through the system and spray onto the indicator plants.

Q: We have a tree-lined lane on campus that gets a lot of student traffic. The grass is nearly bare, and some of the trees are beginning to die back. We are considering resodding the area when school is not in session this summer, but what can we do for the trees?

A: Soil compaction from foot traffic can be a very serious problem for both trees and turf. Compaction restricts water and oxygen penetration, resulting in poor root growth and often death of existing roots. Aerators are commonly used on athletic fields and occasionally on home lawns to relieve compaction. The most effective turf aerators remove finger-sized cores of soil to a depth of three to four inches. The root zone of the trees can be aerated by drilling holes to a depth of about 18 inches on a spacing of one and a half to two feet.

You may want to consider wood or bark chips instead of turf, if applicable in your situation. Both wood chips and shredded bark have been used successfully to "cushion" foot traffic along wooded trails to protect the adjacent trees.

Q: What changes can be expected in soil pH if a sulfur-coated slow-release fertilizer is used?

A: The conversion of sulfur to sulfate will make the soil more acidic. The increase in acidity will be determined primarily by the amount of fertilizer applied and the soil texture.

If you are concerned that the sulfur coating will have an adverse effect by increasing the acidity, I would not expect this to be a major problem. The acidifying effect from other nitrogen sources has been easily corrected.

If you are expecting the sulfur coating to correct undesirable alkalinity, I doubt if sufficient sulfur will be applied. Sulfur-coated urea (36-0-0) has a sulfur content of about 12%. If, in a single season, you apply four pounds nitrogen per 1000 square feet, you will also apply 2.4 pounds of sulfur to the same area.

As a general rule, 20 pounds of sulfur per 1000 square feet is required to decrease the pH of soil solution by one unit. In practice, the pH of clay soils is difficult to lower, particularly if the soil is inherently calcareous.

Q: Last year our oak trees were covered with galls. Are these caused by a disease or insect, and how do I get rid of them?

A: Galls can be caused by insects, mites, nematodes or fungi. Since you indicated that your oaks were "covered with galls," you are probably referring to leaf and/or twig galls.

Oaks are infested with over 800 insect galls, most of which are caused by wasps. These galls rarely affect the health of the trees, but control may be warranted for aesthetics. Unfortunately, the life histories of the majority of these insects have not been determined, so the timings for control have yet to be established. On a trial basis, you could spray the tree with insecticide at budbreak and again seven to 10 days later.

Q: One of my clients had a 4-inch tree which broke near the ground. The break was clean and looked almost like a joint. Could it have broken apart where it was grafted?

A: Yes. Some graft incompatibilities may not become evident until the tree has grown a number of years.

It is also possible that wire or nylon cord used to secure the ball wrapping to the trunk was not removed or cut at the time of planting and subsequently girdled the tree.

Q: The last few years we have used quite a lot of salts on our driveways during the winter and many of the shrubs along the road are beginning to die back. Could you recommend some shrubs and ground covers that are salt tolerant?

A: I have completed the following list from a number of articles on the effect of deicing salts on plants. Of course, there are many other factors you should also consider when selecting plants for use in the landscape.

Continues on page 38

"In our area, we need a bluegrass that comes up fast and stays green longer. . . 3 years ago* we picked Baron Kentucky Bluegrass. And we haven't changed since."

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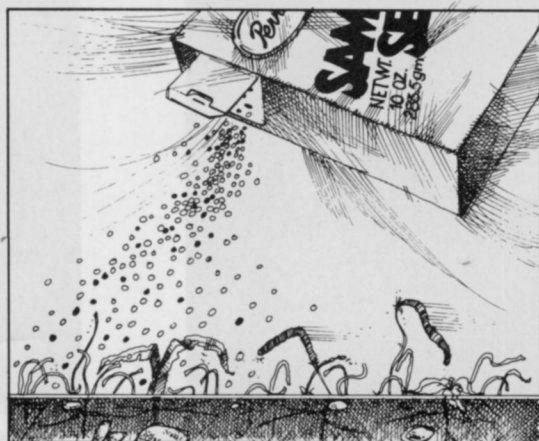
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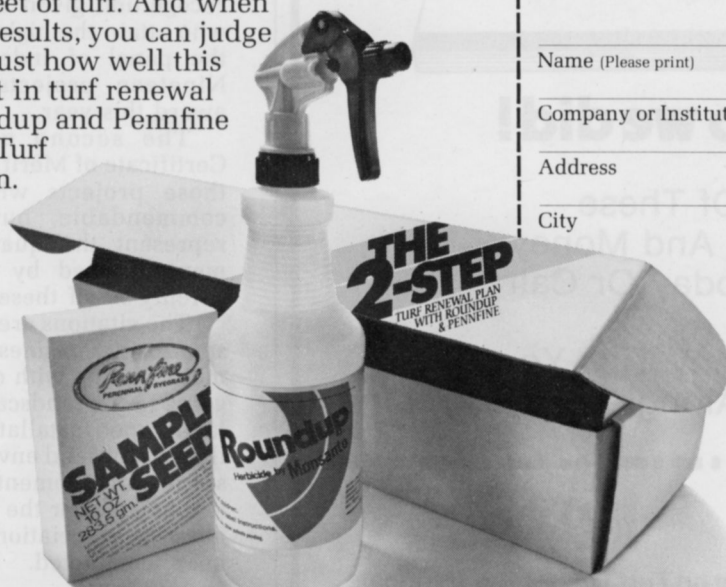
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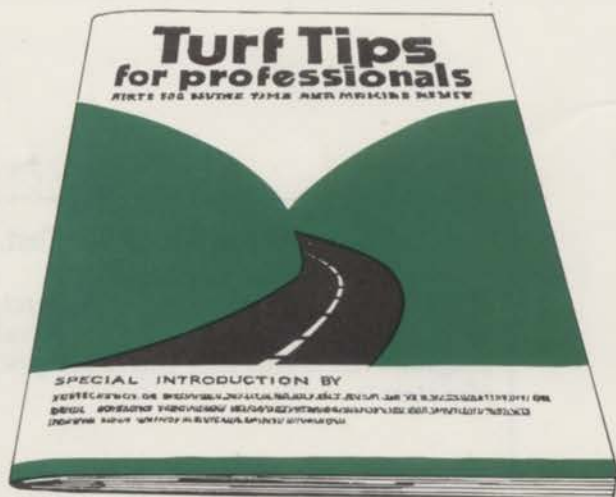
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First lady presents landscape honors

In a formal ceremony and reception at the White House today Mrs. Jimmy Carter met with 135 individuals receiving special recognition for their significant environmental contributions. Occasion was the 25th Landscape Awards Program of the American Association of Nurserymen.

The White House guests represented the sponsors, landscape architects and landscape installation firms responsible for 45 different environmental landscaping projects selected from around the nation for exceptional values they add to the quality of life in their communities. This was the ninth time in the program's history a First Lady has presented the awards, and the fifth time the event has taken place at the White House.

Objective of the program, according to Robert F. Lederer, executive vice president of the AAN, is to stimulate active participation in community improvement by industrial and commercial firms, private and public institutions, and municipalities.

"The national attention which is focussed on a number of outstanding examples through Mrs. Carter's personal interest encourages many others to make the same sorts of investment in their own community's well-being," Lederer said.

Two categories of awards were presented today. The first is the Landscape Award, the highest recognition given to the select few who attain the high standards set by the panel of independent judges. Nineteen projects received that award this year.

The second category is the Certificate of Merit which is given to those projects which are highly commendable, but do not quite represent the quality of achievement attained by the first group. Twenty-six of these were given.

The citations are presented to the sponsoring business, institution or municipality, with duplicate awards going to the landscape architect and landscape installation firm. More than a thousand environmental landscape improvements have received this honor over the past 25 years the nursery association's program has been conducted.

VALENCIA COMMUNITY COLLEGE, ORLANDO, FLORIDA. The site originated from an 85-acre

orange grove which surrounded a three acre lake. The central location of Lake Pamela provided a unique setting for the campus. The building growth was planned in a circular movement around the lake with a buffer of plantings screening the parking areas from the campus.

McDONNELL DOUGLAS CORPORATE HEADQUARTERS, ST. LOUIS, MISSOURI. The building is a three wing structure with curved sides between each of the wings. The planting emphasizes large masses of trees to place the building into a green setting, in scale with the building, and to serve as a buffer screening of Brown Road.

SAN DIEGO WILD ANIMAL PARK, CALIFORNIA. The park is an 1800 acre wildlife preserve and botanical garden in the San Pasqual Valley, 30 miles northeast of San Diego. The park is dedicated to both the preservation of animal and plant life. Landscaping throughout the preserve perpetuates the conservation theme by duplicating, where possible, the animals' natural environments.

BEVERLY HOSPITAL MEMORIAL GARDEN, BOSTON, MASSACHUSETTS. Unlike most gardens, this was designed to be viewed from above from patient rooms as well as to be enjoyed by convalescing patients. A "frozen beach stone" path winds throughout the garden, separating a gently rolling lawn from a shrub border in which almost every variety of broad-leaved evergreen hardy to the area provides an always changing display.

PACKER COLLEGIATE INSTITUTE SCHOOLYARD, BROOKLYN, NEW YORK. The school's 150' x 150' yard serves as the school's only outdoor area for recreation to accommodate 100 children, ages 3 to 17. A small garden plot provides an opportunity for digging and planting projects.

FILENE'S SHOPPERS' PARK, BOSTON, MASSACHUSETTS. The basic design of the park is simple. Standardized planters for trees and flowers are arranged in an interlocking pattern which breaks the area into small spaces in order to give a sense of seclusion to individual park users.

Continues on page 40

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Vegetation Management *from page 32*

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Tolerant

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Tatarian Honeysuckle
Lonicera tatarica
Amur privet
(*Ligustrum amurense*)

Japanese honeysuckle
(*Lonicera japonica*)

Firethorn
(*Pyracantha coccinea*)

Black currant
(*Ribes nigrum*)

Weigela
(*Weigela sp.*)

Sensitive
Japanese barberry
(*Berberis thunbergii*)

Boxwood
(*Buxus sempervirens*)

Squawbush
(*Rhus trilobata*)

Buffaloberry
(*Shepherdia argentea*)

Tamarisk
(*Tamarix pentandra*)

Yucca or Adams needle
(*Yucca filamentosa*)

Arborvitae
(*Thuja species*)

Bayberry
(*Myrica pensylvanica*)

Virginia creeper
(*Parthenocissus quinquefolia*)

Boston Ivy
(*Parthenocissus tricuspidata*)

Autumn olive
(*Elaeagnus umbellata*)

Rugosa rose
(*Rosa rugosa*)

Intermediate

'Spring glory' forsythia
(*Forsythia intermedia*)

Andorra juniper
(*Juniperus horizontalis*)

Winged euonymus
(*Euonymus alatus*)

Multiflora rose
(*Rosa multiflora*)

Arctic blue willow
(*Salix purpurea* var. *nana*)

Viburnums
(*Viburnum species*)

(*Soil salts; not necessarily)
(true for salts on foliage.)

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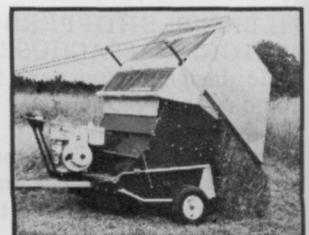
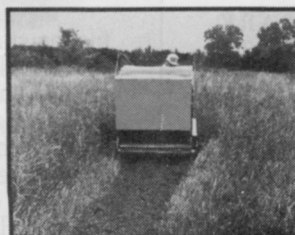


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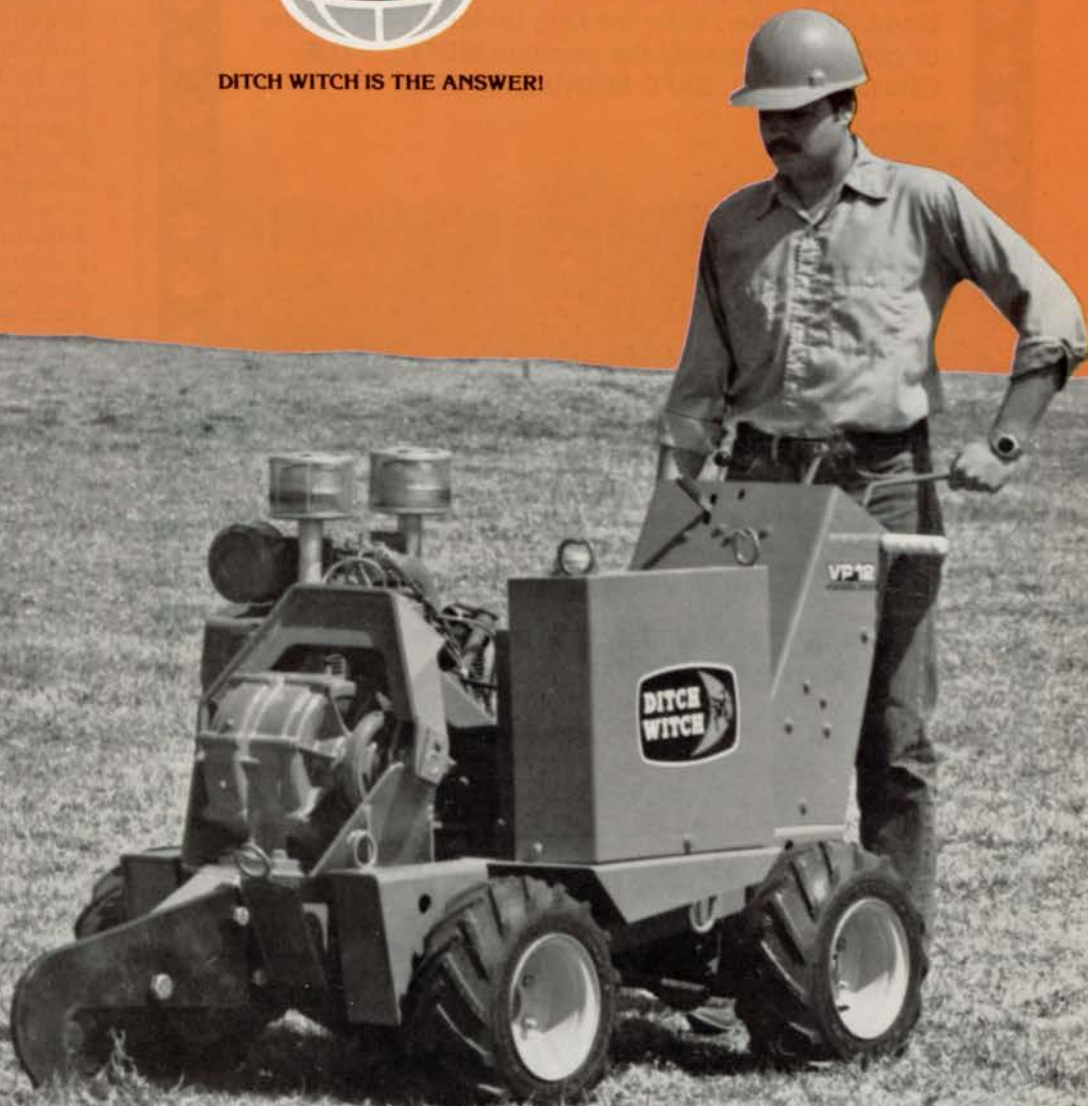
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Awards from page 37

BALTIMORE CITY'S INNER HARBOR, BALTIMORE, MARYLAND. This renewal project was designed to create a large recreational and gathering area for the surrounding community and public. Landscaping of the South and West Shores creates an inviting and park-like atmosphere along the city's waterfront.

LBJ MEMORIAL GROVE ON THE POTOMAC, WASHINGTON, D. C. The Grove covers twelve acres of the Lady Bird Johnson Park — an island in the Potomac River opposite the Pentagon in the nation's capital. The basic element of the design was the shaping of the land to create visual interest and the building of berms to screen sight and sound from the adjoining parkway traffic. The planting consist of almost nine hundred white pines varying in height from ten feet to twenty-five feet, arranged in a random pattern averaging sixteen feet on center. The shrubs consist of rhododendron, azaleas, schipka cherry-laurel, doblefile viburnum, summersweet, dogwood, Baltic ivy, plubgago and many varieties of daffodils.

CENTER CITY, WILLIAMSPORT, PENNSYLVANIA. The construction of a pedestrian mall on the main business street and the conversion of two other streets in the area to semi-malls vividly demonstrates what can be done when a community is conscientiously interested in improving itself and the quality of life for its residents. Full advantage was taken of the scale of the buildings and the spaces between. Important contrast was made between the existing masonry environment of the city and the bold plantings massed in visible areas of the renovated areas.



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