Controlled Irrigation and Deep Soil Aeration Help "Old Turf," Report Says

Deep soil aeration and controlled irrigation can significantly improve old golf greens and other fine turf areas, making them tough but tender and springy, according to a recent report from the University of California (Riverside) Agricultural Extension Service.

Attempts to increase turf vigor and resilience have increased longstanding problems of diseases, poor root systems, and low water penetration rates. Increased irrigation to soften a putting green surface, for example, may leave water on greens, seriously reduce the air available to roots, scald foliage in the summer, and increase soil compaction.

The Arrowhead Country Club in San Bernardino, during the winter of 1961, requested assistance in their program to replace and repair putting greens. Of immediate concern were two 35-year-old greens with typical characteristics of old-green maladies: surface soil stratification, compaction, impaired root penetration, unhealthy root system, and an anaerobic soil condition sufficiently severe to develop a strong odor after exposure of plugs to air for 20 to 30 minutes. University of California farm advisors Chester Hemstreet and Fred Dorman agreed to help with the program.

The researchers tried a number of turf rejuvenation methods on Green Number 4 at the club. Two-thirds of the length of the green was reserved for "deep aeration" treatment; the other third, about 21 feet, was used as a control. The west portion was treated by placing ¾-inch diameter holes on 2-inch centers to a 6-inch depth. Similar holes in the east portion were placed on 4-inch spacings.

Aerifier holes were filled (vertically mulched) by Hemstreet and Dorman with a sandy topdressing mixture containing 25% redwood sawdust, plus all major and minor nutrients. The green was irrigated twice and then given a light top dressing of fine sand, then "squeegeed" smooth.

Next the entire green was aerified with rotary spoon-type equipment. The holes were left open to facilitate movement of irrigation water into the areas between the "deep aerified" holes.

A striking increase in resilience of this putting green was detected by the experimenters immediately after the hand-aeration holes were completed. Heavy irrigations were no longer necessary to supply injured roots with adequate moisture and increase green surface resilience.

Water infiltration tests indicated a considerable increase over the pretreatment rates. Prior to deep aeration treatments, there was excessive water accumulation on the surface after approximately ¼-inch of water was applied—a 20 to 30 minute irrigation. For periods up to 5 hours, the soil surface would yield water when walked on after ½-inch of water was applied. After treatment, casual or excessive water accumulation appeared only in the control or untreated area and on a 3 or 4 sq. ft. area where slope was a problem.

Hemstreet and Dorman feel that the long period of minimum water application increased the air in the soil and allowed the layers of partially decomposed organic matter (old buried thatch) to decompose.

Dorman reported that large-diameter deep-aerifier holes placed through the surface of an old bentgrass green successfully provided adequate drainage.

This deep aeration or vertical mulch procedure, plus irrigation water application control, increased root activity at deeper soil depths and decreased root density at the shallower depths.

The deeper root system and possibly the hardening of the turf from reduced water application, resulted in less turf injury when the interval between irrigations was lengthened, thus reducing the total amount of water applied and time spent in application, it was concluded.

W&T Mailbox

Drives English Style

I have been receiving your magazine for over a year now and have found many articles of great interest. I look forward to each publication.

Being involved in weed and brush control work on state and county roads, I thought your readers might be interested in steps we have taken towards doing a better job, easier and safer.

By going to righthand-drive equipment (see photo above) we have put the applicator "on top of his work." Leaning towards one-man-operated rigs for spot work and shoulder applications, time is saved and possibilties of damages from drift are greatly reduced. The cost of this equipment, factory ordered, is only slightly above standard models, some $90.00 for our one-ton rig. Anyone working on roadways, I am sure, will find this type of equipment beneficial to his program.

M. R. Hubbell

Supervisor
Jackson County Weed Control
Medford, Oregon.

May Pix Were VPI's!

We would like to request several copies of your May issue. In the article, "Brush Up on Brush Control," pages 12 and 13, pictures which were taken here at the Virginia Agricultural Experiment Station were used, and we would like very much to have several extra copies for our files.

Dr. W. E. Chappell

Professor of Plant Physiology
Virginia Polytechnic Institute
Blacksburg

Somehow we failed to credit Dr. Chappell for his kindness in supplying us some of the photographs used in the brush control article. Readers who perform brush control work are all aware of Dr. Chappell's work at VPI, which has been helpful to many applicators around the country. Ed.

Classifieds

When answering ads where box number only is given, please address as follows: Box number, c/o Weeds and Turf, 1900 Euclid Avenue, Cleveland, Ohio 44115.

Rates: "Position Wanted" 5c per word, minimum $2.00. All other classifications, 10c per word, minimum $2.00. All classified ads must be received by Publisher the 10th of the month preceding publication date and be accompanied by cash or money order covering full payment.

HELP WANTED

OUR COMPANY is now operating in termite and pest control. We wish to expand into weed control, turf maintenance, tree care, etc. If you qualify to form and manage this new department, kindly give education details, experience, reference and personal data. Write Box 512, Havertown, Pa.

MISCELLANEOUS

TO EMPLOYERS who advertise for men! The letters you receive in answer to your advertisements in WEEDS and TURF are submitted by each of the applicants with the hope of securing the position offered. When there are many applicants it frequently happens that the only letters acknowledged are those of promising candidates. (Others do not receive the slightest indication that their letters have even been received, much less given any consideration.) These men often become discouraged, will not respond to future advertisements and sometimes even question if they are bonafide. We can guarantee that *every advertisement printed in* WEEDS and TURF *is duly authorized.* Now won't you help keep our readers interested in this advertising by acknowledging every application received, even if you only return the letters of unsuccessful applicants to them marked, say, "Position filled, thank you"? If you don't care to reveal your identity mail them in plain envelopes. We suggest this in a spirit of helpful cooperation between employers and the men replying to Help Wanted advertisements. Put yourself in the place of the other fellow.

Agri-Humus Co. Formed to Market "Humus-Plus"

Formation of a sales corporation in Fresno, Calif., to market a new 50% humic acid concentrate for turf and crop fertilization, has been announced by William S. Kimbro, president of the firm, known as Agri-Humus Co., Inc.

The product will be sold nationally under the trade name of Humus-Plus.

"Humus-Plus," Kimbro reports, "is a new product (of the Baroid Div. of National Lead) refined from natural organic deposits of lignite now being mined and processed for our company. The product is prepared in dry granular form, and is readily mixed with other fertilizer materials and may be applied with all conventional application equipment at planting time or side dressed after planting."

Humus-Plus is reportedly used extensively in turfgrass areas.

Details are available from the company at 317 West Voorman Ave., Fresno, Calif.

Too Few Youth Seek Turf Jobs, Californian Says

Jobs for young people in the turf industry are becoming increasingly plentiful in America, but job applicants are scarcer, according to a recent University of California (Riverside) bulletin.

A group of men in Los Angeles, however, hopes to remedy that situation within a few years. A University of California Farm Adviser, Wayne C. Morgan, is working with educators, golf course officials and members of the turfgrass industry to drum up interest in turfgrass teaching programs at junior and senior high school levels and college levels.

Aim is to interest youth in turfgrass as a career, provide learning opportunities both in the classroom and on the job, and finally have trained candidates become available for work at golf courses, for contract turf maintenance companies, parks, freeways, and similar areas where turf is growing increasingly important.

Lester O. Matthews, supervisor of secondary agriculture in the Los Angeles City Schools, said a similar shortage of qualified people exists for turf and landscaping jobs with the California State Division of Highways (65 short), the Los Angeles City Schools (45 short), and the Los Angeles City Recreation and Parks System (148 short).

Study Red Spider Resistance

Strong resistance of the red spider to pesticides is a big problem to Massachusetts flower growers and ornamental maintenance companies, according to Dr. John A. Naegele, Professor of Entomology and head of the University of Massachusetts' Waltham Field Station.

"These spiders are prime economic pests, particularly on roses, which are an extremely important floricultural specialty in the Bay State," Dr. Naegele reports.

Under a $37,072 Public Health Service research grant awarded recently to the Experiment Station, Drs. Naegele, William McEnroe, K, Kanungo, and Jozef Nowosielski will continue their studies initiated at Cornell University to discover why mites are frequently resistant to pesticides.

"This research is important to growers in Massachusetts," Dr. Naegele explained, "because it may provide information that will answer the question of how to control resistant red spiders and other mites plaguing ornamentals."

— Advertisers —

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Fertilizer Needs Discovered by Leaf Analysis, Researchers Say

Best possible rates, methods, and frequency of fertilizer application on woody plants may be discovered by detailed leaf analysis, horticulturists at the Ohio Agricultural Experiment Station, Wooster, believe.

"Necessary information for proper application includes growth rate, age of plant, desired ornamental effect, and quality of the plant," researchers point out, "and soil tests or other means which overlook this information can not be conclusive."

Wooster scientists are convinced that foliar analysis will provide a truer picture of a plant's nutrient status, and that this information, when correlated with growth and quality measurements, will provide more accurate guides for proper fertilizer practices.

Shade trees and acid soil plants are under study in the present phase of the program, now being carried out in Columbus, Ohio, and at commercial nurseries, as well as at the experiment station in Wooster. Leaf samples are being analyzed by photometric and chemical techniques to discover the most effective differential fertilizer treatments.

Rhode Island U. Develops Fungi-Nemato-Herbicide

A water-soluble combination fungicide, nematocide, and selective herbicide is the latest development to come from research labs of the University of Rhode Island's Department of Plant Pathology-Entomology.

A report from the Agricultural Experiment Station by department chairman Dr. Frank L. Howard, and research assistant Peter B. Adams, states that workers at the station have developed and field tested stabilized methyl arsine oxide. This compound is said to be different from presently available products in that it will pass through highly organic soil and will not be diluted or inactivated, and thus keeps its fungicidal killing properties, the report explains.

Some turf fungus diseases which commonly occur together require two separate fungicides, because one fungus may be in a resting or spore stage and be more resistant to treatment.

Methyl arsine oxide has shown in tests to be effective against both active and resting stages of *Pythium* and *Rhizoctonia* disease organisms. Field trials in 1962 gave 100% control of brown patch, *R. solani.*

1963 trials showed effectiveness against the *Helminthosporium-Curyularia* complex, a serious disease on turf. At that time, researchers also discovered that methyl arsine oxide selectively controlled crabgrass.

Methyl arsine oxide is also toxic to nematodes, but becomes more active if the compound is modified to hexyl arsine oxide.

Although the product is not yet federally registered for sale or use, Vineland Chemical Company, Vineland, N. J., plans additional testing for registration. They expect registration for use on nonfood crops such as turf, ornamentals, shrubs, and flowers. The compound is an arsenical and toxic to humans; it will not be used on food crops.

USDA Registers Betasan

Stauffer Chemical's Betasan, a preemergence herbicide for control of crabgrass and other lawn weeds, has received registration approval under U.S. Department of Agriculture and Public Health Service regulations, the manufacturer announced recently.

Field-tested across the United States and sold commercially for two years in California, Betasan has been shown to have a wider margin of safety to established turfgrasses than many other commercially available products, Stauffer contends.

An application of Betasan during late winter or early spring prior to germination of the weeds is said to give season-long control. Betasan is also noted for its ability to control annual bluegrass, the company says.

Stauffer says the product is safe to use on all types of established lawn grasses, as well as dichondra. For details, write the firm at 380 Madison Avenue, New York 17, N.Y.

Trimmings

Dandy Danner. Hats off to Charlie Danner, Superintendent of the Capital City Country Club in Atlanta, Georgia! It was Charlie, we learned recently, who singled out *Weeds and Turf* for special praise during one of the turf conferences earlier this year. Now we learn from one of his friends that "Charlie is known throughout the South as the very best southern bent grower. He did an excellent job of producing bent greens where most professionals said it was impossible. He appears on several of the southern conference programs annually."

* * *

Rayner Shines. *Cities across the land are in the midst of their elm preservation programs, hoping to protect their Dutch elm trees from disease. A city program which recently received notable local attention was administered by Gordon Z. Rayner, city forester for Milwaukee, Wis. Forester Rayner supervised the inoculation of nearly 45,000 elms with the new systemic insecticide, Bidrin. A feature article in the Milwaukee Journal gave all the details, and pictured arborist John E. Szydlowski applying the pesticide. In his protective garb, John looks like a man from outer space in the Journal photograph, but it's good to see this graphic example of safe practices on the job.*

* * *

Hostetter Hoopla! A landscape architect who's not confining himself at home these days is James F. Hostetter of Tucson, Arizona. This Arizonan (by adoption) was scheduled to address women attending the University of New Mexico Homemakers College on effective landscaping for the housewife last month. Jim received his degree in Landscape Architecture from Ohio State University, and now specializes in landscape design as well as running Hostetters' Nursery in Tucson. As if this didn't consume enough of his time, the versatile vegetation specialist writes a weekly column, "Yard 'N' Garden Tips" for the *Arizona Daily Star.* We're glad to learn of this fellow journalist's apparently limitless energies!

* * *

Southwick moves up. *Promotion of Dr. Franklin W. Southwick, formerly research professor of pomology at the University of Massachusetts, to head of that school's Department of Horticulture was announced recently. It's a singular honor for the renowned scientist, since it was just about 25 years ago when he himself graduated (with his BS) from the Mass pomology curriculum.*

* * *

New Deal. Speaking of new figures in our universities, Dr. Elwyn E. Deal has just been added to the Agronomy Department staff at the University of Maryland. Dr. Deal will conduct research and extension work in turf management, according to Dr. James R. Miller, department head at the College Park school. Dr. Deal is a specialist in the management of roadside turf, and as a result will no doubt have much to offer the W&T readers engaged in this type of activity.

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