

GREEN INDUSTRY NEWS

TURF

Lawn care growth evident at Ohio Turf Show

Lawn care appeared to dominate other turf interests at the Ohio Turf-grass Conference and Show in Columbus, Dec. 5-7. Dave Martin, OTF executive director, said that there were more representatives from lawn care companies than golf courses, and this was only the second year separate sessions for lawn care were offered. More than 1,500 turf managers attended the three-day event which enjoyed good weather for a change.

Chemicals and business dominated the lawn care sessions. Late fall fertilization and turf insect control drew large crowds. Dr. J.R. Hall of Virginia Polytechnic Institute and State University said supplying nutrients to bentgrass, after temperatures stay below 55 degrees but before the grass goes dormant, enables the grass plants to build up carbohydrate reserves for the flush of growth in spring. Early spring fertilization can cause carbohydrate depletion in root systems by June, Hall said, because of excessive shoot growth. Hall recommended use of soluble nitrogen for late fall fertilization. His data was limited to a band across the center of the U.S. from the East Coast to the Midwest. A fertilization program where one pound of nitrogen is applied in October, November, December, January and February was recommended.

Drs. Niemczyk of the Ohio Agricultural Research and Development Center and Hellman of the University of Maryland spoke on turf insect control. Niemczyk reported data from tests on chinchbugs and treatment timing, the ataenius beetle, and the greenbug aphid.

Both Niemczyk and Hellman compared treated and untreated chinchbug areas. Niemczyk showed that an April application of Dursban controlled chinchbug damage throughout the year, although



Dr. Harry Niemczyk



Dr. John R. Hall, III

chinchbug migration in September into previously treated areas was found. Hellman said the place to check for chinchbugs is where dead and healthy turf meet.

Other tips offered by Hellman were that bluegrass billbugs overwinter in shady areas and then migrate into open areas in April when populations peak. One sign of a sod webworm infestation, Hellman said, is the presence of large numbers of birds on a turf area.

Niemczyk stressed the possible seriousness of two relatively new turf pests, the ataenius beetle and the greenbug aphid. Damage levels from both pests have showed remarkable increases.

Business sessions, including a four-member panel on starting a lawn care business, also received good attendance. Subjects covered were business expansion through diversification, cash management, and computers for routing and billing.

Perennial ryegrasses and proper overseeding were covered in both lawn care, golf course, and general sessions.

Hall said strengths of perennial ryegrasses include: medium texture, blends well with Kentucky bluegrass, fast germination, withstands low mowing heights, extended green season, good seedling vigor, and toleration of short-term drought without losing color. Weaknesses, Hall said, are: disease susceptibility, slow lateral growth, faster growing requiring more mowing, and color contrast.

Hall said, "Drs. Reed Funk, Bill Meyer, and Joe Duich have made tremendous contributions in breeding perennial ryegrasses." Bill Meyer, of Turf Seed Co. and Pure Seed Testing in Hubbard, Oregon, spoke to the Golf Course session on Turfgrass Varieties for Overseeding Golf Courses.

Other golf course topics were redesigning greens by Dr. Mike Hurdzan, managing *Poa annua* by Bill Burdick, and sand topdressing by a panel of three superintendents.

The panel pointed out that once sand topdressing is started, it must be maintained or else a layering effect will retard water percolation.

GOVERNMENT

UPDATE

2,4,5-T warnings suggested

Counselors of the Environmental Defense Fund, the National Audubon Society and the National Wildlife Federation have signed a letter to the EPA suggesting that a warning be posted on all areas sprayed with 2,4,5-T where human reentry might be possible, especially recreation sites.

An example of the suggested warning is: "Warning! This area has been sprayed with 2,4,5-T. This product has been determined to cause birth defects in laboratory animals. Women of child-bearing age should not enter posted area and do so at their own risk."

Australia finds no 2,4,5-T, birth defects link

A Consultative Council appointed by the Minister of Health, Victoria, Australia has reported that there does not appear to be any relationship between herbicide usage and type of birth defects or deaths related to birth.

The Council noted that it had compared birth defect numbers in two statistical divisions with similar numbers of births. Even though 2,4,5-T and 2,4-D use was considerably higher in one division, the council reported no differences in the rates or types of defects.

tered for greenbug control. Funds to support the project are invited from the turfgrass industry.

Various biotypes of the greenbug have developed which attach specific grass hosts. Speculation is that a new bluegrass adapted biotype of the greenbug has evolved in Ohio and other midwestern and eastern states.

The greenbug damages grasses in several ways. With piercing-sucking mouthparts it feeds on phloem sap. Large numbers of the insects seriously weaken plants. In addition, the greenbug secretes a salivary phyto-toxin which is injected into the plant, resulting in yellow and orange spots on the leaves. There is the possibility that the toxin may also move within the plant and weaken the root system. The aphid may also be involved in the transmission of virus diseases.

Greenbug damage first appears in late June and continues through September. (See *WEEDS TREES & TURF*, October, 1978). Some control has been achieved with organophosphates, but three or four follow-up applications may be needed.

The new research effort will attempt to establish whether or not a bluegrass-specific greenbug has developed and if so, does it overwinter in bluegrass and will management practices affect overall populations.

Varieties of bluegrass will be screened for resistance or tolerance.

NURSERY

Mich. scientists make plant cloning possible

A technique forming the basis to produce hybrid plants with reduced flowering time, like the kalancho, thereby cutting down on energy and labor costs to keep the plant under short-day conditions, has been developed in the laboratory of Dr. Kenneth Sink, Jr., Michigan State University Professor of Horticulture, according to an article in the *Voice of M.A.N.*, the Michigan Association of Nurserymen's publication.

The adventitious bud technique, a type of single cell tissue culture, involves taking a slice from the leaf petiole of a plant, placing it in a culture medium, then exposing it to the right combination of light and temperature to promote shoot growth.

New plant varieties can be produced by treating the cell cultures with radiation or mutation-inducing chemicals that change the genetic code contained in the cells.

Sink has found 8 to 10 species, including petunias tobacco and

potatoes, that the system will work on. Two Michigan nurserymen, Walter's Gardens in Zeeland, and Goldner-Walsh in Howell, are using tissue culture according to the article.

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Greenbug effect to be studied in Ohio

Stepped up efforts are planned for 1979 to learn more about *Schizaphis graminum* (Rodani), the greenbug aphid that has been causing increased levels of damage to turfgrasses.

Drs. Harry Niemczyk, Professor of Turfgrass Entomology, and L.R. Nault, aphid specialist, at the Ohio Agricultural Research and Development Center, will be co-investigators in the study.

The goal of the study is to learn more about the greenbug and to develop effective and economical methods of controlling damage. Information on the insecticides tested in the study could lead to the granting of a state or national label for the use of materials not presently regis-

SALT

Microscope shows cell damage to pines

Salt damage to trees and shrubs is being evaluated with a scanning electron microscope by Drs. Charles Krause and Alden Townsend, at the U.S. Department of Agriculture's Nursery Crops Research Laboratory.

Krause said they evaluated bristlecone pine and Japanese white pine after they were sprayed twice a day for 10 days with a two percent salt spray. The unaided eye could detect brown needles and typical salt damage symptoms on the bristlecone pine but the Japanese white pine appeared healthy and vigorous.

When examined under the electron microscope, however, the Japanese pine showed damage to the surface guard cells on the needles and

Soil erosion lab to be built

Construction of a \$3.6 million National Soil Erosion Laboratory on the Purdue University Campus in West Lafayette, Indiana, should be underway by next summer, according to a USDA spokesman.

Earl R. Glover, acting regional administrator for agricultural research of the department's Science and Education Administration said the laboratory should be ready for occupancy by late 1980 or early 1981. Construction funds were included in the agricultural appropriations bill approved by Congress and signed by the President in October.

The two-story building will provide space for about 15 Science and Education Administration agricultural research scientists and 22 support staff. Plans for the building are now in the preliminary design stage.

"There will also be space for cooperating Purdue research and teaching staff as well as graduate students and visiting scientists," Glover said.

"We will give special attention to erosion problems on disturbed lands, such as strip mine and construction sites," he added.

St. Louis honored as Green Survival City

The American Association of Nurserymen has announced the official designation of St. Louis, Mo., as a Green Survival City. "The City of Trees" received its certificate from AAN President Ernest Tosovsky and Vice President Hugh Steavenson during special ceremonies in November at a joint meeting of the St. Louis Landscape and Nursery Association and the St. Louis Arborist Association.

Landscape beautification and planting activities have always played an important role in the city. During St. Louis' bicentennial celebration in 1964, the St. Louis Landscape & Nursery Association conducted a planting program whereby citizens could donate funds to sponsor tree planting. In one year \$64,000 was raised.

The city's most recognized and successful planting program was initiated in 1971. Called "Project Greenback," this public awareness project is operated jointly by the St. Louis Landscape & Nursery Association, the St. Louis Arborist Association, the Residential Betterment Section of the St. Louis Community Development Agency, and the Forestry Division of the Department of Parks, Recreation and Forestry.

other symptoms though not as serious as those of the bristlecone pine.

Tiny salt crystals were also visible under the microscope which produces a three dimensional image of a specimen on a television screen magnified up to 200,000 times.

Krause said that the electron microscope permits the scientists to detect subtle differences between salt-tolerant and salt-susceptible plant species.

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Penncross bent rated superior in NGF survey

A recent nationwide survey conducted by the National Golf Foundation showed 60% of the respondents rating Penncross bentgrass superior as a putting surface. Results were received from 1,623 golf facilities, representing a cross-section by type, size of course and geographic location.

Other results revealed that bluegrass was the most frequently used species on tees (32%), fairways (52%) and roughs (53%). Bentgrass had the second highest frequency of use on tees (26%), bermuda (23%) and roughs (19%). On greens, bentgrass was most often used (79%) followed by bermuda (15%). Climate was given as the leading factor in influencing selection of grasses.

Sixty percent of the respondents reported annual budgets for grass seed of \$1000 and under. The median figure was \$833, while the average was \$1485. The average per pound for overseeding bentgrass was \$5.19.

Expanded green renovation for next year was planned by 27 percent of the facilities.

PARKS

PGMS elects new officers

Fred A. Lennertz, Jr., has been re-elected to his second term as president of the Professional Grounds Maintenance Society. J. Alton Enloe is the vice president. He has served on the Board of Directors and was co-chairman of the 1977 Annual Conference in Houston. John R. Van Vorst was re-elected treasurer. vorst was a 1978 recipient of an award in the Grounds Maintenance Award Program. He is Supervisor of Parks for the Borough of Tenafly in New Jersey.

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Ohio simulator to provide turf data

Ohio agronomists have built an environmental simulator with which to study northern, cool season turf-grasses in the laboratory. Bruce J. Augustin, a graduate student in agronomy at The Ohio State University, has spent the better part of a year assembling the unit under the guidance of Keith J. Karnok, turf-grass specialist for the Ohio Agricultural Research and Development Center.

Composed of two growth chambers, adjustable sun lamps, air pumps, connecting hoses, sampling tubes, and various monitoring and recording devices, the facility has the capability of simulating a variety of environmental conditions. Augustin can control light intensity and quality, daylength, relative humidity, wind velocity, air and soil temperatures, and soil moisture in numerous combinations.

Augustin said that with the simulator he can study all the aspects (what goes on above and below the ground) important to healthy turf at one time without actually disturbing the grass.