A Big Turf Show
And What Goes On

For a three-year-old, it's making some pretty bold claims to bigness.

But then the Ohio Turfgrass Conference as supporting evidence offers its attendance of 1,050, raising the question: Is there another similar gathering any larger?

The latest measurement of the Ohio group's growth came Dec. 1-3 in Cleveland. Twenty-two papers were presented; 71 companies occupied 130 booths set up in the main ballroom and an adjacent room half as large in the Sheraton-Cleveland Hotel.

Sponsors were four-fold: The Ohio Cooperative Extension Service, Ohio State University, Ohio Agricultural Research and Development Center, and the Ohio Turfgrass Foundation.

Subject matter for the three days was categorized under five headings: Turf varieties and mixtures; turfgrass diseases; soil factors; weed control; and grounds beautification.

A report on the weed control section will be carried in the February special issue on weed control. A capsule of other information presented follows:

Turf varieties and mixtures

"Temporary grass mixtures are, for the most part, not desirable and used only when quick cover is necessary," stated agronomist Merle H. Niehaus from the Wooster research and development center. On the other hand, he added, "Permanent mixtures can be used to increase turf tolerance to certain pests and particularly to increase shade tolerance."

Fast-growing short-lived species,
rather than acting as a “nurse crop” for slower-growing, long-lived species, can actually suppress the growth of the latter desired species, he said.

A desirable permanent mixture is bluegrass and red fescue. Bluegrass will dominate the sunny portion of the area; the red fescue, the shady portion. In Wooster tests, this mixture produced a complete sod more rapidly than either alone, he reported.

For hard-use areas, such as playgrounds on athletic fields, Niehaus advised pure tall fescue over bluegrass/tall fescue. In high levels of management, the bluegrass will dominate, he said.

Short-term data indicate that bluegrass and new turf-type perennial ryegrass look promising as a mixture to provide quick cover and a high degree of tolerance to many turf diseases.

Dr. C. R. Funk reported these conclusions from Rutgers research of bluegrass blends under various management conditions:

1. Observed performance of a blend has never significantly exceeded the performance of the best component variety.

2. Blending of varieties with contrasting leaf widths has produced attractive turf.

3. Newport has proved to be a poor competitor in mixtures with Merion, Pennstar and Fylking.

4. Merion has been too competitive, in relation to other available varieties to make it an ideal component of a permanent blend. At the end of three years, Merion comprised more than 94% of the turf in all mixtures seeded to either 25% or 50% Merion.

5. Blends of resistant and susceptible varieties showed considerably less damage from leaf spot than the average performance of the components grown separately.

6. Stripe smut did not influence competitive ability until it became severe.

“Data suggests that the best multipurpose bluegrass varieties,” Funk concluded, “will be blends of compatible, low-growing, disease-resistant bluegrasses tailored to complement each other. Outstanding single-component varieties will continue to be used for special purposes.”

All the while that one of the most enviable records in college football was being built, research was going on under the trampling feet of Ohio State University football players and their usually vanquished opponents. Among those watching the turf, perhaps as much as they watched the players, was Dr. Robert W. Miller. He reported on findings of research that began with the renovation of the Ohio State field at Columbus in 1961.

A 90% tall fescue/10% Kentucky bluegrass was seeded in April of 1962. During the first playing season, tall fescue dominated, he said. Then the fescue dwindled to 25% in the 1963 season and disappeared entirely by the 1964 season.

Research was begun to find out what happened to the fescue. Merion, Delta and Newport bluegrass were mixed with fescue. Factors of fertility, seeding rate, mowing height, water and no water were evaluated.

Dr. Miller reported these conclusions:

1. A turfgrass mixture of tall fescue and Kentucky bluegrass will gradually change to bluegrass when highly managed in a climate similar to that of central Ohio.

2. The increasing dominance of bluegrass results in part from differential winter injury to the two species.

3. To maintain a minimum shift to bluegrass, use no more than 3 lbs. of nitrogen per 1,000 sq. ft. per year and mow at a two-inch height.

While perhaps more than half of the golf courses in the northern part
of the country have bluegrass fairways and tees, James L. Holmes, Agri-Systems of Texas, Inc., Bryan, sees a trend to bentgrass.

Fairway irrigation and player demand for short height of cut are the reasons, he said. "If a blend or mixture is all that is required, simply use seaside," he advised.

"Great variation in type is perhaps the most favorable trait of seaside. Where this grass has been regularly and constantly seeded or overseeded, certain types develop under given environmental conditions."

Penncross is finding favor as a green and tee turf, simply because it is easier and cheaper to establish by seeding, claimed Holmes. "It is tremendously easier in reestablishing a uniform turf in a deadened area."

Turfgrass Disease

Of greatest importance is the discovery of turfgrass diseases at the earliest stage, stressed Clinton F. Hodges of Iowa State University. Once large areas have been lost, identification of the specific disease is extremely difficult.

The specialist must be keenly aware of three factors when attempting to identify disease: appearance of individual plants; weather conditions at the time and prior to appearance of the disease; and management practices.

Application of fungicides can be done several ways, but R. R. Muse of Ohio State's Wooster research center said spraying is preferred "simply because it provides a more efficient and better distribution."

Muse stated that complete and uniform coverage of fungicide—that is, wet leaves, crown, and thatch area—can be achieved with 5 to 10 gallons of spray per 1,000 sq. ft.

"In some cases, five gallons are satisfactory against diseases such as powdery mildew and rust, "which attack mainly the grass blades" he said. "Other diseases, such as Sclerotinia dollar spot, Rhizoctonia brown patch, Pythium light, and Helminthosporium melting-out, in which the organisms attack the crown and roots, require 10 or more gallons."

Plant pathologist Noel Jackson of the University of Rhode Island doubted the development of a fungicide that would be a universal panacea for all turf ills.

Laboratory success for a fungicide doesn't always follow with field success because conditions vary so greatly, said Jackson. And methods of testing and evaluation vary from research center to center.

To improve fungicide research and evaluation, Jackson reported that the turfgrass committee of the American Phytopathological Society recommended recently the establishment of nationwide test standards. The standards would cover all aspects of field experimentation, growth chamber and greenhouse studies; the committee charged with recommending standards would also offer suggestions on how to develop a centralized, interstate cooperative facility for obtaining and compiling meaningful data.

A carefully planned fungicide program may be important, but may not be needed, suggested Lowell E. Moser of Ohio State.

"By carefully planning and modifying a turfgrass site, selecting disease resistant varieties, keeping a balanced fertilizer program, irrigating as infrequently as possible and preferably in the morning, moving with sharp mowers, and keeping thatch under control, one could expect less disease."

Intelligent management won't eliminate disease on fine quality turf, he added, but where medium quality turf is sufficient it often is enough to avoid a severe disease problem.
Newly elected president of the Ohio Turfgrass Foundation, Richard Craig, left, is offered best wishes by Robert Reiman, outgoing president (upper left picture) Charles Tadge, right, receives OTF’s “Man-of-the-Year” award from Harry Shrode, awards committee chairman. The leadership that produced the big show and will plan the one next year at Cincinnati is, from the left: Robert Miller, executive secretary; Richard Craig, president; Tom Evans, first vice-president; Robert O’Brien (front), second vice-president; Robert Reiman, outgoing president; Gene Probasco, treasurer; Paul Morgan, director; Fred K. Buscher, director; Bill King, director; Harry Shrode, director; Paul Meichling, director.

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Temperature variation diminishes as soil depth increases, Latham pointed out. The depth where no change occurs is called the neutral layer. The neutral layer for daily temperature change is five inches deep; for annual variation, 40 feet. At 30 feet, he said, the seasons are reversed.

Dr. Paul R. Henderlong at Ohio State illustrated how temperature affected seed germination (percentages recorded 10 days after seeding) with this chart:

<table>
<thead>
<tr>
<th>Species</th>
<th>90°-80°</th>
<th>80°-70°</th>
<th>70°-60°</th>
<th>60°-50°</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pelo ryegrass</td>
<td>65%</td>
<td>92%</td>
<td>62%</td>
<td></td>
</tr>
<tr>
<td>Pennclown fescue</td>
<td>42</td>
<td>86</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Penncross bent</td>
<td>50</td>
<td>58</td>
<td>46</td>
<td></td>
</tr>
<tr>
<td>Highland bent</td>
<td>35</td>
<td>43</td>
<td>45</td>
<td></td>
</tr>
<tr>
<td>K-31 fescue</td>
<td>36</td>
<td>55</td>
<td>58</td>
<td></td>
</tr>
<tr>
<td>Park bluegrass</td>
<td>32</td>
<td>45</td>
<td>20</td>
<td></td>
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<tr>
<td>Merlot bluegrass</td>
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</tbody>
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The optimum air temperature range for bluegrass and fescue growth has been reported to be about 75 to 85 degrees, Henderlong said. Yet the optimum soil or root temperature range is 60-70 degrees. Optimum soil temperature for root development of bentgrasses and ryegrasses is about 85-65 degrees. Growth rate for grasses in general indicates an optimum temperature somewhat higher than that for root growth.

Soil and air temperatures have profound influence on fertilization, stated R. E. Blaser, agronomist from Virginia Polytechnic Institute. "The 14 mineral nutrients needed by turfgrasses do not diffuse into root tissue by themselves," he said. Temperature influences availability of nutrients in soils through chemical and physical effects on soil materials and through growth stimulation or retardation of microbes and turf plants.

Phosphorus availability is lowest when temperature is low. Too much nitrogen when soil temperature is favorable for growing can overstimulate above ground leaf growth at the expense of root health. With high nitrogen content in the leaf and reduced energy reserves in the roots, disease can be just around the corner, he warned.

Experienced turfmen know when it’s “dollar spot weather” or “brown patch weather,” claimed plant pathologist Dr. Robert E. Partyka. It's an indication, he said, that soil and air temperature is quite important in the development of turfgrass disease. As a rule of thumb, he listed these air temperature brackets “right” for producing the following diseases:

Show Mold, *Fusarium nivale*, 32-45 degrees; Brown Patch, *Rhizoctonia solani*, 64-73 degrees for mycelial growth. But at 80-85 and a relative humidity of 100%, the fungus can completely blight a large area within six to eight hours. A rapid temperature drop to the 64-66 degree level favors sclerotial formation. In some cases, sclerotia may form within an hour; *Helminthosporium sorokinianum*, leaf spotting at 68 degrees, leaf spotting with some blighting at 75-85 degrees, and severe blighting with no leaf spotting at 95 degrees; Dollar Spot, peak activity at 70-80 degrees; Copper spot, *Gloeocercospora sorghi*, fungus begins to grow when soil temperature reaches minimum of 62 degrees for seven days (air temperature may be in the 68-75 range); Anthracnose, *Colletotrichum graminicolor*, 80-85 degrees; Pythium blight, *Pythium aphanidermatum* and *P. ultimum*, most favorable at 65-68 degrees; Powdery mildew, *Erysiphe graminis*, 65 degrees; *Fusarium* blight, *Fusarium roseum* and *F. tricinctum*, 77-95 degrees; rusts, *Puccinia graminis*, 50-60 degrees; *Puccinia graminis*, 70-75 degrees, once fungus has invaded the tissue, 85-95 degrees favors growth; stripe smut, *Ustilago striiformis*, 50-60 degrees; and soil-borne nematodes generally grow best at 65-75 degrees.
temperatures that also favor good
turf growth.

Grounds
Beautification

Industry might warm up its wel-
come from a community by leading
with its plan for landscaping.

Some people don’t want industry
because of its lack of emphasis on
grounds beautification, said Jack
Sybrant
of Duncan Landscaping,
Youngstown, Ohio.

“Many times we’re called in too
late,” he added, “with the only solu-
tion of the beautification problem
being to screen the business from
the public.”

Where we can landscape, he con-
tinued, “we try to soften the struc-
tural lines to make the structure
look comfortable with its surround-
ings.”

The same idea is applicable to
home beautification, observed James
Caldwell, horticulturist at Ohio
State.

But first, he said, you have to get
their attention focused on beautifi-
cation. Then give them the right in-
formation; sell them the right plant-
ings; talk about year-around effort;
don’t over-clutter.

Frank Dobie of the Sharon Golf
Club at Sharon Center, Ohio, ob-
served that a “well-planned beauti-
fication program can be a good pub-
lic relations program with mem-
bers.”

Edward Friedhoff described the
tree-planting and grounds beautifi-
cation at the Cemetery of Sprin
G Grove at Cincinnati. Year-around ap-
peal is important, with the whole
idea being to please the living who
come there, he said.

Dave Willits, in reporting about
his landscaping efforts around Co-
lumbus Public Schools, offered
graphic illustrations of what happens
when maintenance isn’t considered
in landscape plantings. In a relative-
ly short time, a complicated, though
attractive, planting can become an
eyesore if the time and labor isn’t
available to maintain it.

Election and Awards

Richard Craig, superintendent of
the Camango Country Club at Cin-
cinnati, was elected president of the
Ohio Turfgrass Foundation. Elected
to serve with him were: First vice-
president — Tom Evans, Velsicol
Corporation; Second vice-president
— Robert O’Brien, Century Tor
Dist., Inc., Toledo; Treasurer — Gene
Probasco, Lakeshore Equipment and
Supply Company, Bloomington; and
directors — William King, Princeton
Board of Education, Cincinnati; and
Paul Mechling, Sylvania Country
Club, Toledo.

Charles Tadge, superintendent of
the Mayfield Country Club of South
Euclid, was named Man-of-the-Year.
Other awards included: Outstanding
Service — Dr. Richard R. Davis of
the Ohio Agricultural Research and
Development Center at Wooster;
Membership — Ronald Smith,
grounds superintendent at Bowling
Green State University; Past Presi-
dent — Robert Reiman, sales service
and traffic manager of the Ohio
Lime Company at Woodville.

The Ohio Turfgrass Foundation
presented a check for $2,400 to Ohio
State University for scholarships
awarded to six students. They are
Randy Rausch, Brian Thrasher, Jerry
Jackson, Gary Chamberlain, Richard
Boehm and Thomas George Van-
den Enden.

Chamberlain, Vanden Enden, and
Thomas Urbansky receive scholar-
ships from the Golf Course Superin-
tendents Association of America.

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