OSU Short Course Talks Turf in Columbus, Jan. 23

Turf managers, arborists, landscape contractors, garden center operators, and nurserymen all had sessions aimed to their interests during the 38th Ohio State University Short Course, January 23 to 26 in Columbus, Ohio. Opening day of this year's short course saw treemen discussing plant identification, research, and problems of municipal, industrial, and utility arborists. At the same time, turf talks opened with a discussion of the sod industry by Dr. James Beard, Michigan State University agronomist.

Citing a twentyfold increase in Michigan's sod production, from one thousand acres in 1955 to more than 20,000 in 1965, Beard said this is due in part to the fertile soils of the eastern half of Michigan's lower peninsula and to the cool, favorable summer temperatures. Adding to the great increase in quality commercial sod has been the decrease in use of low-quality pasture-stripped turf, aside from occasional roadbank plantings.

Beard suggested these seeding rates for establishing new stands of sod: bluegrass, 25 to 40 lbs. per acre; red fescue, 60 to 100 lbs. per acre; bluegrass-red fescue mixtures, 35 to 65 lbs. per acre. Exceeding these rates will give a heavy stand of young seedlings, which will develop into sod slowly due to competition for light. Factors which play a part in selecting proper seeding rates were described as: percent of seed germination, seed purity, seedbed condition, time of seeding, rainfall and irrigation, and temperature.

Proper mowing techniques will do much to determine the quality of a turfgrass crop, Beard continued. Mowing should be frequent enough to remove no more than a third of the foliage. New vegetative growth is stimulated by severe defoliation, with a consequent reduction in the rate of rhizome and sod formation. In addition, thatch appears to be more of a problem when grass blades are cut to longer lengths. Very low cutting heights (about ¾ in.) appear to stimulate turf density and increase rhizome production, the Michigan researcher reported. But he suggested that this practice not be used commercially until further research has been conducted, since other considerations are involved.

Beard recommended these rates for applying nitrogen to sod growing on organic and mineral soils (in lbs. of N per acre):

	Organic	Mineral
Merion	120-180	240-320
Common Kentucky	80-120	80-160
Red fescue	40-75	60-100

Nitrogen fertilization is affected by rate of release from soil and by irrigation and rainfall. Intervals of four to six weeks were suggested between application, with no more than 40 to 60 lbs. of N per acre applied at any one time. Improper use of nitrogen, causing root reduction in sod, results from: excessive total nitrogen application, with a resultant stimulation of top growth; excessive nitrogen at any one feeding; or application of too much nitrogen at high temperatures, bringing about rapid release from the soil and slowdown in plant growth.

With the application of good management procedures, Beard forecast that many growers may soon be getting three crops every two years. Once the sod is stripped, however, postharvest problems arise, one of the most common being sod damage from high temperatures during shipping and storage. Referring to a study in which thermocouples were placed in stacked sod, Beard recounted that damage occurred at temperatures of 100° to 105°, too low for standard heat damage. This might be attrib-

Ohio turf specialists, Dr. Merle Niehaus (left, at the microphone), and Dr. R. R. Davis (standing, right) addressed turfmen at The Ohio State University's annual short course.

Dr. L. C. Chadwick (right) secretary of the Ohio Chapter, ISTC, congratulates T. D. Neil, of the Ohio Power Co., Canton, on his election as chapter vice president. Chosen president of the Ohio group was Harold C. Simon, of the Natorp Landscape Organization, Cincinnati.

uted, he felt, to a gaseous interchange of some sort.

Sod Motivates Seed Purity

The sod industry has been a prime motivating factor in the demand for higher seed purity, Dr. Robert Schery, Director of The Lawn Institute, Marysville, Ohio, asserted.

Among the determinants of quality grass seed are genetic, physiological, and purity factors. Consumers, boosted by new federal laws requiring publication of certain information on purity and type of grass seed, are now convinced that better grass varieties are available. Better seed depends on such a complex of elements that watering and fertilizing treatments given parent plants may even show up in seeds.

Turning to purity—freedom from contaminants such as chaff, weeds, and unwanted grass seeds —Schery referred to a survey in which 1707 assorted seed samples were analyzed for contamination by noxious plants. Findings were compared to a listing of all reported noxious plants. It is interesting to note, Schery said, that most reported noxious weeds did not even occur in the samples, and of those that did occur, most can be easily controlled with chemicals.

Bad Year for Bluegrass

Turning to grass breeding research at the Ohio Agricultural Experiment Station, Wooster, Ohio, Dr. Merle Niehaus called 1966 a bad year for bluegrass because of prolonged drought and high summer temperatures. However, adverse growing conditions greatly facilitated evaluation of tolerant varieties.

Niehaus ranked some twenty bluegrass varieties under test on the basis of leafspot occurrence, fall color, percentage of bare ground in sodded area, percentage of weeds in plots, density ratings, and melting out losses. Plots were located at Wooster, Ripley, and Columbus, Ohio, though some varieties were tested at only one location. Merion topped the list, followed by Windsor. Among the more commonly known varieties, these were followed by Newport C-1,

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Campus, Newport, Prato (about midway in the standings), Park, Arboretum, common Kentucky, Cougar, NuDwarf, and Delta.

Pointing out the similarity between this composite ranking and relative resistance to Helminthosporium leaf spot, Niehaus emphasized the importance of tolerance to this disease.

No new varieties are yet available from the Ohio Station, the researcher reported, due to the time required for selection and buildup of desirable strains. Selection is the most common approach to producing new varieties of apomictic bluegrasses. Isolation of desirable phenotypes from a plot of grass, although difficult, provides the breeder with material for a conscientious program of breeding and selection, Niehaus said.

Emphasizing that the next major problem confronting the turf industry is that of getting a sound grass breeding program established, the speaker specified several ways to approach new introductions: introduction of a single line as a variety; mixing of those lines showing strong points; release of several lines with recommendations for blending; and mixing on the basis of seed productivity with a blend of the several varieties, a slow process due to the time required to test lines.

Mowing as a Science

Mowing is the most reliable way to control bluegrass flowering, Dr. R. R. Davis, Ohio State University agronomist, stated. Bluegrass normally grows with bursts in the spring and fall and a slower period of growth in the warmer summer. If permitted, it will usually flower during the late spring. However, low nitrogen levels can bring about greater flower production in some varieties.

It has been shown, Davis continued, that reduction of top growth and development, as well as of root growth, is directly proportional to clipping depth. For example, he pointed to work done with red fescue, where consistent mowing at ½ in. for a three-year period resulted in growth 40% to 75% lower than check plots mowed at a height of 2 in. Low mowing, according to Davis, not only stimulated regrowth of foliage with a corresponding decrease in root production, but greatly reduced the photosynthetic area as well. Another benefit of a 2-in. clipping height is that weed control problems are minimized because of heavier sod formation, Davis added.

Actual mowing height should depend on the use to be made of the area and the growth habit of grasses employed. Reel mowers are preferred, particularly for closer clippings. Further, turf should be mowed in different directions periodically to prevent grass from being constantly pushed at one angle. Concluding his remarks, the Ohio agronomist maintained that removing clippings after each mowing takes needed minerals from the soil, resulting in a gradual depletion of nutrients.

Weeds Defy Description

The precise description of a weed is impossible to formulate, since what may be a weed to one person is being cultivated by the next, Dr. E. W. Stroube, of the Department of Agronomy, The Ohio State University, told the turf session. Best weed controls are a dense turf providing stiff competition to germinating weed seeds, and weed-free grass seed.

Good chemical controls are available today for almost all broadleaf weeds, Stroube said. Amine form of 2,4-D can be used to great advantage, but although this form greatly reduces spray drift, spraying should still be done on a calm day with low pressures and avoidance of direct contact with desirable plants. For plants resistant to 2,4-D, silvex can be used; however, it is more powerful and requires greater care in handling. Dicamba can be used on those plants which are resistant to 2,4-D and silvex; but once again, it is still more powerful and demands even greater care. Finally, MCPP can be safely used on bents.

Although a dense turf prevents germination of much crabgrass, its eradication from turfgrasses can be accomplished with such chemicals as Bandane, benefin, Betasan, calcium arsenate, Dacthal, Tupersan, and Zytron. Stroube defined Betasan and calcium arsenate as safest on bents, and Tupersan (siduron) as safest on new bluegrass seedlings. Preemergent seedbed materials should be applied in February, March, or April, he concluded.

Bluegrass Masters Tall Fescue

With reference to the 1961 renovation of Ohio State University's football field, Dr. R. W. Miller, University agronomist, remarked that, by the end of the second football season, the new turf was entirely bluegrass, whereas the original seeding mixture had been 90% tall fescue.

Bluegrass dominance was aided by mowing at a 2-in. level, and by repeated high nitrogen fertilization. Severe winter kill of tall fescue was given as the final reason for bluegrass dominance. In an experiment to prove this point, Miller demonstrated that high nitrogen plus cold temperatures followed by warm temperatures caused a loss of much fescue. Conversely then, if it is desired to maintain a high percentage of fescue, low nitrogen levels must be maintained.

Dr. Miller is executive secretary of the Ohio Turfgrass Foundation, formerly Ohio Turfgrass Council, one of the organizations sponsoring the Columbus short course. New president of the Buckeye turf group is Harry Murray, Akron, who takes over from retiring president, Curtis Overton, of Worthington. Charles Tadge, Toledo, is first vice president; Robert Reiman, Woodville, is second vice president; and Richard Baldridge, Lima, serves as treasurer.

Other sponsors of the four-day meet were the departments of Agronomy, and Horticulture and Forestry, The Ohio State University; Ohio Nurserymen's Association; and the Ohio Chapter, International Shade Tree Conference. Cooperating in the program were the Ohio Agricultural Research and Development Center, and the Ohio Cooperative Extension Service.