

Stop 13 Continued

The Thatch Problem - Thatch is defined as a tightly intermingled layer of living and dead stems, leaves, and roots of grasses which develop between the layer of green vegetation and the soil surface. The higher rates of nitrogen fertilization, development of more vigorous grass varieties, increase in watering, and Michigan's cooler climate for mid-summer growth have contributed to the current prominence of the thatch problem.

Thatch accumulating to a depth of more than 1/2 inch creates the following undesirable conditions which result in deterioration of the turf.

1. Greatly enhances the micro-environment for disease activity including leafspot, stripe smut, powdery mildew and Fusarium rosium.
2. Elevates the grass crowns above the soil to the extent that drought resistance is reduced.
3. A tight thatch or mat can greatly inhibit aeration and water movement into the soil. Water movement is particularly impaired when the thatch is dry.

Thatch has only recently become a problem in lawns and is not widely known or recognized as yet. Rather, the lawn owner notes a disease or drought problem rather than the major role of thatch.

To determine the degree of thatching present cut a pie shaped wedge two inches deep, remove the plug, and make an examination of the vertical cross section. Superficial examinations from the surface are not effective in determining the amount of thatch which is present.

STOP 14

Dr. Jim Beard

Turfgrass Winter Injury Studies - Twenty-one turfgrasses are being evaluated for susceptibility to direct low temperature injury. Plugs were collected April 20, 1964, and subjected to the following temperatures: 30°, 25°, 20°, 15°, 10°, 5°, 0°, -5°, and -10°F. The vegetative bentgrasses were more resistant to injury than the seeded bents, Seaside and Astoria. Of the bluegrasses, rough-stalk and Merion were most resistant to injury followed in order by Common and Newport.

Studies concerning the effects of ice covers on bentgrass varieties are being conducted. Ice coverage for 120 days produced no significant kill to Toronto, Washington and Cohansey. Severe kill of Astoria and Seaside was observed after 90 days coverage.

Stop 14 Continued

Harlan Stoin

Internal Nitrogen Metabolism Studies - Bentgrass has been selected for studies involving the biochemical mechanism of indirect high temperature growth stoppage. Work is to be concentrated on the influence of high temperatures on bentgrass and bermudagrass nitrogen fractions including the amides, keto acids, and amino acids.

STOP 15

Tom Duff

Management Factors in Putting Quality - A device has been designed and constructed for use in determining the speed of bentgrass putting surfaces. Comparisons of bentgrass varieties and effects of several management practices have been made during the 1963 and 1964 seasons. Results, to date, show that most cultivation practices increase ball velocity. Heavy topdressing or mowing frequencies of less than 1 day reduce ball velocity.

Effects of Mid-day Watering Practices on the Micro-Climate, Soil, and Plant - The amount, frequency, and timing of mid-day watering are being compared for their effects on plant and soil cooling and plant moisture relationships. Measurements taken include air and soil temperatures, light intensity, relative humidity and wind speed.

STOP 16

Dr. Paul Rieke

Nitrogen Carriers - There are many different nitrogen carriers which can be used in fertilizing turfgrass. Ammonium nitrate, ammonium sulfate and the various sources of urea are perhaps the most widely used. Many other sources are also available. Factors which should be considered in selecting a nitrogen carrier include availability of the nitrogen to the plant, season of the year, kind of soil, cost of application, cost per pound of nitrogen, ease of handling, and acidifying effects of the carrier. Some carriers are acid-forming, such as ammonium nitrate and ammonium sulfate. Others are basic in their effect on soil pH. One pound of nitrogen as calcium nitrate is equivalent to adding 1.3 pounds of lime to the soil. One pound of nitrogen as ammonium nitrate or ammonium sulfate requires 1.8 and 5.5 pounds of lime, respectively, to correct for the acidifying effects of these nitrogen carriers.