

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.

Stop 16 Continued

Relationships of Leaf Carbohydrates to Nitrogen Feeding Rates - Investigations by David Green as part of his Masters thesis involved characterization of the soluble carbohydrates occurring in Merion and common Kentucky bluegrass, Toronto creeping bentgrass, and Pennlawn red fescue. Merion was the only species which contained significant levels of fructosan in the leaf tissue. An oligosaccharide was the dominant sugar fraction in all four species. The disaccharide, sucrose, and the two monosaccharides, glucose and fructose, were unaffected by nitrogen feeding rates as high as 12# of nitrogen per 1,000 sq. ft. in either one application or six seasonal fractions. Effects attributable to nitrogen treatments were only observed in the oligosaccharide and polysaccharide fractions of leaf tissue but conditions such as summer dormancy in common Kentucky bluegrass and Pennlawn red fescue which produced critical decreases in the mono- and disaccharide fractions resulted in corresponding increases in the polysaccharides.

Thus, nitrogen feeding rates as high as 12# of nitrogen per 1,000 sq. ft. in either one single application or six seasonal fractions failed to deplete the carbohydrate level of leaf tissue in the four grasses studied. Much data is available showing the decrease in root production at higher nitrogen feeding rates. Since these results indicate that the leaf is capable of photosynthesizing sufficient carbohydrates it is possible that a blockage or defect is occurring in the transport of carbohydrates to the root system.

STOP 17

(optional)

Board Wagons

Shadegrass Ecology Study - The study was initiated in 1961 to investigate the relative degree and the mechanisms of shade adaptation. It was conducted under extremely heavy natural shade (5% of incident light) with eighteen grass mixtures included. The main conclusion from this study was that disease and not light competition was the major factor influencing the heavy shade adaptation and culture of turfgrasses.

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DATES TO REMEMBER

March 11 and 12, 1965

The 35th Annual Michigan Turfgrass Conference