BENTGRASS BREEDING

PENNSYLVANIA STATE UNIVERSITY
University Park, Pennsylvania

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(ongoing support since 1958)

1. Colonial Bentgrass

In order to more fully explore breeding possibilities, different types of nutrient systems (media) are being evaluated for their ability to induce callusing of microspores in the culture of haploids. Although success has been limited to date, the tests continue with different media. A morphological study is also in progress to better understand another development using techniques established for fixing a microtome sectioning of paraffin embedded materials.

In the past year, there have been 13,000 selfed and 18,000 open pollinated colonial bentgrasses (1st to 4th generation) screened for rhizome development. Selections have been made and planted in the nursery for further selfing and crossing in 1988. Seed was harvested from 87 early rhizome forming types, 24 new selections (1st generation), 600 selfed and open pollinated plants and 460 other colonials which survived disease screening for Phialophora and Leptophaeria.

2. Creeping Bentgrass

Approximately 500 creeping bentgrasses which survived Patch Disease organisms were individually harvested and will be planted for further screening. Also harvested were 13 early maturing types in the hope of spreading harvest dates in production fields to avoid weather disasters such as occurred in 1984. Turf quality screening will be done from several generations of reselected material as well as over 100 European creeping bentgrasses.

In the Fall of 1987, plots were established to evaluate non-certified Penncross bentgrass seed and significant differences are already evident. Laboratory electrophoresis analysis is being conducted to distinguish genetic variations.