

STOPS 9 AND 10

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Turfgrass Shade Investigations

During July and August of 1971 an irrigation system was installed in the woodland shade plot area at the M.S.U. Crop Science Field Laboratory. Subsequent to installation of the irrigation system, the tree canopy was selectively pruned to provide a fairly uniform light intensity equivalent to approximately 5 percent of normal sunlight over a 24 hour period.

Studies underway include sod transplanting techniques for shaded sites, Kentucky bluegrass cultivar shade adaptation, Kentucky bluegrass blend shade adaptation, and Merion Kentucky bluegrass-Pennlawn red fescue shade adaptation.

A Kentucky bluegrass cultivar shade adaptation study was initiated in 1971 at Michigan State University. A seedbed was prepared and the experimental area sodded on August 25, 1971. The sods were lifted from the M.S.U. Muck Farm experimental plots which were 18 months old at the time of harvest. Three replications of each of the cultivars were transplanted into a uniformly shaded area in a randomized block design. The plot size was 3 x 6 feet. Subsequent to transplanting, the area was irrigated as needed to prevent wilt and mowed weekly at a cutting height of 2.5 inches. In addition, Dr. Vargas is cooperating in the application of a preventive fungicide program over one-half of each of the individual cultivar plots. This is being done with the objective of separating those cultivar responses associated with disease effects from those responses associated with the lack of light and associated shading effects on the turfgrass environment.

Results to date indicate that Nugget Kentucky bluegrass ranks superior in shade adaptation. Those cultivars ranking lowest in shade adaptation include Park, Prato, Kenblue, and Cougar. These evaluations to date reflect primarily the effect of leaf spot damage. The influence of powdery mildew on the cultivar evaluation plots has been minimal. Further change in the performance of these cultivars is anticipated during the fall of 1973 when the powdery mildew severity may have an effect. This is presented as a preliminary report. (Table 16)

Table 16. Kentucky bluegrass cultivar shade adaptation study. Percent of stand not thinned primarily by Helminthosporium spp.

Cultivar	Fungicide Treated			No Fungicide		
	5/4	7/19	8/29	5/4	7/19	8/29
Nugget	81.67	91.67	81.67	66.67	88.33	86.67
A-34	83.33	65.0	83.33	80.0	75.0	80.0
Pennstar	80.0	63.33	80.0	55.0	56.67	55.0
Merion	78.33	56.67	78.33	56.67	53.33	56.67
Belturf	78.33	70.0	78.33	63.33	53.33	68.33
Fylking	75.0	50.0	78.00	58.33	46.67	58.33
Windsor	75.0	63.33	75.0	41.67	33.33	41.67
Galaxy	71.67	61.67	71.66	63.33	63.33	63.33
Cougar	70.0	58.33	70.0	56.67	41.67	56.67
Prato	66.67	70.0	66.67	46.67	60.0	46.67
Newport	65.0	53.33	65.0	46.67	36.67	46.67
Captan	65.0	50.0	65.0	43.33	43.33	43.33
Pp-1	61.67	43.33	61.67	40.0	46.67	33.33
Campus	46.66	25.0	46.67	15.0	8.33	15.0
Kenblue	46.66	30.0	46.67	13.33	25.0	13.33
Park	41.67	33.33	41.67	20.0	16.67	20.0
76-622-986	40.0	23.33	40.0	13.33	16.67	13.33
Delta	30.0	16.67	30.0	11.67	8.33	11.67
Monopoly	20.0	11.67	20.0	18.33	21.67	18.33