

STOP 2

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The Comparative Rooting Ability of Transplanted Sods as Affected by the Particular Variety or Blend of Kentucky Bluegrass.

The ability of sod to root into the underlying soil after transplanting is an important criteria from the consumer utilization standpoint. A technique was developed at Michigan State University for evaluating sod rooting under field conditions. The Michigan Sod Rooting Test involves placing a harvested 10 inch square sod piece in a wood frame that has a fiber glass screen secured to the bottom. This arrangement is then placed on a recently prepared moist soil and permitted to root into the underlying soil for a specified period of time ranging from 25 to 50 days depending on the objectives of the study. At that time a block and tackle arrangement with a mechanical advantage of five is connected to the four corners of the wood frame containing the rooted sod. A force is then applied at a uniform rate to the sod. The number of pounds required to pull the sod free from the underlying soil is then utilized as a measure of transplant rooting.

This technique has previously been utilized in comparing the transplant rooting ability of sod grown on organic and mineral soil. Nine experiments conducted throughout a growing season and a three year study where the sod was lifted 6, 12, 18, and 24 months after transplanting indicated no significant difference in the rooting ability of sods grown on organic versus mineral soil providing the cultural practices during the period of sod production were comparable. The comparative rooting ability of 18 Kentucky bluegrass varieties and 11 blends were evaluated during the 1970 and 1971 growing seasons. Significant, repeatable differences indicate that this technique can be utilized in evaluating the transplant rooting ability of sod. It is apparent from measurements made to date that the rooting ability of a particular variety or blend will vary substantially over a growing season as affected by the severity of disease and the temperature conditions favoring or impairing shoot and root growth.

The 18 Kentucky bluegrass varieties were grown on an organic soil at the MSU Muck Experimental Farm. The sods were harvested at a thickness of 0.5 inch and transplanted onto a moist, sandy loam soil. The experimental area was subsequently irrigated as needed to prevent wilting of the transplanted sods.

The comparative rooting ability of the 18 Kentucky bluegrass varieties varied considerably depending on the specific time of year when the sod was transplanted (Table 2). During the May-June period when Helminthosporium leaf spot disease problems are most severe, those Kentucky bluegrass varieties susceptible to this disease lacked adequate sod rooting ability.

Varieties ranking superior in rooting ability during this period included Nugget, A-34, Captan, Campus, Belturf, and Pennstar. The comparative rooting ability of many varieties is quite different during the late fall period. At this time varieties such as Delta, Campus, Kenblue, Windsor, Park, Prato and South Dakota Certified exhibit superior sod rooting ability. Evidently these grasses are able to continue root growth longer into the cool temperature periods of late fall than other leaf spot resistant varieties such as Nugget, Pennstar, A-34, Merion, and Fylking. This variation in rooting ability among varieties through a growing season is additional evidence supporting the desirability of using Kentucky bluegrass blends to provide a wider genetic base and range of adaptation.

A series of 11 Kentucky bluegrass blends was also evaluated for sod rooting ability at the same two dates as previously reported in the variety tests (Table 3). The range from maximum to minimum among the 11 blends is not as great as previously reported for individual varieties. In addition, the blends as a group ranked higher in sod rooting ability than the individual Kentucky bluegrass varieties. These data further justify the use of Kentucky bluegrass blends.

Table 2. COMPARATIVE TRANSPLANT SOD ROOTING ABILITY OF 18 KENTUCKY BLUEGRASS VARIETIES HARVESTED FROM THE SAME PLOT AREAS AT TWO DATES.

East Lansing, Michigan

Kentucky Bluegrass Variety or Selection	Michigan Sod Rooting Test (pounds) 11/10/70**	Kentucky Bluegrass Variety	Michigan Sod Rooting Test (pounds) 7/2/71***
Delta	67	Nugget	81
Campus	66	A-34	80
Kenblue	65	Captan	77
Windsor	61		
Park	60	Campus	75
Prato	59	Belturf	72
South Dakota Cert.	58	Monopoly	71
Belturf	54	Pennstar	68
Captan	54	Fylking	55
Arboretum	53	Merion	54
Newport	51	Newport	46
Cougar	49	Delta	*
Monopoly	49	Kenblue	*
Fylking	48	Windsor	*
		Park	*
Merion	47	Prato	*
A-34	45	South Dakota Cert.	*
Pennstar	38	Arboretum	*
Nugget	24	Cougar	*

*Sod could not be transplanted due to severe Helminthosporium leaf spot thinning.

**Transplanted August 2, 1970.

***Transplanted May 18, 1971.

TABLE 3. COMPARATIVE TRANSPLANT SOD ROOTING ABILITY OF ELEVEN KENTUCKY BLUEGRASS BLENDS HARVESTED FROM THE SAME PLOTS AT TWO DATES.
East Lansing, Michigan

Percent Composition of 11 Kentucky Bluegrass Blends						Michigan Sod Rooting Test (Pounds)		
Merion	Newport	Park	Fylking	Windsor	Prato	11/10/70*	7/2/71**	Ave.
50		50				77	71	74
50				50		70	73	72
50	50					49	86	68
33		33	33			67	67	67
33	33	33				62	71	67
33			33	33		57	76	67
	33	33	33			53	77	65
50			50			57	71	64
	33			33	33	48	78	63
50					50	45	75	60
			33	33	33	38	71	55

*Transplanted September 31, 1970.

**Transplanted May 18, 1971.