Muck vs. Mineral Grown Sod: The Controversy Continues

The data shows that in the short term, there may be an advantage to using mineral sod. In the long term, however, it appears that the soil type on which the sod is grown will have no influence on rooting.

Sodding is a popular method of turfgrass establishment, especially where a rapid turfgrass cover is desired. While sod can be produced on several different soil types, high organic or muck soils are especially well suited for producing a crop. The dark soils tend to heat up quickly, they are very fertile, and perhaps most important, the sod is very lightweight. For years there has been much controversy over how well muck-grown sod will transplant onto mineral soil. Research conducted at Michigan State nearly 30 years ago found that there were no transplanting problems. Despite this, doubt about transplanting muck sod on mineral soil still looms in the minds of many people.

Last year, with support of the Orange County Black Dirt Sod Growers Association, we conducted a sod transplant study at Cornell. Our objectives were to look at the influence of soil type, and sod age and thickness on sod rooting.

We identified sod sources of similar varietal makeup grown on mineral (Saratoga Sod Farms, Saratoga, NY) and muck (DeBuck Sod Farms and Pine Island Turf, Pine Island, NY) soils. While sod ages varied some, we included young and old sod, cut at a normal thickness, and a thicker sod (about 1/2 inch soil). The soil was transplanted to a mineral, sandy loam.

One square foot frames were made, to which a piece of vinyl window screen was attached, and reinforced to the bottom. Eye screws were attached to four corners of the frame. After the soil was prepared, a piece of sod was cut to fit in the frame, and the frame with sod placed on the soil. Rooting was assessed twice by attaching the frame to a winch connected to a load cell. The winch allowed us to pull the sod frame off the ground, while the load cell measured the amount of force required to do so. The greater the force required, the better the sod was rooted.

The experiment was repeated twice, once in late spring (June 17) and again in the fall (September 17). Rooting measurements were made at 2 and 4 weeks after transplanting for the spring planting, and at 3 and 5 weeks in the fall.

The results of the experiments can be found in Table 1. It took greater force to pull up the mineral-grown sod in the first rooting measurement after transplant. In other words, the mineral sod had greater rooting in the first couple of weeks after transplanting. This was consistent for both transplant dates. At the later rooting measurement, however, there was no significant difference between the two soil types. Again, this was consistent for both the transplant dates.

The data shows that short term, there may be an advantage to using mineral sod. Long term, however, it appears that the soil type on which the sod is grown will have no influence on rooting; we saw no difference in sod rooting with soil type. You should realize that the soil was properly prepared prior to laying the sod, and that we kept it irrigated for the duration. The success of any sod installation requires that you do the same.

We observed a rooting difference due to sod thickness in the spring planting, but not in the fall. The thinner cut sod provided better rooting in the spring planting.

Finally, sod age appears to have little effect on sod transplant rooting, at least based on our results. The table shows a rooting difference with age for the first sampling date in both tests. These differences, however, are more reflective of the soil type the sod is grown, rather than the age of the sod.

In summary, we could not see any long term disadvantages to using muck grown sod. Proper soil preparation and post transplant care are very important in the success of a sod planting. Be sure that you properly prepare the soil prior to establishment, make sure the soil is moist when laying the sod, and be sure to water frequently until the sod is firmly rooted.

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There appear to be no long-term disadvantages to using muck sod.

Table 1. The Influence of Soil Type, Thickness, and Age on Sod Transplant Rooting.

Test 1: Spring Planting	2 weeks	4 weeks
	kg/sq ft	
Soil Type		
Organic	17.8 b	60.2 a
Mineral	29.3 a	60.3 a
Sod Thickness		
Thin	23.8 a	66.6 a
Thick	23.3 b	53.0 b
Sod Age		
9 mo. (mineral)	34.9 a	58.7
18 mo. (organic)	15.0 d	58.4
30 mo. (organic)	20.7 c	62.0
34 mo. (mineral)	23.8 b	61.9

Test 2: Fall Planting	3 weeks	5 weeks
	kg/sq ft	
Soil Type		
Organic	18.9 b	31.2 a
Mineral	23.7 a	34.7 a
Sod Thickness		
Thin	22.4 a	32.7 a
Thick	20.2 a	33.2 a
Sod Age		
12 mo. (mineral & organic)	20.6 b	31.5 a
24 mo. (organic)	18.7 b	33.1 a
36 mo. (mineral)	25.2 a	35.7 a