

NOTES ON SOIL COMPACTION

In the spring of 1952, Charles Danner, of the Richland Country Club, Nashville, Tenn., submitted several cup-cutter plugs of soil and turf from one of his bent putting greens. This green had been built according to carefully drawn specifications, using sand and soil which had been approved by several individuals. In the process of construction a Rototiller was used to mix the material. A year or two after the green was in play it was noticed that the surface became very hard and compact, and water penetrated with difficulty. The samples were analyzed by Dr. V. J. Kilmer, Soil Management and Irrigation, Bureau of Plant Industry, Department of Agriculture. Here are the results as submitted through the USGA Green Section to Mr. Danner.

MECHANICAL ANALYSIS

	<i>Surface</i>	<i>Subsurface</i>
Very coarse sand	10.9	12.1
Coarse sand	32.8	21.9
Medium sand	23.3	37.7
Fine sand	11.0	13.5
Very fine sand	1.8	0.9
Silt	12.2	8.7
Clay	8.0	5.2

INTERNATIONAL CLASSIFICATION

<i>Fraction</i>	<i>Diameter</i>	<i>Surface</i>	<i>Subsurface</i>
I	2.0 - 0.2	74.7	82.3
II	0.2 - 0.02	10.0	6.8
III	0.2 - 0.002	7.3	5.7
IV	Less than 0.002	8.0	5.2

Our interpretation is that the higher content of very fine sand, silt and clay in the surface layer is enough to give you the compaction effect. This evidence further condemns the Rototiller as an implement for preparing a seedbed for putting greens. It is apparent that the particles of different sizes were redistributed by the effects of the Rototiller action.

The composition of the soil mixture in the subsurface is nearly ideal from

every standpoint. The mass of bent roots in the subsurface soil was one of the heaviest I have ever seen.

It would appear that, in order to correct this condition, frequent aerifying must be resorted to. This will be essential to encourage the roots to grow through the compacted layer so that they can work in the uncompacted subsurface zone. In time we would expect that the compacted layer may disappear with constant aerifying but this will take several years.

QUESTION AND ANSWER

Q: My home is in a suburb. I'm going to plant a new lawn and I'm very much interested in the new grasses you have developed. I would like to have a perfect lawn with a minimum of care, capable of taking the punishment of four young children. Should I gamble on these new grasses or should I stay with a seed known to be successful in this area? If so what is it? The local landscapers say Kentucky bluegrass. I won't have it. When I most want a lawn for croquet, badminton, etc. during the vacation period, the bluegrass is brown, dormant and thin.

A: We would urge you to give the new improved grasses a thorough trial. We are all too aware of the failure of bluegrass to produce the kind of turf that most people want during the season when they want to use their lawns for various purposes. We have been urging people to use more of the warm-season grasses, such as bermuda and zoysia, because these grasses are at their best when people want to use their lawns. The U-3 bermuda may not be as successful in your area as the Meyer zoysia. Enclosed you will find a list of suppliers of the improved warm-season grasses. We have named no suppliers of Merion bluegrass because you will get this seed from your local seed dealer.