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Softening Hard Greens A Simple, Safe Way

By WILLIAM E. LYONS

Golf Course Supt. and Garden Supervisor, The Firestone Tire & Rubber Co., Akron, O.

At one of the early meetings of the Mid-West Turf Foundation, Purdue University, I talked to every one I could get into conversation about greens construction. It's odd that no two golf course superintendents had even close ideas about the material on which the grass should be grown. Some wanted their favorite mixture to be 3 in. deep, others 5 in., and a few 8 in. and no one at that time was thinking in terms of a foot deep. At the same short course one of the lecturers demonstrated a uniform mixture 2 ft. deep.

One of the speakers gave us his idea on testing materials for greens construction and top-dressing: "Put it in a cigar box and wet it so thoroughly that a drop of water would splash the solution. Let it dry in the shade; then if it will break with finger and thumb pressure it is OK." Sounds good. Just don't rely on it if you are where poa annua gets into the best of bents.

Here is why this test is not reliable: We have made top-dressing that was the envy of our neighboring superintendents. They looked like a million, tested by the above method they were perfect; yet, every time we used them we got more poa annua instead of less. Why?

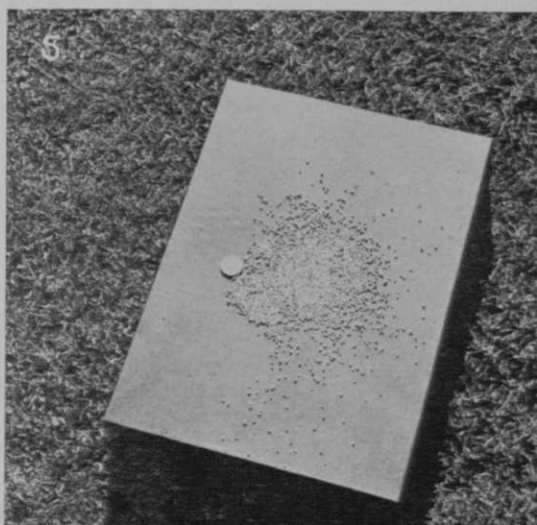
Where nature grows good bent unaided by man she grows it in a soil structure that has about as much pore space in it as a loaf of bread. A bushel basket full of light bulbs would have a lot of pore space from bulb to bulb. Put those bulbs where a steam roller could run over them, then how much pore space would be left between them? You know that one.

Traffic Eliminates Pore Space

Now make the finest top-dressing you can think of from soil, muck, peat, sawdust, sharp sand, etc. Give it the cigar box test. Let 400 people tramp on it 7 days a week for 7 or 8 months under all kinds of weather conditions. How much crumb structure do you have left? Very little, is right. The top $\frac{1}{16}$th of an inch is apt to look like a piece of cardboard and right there is where you are licked. Poa will come in as tho it were sown. Why? Bent roots must be bathed in oxygen and they can't get air thru a cardboard layer. Another reason is that the beneficial iron in the soil, ferric oxide, will change to ferrous oxide and actually poison the roots of bent. Poa literally thrives on ferrous oxide. Chemical tests prove it.

Taylor Boyd of Cincinnati told me many years ago how he cured a whole course of soggy greens that wouldn't drain during hot humid weather; the kind that get full of "patch" from June 'til September. He had a power shovel tear them all out and then put in new material — 90% coarse sand and 10% loam soil.

The first fellow I met at the GCSA national golf tourney at Purdue in Sept. '51 was Taylor Boyd. I told him I remembered what he had told me years before about those greens. Right then he came forth with his latest. He built a green by shaping the subsoil so the water at the center would drain to the outside edge where tile are laid. The top is 100% coarse sand 8" deep. He allowed this green to dry out in '51 for 30 days without rain or sprinkling and it showed no ill effects. A sprinkler soaked it for 24 hrs. or more and it showed no sign of



(All photos by The Firestone Tire & Rubber Co.)

1. "Sharpened" piano wire rakes worked against the grain opens densely matted greens. 2. Mowing off mat by the bushel, 18th Green Firestone CC. 3. Soilaire tool makes a clean hole to receive sand and the leaf sweeper takes up the plugs. 4. The steel mat works it into the holes and pulls the grass up a bit. 5. The uniformity of No. 816 silica sand is shown in comparison to a nickel.

water logging. Poa population is zero.

That makes a lot of sense. Today many of us feed our greens like a hydroponic garden, using all water soluble chemicals in solution. There isn't need for clay, mulch or even horse manure in the top-dressing to support plant life. We have testing tools to tell us what plant nutrients are needed or how to bring a green into balanced fertility. The more coarse sand in the green the more easily it is for the nutrients applied to go to work where we want them and not be tied up into insoluble forms with the clay, muck, peat, etc. In other words there is less competition between the plants and the soil for the nutrients we apply.

Another friend of uniform coarse sand is Ralph Bond, Old Orchard Turf Nurseries, Madison, Wis. Ralph stopped in to look us over a year after we had had a lot of trouble. (Something every GCSA member has to go thru). He tells this story: "Down on Daytona beach where they race high speed cars the sand is so fine that it packs when wet and makes the smoothest driving surface available, yet, several hundred yards inland the sand becomes so coarse that one wades in it shoetop-deep, wet or dry."

Reconditioning Greens

We were lucky and had an extra green where we could try out Ralph's idea. Here are the three easy steps that even a farmer greenkeeper like myself can take:

1. Use a sharp tooth piano wire rake and work it vigorously against the grain. This thins out the mat so the sand can be worked in. Mow off the "fur."
2. Use a Soilaire machine to punch clean holes that will easily fill with sand. Sweep up the plugs with a leaf sweeper. Mow again for a clean job.
3. Spread a uniform coarse sand with a shovel or a Root spreader. Mat in with a steel mat. Let grow for three days to a week before mowing.

The last step is a critical one. Where is one going to get a coarse uniform grade of sand free from fines that will not pack and stratify. We hunted for three years before we could find the supplier of the right stuff. It is graded as No. 816 and comes from the Industrial Silica Corp., Youngstown, O. The grade analysis is as follows:

U.S. Std. Mesh	Per Cent
6	0.00
8.5	0.5
12.0	63.0
16.0	36.0
Pan	0.5

Some GCSA men may frown on the idea of sanding greens in view of the fact that they or their neighbors have greens that have sand layers in them. The answer to that is that all sand is not alike and from the sand layers that we have seen the sand was fine enough to be used for traction material in a locomotive.

Once you start this program don't stop and switch to some other kind of top-dressing or you will form a layer due to the heavy root structure that will form in this No. 816 sand. On many golf courses one can read the history of changing ideas about top-dressing by taking a profile sample from the greens and counting the layers of different top-dressing mixtures.

When Ralph Slates, owner of Meadow View, Ravenna, O., saw our little old No. 6 green, 2500 sq. ft., par 3, taking 2000 players a week he went to work and used No. 612 Silica (coarser than No. 816) on a green that was always hard even when it was wet. In three days time he told us this green softened.

Last year was the first year in 20 years that grass had held on our No. 6. The poa population went down and from somewhere bent came in and we did not seed or stolon-plant this green. To the many men who have studied this green (there have been many) the evidence is clear that poa is a soil problem. Keep a crumb structure in the top surface of the green by using a material that will not break down and you have gone a long way in eliminating poa. Your greens will stay soft even when dry.

All the greens on the Firestone public course and the Firestone CC were treated in the fall of 1951. You are invited to see and play them.

The cost of weed-free No. 816 Silica Sand to us is about one-fourth the cost of making our own top-dressing mixture. We can purchase it in bags or bulk.

In a future issue of GOLFDOM we will tell you about the grass we had to invite people to walk on.

Golf Is 36% of Athletic Goods Sales in 1950

Athletic Goods Manufacturers Assn. census report for 1950 sales recently released, shows golf equipment accounting for $41,789,127 of total sales volume of $117,051,885 (at factory selling price, excise tax excluded) of reported athletic and sporting goods.

Baseball and softball equipment is second in volume with $29,220,703; athletic shoes is third with $12,478,224 and inflated goods fourth with $11,299,996. The recapitulation also includes athletic clothing, tennis equipment; helmets, pads, etc.; boxing gloves and miscellaneous items produced by leading manufacturers.