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Skimpy Seeding Practice Robs Till, Turf and Time

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THE MOST costly item for golf courses has been and still is, the production of turf. That should not be, but regardless, there are few clubs that can boast of good turf from the opening of their courses. There must be a fundamental reason for such abject failures. Most club members are lulled into the "kickless class" by that time-worn excuse; "Oh, it takes three to five years to produce good turf." Thus members of thousands of clubs play in misery on poor turf, with hope beating eternal, that at the end of the allotted time their fairways, by some gift of nature, will be covered with a dense turf of the finest grasses. I know of no greater task, where time, labor and expense is so uselessly wasted, than trying to rehabilitate an unirrigated fairway that has been improperly prepared and insufficiently seeded.

Nevertheless this is the experience of nine out of ten golf courses built. There are many factors entering into the production of turf, such as the preparation of the soil, quantity of seed, time it is sown, etc. But, providing the ground has been properly prepared and the necessary amount of seed sown from August 15 to September 20 there is no reason on earth why a thick healthy turf cannot be ready for play the following spring.

Modern turf production as we know it,

is only 30 years old. Previous to this time it was the custom to fine down old pasture land. The first course prepared and sown entirely to seed was Sunningdale, England. It was sown down in September, 1900, and was ready for play the following spring. It was a revolution, in turf production. Hitherto 30 to 40 lbs. of seed to an acre had been used, which is ample for pasture. Here at Sunningdale they had used 350 lbs. to acre on fairways and 20 lbs. to the 1,000 square feet on the greens. Thousands went to see what was conceded to be the best turf in England. These quantities became the standard and still are, in Europe. They also became the standard for America. Such courses as Myopia, Brookline, The National, and hundreds of other courses produced wonderful turf in six months. Then came Piper and Oakley's book "Turf for Golf Courses" recommending 100 to 150 lbs. of seed to the acre. I confidently can say that more mediocre turf has been produced in the states since 1920 from lack of sufficient seed than there was from the time the English seed houses introduced their methods (about 1903) to 1920.

Reverse Soils Order

In agriculture it is necessary to select crops adopted to the soil. In turf production for golf courses, one is forced to use any kind of soil. Unlike agricultural crops,



Fairway turf at Lakeville G. & C. C. (Great Neck, L. I.) seven months after seeding at a rate of 400 pounds per acre.

turf cannot be plowed under, after play has begun. Therefore it is necessary to prepare the ground very thoroughly both mechanically and chemically in order that the seed will not only have a fine bed, but also the ample nourishment so necessary to delicate seedlings.

Rabbits are great breeders. Their powers of reproduction are gauged and proportioned to the dangers that might ordinarily make an end of the species before arriving at maturity. A codfish produces a half million eggs and only two escape to replace the parents. This being true of the prolific breeders in the animal and fish kingdom, one is forced to suppose a parallel exists in the seed and plant world; more especially with grass seed when one considers such grasses as the bents containing 6,000,000 seeds to the pound, bluegrass 2,400,000 seeds to the pound, and fescue, the largest of the fine grass seeds, 500,000 seeds to the pound. It would seem if it were not for the loss, that a pound of each variety would be sufficient to sow a putting green. In practice this quantity is entirely inadequate.

It would be well to recall what actually happens when we are confronted with a problem of sowing down 40 to 50 acres of fairway, 20 to 30 acres of rough and 4 to 5 acres of putting green area in a space of 20 days. It stands to reason that 60 to 80 acres of the seeded area cannot be hand-raked. It is absolutely necessary to use mechanical means in order to finish in the time allotted, even though aided by favorable weather conditions. If we use 150

lbs. of seed to the acre how much actual seed are we getting?

Hot-house Tests

The following is an average fairway mixture:

Name.	Quantity.	Purity.	Germination.	Actual seed germination under hot-house conditions.
Red-top . . .	30 lbs.	94%	94%	26.50 lbs.
Bluegrass .	50	80	80	32.00
N. Z. Fescue	45	98	80	35.28
Mixed Bents	25	80	80	16.00
	150 lbs.			109.78 lbs.

The purity and germination I have shown are above the average, nevertheless the mixture shows a direct loss of 30%. In other words, for every 150 lbs. of seed (gross weight) we actually sow only 109 lbs. of seed that will germinate under hot-house conditions. This in itself ought to be sufficient argument in favor of a greater quantity of seed. But, when we come to sow large areas, it has to be done by machines, and gone over with a mechanically drawn rake, rolled, etc. Now, who is to say what percentage has been buried to a point where it will not germinate; what percentage the birds will eat; what percentage, after it has germinated will die of lack of moisture; or what percentage will be killed from too much water (heavy rains); what percentage will be destroyed from other sources we know not? That some percentage will be destroyed from one or more of these causes must be

admitted by all. It also goes without saying that the more seed sown, the thicker the ground will be covered with millions of grass plants, each protecting the other from the cold, sun and wind. Not being able to expand the roots go down, with the result that a dwarf, fibrous and hardy turf is produced.

I do not wish to infer that 150 lbs. of seed to the acre will not produce turf, but that the most costly and important element, time, is neglected. For instance, I have always made a practice of sowing rough at the rate of 150 pounds to the acre, and have had ample opportunity of noting what kind of turf this amount of seed will produce. Experience along this line, without exception, proves that this turf when subjected to regular fairway treatment, i. e., frequent mowings with fairway tractor mower units, invariably shows a thinning or patchy turf. During the summer the direct rays of the sun on these bare spots raises the temperature of the earth and bakes the grass to such a degree that growth is stopped and instead of the grass spreading and taking possession of the bare spots, the opposite is true. The edges recede, the spots become bigger and the grass becomes less.

On the other hand when the rough is kept to a height of approximately four inches, 150 pounds becomes a liberal seeding. The reason being, that it is unmolested by constant cutting and the height of the grass shades the roots of its neighbor, thus preserving the moisture content and preventing quick evaporation that takes place when the grass is cut short. Turf of this kind, if it is not allowed to grow to a height of more than four inches for a period of three years, and is then cut down gradually to fairway length, will, with the aid of a little fertilizer, make very fine fairway turf. But it takes three years. This is the element of time.

Seeding Time-Table

Experience in seeding large areas over a period of 18 years has shown me that 350 pounds of seed to the acre will produce fine turf in six months; 250 pounds to the acre will produce turf in twelve months, and 150 pounds of seed to acre will produce turf in three years. These figures are given for land that has been cultivated and fertilized. I do not want it understood that the quantity of seed is sufficient in itself. Thorough preparation of the seed bed, both chemically and mechanically, is of equal importance.

The question of having or not having turf is decided very quickly after the seed has been sown. If the seeding takes place during the latter part of August or the first twenty days of September, and there has been a shower or two, germination will start in from seven to ten days, sometimes in four days. If at the end of three weeks you are not preparing to cut fairways and greens, both having a dense covering of grass, do not wait, take advantage of the growing season that remains and sow more seed.

Seeding can be done at any time. Fall seeding has the advantage of cool nights and warm days, weeds becoming dormant, and no fungus diseases to retard growth. Seed sown in spring or summer has to battle weeds, crab-grass, damping, brown-patch, etc. I have had excellent results seeding in July, but, the gamble is too great. With the advent of fairway watering, much guess has been eliminated from turf production, and no new club should be without it. But, even thorough irrigation is no insurance for spring or summer seeding.

How Ample Seeding Saves

Golf courses are classified largely by the quality of turf found on the greens and fairways. The average committee in charge of construction of a new course scarcely realizes the actual saving which will result from the shortening of the time required to get turf ready for play. For example, land, course and clubhouse costing \$500,000.00 at 6 per cent interest, means \$30,000.00 per year. To this must be added cost of upkeep and loss of revenue, etc., which can easily amount to another \$30,000.00, or a total of \$60,000.00 a year. In other words, a cost to the club of \$5,000.00 a month whilst the turf matures, and this is all dead loss.

For this reason turf production is the most costly item in golf. Really high class turf can be had from the start, and the resultant saving is well worth the consideration of a new club.

GOLFDOM GLAD TO HELP

If your club has a pressing organization or operating problem, write GOLFDOM about it. If we can't help you, we'll get you advice from someone who can.
