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## THE NINE-HOLE GOLF COURSE

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This article is dedicated to the nine-hole golf courses. We shall try to tell what the USGA Green Section and co-operating agencies have been doing to help these folks who sometimes may feel that we talk entirely too much about "championship courses." Many of the labor-saving devices, learned the hard way on an 18-hole course by a capable superintendent, are entirely applicable to the nine-hole course.

From 1935 to 1945 I was Extension Agronomist in Pennsylvania. I visited and inspected virtually every golf course in that state during that time, including all of the nine-hole golf courses we could locate. I want to point out some of the procedures which were generally practiced on nine-hole courses which cost those clubs good money that could have been, and should have been, spent in another direction. In many cases the practices had been ordered by the green committee chairman.

### Annual Reseeding with Bluegrass

The wheelbarrow seeder being pushed over the thin, weedy fairways in the

spring when the soil was honey-combed with frost was a common sight on many nine-hole golf courses. The rate of seeding usually was about 50 to 75 pounds of seed to the acre. This was considered not enough, but just so some seed was being used. On 20 acres of fairways this would amount to at least 1,000 pounds of seed. The price of 50 cents a pound at that time brought this up to about \$500 worth of seed. I'm quite sure that, if we could examine the records of these nine-hole golf clubs back in 1935 to 1940, we would find that just such expenditures had been made. This money would have bought a lot of fertilizer at that time, at least 12 tons, which would have done far more good than the seed of a grass which wasn't designed to produce a good fairway in the first place.

The USGA Green Section has pointed out repeatedly that fertilization of unsatisfactory turf is far more effective in developing good turf than more seed. The fertility of the soil in most cases is not able to support the turf plants that are there. To start more plants simply is a drain on the fertilizer supply.

### Fertilizer Purchases and Storage

I shall never forget my astonishment time after time when I would recommend an adequate fertilizer program for the fairways and the Chairman would say, "Oh, we don't have enough money for that!" Later on we would go down to the barn and I would see a ton or so of a brand-name fertilizer which at that time was selling at two to three times the price of farm fertilizer of the same chemical analysis. In effect, they could have been using three times the amount of fertilizer at the same cost if they had bought right. This information always has been available from the USGA Green Section. In too many cases the nine-hole courses have not asked for information and guidance from the Green Section.

Another thing I often noticed was that fertilizer was stored on or near the ground. The bags had become water-soaked and much of the fertilizer had become caked and virtually useless. It doesn't take a big budget to store fertilizer properly.

### Topdressing

Many nine-hole golf courses used to topdress their greens once a month with one and one-half to two cubic yards to a green of 3,500 to 4,000 square feet. The topdressing usually was loaded with weed seeds, which necessitated hiring extra help to hand-weed the greens several times a year.

The USGA Green Section steadily has advocated *less* topdressing and repeatedly has directed attention to excellent putting greens that have not had a topdressing in 12 to 15 years. The introduction of superior grasses and the development of better fungicides have been as applicable to nine-hole courses as to 18-hole courses because in both cases the better grasses and the better fungicides have resulted in better turf and at lower cost.

### Water

Watering the greens every night costs nine-hole courses a great deal of money and frequently results in costly loss of turf through shallow roots which could not withstand the severe summer weather.

The USGA Green Section has spent thousands of dollars to learn how to water turf properly. This information is available and applicable to nine-hole courses. Now we are working on combinations of grasses together with aerifying and adequate feeding so that water may be needed only once or twice a month. This is not a fanciful prediction. It is an actual occurrence.

### Grasses

The USGA Green Section and cooperating agencies have developed a number of superior turf grasses which will help the nine-hole courses produce better turf and at lower cost. Here are just a few of them:

- U-3 bermudagrass
- Merion bluegrass
- Tifton 57 bermudagrass
- Meyer (Z-52) zoysia
- Centipedegrass seed
- Polycross creeping bent seed
- Polycross creeping red fescues

Virtually every important turf grass in the United States is being investigated from the standpoint of improvement for lower-cost turf.

For nearly 30 years the USGA Green Section has been working on ways and means to minimize the loss of turf from disease. Better fungicides, better use of water, other management practices, all are designed to help the nine-hole course as well as the other courses.

It has been our pleasure to have started a significant trend in the direction of chemical control of weeds in turf through selective means. This trend has reached a point today where no golf course need have any weeds. The fact that weeds can be controlled means that fewer mowings are needed during the year, especially through the fairways and in the roughs. This has meant a significant saving.

Better insecticides have been developed, and today no golf course need have its turf eaten up with grubs. How well I recall many nine-hole courses throughout Pennsylvania with most of the turf gone at the end of the summer from white grub and Japanese beetle grub attacks!

The cost of Chlordane today is insignificant compared to the cost of re-establishing that turf. Controlling the grubs means also that fewer weeds need to be controlled, because weeds come in only when turf is not solid.

#### Fairway Renovation

Occasionally unsatisfactory fairways need to be renovated so that a new and superior turf grass can be established. The work of the USGA Green Section consistently has shown that sodium arsenite is one of the most effective and yet one of the cheapest chemicals ever produced for this purpose. This information is directly applicable to the nine-hole course, where costs mean so much. The USGA Green Section has been working with sodium arsenite for more than 20 years. Golf-course superintendents from 18-hole courses who regularly have attended the conferences and field days are

the ones who have learned the most about how to use this very useful chemical.

It has been difficult to reach the nine-hole golf course. Too often the superintendent and the green committee chairman feel that the conferences don't meet their problems; therefore, the personnel of the nine-hole course fail to obtain the basic information which would help them to do a better job at lower cost. The personnel of the USGA Green Section staff never has been, and perhaps never will be, adequate to visit all of the nine-hole courses which are members of the USGA. We should like very much to make such visits, because we realize how much we could help the nine-hole golf courses. Yet we depend largely upon our USGA JOURNAL and upon correspondence. The information which the USGA Green Section has is available to all. Everyone who can write a letter or dial the telephone can get the information he wants.

## AERATION AND OTHER PRACTICES

The Mid-Atlantic Association of Golf-Course Superintendents heard, at a summer meeting, discussions of various topics which we believe will be of interest to all golf-course superintendents.

#### Aeration

Charles K. Hallowell, Philadelphia's representative of the Pennsylvania State College, Division of Agricultural Extension, emphasized that we should not throw our present fundamental knowledge in soils out the window now that we are being bombarded with advertisements describing miracles accomplished with the new soil conditioners. The need for lime, organic matter, nutrients and good maintenance and management practices is important today and will always be important in growing good turf. Our present knowledge in soils is the amassed thought and experience of innumerable minds. This knowledge is not passed off lightly by wise turf men.

Mr. Hallowell spoke of Dr. Alderfer's

work at Penn State. Dr. Alderfer regards a good soil as one made up of approximately 25 per cent air, 25 per cent water and 50 per cent solids (sand, soil, organic matter). A good soil takes in approximately one inch of rainfall or more per hour while a poor soil will take in approximately .5 inches per hour or less. It is important not only to get water into soils but also important, in many instances, to get water out of soils. This is also true of air. When air circulation is poor, grass roots, like any other living organisma, are in danger of suffocation. Movement of water and air are the important factors. If water or air become static, then you have a poor or troublesome condition. Aeration aids in water and air movement.

Mr. Hallowell stated that this past spring was unlike any he had previously experienced. As we all know it was one of the wettest seasons on record, and many of the poorly drained golf courses encountered difficulties. The usual heavy