

"Zero Hour" for New Turf

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ALL seeding and fertilizing provides some of the greenkeeper's most complex problems. Tees, fairways and greens must be in condition spring and fall. It is during these seeding periods that the greenkeeper's ability is demonstrated. His results characterize him as a success or a failure. Constant thought and study with a clean conception of the fundamental principles of his work is demanded of him in order for him to have a comprehensive idea of what he wishes to accomplish in fertilizing and seeding.

As most golf course turf problems are local, it is difficult to lay down any set rules of procedure. It would be absurd to think that the greenkeepers here in the middle west would be thoroughly familiar with the problems in the far east, far west or far south. These sections all have their own seasons and growing periods and are affected by local conditions. Diversity of soil, weather and variation of seasons are among the factors which make greenkeeping a science.

Know Your Soil

Knowledge of the elements contained within a given soil should be a guide in the application of fertilizers. Information should be possessed by the greenkeeper as to the physical and chemical condition of the soil on his course and its probable productive capacity and adaptability for the growth of grasses.

Grasses, like other crops, eventually exhaust the supply of essential forms of plant foods, among the most necessary of which are nitrogen, phosphorous and potash. When these elements are not properly balanced, the grass ceases to be properly nourished and is unable to withstand drought and disease.

Undernourishment not only results in a puny stand of grass but also has a tendency to encourage weeds. Such a stand is costly. Economy of necessary fertilizers is foolish. Weeding is expensive and it is always more satisfactory to keep a course in condition than to build up a course which has been allowed to deteriorate. The greenkeeper who is blind to the necessity of replenish-

ing his soil shuts the door to progress in his own face.

The quantities of chemical elements removed from the soil by a growing stand of grass is almost beyond belief. Few realize the quantity of grass cut during the season. With each cutting quantities of necessary elements are extracted from the soil. Ideal fertilization would replace these elements after each cutting. That is obviously impossible. These constituents can only be added to the soil in the spring and fall. Therefore it is necessary for a greenkeeper to know not only in which elements his soil is deficient but also to anticipate the soil's future requirements.

Over-fertilization is harmful. It results in a reverse condition from under-nourishment. This condition prevails on a number of courses. Results, which are usually most apparent on the greens, produce a "soft" growth or "suckling" growth, unable to withstand hot weather. This in most cases is caused by too much watering and forced stimulation.

Continued Growth Unnatural

Turf grasses undergo a constant artificial stimulation during the season through close cutting and continuous fertilization. This compels the production of a continuous growth contrary to nature. Normally all grasses have their maturity period. Wise is the greenkeeper who can keep grass growing during the entire golf season. Much study is required to understand the various influences which affect its growth. The more the natural tendencies of grasses can be encouraged the better will be the results.

Agricultural chemistry has put a knowledge of fertilization at the average greenkeeper's door. There is no reason why he should be ignorant of this subject. Present commercial organic fertilizers have certain advantages over the old organic fertilizer. They may be applied more quickly and consequently more economically. With the proper appliances a course may now be properly fertilized in two or three weeks whereas the application of manures and composts required months to build up the soil. Also, these fertilizers are far better

balanced than the former organic fertilizers. The preferred commercial fertilizer, of course, depends upon the condition of the soil.

Getting Seeding Results

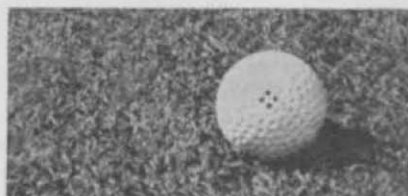
Proper conditioning of the seed bed is fundamental. This is the foundation of successful growth. Poorly conditioned seed beds will not permit maximum growth and the result, or rather the lack of it, is apparent with the first stand of grass. Proper cultivation of the soil prior to seeding also helps to encourage a suitable growth of grass before freezing weather.

Late summer seems to be the ideal time in which to seed fairways and greens. The rays of the sun during the preceding months have properly warmed the soil. The lengthening nights and shortening days are favorable to growth. The fall rains and cool nights are beneficial to seed germination.

Reseeding fairways seems best done with a disc drill. However, it is a mistake to believe that once or twice over the area with a drill is sufficient. Instead, the drill should be criss-crossed across the field until every square foot of turf has been properly covered. This action opens the soil and embeds the seed so that it will not be burned by the sun or washed by the rain. This operation also incorporates the fertilizers into the soil to provide immediate nourishment for the seeds.

Grass seed mixtures to a certain extent are matters of personal preference based on knowledge of the situation. However, a mixture of 70 per cent bluegrass and 30 per cent creeping bent has produced some of the finest fairways in the middle west. Also, a mixture of 60 per cent fescue and 40 per cent bluegrass has produced some fine results. Personally, I prefer the former mixture and do not recommend the use of red top or rye grass except for the purpose of showing quick temporary growth only.

To prepare putting greens on new courses it is wise to cultivate the soil continually throughout the month of August. This action has a tendency to discourage the growth of weed seeds. Vegetative greens, planted from stolons, usually produce a sufficient stand of turf to play over the following spring season. Seeded greens should be seeded about August 20th in the middle west in order to provide a playing surface the following May. Following seeding, it is well to top-dress the newly seeded area thoroughly. This action will help



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Experience coupled with scientific study provides the best guide to the solution of the problems of fall fertilization and seeding. The complexity of these problems is one of the factors which makes greenkeeping a science.

Greenkeeping is no longer a mere empiricism, nor a smattering of detached experiences, but it rests upon a substantial scientific foundation of rather well established laws. These fundamental laws or principles are numerous and often abstruse but we are able to understand their general purport and problems which a few years ago seemed to be hopelessly obscure and which perhaps were considered to lie outside the sphere of greenkeepers. Investigations now have developed into a system of clear and correct thinking, and the greenkeeper that thinks is a hard way to pass. Let him really and seriously *think* about his seeding and fertilizing this late summer and fall and the rewards in turf will be rich next year.

1929 Greenkeepers Show at Buffalo

ELEVEN thousand square feet of display space will be available for the second annual National Greenkeeper's Association show, to be held in the ballroom and foyer of the new Hotel Statler, Buffalo, next February 13-16, 1929, according to the announcement made recently by Fred A. Burkhardt, chairman of the show committee of the N. A. G. A. The available floor space is three times that of this year's show and will allow display of complete fairway mowing units, sprayers, in fact every article of golf course equipment used in construction and maintenance work. The show-room is immediately off the main lobby of the hotel, in which the greenkeeper's annual convention will be held during the same week.

According to Burkhardt, the committee will not increase the price of space over last year and promise the exhibitors the same efficient management as at Detroit.

In addition to the chairman the committee consists of Jehn MacGregor, John Morley, Emil Loeffler, Al. Schardt, David Rees, and Lewis M. Evans. Particulars of the show can be obtained from Fred A. Burkhardt, 405 Caxton Bldg., Cleveland, Ohio.