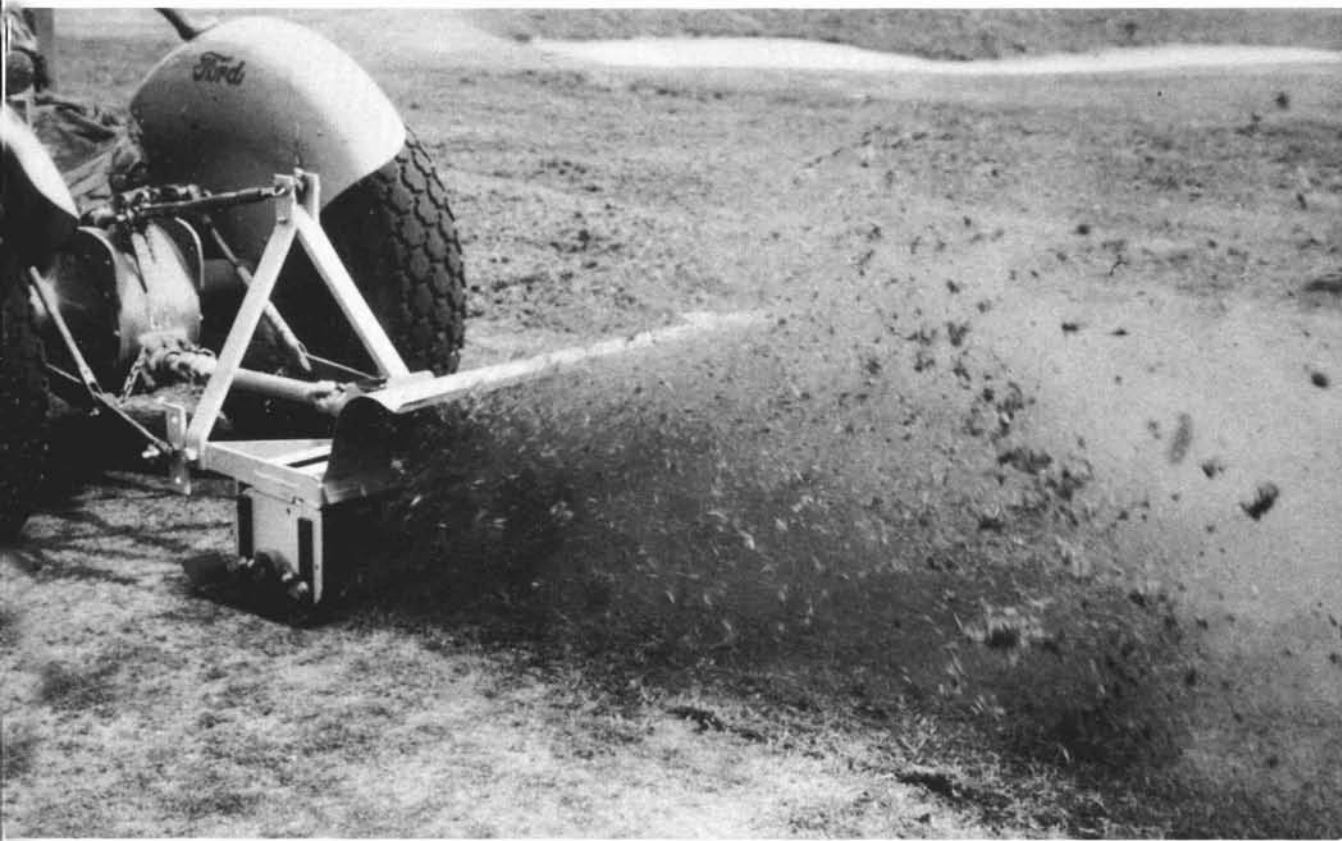


Fairway Renovation—

It's Paying Off



You have to make it worse before you can make it better.

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It's a tribute to today's golf course superintendent and a mark of his progress; Fairway Renovation is Paying Off! It is not a simple project; not a run-of-the-mill operation. But with thorough planning and total dedication, it works—beautifully!

Only in recent years have numbers of clubs become interested in improving fairway turf. Their reasons may be varied (heavy weed population, new irrigation system coverage, closer cut for fairway turf, a change of fairway grasses, etc.), but basically today's golfer wants opti-

mum playing conditions at all times. He wants a permanent turf and a good fairway lie. He also wants a smooth ride in his electric car. One club undertook fairway renovation for this purpose only—a smoother ride!

With today's technology, a permanent turf population can be established along with smooth-flowing contours. Several methods have been used and each has met with varying degrees of success. Regardless of the renovation method, the timing of each cultural practice is critical in encouraging and maintaining a permanent turf. The cultural program begins with the initial renovation and must continue on through the life of the plant. Permanent turf establishment is easy. Keeping it without invasion from undesirable weeds (mainly, *Poa annua*) is another problem.

There are four common methods of fairway renovation;

- 1) Heavy aeration.
- 2) Aeration and thatching.
- 3) Thatching.
- 4) The "scorched earth" technique.

They are listed in ascending order of difficulty and effectiveness.

Aeration

Aeration is undoubtedly the easiest and therefore the most prominent method of renovation today. It is not the most effective and results are slow to show themselves. A very suitable seedbed is produced by aerating a fairway eight to 10 times. The seed must come in contact with the soil for good germination

and plant development.

This program must be repeated at least three to four consecutive years, or until such time that the permanent turf will hold its own against weed invasion. Each season as the permanent turf increases the total number of aerations are reduced.

Joe Camberato, Superintendent of Sleepy Hollow Country Club, Scarborough, N.Y., has had excellent results with aeration and overseeding of bentgrasses on his course. Joe comments as follows:

"Aerifier holes show definite advantage over mere slicing or spiking of fairway turf. I find faster germination, better plant movement (360°), quicker plant development and especially in the root zone. Introducing Astoria and Seaside bentgrasses, thinning out the matted bents, etc., are interesting problems. The Astoria sticks up well from the aerifier hole—sort of like an oasis in a desert! In general, I am well pleased with the results I have obtained."

In the West, Superintendent Harvey Hardin, of Indian Wells Country Club, Palm Desert, Calif., relies on aeration of his bermudagrass fairways each fall for ryegrass establishment. He has had a considerable amount of success.

If one seriously considers the aerification technique for fairway renovation, he should not lose sight of the fact that it is a long-range program (at least several years) and rapid progress should not be expected.

Aeration and Thatching

The aeration-thatching method has had mixed results and received mixed ratings from super-

"The Scorched Earth" policy is by far the best method of establishing a new turf cover.





The smaller unit can be used to supplement the larger one to assure a minimum mowing of three times per week.

intendents. With this method aeration is accomplished but three to five times over a fairway followed by one thatching operation. The new seedlings develop rather well in the aerification hole, but they have diminishing success in the thatching groove because of competition from the old turf. The results of this method have been fair to poor.

Thatching Method

The thatching method has shown only fair results. This operation requires two thatchings in opposite directions, or at right angles to each other. The thatching machine should be set for reasonable penetration ($\frac{1}{2}$ inch or more) to insure a good seedbed development. The seed germinates in the thatching grooves, and rows of new plants are soon visible. However, before the plants can mature and develop they are frequently choked and crowded out by undesirable turf and weeds on either side of the thatching groove. **Poa annua** is the main weedy pest.

The two methods mentioned above (aerating-thatching and thatching) help reduce existing thatch, but they do not expose sufficient soil for new turfgrass establishment. Both of these programs must be carried out yearly if a permanent turfgrass percentage is to be developed. Bluegrass-fescue mixtures seem to survive this type of renovation better than bentgrass turf.

The Scorched Earth Method

The "scorched earth method" requires considerable understanding and planning. It is by far the most effective way of establishing a new and uniform turfgrass cover over a large area. Several clubs have tried this method during the last several years with outstanding success in establishing a permanent turfgrass cover.

When Dick Silvar was Superintendent at the Knickerbocker Country Club, Tenafly, N.J., he carried out a scorched earth program and reported as follows:

"Club members experiencing and being inconvenienced by a scorched earth program will very quickly become experts in identifying **Poa annua** plants in all stages of growth. If you can change from 90 per cent **Poa annua** and 10 per cent bentgrass to 90 per cent bentgrass and 10 per cent **Poa annua** in a very short period of time, you have won a major battle. This can be done if the program is carried through to completion. Programs are often started and, because of inconvenience to the members, are abandoned and **Poa annua** soon takes over again."

At The Country Club in Salt Lake City, Utah, Superintendent Deloy Wilson has also carried out a scorched earth program. "The effectiveness in establishing a new permanent turf," he reports, "seems directly related to the knock-down or kill of the old turf (**Poa annua**) before

overseeding. Eliminate the competition and the new grass will thrive and establish itself very well."

Sherwood Moore, when Superintendent at Winged Foot Country Club, Mamaroneck, N. Y., developed a successful scorched earth renovation program much along the following lines:

- 1) Treat all areas to be renovated with a non-residual contact herbicide such as sodium arsenite at 20 pounds per acre. Repeat this treatment in three or four days. (Note: sodium arsenite is most effective if soil moisture levels are low and air temperatures above 80°.) The use of a butane flame has also been employed to knock down original vegetation.
- 2) One week after the initial sodium arsenite application, aerify thoroughly; i.e., at least six to eight times for thorough seedbed preparation.
- 3) If liming is required, accomplish at this time.
- 4) Operate a thatching machine over the entire area. Adjust so that soil penetration is achieved, (½ inch depth or more). The thatching operation will break up the aeration cores and help prepare a better seedbed. Follow this with an old set of fairway mowing units to break up the remaining soil cores and produce a smooth finish.
- 5) Apply a complete fertilizer and seed the treated areas.
- 6) Drag or mat the fairways after seeding. This helps in better seed placement and provides a light soil covering for the seed.
- 7) Carry out an adequate and proper irrigation program.

The scorched earth program does inconvenience the membership. Fairways renovated in this manner should not be opened to play for at least four to six weeks or longer depending on seed development. However, up to the time of seeding (while burning the existing turf, aerifying and dethatching) the fairways are playable. The four- to six-week restriction on play seems a small price to pay for years and years of excellent fairway turf in the future.

The Importance of Timing

Proper timing is critical in carrying out a successful renovation program. If your object is to establish good cool-season grasses, the work

should be started early enough so that overseeding may be completed about mid-August. If you wish to establish a bermudagrass fairway turf, overseeding should be completed by mid-June.

The second critical factor lies in the amount of seed and fertilizer applied. During a fairway renovation project, there is no virtue in "sparing the seed." If you are going to the trouble and expense of carrying out a renovation program, be sure to sow a sufficient amount of good seed to insure a substantial coverage.

Seed mixtures and seeding rates are always controversial subjects. We would recommend contacting your local USGA Green Section representative for his specific recommendations for your conditions. In general terms, we would suggest sowing at 1½ times the "normal rate" when overseeding.

Adequate fertilization and pH levels are also essential in establishing a new turfgrass cover. It is just as important to avoid starvation as it is over-fertilization.

The fourth critical factor is irrigation. In order to grow any type of quality turf, the irrigation system must be capable of providing adequate coverage and the proper precipitation rate. Overwetness will only stimulate weed and *Poa annua* invasion. Inadequate irrigation will prevent the permanent grasses from developing a solid, tight sod. Irrigation is critical.

How Can We Keep Poa Annua Out?

Once a permanent turfgrass population is established on the fairways, constant vigilance must be maintained over the turf management program to prevent *Poa annua* reinvasion. We have the materials today to manage permanent turf and to keep it relatively free of weeds and undesirable grasses. New pre-emergence herbicides (such as Bensulide, DCPA, H-9573, Sidoron, etc.) as well as some of the old materials such as calcium arsenate are effective in checking weed invasion. Post emergence materials such as Dicamba, Mecoprop, sodium arsenite, etc., can be effectively used in maintaining a permanent and desirable turfgrass population.

Today's golf course superintendent has the knowledge and materials available to insure the success of a fairway renovation program. Not only for today, but also for the years ahead. He appreciates that every cultural practice, fertilization, irrigation, fungicide, insecticide, and herbicide application must be weighed and analyzed in relation to its effect on the permanent turf. He knows the importance of long range planning and continuity of effort as well as the value of economical operation.