

FAIRWAY MAINTENANCE

How a season-long program based on proper timing and calculated risks can produce durable turf that stands up under all kinds of weather and conditions.

By Robert M. Williams

Supt., Bob O'Link GC, Highland Park, Ill.

(This article is condensed from a speech made by Bob Williams at a recent Michigan State U. turf meeting.)

Most of us probably have been so preoccupied in recent years with the care and handling of greens that we have overlooked to some extent the maintenance of what constitutes about 85 or 90 per cent of the golf course proper — the fairways. Not that I think that the fairways I have seen at numerous courses around the country are in danger of going to pot. They're not. It's just that I think that it is occasionally good for us to stop and take stock of our methods of maintenance and to improve where we can.

When I transferred from Beverly Country Club in Chicago to Bob O'Link last year, I did a lot of thinking about an improved fairway maintenance program. The turf at my new club was about 50 per cent creeping bent and 50 per cent annual bluegrass. Irrigation facilities were limited since we could water only from midnight until 6 a.m. at a capacity of 450 gpm. Weed infestation was relatively light. Drainage seemed to be a localized problem in several low areas. The soil at Bob O'Link is a sandy, clay loam mixture with good physical and chemical structure. The biggest drawback was that corrugations had developed on fairway surfaces due to high speed mowing.

I tried to put my maintenance program on a segmented basis, thinking of it as a procedure that involved these things: Timing of maintenance operations; Diagnosis of troubles; Observation; Planning; and, of course, the proper use of the Calculated Risk. I won't say that the program was 100 per cent successful for us, and possibly wouldn't be at any other course, but I do think it was a distinct improvement over the general practices of the past, my own included, and has a promising future.

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spring and is graduated to a maximum of 3/8 ins. in the hot, humid midsummer months. We drop back to the lower cut in the fall. Frequency ranges from 3 to 4 times a week in the growing season to only once a week during hot weather. During midsummer most of the fairway mowing is done in the evening to avoid bruising the turf. Most important, our tractor speed is kept to 5 mph to keep the mowers from lifting and causing corrugation.

Removal of early morning dew has been a big factor in our program. This not only permits the golfer to get out early but gives the grass an extra drying period so that mowing can be started and nearly completed before play becomes too heavy. We remove dew by attaching 200 ft. of 1-in. hose to two tractors that are driven down opposite sides of the fairway. All 18 fairways are dragged in about 40 minutes.

Irrigation and Moisture Control

Since we have a great deal of annual bluegrass we have tried to learn to live with poa annua. To do this it is necessary to keep the poa's shallow root system moist, well fertilized and treated with fungicide to combat fungus disease.

The building of a two-acre lake and new pumping plant has increased our irrigation supply to 1,000 gpm. We can now water all tees, greens and fairways in about eight hours. Also, we can water the entire course nightly now and not stretch the operation over three days, as before. We have found that poa frequently can't wait two or three days for water. If the top 1/2 in. of soil dries out, poa may die.

Aerification Procedure

Aerification is a means of moisture control. Without it, turf may become dense, moisture penetration is impeded and slopes will shed water with about 100 per cent runoff. We sink a 3/4 in. thatch spoon below the turf mat into about 1/2 in. of soil. Care should be taken to

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aerify only if grass is growing and heals readily. The exception comes when water penetration is necessary to prevent desiccation.

In 1959 in May, July and Sept., aerification worked well at Bob O'Link. With a tractor-lift aerifier, 18 fairways can be completed in about 12 hours. Following this, fairways should be dragged with a 20 ft. length of mesh fence to break up cores and help reduce matting of the bentgrass. If soil is kept in a moist state during aerification, formation of local dry spots, that refuse to take water thereafter, is avoided.

Weed Control

Weed infestation at our club was light. Our experience has been that healthy turf will surmount the weed menace. When we use 2-4-D on bent fairways, the dose is kept at a ¼ to ½ lb. per acre rate for active ingredient. Light applications of sodium arsenite seem to be safe for fairways in the spring and fall. We have used 1 to 3 lb. applications in Nov. and April. They reduce clover and minor weeds and apparently stimulate bent growth.

Disease Prevention Program

Fairway fungicide programs probably are neglected in maintaining close-cut bent-poa turf. Fear of high costs and too demanding work in application undoubtedly have deterred fairway fungiciding. Yet at the same time, no supt. would hesitate to treat bent-poa greens with fungicides. In either situation it's the same grass growing under similar conditions except for height of cut. It should be remembered that fairway grass is just as susceptible to disease as the turf on a green. After the 1959 toll of fine fairway grass, due to disease, I think many supts. will come around to adopting a fungicide program that will prevent a recurrence.

A few years back, while treating for crabgrass with phenyl mercury, we noted that turf was not seriously affected and poa annua loss was not great when this

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chemical was applied. This was really nothing new. But it forcibly showed how important fairway disease control can be. We worked out a practical dosage for economy and effect. I have continued this practice for several years and my fairways have been much improved.

Last year we applied phenyl mercury six times, applying it upon the first indication of a disease attack in the last week of July, again in early August, and making four applications in the last 10 days of August when we encountered our worst disease weather. Dosage was at 1 st. per acre of 10 per cent material. This yields $\frac{3}{4}$ ozs. of material per 1,000 sq. ft., or less than the recommended rate of 1 to 1 $\frac{1}{4}$ ozs. Water in conjunction averaged about 75 gals. per acre. We added 3 lbs. per acre of iron sulfate to the above mixture to give added color, plant strength and to combat iron chlorosis, usually prevalent in hot, wet weather.

Two spray rigs were used in the fungicide treatment and our 40 acres of fairways were handled in about three hours. About 10 gals. of chemicals were diluted in 3,000 gals. of water. Material cost was around \$100, cheap in comparison with reseeding costs when disease damaged areas have to be repaired.

Fertilization Procedure

We go on the theory that fairways have to be fed lightly and frequently. The slightest overfeeding yields excess clippings that can't be practically removed. They remain to smother healthy turf. Then, too, overfeeding softens the grass plant and invites disease, wilt and physical damage.

We treated six times in 1959 between April and Sept. In April we used 370 lbs. per acre of a 10-10-10. In July we applied 225 lbs. per acre of Milorganite. In August and Sept. two additional treatments of Milorganite were applied at a 200 lb. rate. Also, in Sept. on treatment of urea (45 per cent N) was applied at a 50 lbs. rate alone with a single treatment of potash at a 50 lb. rate. The pelleted or granular materials were laid on with a broadcast type spreader covering 40 ft. to a swath. It took four hours to cover our 40 acres.

Insect Situation

Our program calls for an application of 8 lbs. (actual toxicant) of Chlordane per acre to combat angleworm and grubworm. It is timed to head off cutworm infestation that comes in June or July. We find this treatment more to our liking than the arsenates which aren't needed in our case because we don't have much of a crabgrass problem.

Our total expenditure for materials for the 1959 fairway program amounted to \$2,560, broken down as shown:

Fertilizer	\$36 per acre	—	\$1,440
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