

## TEE AND FAIRWAY CULTURE

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This is indeed a very broad topic, one which could well be covered in a full three week short course. I have broken the maintenance program down into six parts, and will, because of time limitation be very general in many sectors. However, I intend to zero in on some specific items which have helped me through the years and which I pass on to you for your thoughts.

Mowing  
Fertility  
Water use and Drainage  
Diseases  
Weed Control  
Soil Manipulation

At conferences such as this, there is always a strong emphasis put on the specific factors concerning the growing of quality turf. Important as turf itself is, we, the Golf Course Superintendents, must realize that we are in a service industry. We are providing a product for our golfers and the product is a "playable golf course". In a nutshell, to the best of our ability, within financial limitations established between us and our superiors, we must give the golfer what they want. We must keep the golfer happy. From time to time we see good grass growers lose their jobs because, although their turf is good, somehow they have lost touch with the golfer.

### Tees, what does the golfer want?

1. Soft enough so he can easily push a tee into it.
2. Short enough that a standard length wooden tee can be pushed into the soil and firm enough to still hold the ball free and clear of the grass tips.
3. Level and firm so a golfer can take a good, stable stance while addressing the ball.

How often have we played from a tee when the thatch was so deep that our tee could not even make contact with the soil. Sure, this is more often observed in the South with vigorous Bermuda grasses, but the same is true on many of our northern courses. Thatch is present on the back of bentgrass tees which are rarely used, or on merion Kentucky bluegrass tees, and Kentucky bluegrass fescue mixtures maintained at a high mowing height. Tees must have these 3 characteristics. If we cannot provide them along with good turf, then it would be better to provide them with no turf at all.

### What does he want in a Fairway?

1. Soft enough so he can take a divot without spraining his wrists.
2. Short enough or clean enough so the ball sits up free so he can strike the ball first without pinching any grass between the club and the ball.
3. Firm enough so he can get a good firm stance.
4. Relatively free of blemishes so he is reasonably assured of getting just such a lie.

Have you ever seen a quality, highly maintained, very closely cut fairway where the ball sat up extremely well? Where there was so much thatch under the ball that footprints showed and a golfer could not take a good stance? That is just not good fairway turf as the golfer sees it.

## MOWING

The strain or species of grass governs how close the grass may be clipped and still survive. In general the golfer demands that tees should be cut no higher than 3/8" and fairways at an absolute maximum of 3/4". The introduction of the riding triplex Green mower has given us a mower that will economically provide a good teeing surface. A retired triplex Greens mower is perfectly suited. It allows us to get full use of the entire life of the machine. When the machine wears sufficiently that it will not give a uniform dependable cut for the greens at 1/8", it is retired to tees and does well at 1/4" or 3/8". Retaining this extra triplex unit works exceptionally well when organizing a regular greens verticutting program.

### Frequency of Mowing

Increasing the frequency of mowing is one maintenance technique that benefits the turf as well as the golfer. Short cut turf must be cut more often than higher turf. Fairways with a cut of 1/2" under reasonable growing conditions must be clipped at least twice a week. This may be increased to daily mowing as growing conditions increase. The overall philosophy every superintendent must live by is to provide the best playing conditions possible for the dollars available. To me this means I should grow the turf only fast enough to keep surface in good condition. In order to do this the turf must be kept on the hungry side.

- Slower growing turf means:
- a. Less thatch production.
  - b. Usually less disease.
  - c. Greater uniformity between mowings.
  - d. Fewer watering problems.
  - e. Fewer disasters, turf wipe-outs, (Winter Kill).

Sure, the grass can be greener, lusher, but extended over a period of years lush type maintenance tends to produce soft fluffy fat lies. Then when the "Dog days" of August arrive more water than the golfer likes must be applied to keep the turf alive. Soft spots develop on almost any soil, be it sand, silt or clay. Vehicular wheel damage is evident and the superintendent is under the gun. To prevent this, keep your fairways just a little hungrier and a little drier than the membership feels is optimum.

Here are two little gimmicks that I work in and out of my mowing program to keep turf playable and make grass growing easier.

1. Dragging dew off fairways each morning with a hose. I don't do this on greens or tees for it is just as fast to cut them as to pole them. It truly is amazing how much less irrigation water is required if this practice is followed. Diseases are also reduced by physically breaking up the mycelium and removing the dew or guttation water in which mycelium grows. Early morning syringing of dew is made easy with automatic sprinkler systems and provides almost the same effect.

2. Drag matting fairways. Join together 3 or more greens topdressing mats and drag the fairways once dry, after mowing. This knocks down the clumps of clippings and worm casts, working them into the turf while standing the grain up for the next mowing. This practice virtually eliminates verticutting, cross cutting, and produces the sought after ribbon effect with an inexpensive maintenance free unit. If when initiating this program, grain is severe, mat only before mowing until the grain is brought under control. Mowers, of course, must be sharp and not driven too rapidly. Fast mowing saves little time, for a larger overlap is taken and the desired smooth uniform cut is lost.

## FERTILITY

Fertilizing is an individual thing and depends on:

1. The Dollars available.
2. Superintendent and his experiences.

3. Soil.
4. Water available.
5. Weather conditions.

Many new products are on the market, and before widescale applications are considered, be fully aware of how they function over an extended period. Soil type has a great effect on fertilizer selection. Open sandy soils have such a fast reaction time, and because they do not store large quantities of nutrients, light frequent applications must be made or else slow release types should be used. Burns are always more severe on sands because they lack buffering capacity. Fine soils, the silts and clays, have larger buffering capacity, and therefore, are able to store larger amounts of nutrients. This means fewer fertilizer applications and less total fertilizer because less irrigation water is required and thus fewer nutrients are lost through leaking. I do not propose to give my rates or types of fertilizer used, however, I like the broadcast cyclone type spreader and this dictates a pellet type fertilizer. I like to spread fertilizer in the dew, and this dictates a non-burning type unless I water immediately behind the spreader. Fertilizing in the dew allows a most positive uniformity in spreading. Not only can you see the wheel tracks, but the actual knocking down of the dew by the fertilizer. I double overlap to further aid uniformity of spread. The operator drives down the far outside edge of his last pass and spreads the fertilizer out to tractor marks of the last pass. This allows for total overlap and does it in such a way that the far outside edge covers the heavier center strip and vice-versa. I continue to be concerned about early spring fertilizer applications. The golfer wants fast green-up and growth. Turf just can't be pushed before the soil warms up, and then everything works together to produce lush spring growth. Lush spring growth stimulates *Helminthosporium*, the scourge of all turf diseases, and away we go!

#### WATER USE AND DRAINAGE

Water use is dictated by amount of water available, the type of system, the type of soil, drainage, etc. Automatic systems help for they allow water to be applied slowly and intermittently permitting total water penetration with no runoff. There is much that can be done with a manual system. The superintendent must know the system perfectly to get the most out of it. Nozzle sizes may be worn, oversize, and thus delivering more gallonage than pumps can supply resulting in pressure drop. Low pressure can produce poor droplet break up and reduce coverage so drastically that even designed uniformity of water coverage can be lost. At conference time - how many have greens mowers sharpened? How many have fairway mowers sharpened? How many have sprinklers dismantled, wear washers checked and repaired? Strange? Any irrigation supply house will tell you there is no run on sprinkler parts until the first dry spell. Yet, we would give up almost any turf maintenance tool before we would give up our irrigation system. Why then, do we put up with poor functioning sprinklers, leaking valves, heads, etc.? The same holds true with automatic systems. Irrigation equipment needs repair and preventative maintenance. Know your system, keep it in repair, and thus, get out of your system all that was designed into it.

Essex Golf Club soil is a fine silt, and water penetration and percolation is poor. It requires very little total water to maintain good turf, but because of the soil, it requires frequent small amounts of water to keep the surface open. We have always used wetting agents and feel that they should be an important part in everyones maintenance program. Every golf course has thatchy areas, dry spots, and compacted areas where water penetration is not uniform. The use of wetting agents is a tool that will give better uniformity to any irrigation system and thus, give uniformity to turf color, cover, playability, and that is what the golfer wants.

## DISEASES

### Spring Diseases

Spring is the most important period in the grass plant cycle for it is during this time that food reserves and root growth are built up to carry the turf through the summer. The leaf spot fungus, Helminthosporium, attacks at this time. It is very insidious and often goes unnoticed because of active spring growth yet inhibits build up of plant reserves and plant dies later during summer stress period. Spraying as a control is normally done at the time of the third or fourth mowing late in May or early June. Some years 3 or 4 spray applications will be needed on a weekly basis to keep Helminthosporium under control. The most important factor is to obtain control before it becomes deep seated. Control products are Acti-dione, Daconil 2787, Dyrene and Terrachlor.

### Summer Diseases

These are large brown patch and dollar spot. The use of systemics as a general cure has lost favor with us at Essex. Without the regular sprays of contact fungicides Helminthosporium has proceeded unchecked. In 1975 we are returning to our old contact sprays with regularity inserting the systemics when we need the control that only they can give.

### Fall and Winter Disease

During damp drizzly overcast days in fall when leaves are falling Fusarium and Typhula snowmolds break out of their summer dormancy. Applications of specific snow mold fungicides at this time easily control these diseases for an extended period.

We, in Ontario, are still able to use mercuries and get excellent control most years with one application of Calo chlor or P.M.A.S. If, however, the wet cool fall spell continues for a lengthy period 2 or 3 applications of fungicide may be needed at that time. It would appear that time of application is much more important than type of material.

### Weed Control

We, in our weed control program, try to use as little chemical as possible. All weed killers slow up the growth of the grass, and grass is what we are trying to grow. Over the years we have seen varying degrees of damage on fine bent fairways with the use of phenoxy herbicides. Even though most manufacturers recommend fall as the best time for weed control, there is no question that fall sprays have a very serious effect on the winter survival of short cut turf, especially bent-grass.

It has been a long time since I sprayed fairways in total for weeds. The program I use is to spray the rough hard 1 or 2 times a year (hopefully to kill the bent) but this keeps the weeds out of the fairways. On fairways in the spring only before early June do we spot spray any phenoxy killers. Once again the grass plant needs this period to build up roots and food reserves to carry it through the summer and weed killers prevent both these processes. We must spray weeds early so turf has time to regain root systems before hot summer weather.

### Crab Grass

Crab grass is prevalent, but localized at Essex Golf Club, thus spot treatment is used. Control was excellent when D.S.M.A. was used as a post emergence. In the last several years pre-emergence sprays at the time the Forsythia is in bloom have given excellent control early in the summer, but spotty infestations in late summer have forced an additional spot treatment with D.S.M.A. We have not decided on our program for 1975 but are considering a second application of pre-emergence at 1/2 rate 6 weeks after initial application.

### Spray Application

In spray applications of fungicides or weed killers, I like to double overlap similar to my application of fertilizers. We make up a boom and get double spray coverage with one pass. This is done by reducing nozzle spacings by 1/2 or using wide angle nozzles and adjusting boom height. The double spray ensures at least 1/2 rate, if one nozzle plugs, and gives better coverage when wind swirls the spray pattern. We always spray on dewy mornings and add sufficient wetting agent or spreader sticker, so not only are wheel tracks easily seen, but the wetting agent knocks down the dew and the exact limits of the spray pattern can be observed.

### Soil Manipulation

We do very little spring aerifying on tees or fairways at Essex Golf Club. In the Toronto area, we appeared to require much more aerification to maintain good soil tilth. This seems strange for we feel Essex's fine silt is more subject to compaction than Rosedale, a fine sandy loam of Toronto.

We use the core type aerator on tees as a method of not only opening up the soil, but providing a topdressing. If extensive leveling is required to fill divot holes more topdressing will be added. This operation is carried out as a general practice in the late fall and on certain tees as required throughout the season.

One method we use to hold turf on tees throughout the summer, particularly on par three holes, is to fill divot holes with a topdressing seed mixture. The regular greens topdressing soil is bolstered with 30% peat moss to increase water holding capacity. The type of the permanent grass seed varies depending on permanent turf in the tee. About 40% Poa trivialis and 40% Pennlawn Creeping red fescue are included in the mixture to go with the permanent type. Poa trivialis and Pennlawn fescue are both rapid germinators, blend well with existing turf, are permanent in nature, and will withstand traffic as seedlings under close cut. Annual ryegrass, once used exclusively as a nurse grass, has been discarded because it produces a patchy appearance and excludes the establishment of permanent type grasses. The newer strains of ryegrass might be experimented with for they have a fine blade and blend well with bluegrasses. Fairway aerification at Essex is limited to late fall as a general program, and as required during summer when isolated dry spots develop. Essex has always aerified fairways very late in fall when turf growth has practically stopped. This late aerification works well in Windsor, for normally open winters produce enough growth that holes continue to fill during late fall and before spring play. The water holding properties of the fine silt and the abundance of trees prevents the dessication other courses have when holes are left open through the winter.

### A Word About Earth Worms

Some of the best bentgrass fairways, I have seen, have had a very high population of earth worms. Their castings are very evident in the spring and fall but they, and the worms, seem to totally disappear in the summer after the first application of any fertilizer or chemical spray. We, at Essex, do everything we can to retain the worm population and feel that our drag matting smooths the fairways which is a plus to the aeration they do. Worm casting only seems to affect the golfer when the dew is heavy in the fall. This is the one concession we expect from the golfer and with a little publicity in favor of the earth worm; we have set in motion some reverse psychology. We, the former bad guy, the user of arsenic and mercury really aren't so bad. We do have a working knowledge of ecology and care about the environment.

### In Summary

Never use extreme measures unless all else fails. Do everything you can to make it easier for the grass to grow. Use extreme care in the application of

fertilizers, fungicides and weed killers; they all have the ability to set back the turf. How do we maintain turf? Very carefully. We cannot make mistakes, there are no second chances. Let the grass grow for you; don't kill it with kindness, and give the golfer what he wants.