

## FAIRWAY CLIPPING REMOVAL AND POTENTIAL PROBLEMS

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Revolutionary ideas for managing turf come along every so often i.e. living with annual bluegrass, sand top-dressing of greens, shatter core aerification, mowing decks around the greens shorter and removing clippings, and finally mowing fairways at 3/8" and removing the clippings. All new ideas deserve a fair trial. There is always some place on a golf course that a new idea can be tested, or if the equipment is not available, one can visit a neighboring course where the practice is being carried-out, to evaluate the situation.

It is still too early to pass judgement on the merits of collecting clippings from fairways. Those places where it has been tried, have liked the results. Some of the benefits of fairway removal that have been reported are: the fairways are more manageable, they don't wilt during the summer stress period, don't require syringing, an increase in creeping bentgrass population, less Poa annua, and less disease problems. Whereas, some or all of these might be true, what is obviously needed is some well planned replicated research. Until that is done, one can only speculate on the observations that have been made.

### Easier to Manage

Lets logically look at some of the observations that have been made. The fairways are more easy to maintain and don't require syringing. I believe this is true. I would suggest most of this is due to the removal of the "silage effect". when the clippings are returned to a turf area they eventually decompose. When clippings are returned during hot weather, they decompose very quickly, giving off heat much the way silage does in a silo. The air temperature may only be in the mid 80's but the micro-climate, where the clippings are decomposing in the turf, could be in the 100's. Just as greens have always been easier to manage, the fairways and decks are easier to manage where clippings are removed. Elimination of the silage is one of the major benefits of fairway clipping removal.

### Increase in creeping bentgrass population

This needs to be treated separately for a decrease in the amount of Poa annua in the fairways. I have observed what appears to be an increase in creeping bentgrass population after only a few mowings at the 3/8" height of cut, versus the 5/8" or 3/4" height of cut. Comparing adjacent fairways mowed at 5/8 inch the initial increase in creeping bentgrass was not due to clipping collection, but to the growth characteristics of each grass species at a 5/8" mowing height. Poa annua has an upright growth habit, creeping bentgrass has a more prostrate growth habit. When grown in a polystand, mowed at 5/8" or 3/4", the upright growth habit of Poa annua causes the creeping bentgrass to be more upright, and it tends to blend in more with the annual bluegrass so the actual amount of creeping bentgrass appears smaller. However, when a fairway is mowed at 3/8", the creeping bentgrass is more prostrate in growth and the actual content of a fairway becomes more evident. Looking at adjacent fairways, one mowed at 3/8" with the clippings removed, the other a 5/8" with no clippings removed, I have observed similar creeping bentgrass - Poa annua contents in both fairways, once careful examination was made.

### Decrease in annual bluegrass content

The initial reports of this phenomena, suggested the Poa annua seedheads were removed along with the clippings and the annual bluegrass could not re-seed itself and was therefore being eliminated from the population as the "annual" plants died. First, clippings have been collected from greens for years, and Poa annua is a major component of most older greens. Secondly, most of the Poa annua types on golf course greens, tees, and fairways are the perennial type, not the annual type Poa annua.

Poa annua is a nitrogen lover and doesn't compete well at low nitrogen levels. Creeping bentgrasses with possible exception of "Penneagle", do very well under low nitrogen regimes and compete very poorly with Poa annua at high nitrogen levels. Removing the clippings has the effect of greatly reducing the amount of nitrogen available to the plant throughout the season, compared to returning the clippings. This may explain the observed increase in creeping bentgrass and the decrease in Poa annua content after a couple of years of removing clippings. However, if the superintendent decides to increase the amount of nitrogen applied to his fairways per season, to make up for what is being lost through clippings removal, I believe they will see a reversal and the Poa annua will begin to retake ground lost to the creeping bentgrass.

### Fewer Diseases

When superintendents report fewer diseases, they really mean a shift in disease, away from disease favored by high nitrogen, to those favored by low nitrogen. There should be a decrease in Rhizoctonia brown patch, Pythium blight and Fusarium patch with an increase in Sclerotinia dollarspot, Corticium red thread and anthracnose. Although the increase in anthracnose may be questionable, since outbreaks of this disease are directly related to hours of continuous leaf wetness, the lower cutting height and thinner turf may actually reduce the amount of anthracnose, compared to high height of cut with thicker, denser and taller turf which would tend to dry slower.

Finally, whenever you change a system, it takes the pathogen and their competitors about 3 seasons to reach equilibrium. It is after the 3rd season that any new disease or other problems will become evident. We are now beginning to see problems with sand top-dressing programs after 3 years. But if the initial findings with fairway clipping removal holds up, and no new serious problems develop, fairway clipping removal may be the next great break through in turfgrass mangement. This provides the golfer with a better playing surface while making the superintendent's job of managing turf during the stress periods of summer, a lot easier.