

OVERSEEDING: AN EFFECTIVE ALTERNATIVE TO REBUILDING C-15 GREENS?

Much has been said and written in regard to "C-15 Decline". Programs to deal with this scourge have ranged from fumigation and total rebuilding to massive doses of antibiotics, the latter being less than successful. I have yet to find an article or report which parallels my experience in successfully overseeding infected greens. Therefore I will present my thoughts regarding this program and perhaps someone with a similar problem may benefit.

C-15 Decline first appeared at Calumet over Memorial Day weekend of 1980. In three days, two greens were 50-75% infected. Within the next two weeks, all but five of the greens developed significant percentages of the disease. As other varieties of bentgrass were healthily growing in the greens as was *Poa Annua*, diagnosis was positive.

At this time, all types of pesticides were tested with no positive results. Aerification, spiking, topdressing, and other cultural practices were as futile. By the time Labor Day 1980 approached, the disease had become progressively worse. After analyzing results of our experimentation and testing, only four practices were felt to have any benefit in relieving disease activity: raising the cutting height to 3/16", reducing soil moisture to a minimum level, using heavier than normal nitrogen application, and applying heavy amounts of Iron Sulfate or Chelated Iron.

Limited finances precluded resodding, rebuilding, or other procedures being used at the time on other courses. Closing the greens for renovation was out of the question due to numerous outings and events booked ahead. When all options were considered, an overseeding program was determined to be the only direction to go.

After Labor Day passed, soil samples were analyzed, deficiencies corrected, a normal spray schedule resumed, and starter fertilizer applied. The greens were then aerified with 1/2" Greensaire tines and cores verticut and dragged in. Before final dragging, 1 lb./1000 sq. ft. of Penncross seed was applied. Two weeks after aerification and seeding the greens were topdressed with 2-1-1 topdressing mix. In spite of our effort, Fall establishment was very poor so the process was repeated early in the Spring of 1981. By May 1 the Penncross had begun to fill in. The disease was continuing to thin the turf at a rate much faster than the Penncross was establishing and the overall putting quality was as poor as ever.

A discussion of our mutual problem with another Superintendent indicated some disease control with an Acti-Dione TGF/Tersan LSR mixture. Another product showing some results was granular PCNB. With an application of TGF/LSR/Iron Sulfate alternated every 5-7 days with one of TGF/Acti-Dione RZ/Iron Sulfate some positive results were achieved. While not curative, these spray applications did seem to slow disease activity.

By mid June 1981 the turf had shown fair recovery although it seemed *Poa* was establishing as quickly as the Penncross. At this time I felt the greens had recovered sufficiently to allow us to begin smoothing and speeding up the putting surface. Research and observation done earlier, I was convinced a sand modification program would be an effective way to: lower mowing height and increase speed, provide an immediate smooth putting surface, provide increased seedling protection from traffic wear, eliminate grain and eventually all thatch, and optimize water usage and increase root oxygen level. While there were numerous

other advantages to the sand program, these were the factors I felt most important to the overseeding program.

Initial sand application was done with a Metermatic spreader in mid June. A second application was made after July 4th for a total sand depth of 3/16". By August 1, cutting height was lowered to 5/32" which was the mowing height we had maintained prior to disease infestation. Alternate fungicide applications were continued but at reduced rates to avoid phytotoxicity. By Labor Day the greens were still very thin. The sand however provided a smooth putting surface, even over the most heavily infected surfaces.

After Labor Day a normal spray schedule was resumed. This was done to encourage any remaining C-15 plants to weaken while protecting desirable plants. The greens were aerified with 5/8" Greensaire tines, cores removed, and hole filled with sand. Before final dragging of the sand seeding was done with Penncross at 1 lb./1000 sq. ft. Starter fertilizer was applied and greens were dragged with a modified coco mat. This placed the seed in the top 1/2" of the aerifier hole. Germination was excellent and the greens filled quickly enough that by the end of the growing season we had lowered the cutting height to 1/8". Holding irrigation to minimum levels after initial establishment put a halt to *Poa* invasion and some of the *Poa* plants weakened and died. By the time we sprayed for snow mold, the C-15 plants were gone and Penncross had established satisfactorily.

This Spring (1982) we found some of our newly seeded areas did not survive the Winter. The last week of March we repeated the aerifying, sanding, and seeding program of the previous Fall. This time we used a 50-50 Penncross-Penneagle mix and also applied 1/2 lb./1000 sq. ft. Nitrogen.

A small hand spiker was used to work additional seed into the winter kill areas. Germination was again excellent and by Memorial Day greens were filled, fast and true. Mowed at 7/64" there is little grain and *Poa* is fast disappearing, a benefit of reduced irrigation needs. It was a personal triumph when I was requested to raise the mowing height on our sloping 14th green. A ball putted uphill and not holed out had a tendency, especially on windy days, to stop momentarily and then roll back towards the frustrated golfer. A ball putted downhill would usually roll off the green if not holed out. We have since raised the height of this green to 5/32" which cured the "problem".

While a number of practices contributed to the success of the overseeding program, I feel sand modification was the single most important practice. Earlier failures with conventional topdressing proved this to me. This is not to say that a sand program is the panacea for C-15 Decline. There are Courses who have been on sand modification programs for several years and now are developing C-15 Decline on their greens. The point I am making is that I believe earlier initiation of the sand program would have expedited establishment by one growing season.

In retrospect, if limited finances were not a problem and the greens would have been closed I believe I would prefer a Roundup-seeding program. Even better would be a Methyl Bromide-seeding program as all *Poa* would be eliminated this way. Also if I had 18 100% C-15 greens all showing infection, the seeding program I used would not be practical. However, if you have: limited funds, need fast, smooth playable greens while establishing new turf, and have partial infestation only, overseeding in conjunction with a sand modification program can work for you. It worked for me.

James F. Mittee, CGCS Supt.
Calumet C.C.