

## THE C-15 PROBLEM

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C-15 or "Toronto" creeping bentgrass has developed 2 disease problems over the past several years. One has been stripe smut, caused by Ustilago striiformis, and the other, with an unknown cause, has become known as the C-15 problem.

The stripe smut problem slowly thins the "Toronto" turf. The disease is recognized in the spring and fall of the season by the dark black stripes of fungus spores running parallel up the leaf blades. It is often difficult to see stripe smut symptoms on closely mowed bentgrass.

The C-15 problem is more striking and an entire green may be lost in a few days. The greens are severely thinned and clumpily in appearance as individual plants are killed. This disease is only a problem on "Toronto" bentgrass cut at green height of 1/4" or less. The problem has not been observed on the "Toronto" growing in the fringe or approaches of the green at 1/2" or more. The disease starts in the cool weather of spring and appears to recover with the arrival of the warm weather of the summer and then begins to decline again in the latter part of the summer and continues on into the cool weather of the fall.

Several things have been associated with the C-15 problem including high populations of nematodes, especially Tylenchorhynchus dubius the stunt nematode, and Cricinomoides spp. the ring nematode. However, where nematicides were used to control these nematodes, very little recovery of the turf occurred. Dr. Wm. Meyers, plant pathologist at Warren's Nursery, has isolated Helminthosporium erythrospilum from "Toronto" bentgrass greens in Illinois and has been able to satisfactorily control it by applying 6 oz. of Daconil 2787 every week from early April through October. The best control with Daconil 2787 was obtained where high nitrogen levels were maintained.

For those "Toronto" greens with the stripe smut problem, 8 oz of Tersan 1991, Fungo, Spot Kleen or Cleary's 3336 drench should be applied as early in the spring as possible, prior to the first mowing.

Neither disease is much fun to have on your greens. The "C-15 problem" is quicker and more devastating. Stripe smut is a much slower disease, but the end results are the same; removal of the desirable "Toronto" bentgrass and its eventual replacement with Poa annua. They both can be controlled chemically, but the treatments are very expensive. Controlling the C-15 problem is also very time-consuming. Controlling the stripe smut problem with systemic fungicides year after year could lead to the development of strains of stripe smut which are resistant to these fungicides.

Those who already have one of these problems on their "Toronto" greens may wish to follow one of the control programs, in the hope that less expensive and more permanent control will be found. It is my personal belief that overseeding programs with "Penncross" or "Emerald" creeping bentgrass should be started. It may be advisable to completely re-seed, re-stolonize, or re-sod severely affected greens. For those people unfortunate enough to have one of these problems, my heart goes out to you; but for those of you who are contemplating rebuilding greens on an established course or building greens on a new golf course, if you still use "Toronto" creeping bentgrass after having been forewarned, I can only say, "you made your own bed now lay in it".

I realize that "Toronto" creeping bentgrass has become the Cadillac of bentgrass greens, and that having "Toronto" greens on your course is a sign of prestige, but when it develops either one of these problems, it will look more like a Model-T and add very little prestige to the course.