Caught Up in the Wrath of Summer 2005

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It was a doosy, the summer of 2005. Notice I used past tense. One can only hope, that by the time you read this, it is over. I know my good friend, Jack MacKenzie, embraces the challenges of a tough season. I, on the other hand, prefer the calm and tranquillity of seasons such as 2004. Life is tough enough without disgruntled golfers. Can someone please explain to me the thought process of the typical American golfer? As if we, the dedicated keepers of the turf, are satisfied with golf course conditions below our own expectations!

Thank you to all 27 clubs who returned the survey pertaining to TAP (Take-All Patch), PCNB, and nematodes. This survey was an unscientific "study" designed to look at several relationships between the above-mentioned topics. My initial interest was piqued after a conversation I had with Fred Taylor at Mankato GC. He wondered if the reduced use of PCNB over the past five years, due to "perceived" root pruning issues associated with the product, had any correlation with the outbreak of TAP on older, established greens. Ever since mercury was removed from our winter plant protection arsenal, pink snow mold can now be experienced almost every month of the year in this region. I don't recall that being the norm twenty years ago. Is the relationship the same between PCNB and TAP? I was also intrigued by research literature that suggests a possible synergism between plant parasitic nematodes and certain plant pathogens. This combination may form a "super complex", of sorts, that is more effective at injuring and decimating Poa annua and bentgrass communities.

The results of the survey revealed some interesting trends. Of the 27 respondents, seven had outbreaks of TAP this season. All seven of these golf courses experienced the disease on putting surfaces only and six of these greens were nine years or older. The only green less than nine years old was between six and eight years of age. This is interesting in that TAP, up until now, was thought of as a disease of new, sand-based putting greens. Of the fifteen golf courses that treated their greens last year with PCNB, only two experienced TAP infections. Of the five golf courses that have confirmed plant parasitic nematodes in their rootzones, four experienced an outbreak of TAP. Coincidence? I don't know. I do think that the numbers obtained in this survey reveal some possible relationships that warrant further investigation.

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On that note, Keller GC, Forest Hills GC and Mankato GC have teamed with Dr. David MacDonald, a nematologist at the University of Minnesota, to further explore some of these relationships in a multi-year study. Several TAP infected greens from each club will be studied to determine if plant parasitic nematode populations correlate with TAP or other root-infecting fungal activity. In addition, PCNB will be added as a parameter to the study.

Three greens at Keller GC will be sampled at the same 12 locations on each green at least three times per year. Sampling procedures at Forest Hills GC and Mankato GC will most likely not be as intensive. The study will also look at vertical distribution of the nematodes in conjunction with root length throughout the growing season. Sections of each green will receive a spring application of a nematacide, most likely Nemacur, to evaluate pesticide effectiveness relative to plant health. Clipping yield will also be examined.

I realize that some who are reading this are skeptical, believing that nematodes are a "southern" problem and not an issue in the northern climes. I was of the same mind set ten years ago. Nematodes??? Get serious! Well, after countless sampling sessions over the past ten years with Dave MacDonald, I can tell you that parasitic plant nematodes do exist in Minnesota and often times at detrimental population levels. My theory has always been that any damaged inflicted by nematodes can be overcome with proper cultural programs and by maximizing plant health. That is until this year…I have a feeling that the extremes of the current golf season brought nematode damage to the forefront and under the spotlight. I find it hard to believe that the quantity and variety of chemistries that we - and others - threw at our TAP outbreak were so ineffective in arresting this pest. There must be other factors at work here. Instead of "grasping at straws," I am hopeful this study will provide some answers.

Being that we are fortunate enough to have a nematologist on staff at the University of Minnesota, it might be worth your while to submit several samples from that perennial problem green on your golf course. If you are interested in checking out your microscopic roundworm populations, there are several recommended procedures that should be followed to ensure accurate results. All testing should keep the following nematode facts in mind:

+ Nematode populations can vary dramatically, depending on the time of the year. Optimum soil temperatures for these invertebrates range from 68 - 86 degrees F.

+ Nematodes are not very mobile in the soil, generally moving less than one foot per year.

+ Populations tend to be very erratic in their distribution across a putting green.

Therefore, multiple samples should be taken from each green. Samples should be taken to a depth equal to that of the root system, generally 4-6 inches. Minimum sample size is 100 cc's of soil or approximately one-half cup. A one-inch diameter soil probe is ideal for sampling though a cup cutter can be used. If you are sampling suspect areas on a green, take samples from the margins of these areas. And finally, keep samples out of direct sunlight and away from high temperatures. Ship samples immediately or refrigerate until samples can be submitted to the lab. Diagnostic fees are $17 for the first sample and $7 for each additional sample from the same green.

(Editor's Note: Dave MacDonald can be reached at 612-625-9274.)