



# Prescribed Season-long Disease Management Programs: Are they right for your course?

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Over the past year I was asked to conduct a study to look at prescribed season-long disease management programs by both Bayer (Aventis at the time) and Syngenta. From Syngenta, I was given a program from June through September with applications every 14 days. An application for snow mold was added to compare it head to head with the three Bayer programs. With the Bayer programs I was given liberty to develop them as I saw fit for disease activity in Wisconsin. The programs with Bayer products were applied on either a 14 or 28 day schedule. While these might not be the best answer for everybody (and some even had failure at the Noer), they help you get in the ballpark for possible programs that could be useful for maintenance of your greens. When it comes to greens, fungicide programs should be on a preventative schedule. It is impossible to catch up after you have a disease outbreak, not to mention the expense of higher rates of chemicals for curative control.

## EXPERIMENTAL METHODS

This evaluation was conducted at the O. J. Noer Turfgrass Research and Education Facility on creeping bentgrass/annual bluegrass maintained under golf course green management conditions, at 0.125-inch cutting height. The test plot received 2lb of N/1000 ft<sup>2</sup> during the growing season, half from an application of Spring Valley 21-3-12 in early June and the other half from two applications in the form of Urea in mid-July and early September. Irrigation was provided four times a week at 100% ET. Individual plots, 3 ft x 10 ft, were arranged in

a randomized complete block design with six replications. The experimental area was not inoculated and all disease pressure was of natural occurrence. Treatments were applied with a CO<sub>2</sub>-powered boom sprayer, using XR TeeJet 8005 VS nozzles, at 30 psi, in water carrier volume of 2-gal/1000ft<sup>2</sup>. All applications were initiated on June 24, 2002 and followed their respective spray schedule listed in Table 1. Quality, percent dollar spot, and percent anthracnose were rated several times during the summer and fall. If disease

develops over the winter that information will be collected and shared at a later date. Data obtained were subjected to analysis of variance and LSD was used to determine significant differences between treatment means.

## RESULTS AND DISCUSSION

Spray programs #1 and #3 had excellent performance throughout the summer. Disease development was kept to a minimum and quality was usually well above acceptable levels (Table 3). Some programs

Table 1. Application dates based on spray timing schedule.

Timing Date	June 6/24	July 1 7/8	July 2 7/21	Aug 1 8/5	Aug 2 8/18	Sept 1 9/3	Sept 2 9/18	Oct 1 10/1	Oct 2 10/29
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Table 2. Spray programs and schedule of applications.

Treatment	Formulation	Rate	App Timing
1 Chipco Signature	80WG	4OZ/M	June
Chipco Triton	1.67SC	1FL OZ/M	June
Chipco 26 GT	2SC	4FL OZ/M	July 1
Chipco Signature	80WG	4OZ/M	July 2
Chipco Triton	1.67SC	1FL OZ/M	July 2
Chipco Signature	80WG	4OZ/M	Aug 1
Compass	40WG	0.25OZ/M	Aug 1
Chipco Signature	80WG	4OZ/M	Aug 2
Daconil Ultrex	82.5WG	3.2OZ/M	Aug 2
Chipco Triton	1.67SC	1FL OZ/M	Sept 1
Chipco Signature	80WG	4OZ/M	Oct 1
Chipco 26 GT	2SC	4FL OZ/M	Oct 1
Chipco 26 GT	2SC	4FL OZ/M	Oct 2
Daconil WS	6F	5.5FL OZ/M	Oct 2
Chipco Signature	80WG	4OZ/M	Oct 2
2 Chipco Signature	80WG	4OZ/M	June
Chipco 26 GT	2SC	4FL OZ/M	June
Chipco Signature	80WG	4OZ/M	July 1
Chipco Triton	1.67SC	1FL OZ/M	July 1
Chipco Signature	80WG	4OZ/M	Aug 1
Compass	40WG	0.25OZ/M	Aug 1
Chipco Signature	80WG	4OZ/M	Aug 2
Chipco 26 GT	2SC	4FL OZ/M	Aug 2
Chipco Signature	80WG	4OZ/M	Sept 1
Daconil Ultrex	82.5WG	3.2OZ/M	Sept 1
Chipco Signature	80WG	4OZ/M	Sept 2
Chipco 26 GT	2SC	4FL OZ/M	Sept 2
Chipco Signature	80WG	4OZ/M	Oct 2
Chipco Triton	1.67SC	1FL OZ/M	Oct 2
PCNB	4F	8FL OZ/M	Oct 2
3 Chipco Signature	80WG	4OZ/M	June
Chipco Triton	1.67SC	1FL OZ/M	June
Bayleton	50WG	1OZ/M	July 1
Chipco Signature	80WG	4OZ/M	July 2
Compass	40WG	0.25OZ/M	July 2
Chipco Signature	80WG	4OZ/M	Aug 1
Chipco 26 GT	2SC	4FL OZ/M	Aug 1
Chipco Signature	80WG	4OZ/M	Aug 2
Chipco Triton	1.67SC	1FL OZ/M	Aug 2
Chipco Signature	80WG	4OZ/M	Sept 2
Compass	40WG	0.25OZ/M	Sept 2
Chipco Signature	80WG	4OZ/M	Oct 1
Chipco 26 GT	2SC	4FL OZ/M	Oct 1
Chipco Signature	80WG	4OZ/M	Oct 2
Chipco 26 GT	2SC	4FL OZ/M	Oct 2
Daconil WS	6F	5.5FL OZ/M	Oct 2
PCNB	4F	8FL OZ/M	Oct 2
4 Daconil Ultrex	82.5WG	3.2OZ/M	June
Heritage	50WG	0.4OZ/M	July 1
Daconil Ultrex	82.5WG	3.2OZ/M	July 1
Daconil Ultrex	82.5WG	3.2OZ/M	July 2
Heritage	50WG	0.4OZ/M	Aug 1
Banner Maxx	1.3EC	1FL OZ/M	Aug 1
Banner Maxx	1.3EC	1FL OZ/M	Aug 2
Daconil Ultrex	82.5WG	3.2OZ/M	Aug 2
Daconil Ultrex	82.5WG	3.2OZ/M	Sept 1
Heritage	50WG	0.4OZ/M	Sept 2
Banner Maxx	1.3EC	1FL OZ/M	Sept 2
Heritage	50WG	0.4OZ/M	Oct 2
Daconil WS	6F	5.5FL OZ/M	Oct 2
5 Untreated Control			

Table 3. Quality, dollar spot and anthracnose rating from 2002 season.

Treatment	Quality†					% Dollar spot				% Anthracnose		
	Jul-12-02	g-01-02	Aug-17-02	Sep-05-02	Oct-01-02	Jul-12-02	Aug-01-02	Aug-17-02	Sep-05-02	Jul-12-02	Aug-17-02	Sep-05-02
1 Program 1	6.17a*	6.92a	7.42a	7.25a	6a	0.8b*	5.2cd	0c	0.7c	4.2ab*	3.8c	2.2b
2												
3 Program 3	6.67a	7.42a	7.17a	7a	5.75a	0b	2d	0c	0c	1.7b	4.8c	2.7b
4			7b	6.83a	5.67a	0b	11.7c	0c	0c	6.7ab	13.3b	3b
5 Untreated Control	4.92b	4.08c	3d	3.33c	2c	8.3a	35a	32.5a	34.2a	9.2a	23.3a	8.3a
LSD (P=.05)	0.80	0.76	0.78	0.82						5	4.67	
Standard deviation			5	0.68								
CV	11.01	11.04	11.75	11.54	9.27	88.38	36.77	30.84	26.13	73.29	39.26	41.54

†Quality was rated visually on 1 to 9 scale; 1=necrotic turf/bare soil, 9=dense, uniform, dark green turf, 6=acceptable turf quality.

\*Means followed by the same letter do not significantly differ (P=.05).

did incur disease breakthrough at certain periods of the summer. These breakthroughs were usually due to improper timing of certain chemicals or extending spray timings beyond the length of efficacy for the chemical. It was also noted that once disease development occurred, it was difficult for a program to recover to pre-disease conditions. An example of this

would be program #2, which suffered extensive dollar spot damage at the end of July and maintained higher levels of disease and reduced quality through the fall.

The information provided in this study should help you develop programs that will best fit your circumstances. While some of these programs worked excellently, course-to-course and year-to-year

results may not be the same. With this study and any study conducted at the O. J. Noer Research Facility, it is important to take the knowledge gained from the study and expand on it for your situation. We are here to evaluate programs to help control plant diseases on your golf course. 🌿

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