

Stop #8: Once and for all, do fungicides really offer plant health benefits?

Ryan Nichols, Jim Baird, and Marco Schiavon

Beneficial effects of fungicides

Certain fungicides are purported to promote plant health and abiotic stress resistance in addition to fungicidal action. This study was conducted to determine if fungicides can promote plant health under simulated golf course tournament stress conditions. The study green was subjected to tournament conditions on 20 July 2013 allowing for a minimum of 2 applications for treatments on 28-day intervals and 4 applications for treatments on 14-day intervals. Simulated tournament conditions included increased mowing, rolling, and minimal irrigation. Irrigation was done by hand, syringing the green to maintain moisture levels below 10% during the 7-day period. Aboveground measurements of turf quality and Normalized Difference Vegetation Index (NDVI) were taken during the 7-day simulated tournament conditions. Root samples were taken on day 0 and day 8 for winRHIZO analyses. The experiment was repeated one month later.

Spray Record:

Timing	A	B	C
Date	18 June 2013	2 July 2013	16 July 2013
Time	8am	8am	8am
Temperature	67.8 F	74.8 F	71.2 F
Wind	Calm	Calm	Calm
Conditions	Sunny	Overcast	Overcast

Timing	D	E	F
Date	6 August 2013	20 August 2013	3 September 2013
Time	8am	8am	8am
Temperature	60.7 F	70 F	80 F
Wind	Calm	Calm	Calm
Conditions	Sunny	Sunny	Sunny

Results:

- ✓ Overall, there were no visual differences among fungicides and the untreated control for stress tolerance during RUN 1 of the 7-day simulated tournament conditions.
- ✓ No fungicide treatments showed signs of phytotoxicity during the study period.

Notes:

2013 UCR Turf Health Trial

No.	Treatment	Company	Rate (oz/M)	Timing (d)	g or ml/1 L
1	Control	--	--	--	
2	Insignia	BASF	0.7	28	3
3	Honor	BASF	1.1	28	4
4	Disarm 480SC	Arysta	0.36	28	1.4
5	Heritage (WG)	Syngenta	0.4	28	1.5
6	Daconil Action	Syngenta	3.5	14	14
7	Velista	Syngenta	0.5	14	2
8	Chipco Signature	Bayer	8.0	14	30

Plot Map:

West

1	2	3	4	7	3	2	5
5	6	7	8	4	6	8	1
6	1	2	8	5	3	1	4
7	3	4	5	6	8	2	7