Preventive Control of Brown Ring Patch or Waitea on *Poa annua* Greens

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Goal: Evaluate fungicides for ability to suppress Waitea patch of *Poa annua.*

Location: Biltmore Country Club's 15 green in play – N. Barrington, Illinois

Background: Waitea patch is a common disease of *Poa annua* on greens in Chicago. May to June, the fungus infects *Poa annua* leaf sheaths and causes narrow bright yellow ring symptoms. Rings are about 4 to 12 inches in diameter. Dr. Randy Kane noticed it on a green about 1985 with Dave Ward in Flossmoor. Until 2006 it was called *Rhizoctonia zeae* in Chicago. On the west coast Waitea was being confused with *Rhizoctonia cerealis* or yellow patch. In 2005 Japanese scientists renamed this *Rhizoctonia* disease. Today it is called brown ring patch or Waitea patch. Confusion exists on how to control this disease and more research is needed.

Brief Material and Methods: Fungicides, urea nitrogen, and PGRs were evaluated to suppress brown ring patch (hereafter Waitea) on an established push-up green, at Biltmore Country Club, in N. Barrington, IL; a northwest Chicago suburb. The green surface was primarily *Poa annua*, with approximately 10-30% of creeping bentgrass (*Agrostis stolonifera*). The turf was mowed 6 days weekly to a height of 0.110 in. and fertilized with a total of 3 lb N/1,000 ft^2 during the season.

Individual plots were 4 ft x 6 ft and arranged in a randomized complete block design with 4 replications. Treatments were delivered using a CO_2-powered backpack sprayer with 8004 TeeJet flat fan nozzles at 40 psi in water equivalent to 2 gal/1000 ft^2. Waitea symptoms were visually evaluated as percent and number of rings per plot. Visual quality was also rated (1-9 scale, where 1 = entire plot area brown or dead; 6 = minimum acceptable color and quality for a putting green in summer; and 9 = optimum greenness, texture and density) to monitor for acceptable quality and quantify any phytotoxicity.

No symptoms existed in 2011 when first applications were made on 12 May. Eleven fungicides were applied every 7, 14, or 21 days. Non-fungicide standards were also included Proxy/Primo every 21 days and N by urea every 14 days (Table 1).

Table 1. Treatments, intervals, rates and application dates for control of Waitea on a golf green at Biltmore Country Club, N. Barrington, IL in 2011.

Nbr	Treatments	Interval	Rate per 1,000 sq ft	12 May	18 May	24 May	1 Jun	6 Jun	14 Jun
1	Untreated	….	....						
2	Nitrogen by urea	14 day	0.15 lbs N	x		x		x	
3	Nitrogen by urea	14 day	0.3 lbs N	x		x		x	
4	Affirm	7 day	0.9 oz		x	x	x	x	x
5	Renown	14 day	4.5 fl oz	x		x	x	x	
6	Concert II	14 day	4.0 fl oz	x		x	x	x	
7	Daconil Ultrex	14 day	3.2 oz	x		x	x	x	
8	Cleary's 3336 F	21 day	4.0 fl oz	x			x		
9	ProStar	21 day	2.2 oz	x			x		
10	Banner Maxx	21 day	1.0 fl oz	x			x		
11	Insignia SC	21 day	0.9 fl oz	x			x		
12	Torque	21 day	0.6 fl oz		x		x	x	
13	Affirm + Torque	21 day	0.9 oz + 0.6 fl oz		x		x	x	
14	Proxy/Primo	21 day	0.5 + 0.125 fl oz	x			x		

Results: At this site in 2008, 2009, 2010 and 2011, Waitea symptoms first occurred on 22 May, 18 May, 25 May, and 30 May respectively. In all years, Waitea disease developed through June, but symptoms were absent thereafter. During autumn, Waitea is infrequently reported on Chicago greens for unknown reasons. Untreated plots saw peak disease development on 6 June with 13% damage by Waitea, and by 27 Jun disease symptoms naturally ended. Compared to the untreated control, all treatments reduced both Waitea percent and number except Daconil Ultrex and Proxy/Primo. When Waitea was active, Cleary's 3336 (thiophanate methyl) consistently increased disease relative to the untreated control.

Key Points:

- Untreated, peak Waitea patch development of 61% occurred on 6 June.
- Symptoms first occurred on May 30. On June 1 all fungicide treatments except Cleary's 3336 reduced Waitea as compared to untreated (Fig 1).
- Cleary's 3336 consistently increased the disease compared to untreated (Figs. 1 and 2). On 6 June, peak development occurred and breakthough occurred in certain treatments which included N by urea 0.15 lb, Proxy/Primo, Daconil Ultrex and Banner Maxx (Fig. 2)
- On 6 June, Urea at 0.30 lb N was statistically similar to best control which included, Insignia SC, Renown, Torque, Affirm, Torque+Affirm, ProStar and Concert II (Fig. 2).
- Only disease negatively impacted visual quality, treatments were without phytotoxicity.
- Low nitrogen or certain fungicides may be responsible for increased Waitea in spring.

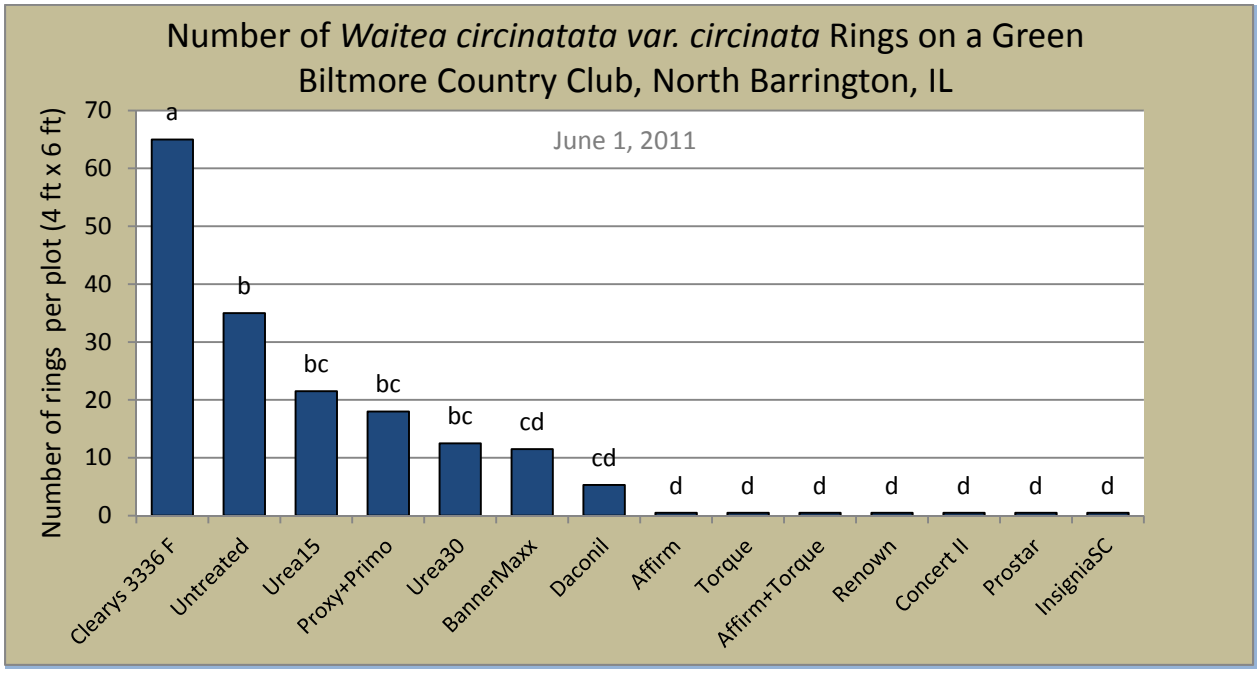

Figure 1. Following 8 May and 22 May applications, Waitea patch was suppressed by most treatments including nitrogen by urea at Biltmore Country Club, N. Barrington, IL in 2011.

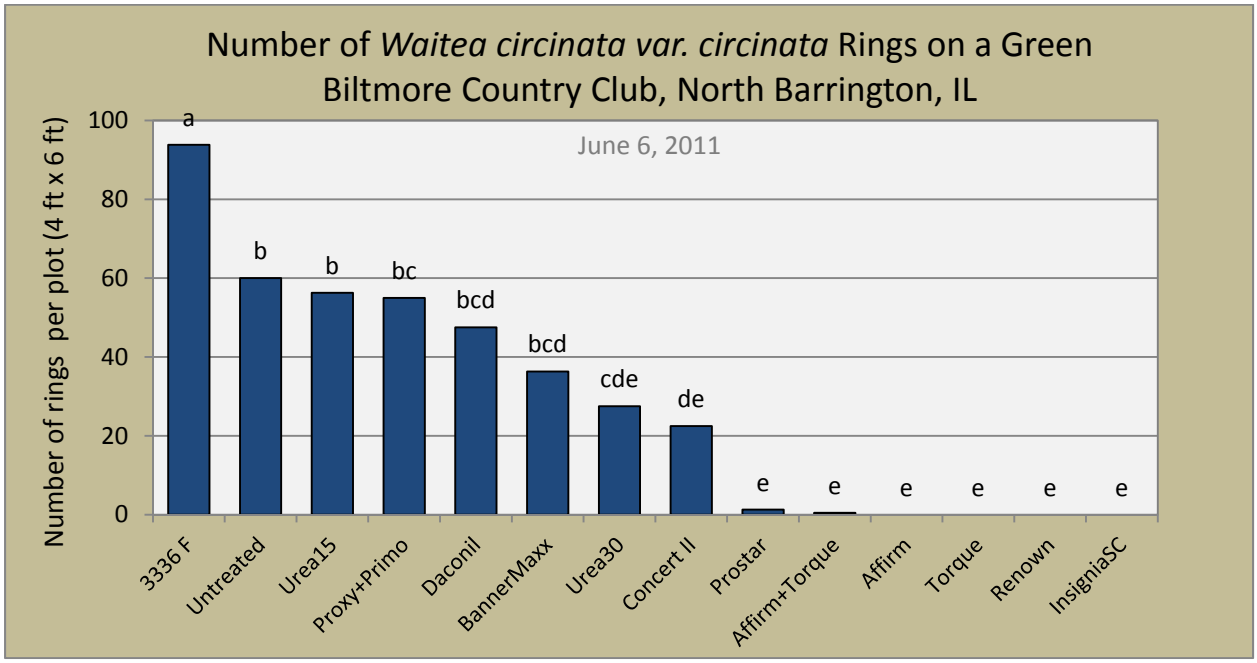

Figure 2. Peak Waitea development with breakthrough occurring in certain treatments. Biltmore Country Club, N. Barrington, IL in 2011.

Peak development of Waitea in 4 ft by 6 ft plots at Biltmore CC in N. Barrington, IL. *Settle 6-6-11*

Rating plots by estimating percent area affected and counting number of rings. *Thomson 6-6-11*