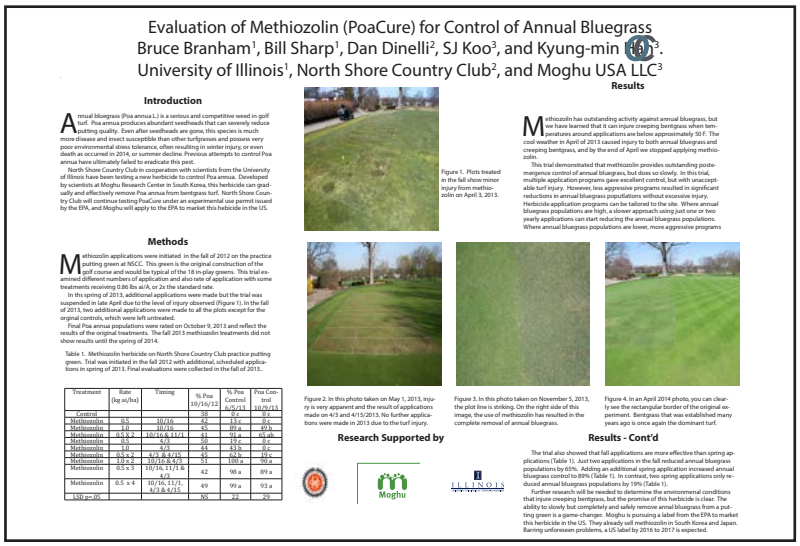
Dinelli Educates Players at Encompass

Kirk Triplett (above purple shirt) was edged out by Tom Lehman this year at North Shore Country Club.

You didn't think that Dan Dinelli, CGCS would let an opportunity slip away to educate any group that traverses across North Shore Country Club, let alone, the old-timer professionals, did you?

Dan set up a poster that was put together by Dr. Bruce Branham, Bill Sharp, and others at the Encompass Championship right on the practice putting green. The poster highlighted some of the work completed at North Shore CC by Dr. Branham, primarily the work centered on *Poa annua* control using the rather new product Methiozolin (PoaCure).

The results Dan shared come directly from the poster: "Methiozolin has outstanding activity against annual bluegrass, but we have learned that it can injure creeping bentgrass when temperatures round applications are below approximately 50 F. The cool weather in April of 2013 caused injury to both annual bluegrass and creeping bentgrass, and by the end of April we stopped applying methiozolin.



Evaluation of Methiozolin (PoaCure) for Control of Annual Bluegrass

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Introduction

Annual bluegrass (Poa annua L.) is a serious and competitive weed in golf turf. Poa annua produces abundant seedheads that can severely reduce putting quality. Even after seedheads are gone, this species is much more disease and insect susceptible than other turfgrasses and possess very poor environmental stress tolerance, often resulting in winter injury, or even death as occurred in 2014, or summer decline. Previous attempts to control Poa annua have ultimately failed to eradicate this pest.

North Shore Country Club in cooperation with scientists from the University of Illinois have been testing a new herbicide to control Poa annua. Developed by scientists at Moghu Research Center in South Korea, this herbicide can gradually and effectively remove Poa annua from bentgrass turf. North Shore Country Club will continue testing PoaCure under an experimental use permit issued by the EPA, and Moghu will apply to the EPA to market this herbicide in the US.

Methods

Methiozolin applications were initiated in the fall of 2012 on the practice putting green at NSCC. This green is the original construction of the golf course and would be typical of the 18-in-play greens. This trial examined different numbers of application and also rate of application with some treatments receiving 0.86 lbs ai/A, or 2x the standard rate.

In this spring of 2013, additional applications were made but the trial was suspended in late April due to the level of injury observed (Figure 1). In the fall of 2013, two additional applications were made to all the plots except for the orginal controls, which were left untreated.

Final Poa annua populations were rated on October 9, 2013 and reflect the results of the original treatments. The fall 2013 methiozolin treatments did not show results until the spring of 2014.

Table 1. Methiozolin herbicide on North Shore Country Club practice putting green. Trial was initiated in the fall 2012 with additional, scheduled applications in spring of 2013. Final evaluations were collected in the fall of 2013.

Treatment	Rate (kg ai/ha)	Timing	% Poa 10/16/12	% Poa Control 6/5/13	Poa Control 10/9/13
Control			70	0 c	0 c
Methiozolin	0.5	10/16	42	53 c	0 c
Methiozolin	1.0	10/16	45	89 a	20 b
Methiozolin	0.5 x 2	10/16 & 11/1	43	94 a	66 ab
Methiozolin	0.5	4/3	66	19 c	0 c
Methiozolin	1.0	4/3	44	63 b	0 c
Methiozolin	0.5 x 2	4/3 & 4/15	45	92 b	10 c
Methiozolin	1.0 x 2	10/16 & 4/3	51	100 a	90 a
Methiozolin	0.5 x 3	10/16, 11/1 & 4/3	42	98 a	89 a
Methiozolin	0.5 x 4	10/16, 11/1, 4/3 & 4/15	49	99 a	93 a
LSD p=.05			NS	22	29

Figure 1. Plots treated in the fall show minor injury from methiozolin on April 3, 2013.

Figure 2. In this photo taken on May 1, 2013, injury is very apparent and the result of applications made on 4/3 and 4/15/2013. No further applications were made in 2013 due to the turf injury.

Figure 3. In this photo taken on November 5, 2013, the plot line is striking. On the right side of this image, the use of methiozolin has resulted in the complete removal of annual bluegrass.

Figure 4. In an April 2014 photo, you can clearly see the rectangular border of the original experiment. Bentgrass that was established many years ago is once again the dominant turf.

Research Supported by

Results

Methiozolin has outstanding activity against annual bluegrass, but we have learned that it can injure creeping bentgrass when temperatures around applications are below approximately 50 F. The cool weather in April of 2013 caused injury to both annual bluegrass and creeping bentgrass, and by the end of April we stopped applying methiozolin.

This trial demonstrated that multiple application programs gave excellent control, but with unacceptable turf injury. However, less aggressive programs resulted in significant reductions in annual bluegrass populations without excessive injury. Herbicide-application programs can be tailored to the site. Where annual bluegrass populations are high, a slower approach using just one or two yearly applications can start reducing the annual bluegrass populations. Where annual bluegrass populations are lower, more aggressive programs can be utilized.

Results - Cont'd

The trial also showed that fall applications are more effective than spring applications (Table 1). Just two applications in the fall reduced annual bluegrass populations by 65%. Adding an additional spring application increased annual bluegrass control to 89% (Table 1). In contrast, two spring applications only reduced annual bluegrass populations by 19% (Table 1).

Further research will be needed to determine the environmental conditions that injure creeping bentgrass, but the promise of this herbicide is clear. The ability to slowly but completely and safely remove annual bluegrass from a putting green is a game-changer. Moghu is pursuing a label from the EPA to market this herbicide in the US. They already sell methiozolin in South Korea and Japan. Barring unforeseen problems, a US label by 2016 to 2017 is expected.

The poster goes on to explain that the developing company Moghu is pursing a label for turf use in the US from the EPA. The product is already sold in South Korea and Japan and a US label for sale is expected by 2017.

Dinelli had a captive audience as the professionals warmed up for the Encompass Championship each morning. As Dan explained to me, "who would know more about playing on *Poa annua* greens than the seniors… and with the way things are looking with PoaCure, they might be the last to experience it where it isn't wanted."

This trial demonstrated that mtehiozolin provides outstanding post emergence control of annual bluegrass, but does so slowly. In this trial, multiple applications programs gave excellent control, but with unacceptable turf injury. However, less aggressive programs resulted in significant reductions in annual bluegrass populations without excessive injury. Herbicide application programs can be tailored to the site. Where annual bluegrass populations are high,

Beyond the scope of the specific research shared at the event, Dan has been a great advocate for our profession showing that science drives the decision making process of the golf course superintendent.