

## Stop 6. Golf Spike, Sole Design Study

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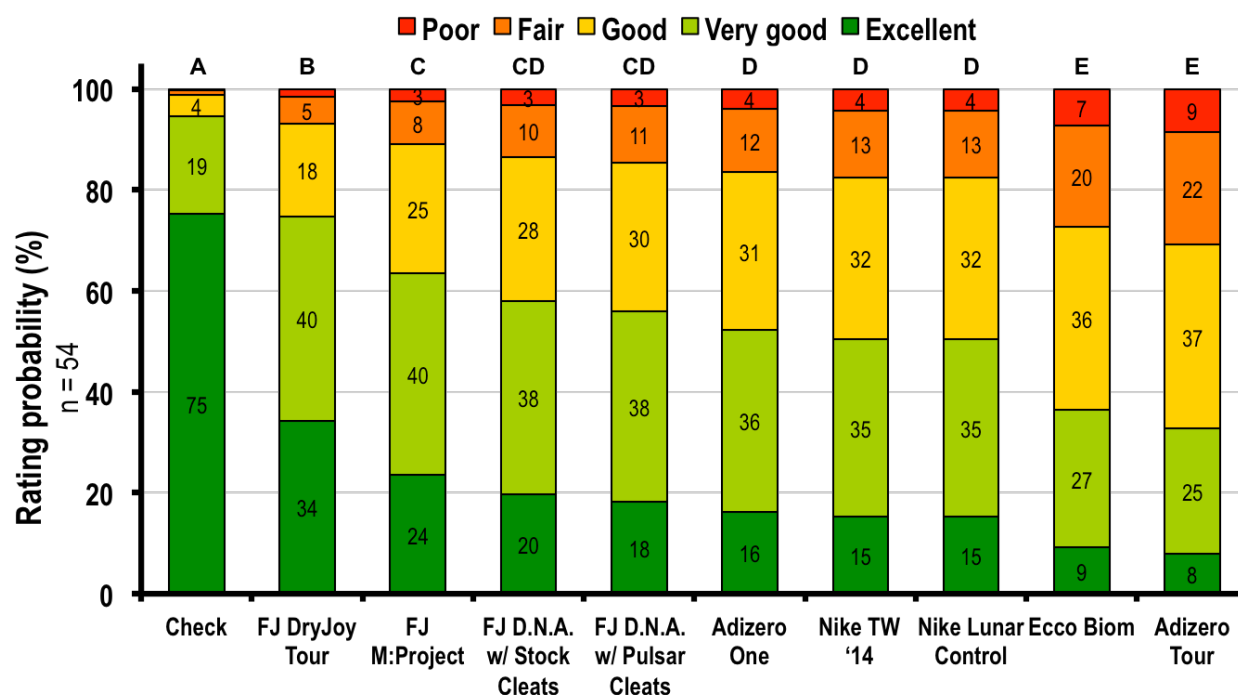
In 2013 I received several phone calls/Emails from superintendents concerned about the aggressiveness of several new spike/cleat designs on their putting surfaces. In response and with the aid of FootJoy I lined-up several golf spikes/soles and performed a traffic study at several golf courses in Florida and Michigan. At all four locations the golf cleat tests were conducted in the following manner.

1. 3' x 3' plots were strung on a putting green using a tape measure, string, and golf tees resulting in 30-plots each (10 treatments including the non-trafficked check plot with 3 replications each) strung-out in a grid of 3 rows and 10 columns.
2. In a randomized order each plot was trafficked by individuals using size 11.5 and/or 13 golf shoes mimicking a golfer pulling a golf ball out from the bottom of the cup after making a putt. At each site 30 rounds of golf were applied per treatment to each plot.
3. After plots were trafficked individuals (golfers, golf course superintendents, or other turf industry individuals) rated the plots on the putting surface a scale of 1-5 for putting green smoothness. The rating scale was:

- 1 = Excellent; no visible traffic
- 2 = Very good
- 3 = Good; some traffic but I would not mind putting on the surface
- 4 = Fair
- 5 = Poor; terrible putting conditions would recommend banning this cleat/sole from our golf course.

In Figure 1 the data was combined from all four sites (i.e. Forest Glen Country Club, Royal Poinciana Country Club, Naples Beach G.C., and Brookshire Inn & Golf Course). Combining all the data 1620 observations are represented in Figure 1. Bars in Figure 1 represent treatments (golf stud or shoe style). Bars that **do not** share the same letter (displayed at the top of each bar) are significantly different from one another. Another way of saying the same thing is that every bar (treatment) that has the same letter above it is **NOT significantly** different from all other treatments with the same letter above them. The statistics takes into account variability that results among raters and variability in turf wear among the three replicate plots within each treatment.

In Figure 1 the non-trafficked check received the highest overall rating with plots trafficked with the Foot Joy Dry Joy resulting in the least visible wear on the putting surfaces. Foot Joy M: Project, FJ D.N.A. with stock cleats, and FJ D.N.A. with pulsar cleats shared the second best ratings (all with the letter C) and all with over 85% acceptable ratings (i.e. good, very good, and excellent ratings). Overall the Ecco Biom and Adizero Tour resulted in the most visible foot traffic with 27% and 31% of the ratings resulting in unacceptable ratings.



**Figure 1.** Predicted probabilities of spike treatments to be rated as either "Excellent", "Very Good", "Good", "Fair", or "Poor". Probabilities were estimated using logistic regression analysis of data collected from 3 replicate plots evaluated from **four locations (Forest Glen C.C. Royal Poinciana G.C., Naples Beach G.C., and Brookshire Inn and G.C.)**. Bars that do not share a letter are significantly different ( $\alpha = 0.05$ ).

### ***Poa annua* Management in Creeping Bentgrass at Putting Green Height with several Herbicide and Nitrogen Regimes**

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Management of *Poa annua* in bentgrass putting greens has always been problematic and control without detriment to bentgrass quality and playability continues to be an important topic on golf courses and at The Hancock Turfgrass Research Center. *Poa annua* winterkill/severe injury concerns have heightened following the polar vortex of 2013/14 as have superintendent thoughts about controlling *Poa annua* as it infiltrates into greens and fairways. Although a daunting task, there is no shortage of new products and ideas when it comes to controlling annual bluegrass.

In this study 12 annual bluegrass control regimes were initiated on a creeping bentgrass putting green featuring combinations of five products maintained on plots with two rates of nitrogen (Table 1). Methiozolin (PoaCure), amicarbazone (Xonerate), bispyribac sodium (Velocity), paclobutrazol (Trimmit), and flurprimidol (Cutless) were applied every 2 weeks starting on June 24, 2013 in combination with urea, as a tankmix, at 0.1 lbs N/M (low rate) and 0.2 lbs N/M (high rate).

Nitrogen rates are included in the study because high rates of nitrogen should help mask injury to the bentgrass caused by some of these herbicides while low rates of nitrogen are thought to favor annual bluegrass over creeping bentgrass. The two nitrogen rates could result in long term differences and a possible trade-off between decreased turf quality (low rate) and decreased annual bluegrass control (high rate) for the end-user.

These herbicides are intended to provide a gradual and subtle control of annual bluegrass throughout the growing season so that bare soil doesn't result and creeping bentgrass is able to spread and overtake weakened annual bluegrass. You are invited to stop by the site and judge each herbicides effectiveness for yourself.

Table 1: Treatment List for Annual Bluegrass Control on a Putting Green

1	methiozolin (PoaCure)	Low N	Biweekly
2		High N	
3	methiozolin (PoaCure)	Low N	Biweekly
4		High N	Fall Treatments*
5	amicarbazone (Xonerate)	Low N	Biweekly
6		High N	
7	bispyribac sodium (Velocity)	Low N	Biweekly
8		High N	
9	paclobutrazol (Trimmit)	Low N	Biweekly
10		High N	
11	flurprimidol (Cutless)	Low N	Biweekly
12		High N	
13	Untreated	Low N	Biweekly
14		High N	

\*Initiated September 16, 2013 with follow-up applications October 2 and 16.