

EMERGING POSTEMERGENCE *POA ANNUA* CONTROL OPTIONS

Ronald Calhoun

Department of Crop and Soil Sciences

Michigan State University

The management decisions made by turfgrass professionals will favor, disfavor, or maintain the *Poa* population in a turfgrass stand. Golf course superintendents often use plant growth regulators to selectively suppress/injure *Poa annua* so that bentgrass populations may increase. Rates for *Poa* suppression are listed labels of TGR, Trimmit (paclobutrazol) and Primo (trinexapac-ethyl). The idea is that the PGRs will suppress/injure the *Poa* and allow the bentgrass fill in.

Currently, no reliable selective postemergence control of *Poa annua* is in the marketplace. Research plots were established on an 80-90% *Poa annua* fairway at the Hancock Turfgrass Research Center in East Lansing, Michigan to determine the effectiveness of commercially available and experimental products for this purpose. Bentgrass plugs were placed in each plot at the beginning of the experiment to determine the safety of each treatment on bentgrass and to measure its spread into the plots. The most remarkable results from this experiment have been the discovery of postemergence annual bluegrass activity of Velocity (Valent) and HM9930 (Helena). Plots treated with Velocity (code number V-10029) yielded >95% annual bluegrass control within 45 days after the initial treatment in 2000 with no damage to the bentgrass plugs. After three seasons of treatment these plots now contain between 80-95% bentgrass. Due to the quick activity of Velocity, it may be more appropriate to use this product where the *Poa* infestation is 15-25% or less. The activity of Velocity represents a quantum leap from currently labeled products. HM9930 provided a more subtle transition as the *Poa* reduction was not evident in these plots until after the second season of treatments. Beacon (primisulfuron) has been reported to have activity on *Poa* and was included in this trial. Beacon has demonstrated some injury to the bentgrass and did not provide a significant transition in the first two seasons. The amount of bentgrass in these plots did increase markedly in 2002. Managing *Poa* with any of these products may be more appropriate where the infestation is 20-25% or less. Plots treated with Proxy have not transitioned at all. The *Poa* in the Proxy treated plots has shown increased vigor, uniformity, and density over the duration of the experiment. Dollar spot incidence was reduced in the Proxy treated plots during the summer of 2000. Seedhead production was also reduced in these plots in the spring of 2001.

An additional *Poa* management study was started on creeping bentgrass maintained at greens height. This trial was initiated in June of 2001 on a two-year old 'Providence' native soil green. Treatments in this study included Velocity at 5 grams of active ingredient per acre (g ai/A) every 7 days and 20 g ai/A every 28 days. Trimmit (paclobutrazol) treatments were also included at 0.06 lb ai/A every 7 days and 0.24 lb ai/A every 28 days. Application cycles were followed for 12 weeks in 2001 totaling 60 g ai/A and 0.75 lb ai/A for the Velocity and Trimmit plots, respectively. Percent *Poa* was determined in the spring of 2002. Velocity applied every 7 days showed the largest reduction of *Poa* of any treatment. The Trimmit plots did not differ statistically from the control plots. These treatments were continued in 2002 (16 weeks).

In fall of 2001, the testing of Velocity was expanded to University of Illinois and Rutgers. The activity of Velocity has been, for the most part, very consistent. In 2002 several golf course trials were initiated. These studies were designed to examine the effects of Velocity under trafficked conditions.



Figure 1. *Poa annua* treated with bispyribac sodium (Velocity) 42 days after treatment. Bentgrass plugs transplanted into the plot (top of picture), are unharmed.



Figure 2. *Poa annua* fairway treated with various PGRs and experimental herbicides. (7 days after treatments)

The results provided by Velocity look very promising. A reliable postemergence partner would be a welcome addition to the *Poa annua* management toolbox. Valent is actively pursuing a label for Velocity (bispyribac sodium). A regional need package has been submitted to the MDA in hopes to have Velocity labeled for golf courses in Michigan for the 2003 season. However, even with a new product on the market, *Poa annua* will continue to compete for resources whenever the opportunity avails. It is unlikely, even improbable, that any single management or control tool can provide a long-term solution to such a complex problem. The use of herbicides, no matter how powerful and effective, will only provide a temporary result, unless you correct the conditions that allowed the weed to out compete the turf in the first place. Understanding why weeds invade will improve our ability to manage turfgrass sites to limit the impact of persistent plants, such as *Poa annua*.