



Management Studies on the Gly-Ryes™

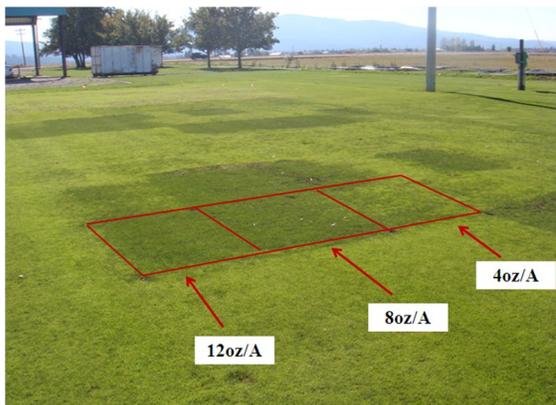
by Christian Baldwin, Ph.D.

Glyphosate Rates Required for *Poa annua* Control

The objective of this trial was to determine rates necessary for *Poa annua* control. **JS501** and **Replay** were seeded on 15 Sept. 2008 in Post Falls, ID at 8 lbs/1000 ft². Application rates were 0, 4, 8, 12, or 16 fl oz/A. Glyphosate (Syngenta's Departure®) applications were made 17 June and 19 Aug. 2009 and 25 June and 25 Aug. 2010.

Overall, four glyphosate applications over a 2-year period at a rate ≥ 8 oz/A spaced 8 weeks apart in June and August resulted in plots with less than 10% *Poa annua*. Meanwhile, the 4 oz/A application rate had 28% *Poa annua* and untreated plots had 82% *Poa annua*. It should also be noted that injury to the ryegrass

Post Falls Poa annua control study following 2-years of glyphosate applied 8 weeks apart in June and August. The dark green perennial ryegrass plots were treated with glyphosate



and the untreated light green plots were infested with Poa annua. Fair to poor control was achieved at the 4 fl oz/A rate. Image recorded October 6, 2010.

cultivars was negligible over the 2-year trial period since applications occurred in the warm summer months.

Temperature Effects on Gly-Rye™ Glyphosate Tolerance

Three trials, two in Post Falls, ID, and one at Oregon State University (OSU) in Corvallis determined the glyphosate tolerance of **JS501** and **Replay** following summer and fall applications. In the summer tolerance trial conducted in Idaho, **Replay** perennial *Continued p. 2*

Spring Greenup: How Much of it is Varietal?

by Doug Brede, Ph.D.

This year many areas in the Midwest and East reported delays in spring turf greenup due to cold soil temperatures. To a turf facility like a golf course or sod farm which depends on springtime revenue, greenup means cashflow.

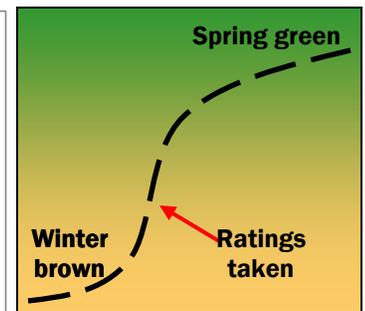
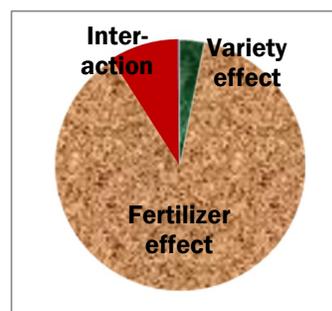
Researchers have studied greenup of cool-season turfgrasses and have recommendations to help speed things up in the spring: (1) late fall NPK fertilization, (2) early spring ammonium sulfate application, (3) planting improved early greenup varieties such as **Rush**, **4-Season**, or **Camas**, (4) turf covers, (5) dyes, paints, liquid iron, or black sand topdressing, (6) early spring scalping, (7) September Primo applications, and (8) fall applied fungicides for snow mold.



An early greenup variety like Camas Kentucky bluegrass (arrows) shows up as dramatically greener for a week or two in April.

One factoid I've never encountered in the turf literature is how much influence does *Continued p. 2*

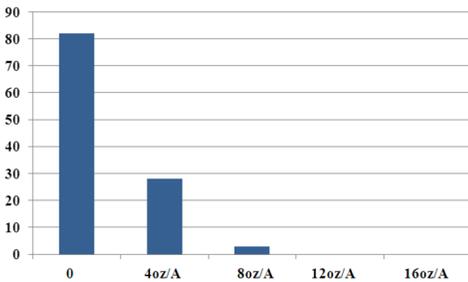
(left) Pie chart shows the plot differences in spring greenup attributable to fertilizer, grass variety, or to the interaction of both (see text). (right) Greenup ratings were taken when plots averaged 30% green.



Gly-Ryes™, continued

ryegrass was seeded on 5 May 2010 at 8 lbs/1000 ft². Glyphosate was applied in late August at 0, 8, 16, 32, 48, 64, or 96 oz/A. In the fall tolerance trial conducted in Idaho, JS501 and Replay were seeded on 5 May 2010 at 8 lbs/1000 ft². Glyphosate was applied at the end of Sept. at 0, 8, or 16 oz/A. In a fall trial at OSU, JS501 and Replay were seeded at the end of July, 2010. Glyphosate was applied at the beginning of October at 0, 4, 8, 12, 16, or 32 oz/A.

In the Idaho summer trial, plots could tolerate up to 25 oz/A with 20% injury. Similar results have been noted in other off-site, independent research trials following applications in warm weather. In the Idaho fall trial, 41 days after an application at 8 and 16 oz/A, plots had 18% and 60% injury, respectively, due to cold temperatures. In Oregon, 36 days after treatment, JS501 injury was 3%, 25%, and 82% at rates of 4, 8, and 16 oz/A, respectively. In both trials, air temperatures



Percent Poa annua following sequential applications of glyphosate 8 weeks apart in June and August, 2009 and 2010. Data was recorded in Post Falls Sept. 27, 2010.

within 1 month after application dropped below 45°F.

Recommendations

Based on the environmental conditions of each trial, results suggest a recommended application rate should be 8 oz/A when night temperatures are consistently above 50°F. This rate is sufficient for Poa annua



Fall-applied glyphosate applications in October at Oregon State University. Significant ryegrass browning occurred 14 days after treatment due to cool temperatures in plots with glyphosate rates of 8 oz/A or higher. Image courtesy Rob Golembiewski, OSU.

control and also provides protection in case a spray overlap occurs during application. Glyphosate applications greater than 4 oz/A should be avoided as air temperatures drop below 45°F. Future trials will examine the best application rates and timings to use with Gly-Rye™ during winter overseeding of dormant bermudagrass. 🏠

Greenup, continued

fertilization exert on greenup compared to varietal effects. In other words, in a slow spring like this, who is more to blame, your fertilizer or your grass variety?

In April of this year, I rated a large Kentucky bluegrass trial here in Post Falls, ID, at 30% greenup. The trial, sown in August 2009, contained 157 varieties, most of which were replicated 16 times. To broaden the scope of the experiment, we fertilized 8 of those 16 replicates with an extra 3 lbs. N per 1000 sq. ft. from Best® Polyon controlled-release 41-0-0 in July 2010. All plots in the trial were maintained home-lawn style, with twice-yearly NPK (May and August), and weekly 2-inch rotary mowing. Greenup was scored on a 1 to 9 scale with 9 equal to full greenup. On that date, most plots rated 1 to 4, but a dozen or more rated 8's and 9's.

Trends in the data were determined by a statistical procedure called factorial analysis of variance. The procedure revealed the amounts of greenup attributable to fertilizer, to grass variety, and to the "interaction" of fertilizer and variety. A fertilizer-by-variety interaction sounds complicated, but it simply means:



Varieties that put up seedheads sooner in the spring (plant on left) coincidentally have an earlier spring turf greenup. Common-type bluegrasses flower and greenup early. Most elite types (right) flower later.

Some varieties respond differently to fertilizer than others. The statistical procedure partitions out this interaction as a separate slice of the overall greenup seen in the trial.

Results showed that 88% of the plot differences in greenup were attributable to fertilizer. The effects of grass variety and its interaction comprised 12% of plot differences in greenup.

In conclusion, if you're experiencing a delay in spring color, look first to your fertilizer program. Grass variety can make a difference in spring color, but at least in this case, it was strongly over-shadowed by the nitrogen applied the previous summer. 🏠