

## Part 2 – Utilizing New Chemistry During Kentucky Bluegrass Renovation

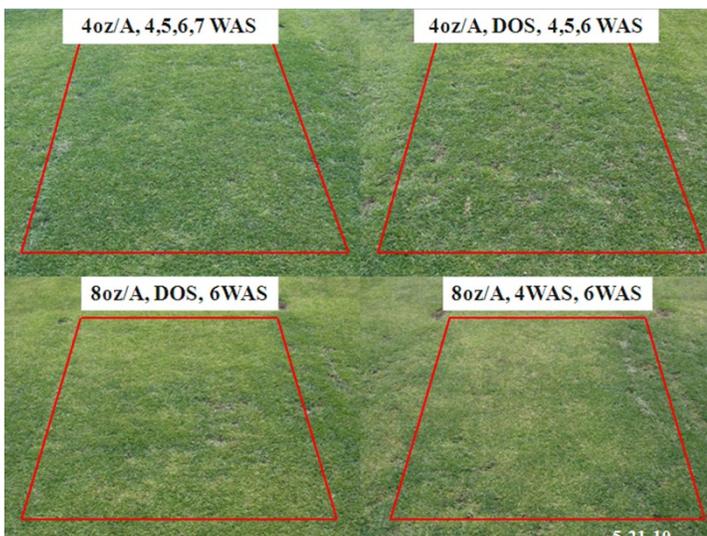
by Christian Baldwin, Ph.D..

In the September **NewsFlash**, Tenacity herbicide (a.i. mesotrione, Syngenta) was introduced as a tool for turfgrass managers to use for *Poa annua* control when renovating to Kentucky bluegrass. Managers run into problems when renovating sites with an existing *Poa annua* seed bank in the soil. They often find limited success in keeping *Poa annua* at bay the following spring. A research project was initiated in fall, 2009, in Post Falls, ID, to provide a solution.

**The primary objective of this research was to determine if application rate and number of applications impact the level of *Poa annua* control.**

**Materials and methods:** ‘Rush’ and ‘Award’ Kentucky bluegrass were seeded on September 4, 2009. Prior to seeding, the existing stand of primarily *Poa annua* was sprayed with glyphosate. Once cultivars were established, mowing continued 3 times weekly at 0.5 inches. This research project consisted of four Tenacity application regimes: (1) 4 oz on the day of seeding (DOS) + 4 weeks after seeding (WAS) + 5WAS + 6WAS, (2) 4 oz/A 4WAS + 5WAS + 6WAS + 7WAS, (3) 8 oz/A DOS + 6WAS, (4) 8 oz/A 4WAS + 6WAS. These application regimes were chosen to stay within the yearly rate restriction listed on the product label of 16 oz/A. No Tenacity was applied the following spring.

**The impact of various Tenacity application regimes on the level of *Poa annua* control during renovation. DOS = day of seeding, WAS = weeks after seeding. Picture taken May 21, 2010.**



### A Step-by-Step Approach for Optimal Kentucky Bluegrass Conversion with Minimal *Poa annua*

1. Spray glyphosate to remove existing stand
2. Seed ‘Rush’ Kentucky bluegrass, which was bred specifically for *Poa* resistance, at 2-3 lbs./1000 ft<sup>2</sup>
3. Best time to seed is late August into early September
4. Apply Tenacity at a product rate of 4 oz/A within 4 weeks after seeding
5. Apply 2 to 4 follow-up applications, spaced approximately 7 days apart
6. Once Kentucky bluegrass is established, apply a pre-emergence herbicide (such as Barricade or Dimension) to prevent future *Poa* from returning

**Results:** In early spring (March), differences started to become apparent among the various Tenacity application treatments. Plots where Tenacity was applied at 8 oz/A two times in the fall had approximately 25% *Poa annua*. Meanwhile, when Tenacity was applied four times at 4 oz/A in the fall, plots had minimal *Poa annua* (approximately 8%).

By early May, similar trends continued as plots that received four 4 oz applications in the fall had 21% *Poa annua*, while 50% *Poa annua* was present in plots that received two 8 oz fall applications. By the end of June, plots receiving four applications of Tenacity at 4 oz/A, regardless of timing, averaged approximately 80% Kentucky bluegrass (20% *Poa annua*). Note that the use of a follow-up preemergence herbicide like Barricade or Dimension in the early spring would likely limit *Poa* return to the single digits (see recommendations above).

**The second objective of this research was to determine if applying Tenacity the day of seeding increases the level of *Poa annua* control.**

Although it’s safe on seedlings, there were no additional benefits in *Poa annua* control when applying Tenacity at the day of seeding compared to the initial application four weeks after seeding. However, results may vary depending on the diversity of weeds at a particular site. Researchers at Rutgers University noted excellent control of other problematic winter and summer annual weeds, such as henbit, chickweed, crabgrass, and purslane following Tenacity applications. The primary target weed in our study was newly germinating *Poa annua*. Few other weeds were problematic during the study.

**Percent *Poa annua* resulting from various Tenacity application regimes, when seeded on 4 September 2009 in Post Falls, ID. Values within a column followed by the same letter are not significantly different .**

Tenacity Product Rate	Application Interval	----- <i>Poa annua</i> (%)-----		
		3/18/ 2010	5/7/ 2010	6/28/ 2010
4 oz/A	DOS + 4WAS+ 5WAS + 6WAS	6b	23b	18b
	4WAS + 5WAS + 6WAS + 7WAS	9b	18b	23b
8 oz/A	DOS + 6WAS	24a	51a	65a
	4WAS + 6WAS	25a	49a	56a
P<F		**	**	**
DOS = Day of seeding.      WAS = Weeks after seeding.		** = Significant at P≤0.01.		

**Renovation, continued**

Results from this research project are encouraging in that *Poa annua* control is possible when renovating to Kentucky bluegrass. Other researchers across the country are also conducting studies using Tenacity attempting to minimize weed invasion when planting Kentucky bluegrass. Iowa State University has conducted several studies the past few years investigating Kentucky bluegrass seeding rates, seeding dates, and various herbicides (including Tenacity) for *Poa annua* control. Rutgers University has also investigated Tenacity use for weed control in Kentucky bluegrass (see the April, 2010 **NewsFlash**).

Washington State University has several on-going trials using Tenacity, in conjunction with Prograss and Velocity, to try and control mature *Poa annua* from an existing stand of Kentucky bluegrass. Results from these studies appear promising for turfgrass managers who want to convert to elite low-mow Kentucky bluegrass cultivars, while minimizing *Poa annua* invasion.

**Summary:**

- ✓ A research project was initiated to provide recommendations for Kentucky bluegrass renovation on soil with a *Poa annua* seedbank utilizing new chemistry;
- ✓ Frequent applications at lower product rates provided better *Poa annua* control compared to higher application rates with fewer applications;
- ✓ For *Poa annua* control, applying Tenacity on the day of seeding did not provide additional control;
- ✓ Future research projects should investigate utilizing other products, like preemergence herbicides, for long-term *Poa annua* control. 🏠



*Iowa State University researcher, Dave Minner (left), shows Mark Grundman and others his Tenacity trial for renovating Kentucky bluegrass.*

## Part 3 in a Series 75 Years of Jacklin Seed

by Doug Brede, Ph.D..

Few people know that Jacklin Seed was involved in formulating and selling fertilizer long before its association with the fertilizer giant, Simplot. In the 1940's, most grass seed production fields were fertilized with nitrogen alone. Arden Jacklin had long suspected that other major and minor elements were important to grass seed production, especially when grown on the gravelly soils of North Idaho.

In 1951, Arden hired fertilizer specialist Lamar Chapman. The pair cooperated with a fertilizer expert from the Univ. of Missouri to lay out a huge "Latin Square" experiment on the Rathdrum Prairie, which showed them that phosphate and sulfur were key elements for seed.



In 1963, Jacklin Seed built a fertilizer warehouse near a rail spur in Post Falls, in conjunction with two investors. The facility was enlarged in 1967 to handle the demand from bluegrass growers. When Jacklin Seed went "public" in 1974, the fertilizer plant was merged into the publically traded Vaughn-Jacklin corporation.

Later, when the 3 Jacklin sons privatized Jacklin Seed in 1985, they sold the fertilizer plant to Greenacres Gypsum to raise funds to finance the leveraged buyout. 🏠

### Jacklin Seed Research Department Welcomes Jami Mayer



Jami Mayer joined Jacklin's research team in September in the position of Project Lead. Jami worked this summer under Dr. Baldwin as a research intern. "I learned a lot more about grasses than I ever imagined," she says.

Mayer (email: [jami.mayer@simplot.com](mailto:jami.mayer@simplot.com)) has degrees in Biology and Recreation and Sport Management from NW Nazarene Univ. She and her husband, Cameron, live locally in Coeur d'Alene, after moving here from Spokane. Born and raised in Anchor Point, AK, her interests include outdoor adventures and spending time with family and friends. 🏠