

TURFGRASS TRENDS

OVERSEEDED RYEGRASS REMOVAL

Removal of Overseeded Ryegrass Best in Heat of Summer

By Travis Gannon and Dr. Fred Yelverton

On golf courses, overseeding of bermudagrass fairways, tees and approaches continues to be common practice because it allows for an actively growing and aesthetically pleasing turf all year long. This is of particular importance at golf clubs that rely on resort play. Although overseeding is aesthetically pleasing and provides an actively growing playing surface when bermudagrass is otherwise dormant, overseeding can be a maintenance and agronomic nightmare. Overseeding bermudagrass increases maintenance costs and poses agronomic issues that can threaten the health of the underlying bermudagrass.

Bermudagrass is a warm-season perennial turfgrass species commonly used on golf course fairways, tees and approaches. However, bermudagrass is shade intolerant. In low-light environments, bermudagrass develops narrow and elongated leaves, thin and upright stems, elongated internodes and weak rhizomes (Duble, 1996).

In the spring when temperatures begin to warm, ryegrass is very robust and actively growing. Unfortunately, this coincides with bermudagrass breaking dormancy and resuming active growth. During this time, overseeded perennial ryegrass is very successful in shading out the bermudagrass base. It is for this reason that in most turfgrass environments, it is essential for ryegrass to be chemically removed in order for bermudagrass to resume active growth and recover prior to overseeding in the early fall. Thinning of the bermudagrass base is exacerbated when overseeded perennial ryegrass is not removed and allowed to persist year after year.

Research trials were initiated at North Carolina State University to evaluate herbicide application timing for control of perennial ryegrass in overseeded areas to assist during transition in spring. Trials were initiated on overseeded golf course fairways on April 17, 2003. Herbicide applications began April 17 and occurred every two weeks thereafter (April 17, April 28, May 15 and June 2). Evaluated sulfonylurea herbicides included trifloxysulfuron (Monument), rimsulfuron (TranX-it), metsulfuron (Manor or Blade) and foramsulfuron (Revolver) at 0.3 ounces, 1 ounce, 0.5 ounces and 17.4 fluid ounces per acre, respectively. Pronamide (Kerb) was also included for comparison. All sulfonylurea herbicides, excluding Revolver, included a non-ionic surfactant at 0.25 percent volume by volume.

Continued on page 72

IN THIS ISSUE

- **Seaweed Extract**
Biostimulants can increase nutrient availability and root mass.....72

OUR SPONSORS



Bayer Environmental Science

www.BayerProCentral.com
888-842-8020



JOHN DEERE

www.JohnDeere.com
309-765-8000



www.agrium.com
800-422-4248

TABLE 1**Effect of application timings on herbicide efficacy for ryegrass control during transition.**

Herbicide (per acre)	Application Date	Percent Ryegrass Control		
		May 29	June 18	July 01
Manor (0.5 ounces)	April 17	39	40	61
	April 28	56	45	86
	May 15	34	23	45
	June 02	-	61	91
Monument (0.3 ounces)	April 17	13	7	38
	April 28	56	36	78
	May 15	54	20	38
	June 02	-	46	93
Revolver (17.4 fluid ounces)	April 17	0	18	0
	April 28	85	94	96
	May 15	73	48	41
	June 02	-	54	95
TranXit (1 ounce)	April 17	26	4	16
	April 28	68	41	93
	May 15	68	49	58
	June 02	-	45	95
Kerb (1 pound actual ingredient)	April 17	30	61	36
	April 28	0	16	0
	May 15	13	36	8
	June 02	-	14	39
LSD (P=0.05)	-	7.2	23.1	30.9



Bayer Environmental Science

QUICK TIP

You may not want to think about it now, but winter is right around the corner. Make preparations now for snow mold control. Gray snow mold occurs where there is snow cover for extended periods of time. Pink snow mold can thrive with or without snow cover. Both can appear together in the same area of turf. Several products from Bayer Environmental Science are registered for snow mold control, including 26GT®, Bayleton®, Compass® and ProStar® fungicides. Years of research have demonstrated their ability to provide effective, long-lasting control.

Continued from page 71

These data indicate sulfonylurea herbicides are great transition aids to remove overseeded perennial ryegrass from bermudagrass. However, we observed varying levels of perennial ryegrass control with different application timings. Manor, Monument, Revolver or TranXit applied April 17 resulted in less-than-optimum perennial ryegrass control July 1 with control ranging from 0 to 61 percent (Table 1).

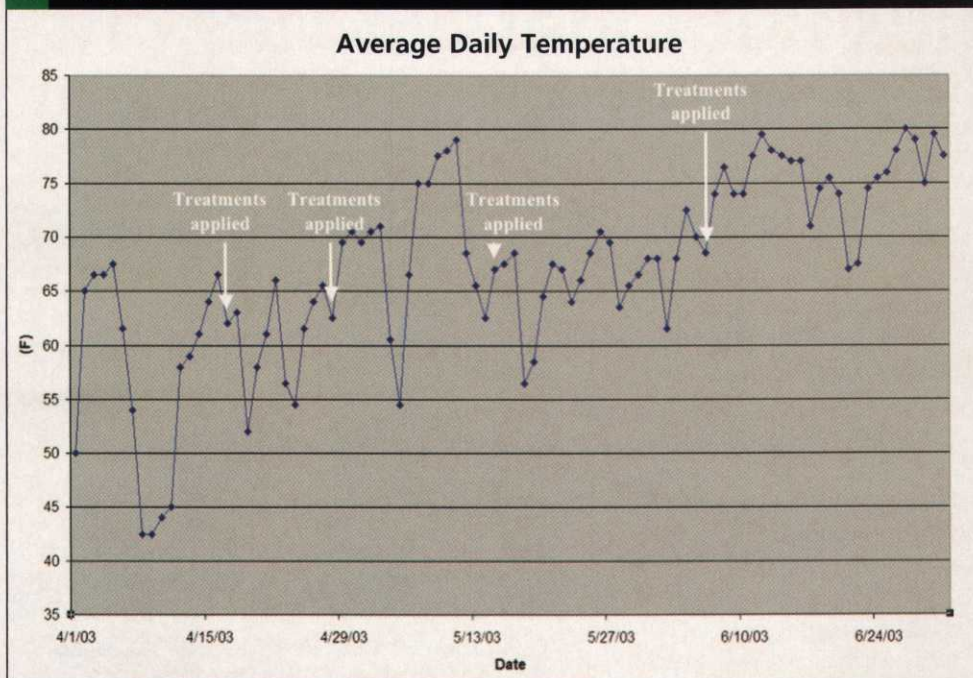
However, when applied April 28, all sulfonylurea herbicides provided good to excellent perennial ryegrass control ranging from 78 percent to 96 percent control. When applications were made May 15, poor perennial ryegrass control (38 percent to 58 percent) was obtained. Conversely, all evaluated sulfonylurea herbicides applied June 2 provided excellent perennial ryegrass control (91 percent to 95 percent) by July 1. Additionally, Kerb treatments did not provide acceptable

ryegrass control by July 1 with control varying from 0 percent to 40 percent.

A common question pertaining to the use of sulfonylurea herbicides for transition from perennial ryegrass to bermudagrass is: "Why are results variable?" Our experience with sulfonylurea herbicides suggests obtained results are largely dependent on the temperature at time of application and shortly thereafter (within one week). Willis et al. (2007) reported similar results with research conducted at Virginia Tech.

We noted poor results within our research trial most notably with herbicide applications on May 15. Although air temperature at application on May 15 was 71 degrees F (daily average 67 degrees), we experienced a cooling trend after application with average daily temperatures decreasing 11 degrees to 56 degrees within three days of application. Hence, reduced perennial ryegrass control compared to other application timings (Table 2).

TABLE 2



Early applications typically result in less-than-optimum perennial ryegrass control with sulfonylurea herbicides.

With that said, applications earlier in the growing season typically result in less than optimum perennial ryegrass control with sulfonylurea herbicides. Reduced perennial ryegrass control — and other weeds for that matter — under relatively cool conditions are likely due in part to the relatively short half-life of sulfonylurea herbicides in soil. Under cool ambient conditions characteristic of early applications, ryegrass plants might not be actively growing and might not absorb the herbicide.

Because the half-life of sulfonylurea herbicides in soil is relatively short, they do not persist. When active ryegrass resumes growth, lethal amounts of the herbicide are no longer present resulting in less than optimum ryegrass control.

Data from this research as well as other trials conducted at North Carolina State University confirms sulfonylurea herbicides (Manor, Monument, Revolver and TranXit) are a great transition aid to control perennial ryegrass provided they are utilized as a late-season transition aid.

Additionally, Monument, Revolver and TranXit provide postemergence control of annual bluegrass. When using sulfonylurea herbicides, extreme caution must be used

around other cool-season grasses, including bentgrass. Sulfonylurea herbicides are water-soluble, hence if they are applied upslope of susceptible species, then one must be mindful of the possibility of lateral movement.

Sulfonylurea herbicides are subject to tracking with foot and equipment traffic. Therefore, it is suggested to apply sulfonylurea herbicides after foot and equipment traffic have left for the day followed by a light irrigation the following morning (and perhaps an additional morning or two) to remove suspended herbicide from the leaf surfaces prior to traffic.

Travis Gannon and Dr. Fred Yelverton are weed science specialists in the Department of Crop Science at North Carolina State University.

REFERENCES

- Duble, R. L. 1996. Turfgrasses, Their Management and Use in the Southern Zone. Texas A&M University Press, College Station, Texas.
- Horgan, B. P. and F. H. Yelverton. 2001. Removal of perennial ryegrass from overseeded bermudagrass using cultural methods. *Crop Science* 41:118-126.
- Willis, John B., Shawn Askew, and Brent Compton. 2007. Cold influences overseeded perennial ryegrass control. *Golf Course Management*, May 2007.
- Yelverton, F. H., T. W. Gannon, and L. S. Warren. 2003 NCSU Turfgrass and Pasture Weed Control and PGR Annual Report. April 21 2004. North Carolina State University - Department of Crop Science. June 20 2007 <http://www.turfgrass.ncsu.edu/pubs/weeds/ANNUAL_REPORT_03/PDF_FILES_03/03 D16.pdf>.