

TURFGRASS TRENDS

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WEED CONTROL

99% Control Is Not Good Enough

You'll pay if bermudagrass control isn't perfect before planting

By John Boyd

Over the last few years there has been a steady stream of people interested in starting a sod farm coming to my office for advice. One of the most important things that I tell them is to make sure that their fields and the planting material that they use is free of bermudagrass. While 99% weed control is acceptable in almost every situation, is not good enough when it comes to bermudagrass.

My warning is that if bermudagrass control is not meticulous before planting, you will pay later-big time.

The Roundup + Fusilade combination outperformed either herbicide alone and tank mixes of Roundup plus the other grass specific herbicides.

A skirmish line of workers moving across a field equipped with backpack sprayers loaded with a 2% or 3% Roundup solution is a common sight on sod farms across the south. Most likely, they are spot spraying patches of bermudagrass. This is a labor-intensive, moderately effective approach to bermudagrass control.

However, once the bermudagrass population becomes dense and widely distributed, spot treatment becomes hopeless and the field will have to be abandoned or completely renovated.

Bermudagrass contamination problems are not unique to sod farms. If bermudagrass is incomplete during establishment, golf courses, sports fields and lawns will suffer the same fate over time.

Background

There is an incorrect notion among the inexperienced that one application of Roundup at 5 quarts per acre will control bermudagrass. However, this is not the case.

B.J. Johnson, while at University of Georgia, published a paper in 1988 showing that three applications

of Roundup at 2 quarts per acre over the growing season (May, June and August) were needed to achieve 98 to 100% bermudagrass control at one year after treatment.

He also demonstrated that repeat applications were much more important than rate in achieving bermudagrass control. His data showed that one or two applications at 5 quarts per acre were not as effective as three applications at 2 quarts per acre.

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Griffin and Dickens, working at Auburn University in the early 1990's showed that 2 quarts per acre of Arsenal (imazapyr) will give complete control of bermudagrass. However, Arsenal is a residual (soil active) herbicide that is not labeled for use on sod farms.

Arkansas research

During 1998 and 1999, we conducted six experiments to evaluate herbicides for bermudagrass control on sod farms. Three applications (May, July, and September) of Roundup Pro at 2 quarts per acre or two applications (May and July) of Roundup Pro at 2 quarts per acre + Fusilade II at 24 fluid ounces per acre controlled 90% to 100% of 'Tifway' and 'Midlawn' hybrid bermudagrasses when evaluated one year later.

When we repeated these trials in 1999, control levels compared to 1998.

Three applications of Roundup Pro provided 85% control and two applications of Roundup Pro + Fusilade provided 76% control one year after treatment. Extremely dry weather during July, August and September 1999 is thought to be the cause for the reduced bermudagrass control.

A single application of Arsenal (not labeled for use in fine turfgrass) gave 100% control of bermudagrass at 2.0 quarts per acre. Tank mixing 2 quarts per acre Roundup Pro with the 1 quarts per acre rate of Arsenal did not improve control compared to Arsenal alone.

Recommendations

Our current recommendation, short of methyl bromide fumigation, is three applications of Roundup at 2 quarts per acre or Roundup + Fusilade at 2 quarts + 24 ounces

TABLE 1. BERMUDAGRASS CONTROL**Percent control * after one year of treatment**

Herbicide	Product	No. of Rate/A	1998-9	1998-9	1998-9	1999-0	Avg. Tifway ^e
			Winrock Applic.	Lonoke Tifway ^c	Lonoke Tifway ^d	Winrock Midlawn	
Roundup Pro	2qt	3	100a	89	100a	85a	94
Roundup Pro (+ Fusilade)	2qt + 24fl oz	2	96ab	93	100a	76b	91
Roundup Pro	2qt	2	60cd	59	92ab	0c	53
Roundup Pro (+ Envoy)	2qt + 34fl oz	2	58cd	63	78b	0c	50
Roundup Pro (+ Finale)	2qt + 4qt	3	28e	25	85ab	0c	35
Roundup Pro (+ Fusilade)	2qt + 24fl oz	1	50d	0	15def	0c	16
Roundup Pro (+ Envoy)	2qt + 34fl oz	1	28e	0	23de	0c	13
Roundup Pro (+ Finale)	2qt + 4qt	2	0f	0	30d	0c	8
Roundup Pro	10qt	1	-	-	-	0c	0

a BASED ON A 0 TO 100 SCALE WHERE 0 = NO CONTROL AND 100 = COMPLETE CONTROL.

b MEANS WITHIN EACH COLUMN FOLLOWED BY THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT ACCORDING TO THE DUNCAN'S MULTIPLE RANGE TEST AT P ≤ 0.05.

c WINROCK APPLICATION DATES FOR 1998-1999 TRIAL: MAY 29, 1998, JULY 13, 1998, OCTOBER 2, 1998

d LONOKE APPLICATION DATES: MAY 21, 1998, JULY 10, 1998, SEPTEMBER 21, 1998

e WINROCK APPLICATION DATES FOR 1999-2000 TRIAL: MAY 21, 1999, JUNE 30, 1999, SEPTEMBER 14, 1999

TABLE 2.**Tifway Bermudagrass Control with Arsenal One Year after Treatment**

Herbicide	Product Rate/A	No. Applic. ^d	% Control ^a	
	1998-1999 ^c	1999-2000 ^d		
Arsenal	1 qt	1	93a ^b	53b
Arsenal	2 qt	1	100a	100a
Arsenal + Roundup Pro	1 qt + 2 qt	1	95a	57b
Arsenal + Finale	1 qt + 4 qt	1	33c	10c
Arsenal + Roundup Pro	1 pt + 2 qt	1	68b	7c
Arsenal + Roundup Pro	2 qt + 2 qt	1	98a	93a
Roundup Pro	2 qt	3	96a	92a

A=BASED ON A 0 TO 100 SCALE WHERE 0 = NO CONTROL AND 100 = COMPLETE CONTROL.

B=MEANS WITHIN EACH COLUMN FOLLOWED BY THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT ACCORDING TO THE NEW DUNCAN'S MULTIPLE RANGE TEST AT P ≤ 0.05.

C=APPLICATION DATES: MAY 29, 1998, JULY 13, 1998, AND OCTOBER 2, 1998

D=APPLICATION DATES: MAY 21, 1999, JULY 13, 1999, AND SEPTEMBER 14, 1999

per acre to actively growing, non-stressed bermudagrass over the entire summer.

The Roundup + Fusilade combination outperformed either herbicide alone and tank mixes of Roundup plus the other grass specific herbicides. It is essential to wait for bermudagrass regrowth before making the next Roundup or Roundup + Fusilade application.

It will take 30 to 60 days for bermudagrass regrowth so your spray schedule might be May-June-August or May-July-September. Each year and location will be different. The key is inspecting the site for regrowth before spraying.

Spraying brown bermudagrass with postemergence herbicides such as Roundup or Fusilade is of no value. Make an inspection trip the following spring (May) and spot spray any remaining bermudagrass with a 2% Roundup + 1% Fusilade solution (2.66 ounces Roundup + 1.33 ounces Fusilade per gallon of water) at least two weeks before planting.

John Boyd is a Weed Scientist at the University of Arkansas where he is involved in Extension and applied research. His areas of specialization are turfgrass, ornamental, roadside and non-cropland weed control.

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