

Quackgrass control in Kentucky bluegrass with sequential applications of Certainty

Zac Reicher and James Rutledge

Dept. of Agronomy

Purdue University

West Lafayette, IN

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Background/Objective: To evaluate the efficacy of Certainty applied at multiple times, at various rates beginning in the spring and fall.

Site Information

Location:	Purgatory Golf Course, Noblesville, IN
Turfgrass Species:	Deep rough
Turf Condition:	fair
Turf Management: Mowing Height cm (in):	10 (4) approximately
Irrigation:	To prevent moisture stress
Testing on Site Previous Year:	none
Target Pest:	Quackgrass
Growth Stage:	Mature

Application Information

Application Date:	30 Aug (06)	28 Sept (06)	13 Apr (07)	8 May (07)
Application Time:	2:00 p.m.	11:30 a.m.	2:45 p.m.	2:00 p.m.
Air Temperature C^o(F^o):	30 (86)	14.1 (57)	17.5 (63.5)	29.4 (85)
Relative Humidity(%):	64	58	30	57
Wind Speed m s⁻¹ (mph):	0.84(2.1)	2.0 (5)	1 (2.5)	1.2 (3.0)
Soil Temperature(7.6 cm depth) C^o(F^o):	25.5 (78)	16.1 (61)	10 (50)	21.7 (71)
Soil Moisture:	moist	moist	moist	dry

	12 June (07)	7 July (07)	10 Aug (07)
	1:30 p.m.	9:30 a.m.	9:00 a.m.
	33.9 (93)	23.3 (74)	23.7 (75)
	20	69	90
	0.6 (1.5)	0.68 (1.7)	1 (2.5)
	29.4 (85)	23.3 (74)	27.2 (81)
	dry	moist	moist

Spray Volume L ha⁻¹ (gal 1000 ft⁻²):	814 (2)
Spray Pressure:	30psi
Spray Nozzle:	8001.5
Spray Equipment:	CO ₂ backpack
Irrigation After Application:	None
Experimental Design:	Randomized complete block
Replications:	3
Plot Size m (ft):	1.5 X 1.5 (5 X 5)

Results:

- All Certainty treatments reduced quackgrass cover compared to the untreated check almost throughout this study (Table 1).
- Fall 2006-applied Certainty reduced quackgrass to 4% cover on 9 Dec 2006, compared to 75% cover in the check plots. Though quackgrass in this treatment recovered by 13 April 2007, additional April and May treatments reduced quackgrass cover throughout the rest of the study to approximately 50% of that in the untreated plots. The fall treatments provided the most dramatic reduction in quackgrass after application among all treatments and should be evaluated further.
- Though the 2007 treatments reduced quackgrass compared to the check, there were no statistical differences due to the number of applications and/or the rate of applications.
- The plot area was in a marginal area of the golf course and thus inconsistently mowed, making ratings difficult and probably resulting in LSD's that were abnormally high.
- Taking this into consideration, the two high rates of Certainty performed exceptionally well compared to the other treatments when rated on 12 June.
- Therefore, we suggest evaluating fall applications of Certainty and at rates higher than 0.01 lb ai/A assuming safety on the desired turf.

Table 1. Percent quackgrass cover after applications of Certainty throughout 2006 and 2007.

Treatment	Timing	Rate	14 Sept	28 Sept	10 Oct	19 Oct	21 Nov	19 Dec	13 Apr	27 Apr	8 May	30 May	12 June	28 June	13 July	26 July	10 Aug	23 Aug	6 Sept
Certainty 75WDG	Aug(06) Sept(06) April May	0.01 lb ai/A	53	37	23	14	4	4	58	59	58	25	32	37	35	37	37	28	30
Certainty 75WDG	April May June July	0.01	-	-	-	-	-	-	-	86	82	37	52	53	58	27	29	37	36
Certainty 75WDG	April May June July Aug	0.01	-	-	-	-	-	-	-	84	79	37	40	48	57	53	44	28	29
Certainty 75WDG	April May June	0.02	-	-	-	-	-	-	-	83	81	28	17	25	30	38	28	25	27
Certainty 75WDG	April May	0.035	-	-	-	-	-	-	-	81	76	23	10	25	29	33	31	35	37
Check			83	75	77	78	80	75	80	77	82	91	93	80	73	75	72	68	67
LSD (0.05)			14.5	25.1	24.4	18.6	18.0	15.1	22.9	27.4	25.1	30.9	37.8	38.2	39.9	43.5	38.2	29.7	24.3