Summer Interseeding and Aggressive Post–Seeding Herbicides to Reduce Annual Bluegrass in Fairways

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Objectives:

1. *Determine if summer seeding and post–seeding herbicides will improve success of fairway interseeding as measured in season–long turf quality and composition of ABG vs desired turf.*

Annual bluegrass (ABG) is the most troublesome weed on golf courses wherever cool–season grasses are grown. On fairways in particular, populations can quickly approach 50% or more if aggressive control measures are not initiated shortly after establishment. Furthermore, difficult summers and/or winters can cause significant thinning or widespread death of ABG. In response, superintendents will overseed in late August to early September to help the stand recover from summer damage or in April after winterkill. However, annual bluegrass germination and competition is highest in these months, and thus it can overtake the desired turf and the cycle starts over. Minimizing ABG and maximizing the desired cool–season turf could help break this cycle. Seeding early in the summer prior to ABG thinning could allow the desired turf to establish while the ABG is thinning. Additionally, aggressive post–interseeding herbicides could shift the competitive balance away from ABG and to the desired turf. Herbicide use over new seedlings is a compromise between seedling safety and the potential for the target weed to reduce establishment. Given the tremendous potential for ABG to invade a turf stand, most superintendents will likely chose to error on the side of applying early. This would be especially true in the fall when cool–season turfgrasses are not under significant stress. Velocity (bispyribac–sodium) is currently the industry standard for postemergence selective ABG in CBG or PRYE. Tenacity (mesotrione),

Figure 1: Almost total control of annual bluegrass in summer 2012 resulting from July overseeding and aggressive post seeding annual bluegrass herbicides at Country Club of Lincoln.

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has excellent seedling tolerance over KBG and PRYE, and can control ABG pre– and postemergence. The preemergence herbicide dithiopyr has the best seedling and the most flexible label for use over new seedings.

These studies began in summer 2011 and are located on the fairways of three golf courses in Iowa and Nebraska. Fairways are a mixed stand of primarily ABG as well as PRYE, KBG, and/or CBG. Experimental design is a split block with three seeding dates as main blocks and the grasses X herbicide treatment factorial as subplots. Seeding dates are June, 15 July, and 15 August. Interseeded grass treatments include unseeded, creeping bentgrass, Kentucky bluegrass, or perennial ryegrass depending on location. Herbicide treatments include untreated, Velocity or Tenacity applied 2 and 4 weeks after seeding (depending on species), dithiopyr applied in early fall and early spring, or Velocity or Tenacity applied after seeding plus the two applications of dithiopyr. Transect counts of ABG are taken in mid–May and early Fall and a visual rating of percent cover of desired species and ABG at the end of the growing year are taken. Combining these three data points annually will give an accurate picture of long –term effects of our treatments. This study will continue with final data to be taken in Spring 2014.

Summary

- Results from each location vary, which was ex–pected given the different environment of each location.
- Though data are still preliminary, it appears that July seedings may be more effective than June or August seedings for establishing creeping bent–grass (Table 1).
- Regardless of seeding date, it is critical to follow up seeding with aggressive POST herbicides for an–nual bluegrass control to maximize establishment of all species, especially Kentucky bluegrass or perennial ryegrass (Table 2)
- The combination of aggressive POST herbicides plus fall– and spring–applied PRE herbicides (dithiopyr) reduced annual bluegrass cover the most in this study and thus increased transition to

Table 1. Effect of seeding date and post–seeding herbicides on annual bluegrass or creeping bentgrass cover when interseeding creeping bentgrass over three years into a perennial ryegrass/annual bluegrass fairway at the Country Club of Lincoln, Lincoln NE.

Seeding date	Herbicides	% cover Creeping bentgrass 10/7/2013	% cover Annual bluegrass 5/17/2013
June 15	none	0 e	96 ab
June 15	Velocity 2 + 4 WAS	30 b	83 cde
June 15	Velocity 2 + 4 WAS + dithiopyr	18 c	66 g
June 15	Dithiopyr	0 e	87 a-e
July 15	none	6 de	99a
July 15	Velocity 2 + 4 WAS	50 a	68 fg
July 15	Velocity 2 + 4 WAS + dithiopyr	47 a	57 g
July 15	Dithiopyr	0 e	95 abc
Aug 15	none	10 d	96 ab
Aug 15	Velocity 2 + 4 WAS	27 b	90 a-e
Aug 15	Velocity 2 + 4 WAS + dithiopyr	47a	41 h
Aug 15	Dithiopyr	3 de	91 a-e

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Table 2. Effect of post-seeding herbicides on cover of desired turf when interseeding Kentucky bluegrass or perennial ryegrass on 15 Aug over three years into a perennial ryegrass/annual bluegrass fairway at Ames Country Club, Ames IA.

Herbicides	Interseeded species	% cover desired turf 10/13/2013
none	Kentucky bluegrass	53 d-j
Tenacity 2 + 4 WAS	Kentucky bluegrass	74 a-d
Tenacity 2 + 4 WAS + dithiopyr	Kentucky bluegrass	80 abc
Dithiopyr	Kentucky bluegrass	53 d-j
none	Perennial ryegrass	63 c-g
Tenacity 2 + 4 WAS	Perennial ryegrass	93 a
Tenacity 2 + 4 WAS + dithiopyr	Perennial ryegrass	90 ab
Dithiopyr	Perennial ryegrass	67 b-f

Figure 2: Creeping bentgrass cover of over 50% in Fall 2013 resulting from three years of overseeding and aggressive post-seeding annual bluegrass herbicides at Country Club of Lincoln.

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