

Mesotrione reduces presence of annual bluegrass during fairway conversion

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Abstract: Annual bluegrass (*Poa annua* L.) is an invasive weed species on golf courses. During fairway conversion to Kentucky bluegrass (*Poa pratensis* L.) from an existing mixed population of annual bluegrass and other cool season turfs, the persistent seedbank of annual bluegrass requires herbicide application to limit reestablishment. Our objectives were 1) to evaluate the effectiveness of two herbicides, mesotrione and pendimethalin, in reducing the presence of annual bluegrass during fairway conversion to Kentucky bluegrass, 2) to determine the best month to perform fairway conversion, and 3) to determine if doubling the normal seeding rate increased Kentucky bluegrass cover. Our study took place over four years on three golf courses: Homewood golf course in Ames, IA, Twin Pines golf course in Cedar Rapids, IA, and Jewel golf course in Jewel, IA. Plots were killed with RoundUp and seeded one week later with two seeding rates, 15 and 30 g·m⁻², in June, Aug., and Sept. in 2007 and 2008. Mesotrione was applied at 0.19 kg·ai·ha⁻¹ on 10, 20, and 30 Oct. in 2007-08 and 2008-09; pendimethalin was applied at 1.68 kg·ai·ha⁻¹ on 1 Oct., 1 Nov. in 2007-08 and 2008-09, and 1 Apr. in 2008-09 and 2009-10. Doubling the normal seeding rate had no effect on final percentage cover of Kentucky bluegrass. August and Sept. seeding provided the highest percentage of Kentucky bluegrass cover when mesotrione was applied. By the end of the study, plots treated with mesotrione and seeded in Sept. had 97% Kentucky bluegrass cover. Mesotrione shows promise as an effective tool for reducing the presence of annual bluegrass during fairway conversion.

Below is a figure to illustrate the ability of Tenacity (mesotrione) to reduce the presence of annual bluegrass during fairway conversion over the first year of this study:

