

Controlling Annual Bluegrass in Bentgrass Putting Greens

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Annual bluegrass (*Poa annua* L.) is a ubiquitous turfgrass species throughout the world, and especially in coastal climates in California. Although perennial biotypes can provide superior playing surfaces on golf courses, *Poa annua* remains more susceptible to biotic and abiotic stresses than species like creeping bentgrass (*Agrostis stolonifera* L.). Along coastal northern California, annual bluegrass is particularly susceptible to damage caused by *Anguina* nematodes on putting greens, which is causing an increasing number of golf courses to rebuild and re-grass with creeping bentgrass. Thereafter lies the challenge of maintaining *Poa*-free bentgrass turf in an environment that is highly conducive for *Poa* growth and re-infestation.

Selective *Poa* control in putting greens is particularly challenging given the added stresses of low mowing heights and concentrated, intensive traffic. As a result, most chemicals that provide both effective and selective control in taller cut turf can cause objectionable and often serious bentgrass injury on greens and thus are not labeled for use.

Methiozolin (experimental name: MRC-01) is a new herbicide under development in the U.S. by Moghu Research Center, South Korea. It provides selective control of primarily *Poa annua* and some other grassy weeds in nearly all other major cool- and warm-season turfgrass species, regardless of height of cut. On putting greens, methiozolin is particularly effective because of its selectivity and slow activity that allows bentgrass to fill in voids left by *Poa annua*. Methiozolin is an isoxazolinone compound, a new family of herbicide chemistry for turf. It is primarily root-absorbed and provides both pre- and post-emergence activity by disruption of cell wall biosynthesis. Methiozolin is currently registered in South Korea and Japan. It is considered a “Reduced Risk Category” pesticide and plans are underway for registration in the U.S. in the near future. The University of California, Riverside has been studying methiozolin extensively since 2010. On putting greens, excellent (90-100%) control has been achieved with four or more sequential applications of 0.5 to 1.0 lb ai/A applied on 3- to 4-week intervals. Applications made more frequently or when average daytime temperatures exceed 85F on a regular basis should be avoided to ensure bentgrass safety. Methiozolin appears to be more efficacious when applied in late fall vs. spring. There appears to be no synergistic or additive effects when methiozolin is tank-mixed with paclobutrazol, FeSO₄, or other herbicides. Colonial and velvet bentgrasses appear to be more sensitive to methiozolin than creeping bentgrass. Ongoing studies are looking more closely into methiozolin tolerance among bentgrass species and cultivars, as well as developing integrated *Poa* management programs using methiozolin.