

PERFORMANCE OF VELOCITY HERBICIDE ON POA ANNUA IN TURF

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Velocity herbicide received a federal registration on September 30, 2004. The registration includes the use of Velocity on golf course fairways and tees, as well as sod farms. As of yet, California has not approved the registration. The active ingredient in Velocity is bispyribac-sodium, which is an acetolactate synthase (ALS) inhibitor. The mode-of-action of an ALS inhibitor is interference with cell division, causing cessation of growth in sensitive plants. This is followed by chlorosis, necrosis, and death, but is rather slow, taking 14-21 days. Velocity is most effective as a postemergence herbicide and has practically no preemergence activity. Velocity is very active on annual bluegrass (*Poa annua*) and rough bluegrass (*Poa trivialis*), as well as yellow nutsedge (*Cyperus esculentus*) and many broadleaf weeds.

Three field trials were conducted on golf course fairways in southern California (Newport Beach, Valencia, and Cathedral City) during 2004 to determine the activity of Velocity on annual bluegrass in dormant bermudagrass (*Cynodon dactylon*) that was overseeded with perennial ryegrass (*Lolium perenne*). The trials were established during late-January through early-March, when the daily high temperatures were still below 80oF (Velocity is most effective with daily temperatures between 55oF and 80oF). The applications began when annual bluegrass was actively growing and was beginning to flower. Optimum weed control (70-98%) was obtained with 2 and 3 sequential applications at 14-day intervals with Velocity at 30gm ai/acre. Velocity also provided excellent seedhead suppression of annual bluegrass, which meant if the bluegrass was not controlled, at least it was not producing unsightly seedheads or viable seeds for the next germination period.

Velocity has shown excellent tolerance in creeping bentgrass (*Agrostis palustris*), where annual bluegrass can also be a major problem. Studies have shown that sequential applications of Velocity at 10gm ai/acre to 45gm ai/acre will effectively control annual bluegrass and allow creeping bentgrass to transition into the area for a more attractive fairway. For slow transitions (high bluegrass populations), the lower Velocity rates at 7-day intervals would gradually allow the bentgrass to overtake the bluegrass. If the population of bluegrass is low, higher rates of Velocity at 14-21 day intervals would quickly control the weed and the bentgrass would rapidly transition, without the unsightly dead areas where the bluegrass once thrived.

Perennial ryegrass and creeping bentgrass are quite tolerant of Velocity, but can exhibit some short-term chlorosis lasting about 2 weeks. Field studies have shown that alternating the Velocity applications with treatments of a foliar fertilizer can reduce the slight chlorotic effects of Velocity.

Along with the herbicidal properties, Velocity can also suppress dollar spot (*Sclerotinia homeocarpa*), a major disease of turf. Although Velocity should not be used as the primary product for a dollar spot program, studies have shown that rates of 10gm to 45gm ai/acre can provide several weeks of disease suppression.

Research plans for Velocity in 2005 will include establishing more field trials in the Palm Springs area to determine the optimum potential in that climate for annual bluegrass control. Evaluating the response of turfgrass on greens to Velocity will also be investigated during 2005.