

J. B. Beard and P. E. Rieke

Management of Kentucky Bluegrass Turfs Infested with Annual Bluegrass

Merion Kentucky bluegrass was established in the fall of 1970. Annual bluegrass (*Poa annua*) plugs were transplanted into 4 x 8 foot plots in 1971. Treatments were initiated in 1972. They included nitrogen rates and time of application; nutrient balance effects; and several calcium arsenate treatments. The objective is to delineate cultural practices that will encourage Merion at the expense of annual bluegrass under field conditions over a period of years.

The most marked responses to date have occurred on the calcium arsenate treated plots that received rates of 4 and 8 pounds per 1000 square feet. When sulfur was applied at rates of 25 or 50 pounds per 1000 square feet in conjunction with the 8 pound calcium arsenate treatment, serious thinning of the Kentucky bluegrass resulted during late spring and summer of 1973. No injury to the Kentucky bluegrass has been observed where no sulfur was applied while the annual bluegrass has been thinned. These results support laboratory and greenhouse work here at Michigan State University showing that calcium arsenate toxicity increases when the soil is more acid. Thus pH has a significant effect on if and how one should use calcium arsenate in controlling annual bluegrass.