

## - STOP 4 -

### A. MANAGEMENT INDUCED SPECIES SHIFTS IN CLOSELY MOWED TURFS

John Kaufmann

Many golf course fairways in Michigan are nearly 100% Poa annua. Perhaps the single most important factor is increased frequency and quantity of irrigation water. However, other factors such as soil compaction, phosphorus levels, nitrogen levels and improper original choice of grasses that survive fairway mowing have all been implicated in the invasion of Poa annua.

This study was designed to show the influence of irrigation and soil fertility the rate of subsequent Poa annua invasion into four turfgrasses. Penncross creeping bentgrass was chosen because of the soloniferous growth habit that could effectively compete with Poa annua. Omega perennial ryegrass was chosen to investigate whether tillering in the absence of horizontal stems is effective in preventing Poa annua encroachment. Two of the elite bluegrasses were chosen for the study. Adelphi is known to be highly resistant to Fusarium blight but lacks horizontal competitive ability especially at low mowing heights. Touchdown has been shown to be slightly susceptible to Fusarium blight but exhibits good competitive ability. The plots were seeded on July 9, 1981 and treatments will begin Spring, 1982.

Tables 6, 7 and 8 are seedling data for putting green and fairway turf varieties.

### B. UPDATE ON GROWTH REGULATORS

Since growth regulators were researched on three or four sites other than the Hancock Research Center, the following summary was prepared as an update.

1. EPTC at both 5 and 8 pounds A.I./acre was found to be effective in reducing seedhead numbers and vegetative growth of roadside vegetation. The growth response was visible within 2 weeks. The effects of the chemical ended after 6 weeks although height differential existed for up to 2 months.
2. Embark at 0.25 pounds A.I./acre controlled seedheads of 6 perennial ryegrasses and 19 Kentucky bluegrasses. Kentucky bluegrasses are inhibited vegetatively to a greater extent than perennial ryegrasses (Tables 9 and 10). Growth of Birka, Bristol, Emmundi and Newport was reduced to a larger extent than Merion.
3. Both late fall and spring treatments of Embark were effective in eliminating seedheads on Poa annua fairways the following May. However, unacceptable winter kill was associated with the use of Embark in early fall treatments. Some yellowing occurred during the 2nd week.
4. MBR-18337, the soil active compound similar to Embark, was found to be less toxic but equal in growth regulating ability.



5. EL-500 was a very effective compound lasting up to 10-12 weeks of complete growth inhibition. Some effect of fall treatments last until the following spring. EL-500 can effectively be antidoted with applications of gibberellic acid. Growth resumes immediately. EL-500 does not control seedheads and may actually enhance seed production.
6. DPX-4189 growth regulator-herbicide reduces vegetative of roadside grasses while controlling all broadleaf weeds except narrow-leaf plantain in the plots.
7. Bas-106-00W is an effective vegetative growth retardant, but has not been effective on seedheads. The compound may take up to two weeks to begin inhibiting growth, but will persist up to 8 additional weeks. In combination with Embark, BAS-106-00W has the potential for season long control.