



Shortstop Tall Fescue Compaction Study (Initiated spring of 1992)

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Tall fescue is being utilized more often as a favorable turfgrass species in Michigan. Reasons for this include improved dwarf varieties, good shade and wear tolerance, a wide mowing height range, good moisture stress avoidance due to deep rooting, and modest fertility needs. For these reasons it was decided to use tall fescue in a compaction study.

The objective of this compaction study is to monitor *Poa annua* encroachment into established tall fescue turf maintained under different amounts of traffic. The assumption is that with greater compaction there will be increased *Poa annua* encroachment.

This compaction study maintained at a 5/8 inch height that had been seeded with Shortstop Tall Fescue in the late summer of 1991 and the study was initiated in June of 1992. The plots are watered daily at roughly a tenth of an inch a night. There are three different treatments and six replications of each treatment. The treatments are a check plot receiving no compaction, a light compaction rolled 3 times per week, and a high compaction that is rolled six times per week. The roller that is used has a vibrator and delivers 7.5 pounds of pressure per square inch. In comparison the force exerted by a 180 pound man walking is roughly 4.5 pounds per square inch.

Data collection began by determining the initial percentage of *Poa annua* on each of the 4' x 18' plots. Follow up ratings were taken to determine changes in these numbers. The Clegg, a research instrument that measures the deceleration of a hammer, gives a measure of surface hardness in gravities (i.e. g-force). The numbers obtained with the Clegg are used in correlation with gravimetric soil moisture content measurements.

Early results show that the high compaction plots have significantly greater percentages of bare spots than the noncompacted plots as well as having more compaction at the surface. The plots that have had the heavy compaction treatments have a greater amount of bare spots and *Poa annua* than the light compacted plots as well as the light compacted plots having a greater number of bare spots and *Poa annua* than the non compacted plots. However, it is important to note that though differences in percentage of *Poa annua* occur in a pattern we would expect the data is not statistically significant at this time. The study will continue through the summer of 1995.