CONCLUSIONS

The effectiveness of Ecomat® as a growth medium for turfgrass establishment has been ascertained during these experiments. However, protocol to achieve successful seed germination and establishment has only been initiated. It has been determined that Ecomat®, as an established sod, has the potential to provide an instant turfgrass cover that is durable, lightweight, and quick rooting.

Chapter one: Mulching study

The objective of this experiment was defined, and it was determined that the use of particular mulches can greatly enhance turfgrass density. The straw mulch especially, enhanced more favorable growing conditions for the germinating seed. In addition, the PennMulch™ and hydro mulch provided more favorable growing conditions for the germinating seed. The physical properties of the mulches determined their effectiveness. The mulches with the presumed larger pore spaces had lower capillary rise potential; therefore, water was not moved away from the germinating seed as easily.

The *Lolium perenne* had germinated sooner and had greater density 28 days after seeding. These results were anticipated because of the more rapid germination rate of *L. perenne* than *Poa supina*; therefore, making the mulch a more important component as germination time increases.

Chapter two: Turfgrass establishment and performance

Unfortunately, the configuration of the establishment experiment impeded much of the attainable results. Because of the repeated washing of the study as a result of rainfall, the germination and establishment conditions for the *Poa pratensis* and *P. supina* were not acceptable, particularly on the sand, Ecomat®, and pine wood mulch growth
media. In any event, the SportGrass™ was very effective for establishing turfgrass, despite the unfavorable watering regimes, and produced the densest turf. No significant differences occurred between the two Poa species.

Turfgrass performance under heavy traffic and low light conditions determined that all growth media were capable of providing acceptable turfgrass density for the duration of the experiment. These acceptable turfgrass densities were augmented with the addition of crumb rubber topdressing.

Chapter three: Turfgrass seeding and fertility studies

The configuration and location of both the seeding and fertility studies severely impeded the potential outcomes of the experiments. Any rainfall or more than three minutes of irrigation was generally enough water added to submerge portions or all of the studies under water. These flooding conditions often persisted for long periods of time (as long as 24 hours) due to the rains.

Increasing the seeding rate in Ecomat® to four times the recommended rate increased turfgrass cover. The Lolium perenne had the greatest turfgrass cover.

Organic nitrogen (Milorganite®) established denser Poa pratensis turf than the ammonium nitrate. This is likely a result of the organic nitrogen being more of a slow release nitrogen, therefore providing nitrogen to the germinating seed for a longer period of time. The poor performance of the ammonium nitrate could be attributed to run off as a result of the frequent flooding of the plots.

Finally, using a different source of nitrogen fertilizer like urea (46-0-0) and/or increasing the concentration of phosphorous or potassium had no significant effects on turfgrass establishment (percent cover).
LIST OF REFERENCES


Stier, J.C. 1997. The Effects of Plant Growth Regulators on Kentucky Bluegrass (Poa pratensis L.) and Supina Bluegrass (P. supina Schrad.) in Reduced Light Conditions. Ph.D. diss. Michigan State University, East Lansing, MI.


