

FIELD EVALUATION OF BIODETHATCH

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Objective: To evaluate Biodethatch, separately and in combination with several other treatments, as a means of biologically controlling or eliminating turfgrass thatch accumulation.

Procedure: Three locations were chosen for this study. Each represented a turfgrass species commonly found on sports turfs in Michigan as well as the cool-humid regions of the U.S. The sites included (a) a Merion Kentucky bluegrass golf course tee, (b) an annual bluegrass-creeping bentgrass (85%-15%) golf course fairway, and (c) a Kentucky bluegrass-red fescue lawn research site. The latter was mowed twice weekly at 1.2 inches with clippings returned; received 4 pounds actual N per 1,000 ft.²/yr, and was irrigated as needed to prevent wilt. All sites had uniform, measureable amounts of thatch.

Treatments were identical at all three sites. The four basic treatments included (a) coring with a Ryan Greensaire unit (4 inch tines), (b) wetting agent (Aqua-Gro), (c) Biodethatch, and (d) an untreated control. The wetting agent was applied with a two-gallon (two-nozzle boom) sprayer at the rate of 8 oz. per 1000 ft.², and the Biodethatch with a 3-foot gravity-type spreader at the rate of 1 pound per 1000 ft.². The three treatments were also applied in all possible combinations giving a total of eight treatments. The plot size and layout are shown in Figure 1. Two replications were used.

Date of the treatment initiation for the Kentucky bluegrass-red fescue was August 9, 1974. The other two studies were initiated that same week; unfortunately both were destroyed before they could be sampled for detailed thatch measurements. During the 3 month period prior to their loss, no visible evidence of thatch decomposition was observed.

Date of thatch sampling for the Kentucky bluegrass-red fescue was June 7, 1975, a duration of approximately 10 months including a winter dormancy period. A total of eight 2.5 inch diameter sod-thatch samples were taken per treated plot. The treated and untreated samples were oven dried at 100°C for 48 hours, the thatch layer separated out, weighed, ashed in a muffle furnace at 600°C for 10 hours, and reweighed. The thatch expressed as total organic matter content was then determined on the basis of weight lost upon ignition. A statistical analysis was conducted. Differences were assessed using Duncan's Multiple Range Test (5% level).

Results and Discussion: Results of the effects of the Biodethatch, coring, and wetting agent treatments on the decomposition of Kentucky bluegrass-red fescue thatch are presented in Table 1. None of the three basic treatments caused a significant decrease in thatch from the untreated control, when evaluated individually. Only the combinations of all three treatments, coring and wetting agent and Biodethatch, produced a significant decrease in thatch when compared to the untreated check. A comparison of the thatch levels resulting from any combination of two basic treatments indicates that the majority of the significant decrease in the three combination treatment was due to coring, not the wetting agent or Biodethatch. No pesticides have been applied in the last five years that could have impaired the potential activity of Biodethatch.

In view of these results, Biodethatch should be researched further before it can be recommended for commercial use in Michigan for the control of Kentucky bluegrass and creeping red fescue thatch. Further research with Biodethatch should include time (season) of application to determine if the long dormancy period incurred in Michigan after a late summer or fall application alters its efficacy.