

THATCH RESPONSE TO BIO-ORGANICS, CONVENTIONAL N CARRIERS AND INSECTICIDES

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Ongoing work at the Hancock Turfgrass Research Center in 1989 sought to evaluate bio-organic and other N carriers for effectiveness in suppressing disease and in reducing thatch. Two separate experiments were conducted simultaneously on a Touchdown Kentucky bluegrass turf. Study A was initiated in 1987 and involved applying several organic N carriers in combination with persistent insecticides to determine impact on thatch accumulation and on necrotic ringspot (NRS) incidence. Treatments included urea, IBDU, Lawn Restore, A-299, MSU-PDC, and Bio-Groundskeeper applied at rates of 1 pound N per 1000 square feet per month. Bio-Groundskeeper contained no N and was applied according to label instructions. Each material was applied with and without the insecticide chlordane. In addition, plots were inoculated with Leptosphaeria korrae, the causal agent of NRS, in 1987. Thatch samples were harvested in 1988 for thickness measurements and to determine bulk density, total C, and total N. Samples were also taken to estimate earthworm populations. Also, diameters of NRS inoculation points were measured. Study B was initiated in 1989 and involved applying several organic and bio-organic materials at excessive rates to determine whether thatch decomposition could be induced. Materials included Lawn Restore, A-199, A-299 and urea applied at rates of 0, 2, 4 or 8 pounds N per 1000 square feet per application. Application dates were 15 May, 15 June, 15 July and 15 August to bring total N applied to 0, 8, 16 or 32 pounds per 1000 square feet. At the time of this writing no samples were taken, thus no data from study B are available for discussion.

Regarding study A, thatch was influenced by application of insecticide, while NRS incidence was influenced by N carrier. Thatch treated with insecticide was thicker, had an increased percentage of total C and a lesser percentage of total N compared to untreated thatch. Thatch treated with insecticide also had a lesser bulk density than untreated thatch, reflective of decreased soil incorporation into treated thatch. This was presumed indicative of a diminished soil animal (i.e., earthworm) activity in response to the insecticide. Turfgrass in study A had a greater incidence of NRS where N was not applied. A trend was also apparent which suggested that slow release N carriers were more effective in suppressing NRS.