

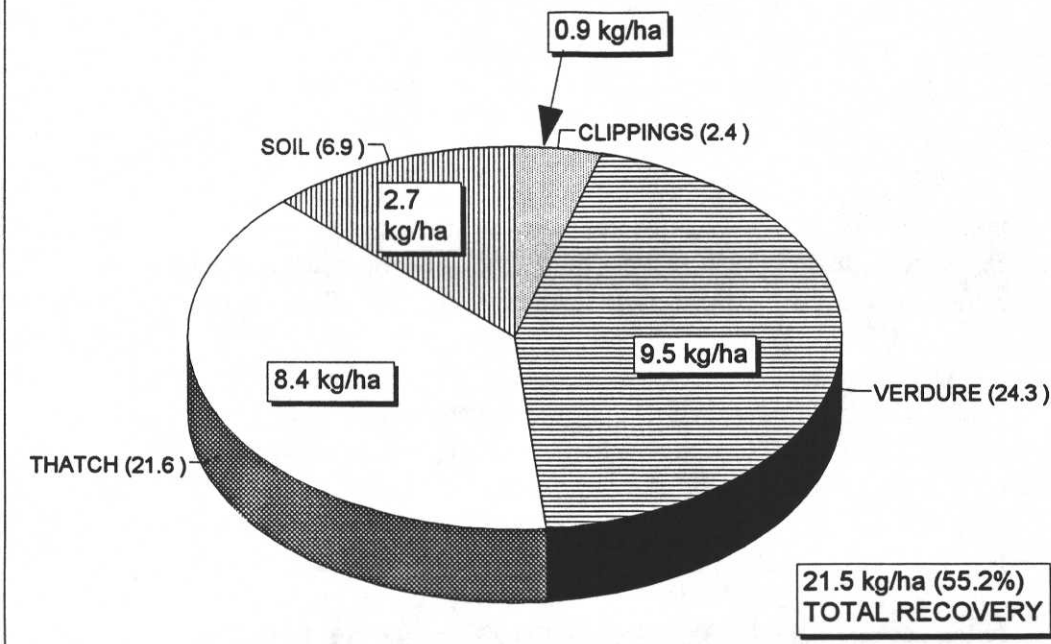


Fate of Fertilizer Nitrogen and Pesticides Applied to Kentucky Bluegrass

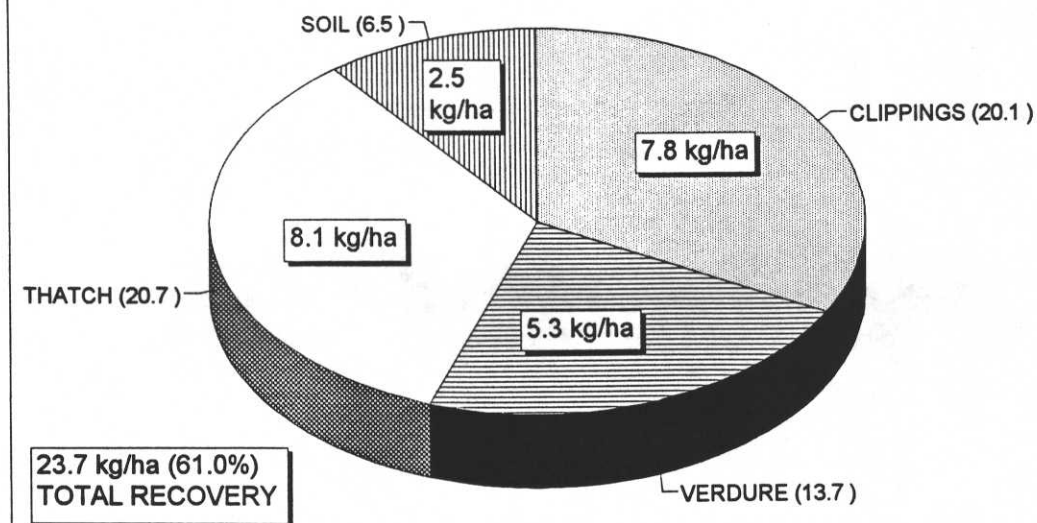
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An experiment was initiated in the intact monolith lysimeters at the Hancock Turfgrass Research Center during 1991 to examine the environmental impacts and cycling of fertilizer nitrogen under two different fertility schedules. There were two treatments that each received 4 lb. N/M per year as urea, applied at a rate of 0.8 lb. N/M on each of five dates. One treatment (designated "Spring") received fertilizer from late April through late September of each year, while the other (designated "Fall") received fertilizer from early June through early November. In 1991 only, the April and November applications of each respective treatment were made with ^{15}N labeled urea. This labeled fertilizer allows discrimination of that particular fertilizer nitrogen from all other N in the environment. Nitrate leaching, plant uptake, inorganic soil N, living and non-living organic soil N, and thatch N have been continuously monitored since the initiation of the study. Nitrogen balances for samples collected through the fall of 1991 are presented in the following pages. Partial analyses have been conducted for samples collected through the fall of 1992, but the data is not yet complete. Leaching of fertilizer nitrogen has been insignificant in relation to the total amount applied. The majority of the recovered fertilizer N has been found in the plant material (clippings and verdure), with the total amount detected in plant material increasing with time. Another large portion of the fertilizer N was detected in the thatch. Fertilizer N present in the soil was primarily confined to the upper four inches of the profile and decreased with time. These trends were true of both early spring and late fall applied nitrogen. It is suspected that the majority of the non-recovered fertilizer N was lost through volatilization. Another study is currently underway to investigate this.

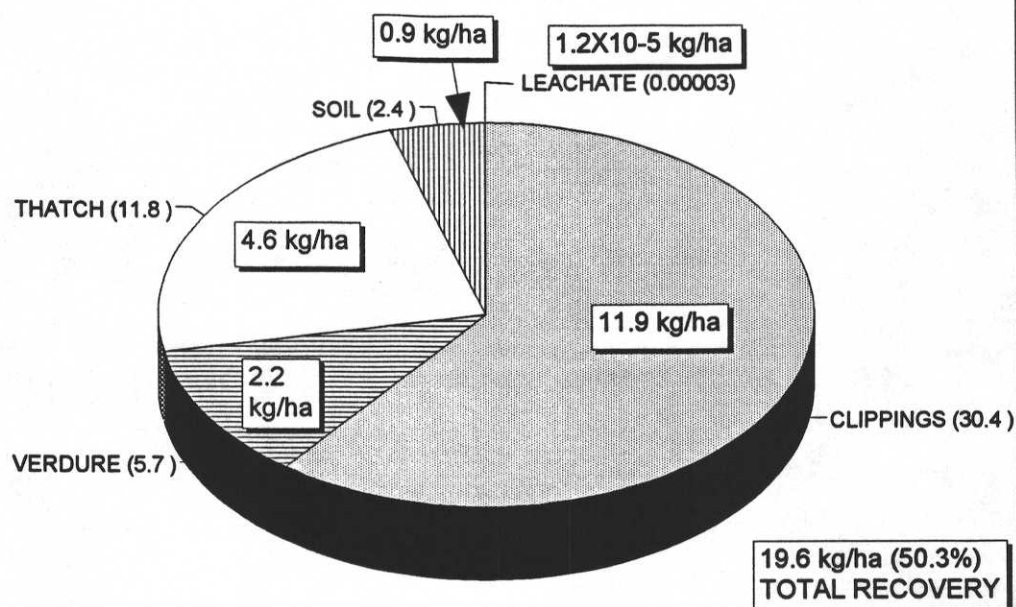
15N RECOVERY AS % OF APPLIED N SPRING Tt - 14 MAY 1991 (18 DAT)



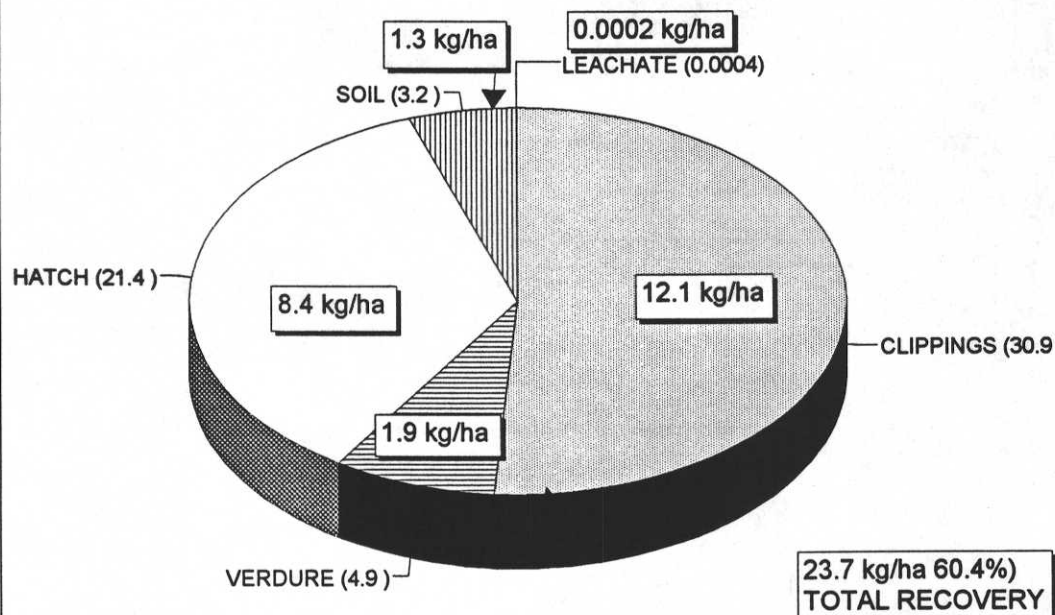
15N RECOVERY AS % OF APPLIED N SPRING Tt - 21 JUNE 1991 (56 DAT)



15N RECOVERY AS % OF APPLIED N SPRING Tt - 16 OCTOBER 1991 (173 DAT)



15N RECOVERY AS % OF APPLIED N SPRING Tt - 26 NOVEMBER 1991 (214 DAT)



15N RECOVERY AS % OF APPLIED N

FALL Tt - 26 NOVEMBER 1991 (16 DAT)

