Evaluation of Nutrient Leaching From Simulated Residential Mixed Landscapes

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In recent years, nutrient leaching from residential landscapes in Florida has been suggested as a cause of water quality degradation due to the heavy use of fertilizers and irrigation in these systems. The objective of this study was to determine nutrient leaching losses from mixed landscapes that were planted with varying proportions of turf grass and woody ornamental plants (sweet viburnum and magnolia). We hypothesize that the landscapes with a higher proportion of established woody ornamental species will have less leachate and nutrient losses than landscapes with higher proportion of turf. Mixed landscapes consisting of 60, 75, or 90% St. Augustine turfgrass were installed in 9 drainage lysimeters in a completely randomized design at the University of Florida/IFAS (UF/IFAS) Mid Florida Research Center in Apopka, FL. Landscapes were fertilized and irrigated based on UF/IFAS recommendations. Plants were allowed to establish in the lysimeters for a period of one year, at which time daily leachate samples were collected for a period of 18 months. Daily leachate samples were combined to produce weekly flow-weighted samples. Leachate samples were stored at 0ºC until analysis for N (e.g., NO_3+NO_2, NH_4, total Kjeldahl N) and P (e.g., reactive P and total P). Flow-weighted concentrations and loads of N and P will be calculated to determine the effects of vegetative cover on nutrient leaching.