

Turfgrass Fertilization and Water Quality

by Joseph B. Hackman, Ph.D.,
Rutgers Cooperative Extension
Service. Reprinted from The
Greenside, newsletter of GCSA
New Jersey

Pollution of surface and ground-water are environmental concerns with the use of nitrogen fertilizers on turfgrass. A recent University of Maryland study (Gross et al., 1990, J. Environ. Qual. 19:663-668) determined losses of nutrients and sediments via runoff and leaching from turfgrass. The study compared N fertilizer applied in a liquid and granular form and an unfertilized control. Nitrogen (as urea) was applied at a rate of 4.5 lbs. per 1000 sq. ft. per year according to appropriate spring and fall feeding schedules. Surface runoff was collected from plots with slopes of five to seven percent from significant rainfall events throughout the year. Groundwater samples taken

monthly at 0.75 m depth were analyzed for nitrate.

Although nutrient losses via runoff were small, total N in runoff was approximately two-fold higher in the liquid and granular treatments when compared to the unfertilized control. There was no difference between liquid and granular treatments with respect to runoff. The concentrations of nitrate in percolate under the granular, liquid and unfertilized control treatments were 1.02, 0.85 and 0.33 ppm. The liquid and granular treatments were significantly higher than the control but not different from each other. These nitrate concentrations are lower than the Environmental Protection Agency drinking water standard of 10 ppm nitrate and are considerably lower than nitrate concentrations previously reported under corn. This study demonstrated that very low concentrations of nitrate were found below the root zone of

fertilized and unfertilized turf and that nitrogen and phosphorus losses in runoff from established turfgrass were low. Sediment and nutrient losses via runoff from established turf are generally low because of the resistance to surface water movement provided by a dense turf stand. The study concludes "that properly managed and judiciously fertilized turf is not a significant source of nutrients or sediment in surface or groundwater."

Answers to Crossword

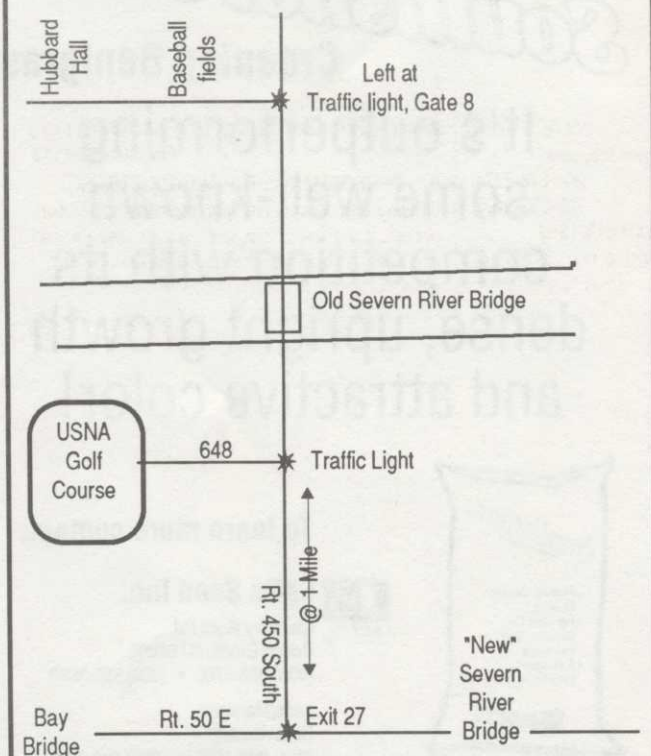
Across

- 5. Mathias
- 10. Cammarota
- 19. Zontek
- 26. Fitts
- 30. Neus
- 35. Ratcliff
- 41. Pryseski
- 56. Gerard
- 66. Shields
- 75. Haske
- 86. Dernoeden
- 94. Walker

Down

- 1. Jensen
- 3. Watson
- 10. Cominski
- 33. Stagg
- 42. Rudinski
- 52. Braun
- 53. Grau

Map to USNAGC and Hubbard Hall



ISOLITE

POROUS CERAMICS

IS BEING USED TO...

- ELIMINATE LOCALIZED DRY SPOTS
- INCREASE SEED GERMINATION
- INCREASE THE ROOT MASS OF SOD
- ELIMINATE COMPACTION
- BLENDED DIRECTLY INTO TOP-DRESSING
- IMPROVE GREEN & TEE CONSTRUCTION
- AMEND NATIVE SOILS - GREENS & TEES
- DRAINAGE - GREENS, BUNKERS & TEES

FOR PRICING OR DELIVERY CALL:
KEN BRAUN OR TIM DAVISSON

@ 410/823-4203

DAVISSON GOLF & LANDSCAPE, INC.
"THE ISOLITE & INFRARED SPECIALISTS"