Runoff Loss of Manure P and N from Transplanted Turfgrass Sod. (A05-vietor085927-Poster)

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Abstract:

Excess manure P can be exported from livestock operations and impaired watersheds through turfgrass sod harvests. The rate of manure P applied during sod production could be limited by P losses in runoff from sites on which sod is transplanted. The objective was to evaluate and relate soil-test P (STP) to runoff losses of dissolved P (DP) from transplanted bermudagrass sod produced with increasing manure rates during an on-farm demonstration. Four treatments comprised manure incorporated in soil at P rates of 176, 352, and 704 kg P ha-1 and fresh manure layered on the soil surface. Harvested sod was transplanted on an 8.5% slope. DP in runoff of simulated rain was monitored according to a NRCS P benchmark soils project 21 and 300 d after transplanting. DP losses ranged up to 1.6 and 0.7 kg/ha for the respective monitoring dates during 35 min of simulated rain on sod grown in the surface layer of manure. DP loss in runoff during the first rain was directly (R-square = 0.81) related to STP in transplanted sod. Total DP loss from sod produced with 176 kg/ha manure P during both rains (< 0.6 kg/ha) is 0.7% of P imported sod, less than losses for surface-applied manure or fertilizer.

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