Citizens and Compost Beautify Tarrant County Courthouse

The landscape maintenance staff for the Tarrant County Northeast Sub-Courthouse, 645 Grapevine Highway, Hurst, Texas encountered problems in maintaining good growth and healthy appearance of turfgrasses and perennial flowers at that facility. When increasing the irrigation schedule from once to twice per week failed to improve plant performance and appearance, Dotty Woodson, Tarrant County Extension Agent – Horticulture, Texas Cooperative Extension, suspected problems related to fertility and soil conditions.

To address these landscape issues, Woodson established test plots to demonstrate the use of dairy manure compost combined with recommended rates of commercial fertilizer on turfgrass and perennial flowerbeds. Research and demonstration trials conducted at the Dallas Research and Extension Center showed dairy manure compost used in combination with inorganic fertilizer optimized plant growth, prepared soil for new plantings, and renovated problem areas in turfgrass and flower beds. These trials and Woodson's demonstration were components of the Dairy Manure Compost Utilization Project, which was funded through a Clean Water Act Section 319(h) Grant provided by the US EPA through the Texas Commission on Environmental Quality.

The treatments Woodson chose for the turfgrass demonstration were a) inorganic fertilizer only at the recommended rate of 8 pounds of nitrogen per 1,000 square feet applied two times during the growing season, b) dairy manure compost applied once at a rate equivalent to 20 tons per acre plus 20 pounds of inorganic nitrogen (N) applied twice during the growing season, and c) dairy manure compost applied twice at a rate equivalent to 20 tons per acre plus 20 pounds of inorganic nitrogen applied twice during the growing

PREPARED IN COOPERATION WITH THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY AND U.S. ENVIRONMENTAL PROTECTION AGENCY

The preparation of this report was financed through grants from the U.S. Environmental Protection Agency through the Texas Commission on Environmental Quality.

season. A 20 ton per acre rate of dairy manure compost is equivalent to about 1/2 inch of compost spread evenly over the grass surface.

The flowerbeds' treatments were a) inorganic fertilizer only at a rate of 8 pounds of nitrogen per 1,000 square feet, b) dairy manure compost at a rate of 100 tons per acre incorporated to a depth of 6 inches, and c) 100 tons dairy manure compost per acre plus 20 pounds of inorganic nitrogen incorporated to a depth of 6 inches. To convert the application rate to a smaller scale for the flowerbeds, Woodson determined the 100 ton per acre rate is equivalent to approximately a 6 inch layer of the material evenly applied on the soil surface.

By incorporating the compost into the top 6 inches of soil, Woodson created a much improved environment for plant growth and development. The dairy manure compost provided essential nutrients required by plants, added organic matter that improved soil physical properties, and increased water infiltration and retention within the soil.

The dairy manure compost was purchased from a commercial composter located in the North Bosque River Watershed. State agencies and local governments that purchase dairy manure compost from qualified vendors are eligible for the $5 per cubic yard rebate available through the Dairy Compost Incentive Program managed by the Texas Commission on Environmental Quality.

A highly regarded and effective Extension educator, Woodson has conducted numerous turf and ornamental plant management workshops for various groups, including the Tarrant County grounds maintenance staffs, Sheriff’s department staff, individuals required to perform community service and Tarrant County jail inmates participating in a “from-jail-to-work” program.

She initiated the dairy manure compost demonstration project at the sub-courthouse with assistance from county community service participants who attended her workshops. With Woodson’s guidance, the participants established the test plots by applying the dairy manure compost and fertilizer

treatments. The grounds maintenance staff at that facility were also actively involved and able to apply their knowledge acquired from their training in the day-to-day care of the demonstration plots.

Turfgrass growth improved in vigor and color in the demonstration plots where compost and fertilizer were added. The differences were clearly visible and prompted many clients visiting the sub-courthouse to comment about the improved appearance of the turfgrass.

The growth and vigor of the ornamental plants were also greatly improved in the plots where compost and compost plus fertilizer were added.

In one problem area, grass seed was sown in an attempt to establish turf where it had not grown before. However, a large rain storm washed away some of the grass seed and the area is still bare. Woodson plans to apply more compost and grass seed to this area to help control erosion and establish turf.

Woodson said the county staff decreased water costs by an estimated 30-50 percent after the demonstration plots were established on the sub-courthouse turfgrass and flowerbeds. In the past, the staff watered twice a week, and now the staff only waters once a week. The compost increased the infiltration rate and water holding capacity of the soil. Woodson was unsure of the water savings in dollars for the county as a result of the education programs and demonstrations. However, she was sure her time with the staff throughout the project helped decrease the volume of irrigation water and saved the county money, as well as contributed to the beauty of their landscapes.