

Soil Organic Matter and Compost Utilization

Background

High clay content soils like those typical of Texas Blackland Prairies often have physical properties making them difficult to manage, especially due to poor drainage and aeration. These soils are often sticky when wet, and very hard when dry. Urban homeowners with these kinds of soils frequently want their yard soils easier to work, and to produce more vigorous plants. This long-term study was established in 2001 to investigate and demonstrate the long term effects of organic matter addition to high-clay soils. One source of organic matter is yard waste compost, and composting is becoming increasingly common in urban areas due to municipal yard waste collection and composting programs such as the one in Plano, Texas. Wastewater biosolids is another source of organic matter that may be appropriate for use in some settings. Our composting research plots are increasingly valuable for demonstrating the importance and role of regular additions of organic matter to Blackland soils.

Objective and Approach

- Investigate and demonstrate the changes in soil chemical and physical properties due to annual applications of organic matter.
- Quantify the effect of organic matter amendments on the growth of selected vegetable crops grown in north Texas on a calcareous soil treated with biosolids or MYWC.

Program Benefits

- Increasing the amount organic matter and organic residues in soil improves water infiltration rates, reduces soil compaction, and makes tillage operations easier.
- Yard waste compost is an excellent source of slow-release plant nutrients, but does not excessively increase soil phosphorus like some of the animal manure composts.
- Compost applied every 12 to 18 months increases the yield of vegetable and grain crops.
- Increasing the use of compost in an urban setting supports municipal yard waste composting programs which are designed to divert yard waste from landfills. Composting converts organic residuals from yards and public lands into a beneficial resource rather than a waste disposal expense.

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