**Investigating the Impact of Low-Cost Organic Fertilizers on Tomato Yield**

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**ABSTRACT**

Organic farming, farming without chemicals, needs organic fertilizers. Knowledge about recycling waste and adoption of appropriate disposal to enhance and protect soil quality require timely delivery of research and educational technology. An increase of organic waste originated from human activities is a continuous concern. Waste application to soil is proposed as a solution to the disposal problem. Because of the rapid growth in the poultry industry, significant chicken manure (CM) generation will become available in increasing quantities. A field trial area was established in Fayette County for gowing tomatoes using low-cost fertilizers. Tomato (*Lycopersicon esculentum* var. Mountain spring) seedlings of 52 days old were planted in 30’ × 144’ beds of freshly tilled soil at eight inch row spacing. The entire study area contained 30 plots (3 replicates × 10 treatments). Each bed was divided into three replicates in a randomized complete block design (RCBD) with the following 10 treatments: 1) no-mulch untreated soil; 2) sewage sludge; 3) horse manure; and 4) chicken manure; and 5) yard waste compost. Each of the 5 treatments was also mixed with biochar to make a total of 10 treatments. Results revealed that yields obtained from CM and CM mixed with biochar were highest, whereas, yield obtained from horse manure was lowest compared to other soil treatments. Total weight of tomato fruits collected after the three harvests revealed CM and CM biochar treatments significantly (*P*< 0.05) increased tomato yield compared to other treatments indicating a positive effect on the growth and yield of tomato.

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Keywords: Low cost fertilizers; Soil amendments; Biochar, Charcoal; Tomato yield