

**EFFECTS OF WILD SUNFLOWER (*Tithonia diversifolia*)  
AND CITRONELLA GRASS (*Cymbopogon citratus*)  
BIOCHAR MIXTURE ON GROWTH AND  
PRODUCTION OF PLANT TOMATO  
(*Solanum lycopersicum*)**



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## ABSTRACT

Biochar is defined as a carbon rich material produced during pyrolysis process that is a thermochemical decomposition of biomass in the absence or limited supply of oxygen. An experiment was conducted to evaluate the growth response of Tomato (*Solanum lycopersicum*) grown in soil treated with different concentrations of biochar mixture. In this experiment, wild sunflower and citronella grass debris were used to make the biochar. Physical and chemical properties of biochar were taken such as pH, electrical conductivity, water holding capacity, bulk density and total negative surface anions. Different concentrations of biochar were added such as with 0g, 100g, 200g and with or without 0.5l of water. Tomato seedlings were planted in each pot and all other agronomic practices were done which recommended by Department of Agriculture, Sri Lanka. Plant height, number of leaves per plant, number of branches per plant, stem height and root length were recorded at two-week intervals. Data were statistically analyzed by Minitab 17. Among the treatments, plants in soil treated with 100g biochar water mixture was showed best growth performance. Because the water provided the favorable environment for the higher rate of microbial growth. It enhance the decomposition of biochar and it make the plants ease uptake of nutrition from soil.

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