

EFFECT OF *PENTACLETHRA MACROPHYLLA* BIOCHAR ON SOME GROWTH INDICES OF *CAPSICUM ANNUUM* L. IN PORT HARCOURT, NIGERIA**Ikechukwu Stephen MENSAH & Kalu OKONWU**Department of Plant Science and Biotechnology
University of Port Harcourt, PMB 5323 Choba, Port Harcourt, NIGERIA**ABSTRACT**

Studies on some growth indices of *Capsicum annuum* L. species in loamy soil amended with wood biochar (charcoal) of *Pentaclethra macrophylla* was investigated in the Ecological Centre, University of Port-Harcourt, Port Harcourt, Nigeria with a view to elucidate its potential for enhancing crop yields and plant productivity. Six treatments viz; 0, 5, 10, 15, 20 and 30 percent of biochar concentrations were used in a randomized complete block design with four replicates per treatment. The effects of these treatments on plant height, leaf number and leaf area were monitored weekly while the root length and dry weight of *C. annuum* were determined 5 weeks after planting. The study showed that 10% biochar treatment gave the highest values for plant height, number of leaves, leaf area, root length and dry weight when compared to the other treatments. The control treatment (0%) gave higher values for growth parameters determined when compared to 5%, 20% and 30% treatments. The 30% treatment recorded the lowest values for growth indices determined. The optimum biochar concentration of 10% treatment gave the highest values in all the parameters measured; higher and lower concentrations led to reduced plant growth of *C. annuum* species. The increase in growth indices parameters of *C. annuum* species due to the application of 10% wood biochar may be attributed to increased nutrient uptake, better water retention capacity, increased pH and ions. This study demonstrated the potential of wood biochar of *P. macrophylla* in promoting growth of *C. annuum* species by enhancing soil fertility, and thus higher crop yields and productivity. Therefore charcoal which was once considered an agricultural waste could be beneficial in agriculture. The study recommends that the use of wood charcoal should be incorporated in farming practices.

Keywords: *Pentaclethra macrophylla*, Biochar, growth indices, *Capsicum annuum*.