

EFFECTS OF THREE CARBON SOURCES ON GERMINATION AND SOME GROWTH CHARACTERISTICS OF *VIGNAUNGUICULATA* WALPS

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ABSTRACT

This study is aimed at investigating the effect of charcoal, sooth and spent oil on the growth of cow-pea (*Vignaunguiculata*L.) with a view to assessing the possibility of increasing the foliage yield of the crop, using charcoal amended soil, The research was carried out in the botanical garden of the Department of Plant Science and Biotechnology, Michael Okpara University of Agriculture, Umudike, Nigeria. The study was carried out using 4 treatments in three replicates. Measured quantities of charcoal, soot and spent oil was mixed with the soil and a control soil without any amendment was set up. Three seeds of *Vignaunguiculata* L. were planted in each of the buckets. Data on the germination rate, vine length and number of leaves per plant were taken and analyzed. The result of all plants on the charcoal treatment showa significant increase (p<0.05) in both vine length and number of leaves. The result for all plants in the sooth treatment showed that the plants had a reduction in vine length, but showed significant increases (p<0.05) in the number of leaves over the plants treated with spent oil. This study has shown that charcoal may increase plant growth due to its carbon content, while the spent oil and sooth may decrease growth.

KEYWORDS: Foliage, Amended Soil, Soot, Charcoal, Biochar & Vine Length