

**Effects of *Allanblackia Parviflora* on Vegetative Growth and Yield of Some Selected Crops
in Traditional Agroforestry in Adansi South District**

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ABSTRACT

Field experiments were conducted in the Adansi South District of Ghana ($6^{\circ}4'N$ $1^{\circ}24'W$) with an aim of studying the influence of *Allanblackia parviflora* trees on vegetative growth and yield of cassava, cocoyam, pepper, okro and maize in agroforestry systems as well as on species of flora in natural agroforestry stands. The crops were planted in 1m concentric rings under four (4) mature and ten (10) young *Allanblackia parviflora* trees. Selected vegetative growth parameters were recorded weekly over a ten-week period. Yield parameters were also recorded at the end of the reproductive phase of the crops. Regardless of age of *Allanblackia parviflora* trees, they caused a significant reduction in the vegetative growth and yield of cassava and maize while the vegetative growth and yield of cocoyam and pepper were significantly enhanced; although their influence on vegetative growth and yield of okro was erratic. The observed statistically significant differences in crop growth and yield in varying distances from *Allanblackia parviflora* trees could be attributed to corresponding significant differences in levels of sunlight, soil moisture, soil temperature, nitrogen, potassium and ammonium. Twenty nine (29) species of plants were encountered growing in the milieu or under the canopy of both matured and young *Allanblackia parviflora* trees (Appendices 1 and 2). Out of these, fifteen (15): *Antiaris africana*, *Baphia nitida*, *Carica papaya*, *Celtis mildbraedii*, *Costus dubius*, *Elaeis guineensis*, *Setaria sp.*, *Sporobolus pyramidalis*, *Sterculia tragacantha*, *Thalia welwitschii*, *Trichilia monodelpha* and *Xanthosoma sagittifolius* were found either growing in the milieu or under the canopy of mature *Allanblackia parviflora* trees whereas ten (10): *Ananas comosus*, *Ceiba pentandra*, *Cnestis ferruginea*, *Rauvolfia vomitoria*, *Sida acuta*, *Synedrella nodifolia*, *Terminalia superba*, *Trichilia roka* and *Tridax procumbens* were observed in the milieu of young *Allanblackia parviflora* trees and only four (4) of them: *Chromolaena odorata*, *Griffonia simplicifolia*, *Musa paradisiaca* and *Theobroma cacao* were growing under the canopy of both the mature and young *Allanblackia parviflora* trees (Appendices 6 and 7). It is suggested that in agroforestry systems using

Allanblackia parviflora, cassava and maize should be planted under full sunlight while okro can be planted either closer to or farther away from *Allanblackia parviflora* trees, depending on the purpose for its cultivation; and cocoyam and pepper can be intercropped with this tree in order to maximize land use and economic returns.

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