Ecology and Biology of Piliostigma Thonningii (Schum.) Milne-Redhead in the Guinea Savanna Zone of Nigeria.

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Abstract:

Eighteen plots in selected sites from the Mokwa, Kainji and Yelwa areas of the Nigerian Guinea savanna were sampled systematically for vegetation attributes. Four belt transects in each plot were sampled to estimate the density of all woody individuals greater than 1m high, density of <u>Piliostigma</u> <u>thonningii,</u> total basal area of woody species, and woody plant cover. Soil samples were randomly collected from the 0-15cm depth in the plots and analysed for texture organic matter and nitrogen. The vegetation and soil data and attributes derived from them were used for ordinations using principal components analysis.

The ordinations show that soil factors namely sand: clay ratio organic matter and nitrogen content were, in association with some vegetation attributes, important in determining the distribution and density of P. <u>thonningii</u> in the areas studied.

Some aspects of the biology of the plant were also studied. Best germination results were obtained after acid treatment. The phenology of the plant and its response to perturbations were observed and these observations gave an insight into its mode of propagation.

Anatomical studies showed the leaf characters as being semi-xerophytes and the stem as having growth rings. The age of the plant could be estimated from ring counts. Examination of the plant for nodules did not yield positive results but nitrogen levels in the leaves compared favourably with those of other browse plants in the same area. This identifies the plant as an important browse species in the savanna. Overall, the study has highlighted the conditions under which the plant grows and its rich potential as a source of cover and browse in the Guinea savanna.

Keywords: <u>Piliostigma</u> <u>thonningii</u>/ vegetation attributes

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