

**Some Aspects of the Ecology and Biology of
Tephrosia Bracteolata Perr, & Guill
(Papiliooideae - Fabaceae).**

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Abstract:

Some aspects of the ecology and biology of *Tephrosia bracteolata*, a fodder plant of the Nigerian savanna often growing in association with *Andropogoneae* grasses, was investigated. The seeds of the plant germinated best after 20 minutes acid treatment. Some good germination was also obtained with heat and boiling water treatment.

Growth rates were better in soil enriched with phosphorus than in natural soil. Since one of the aims of the experiment was to examine the feasibility of sowing rangelands with *T. bracteolata*, field and laboratory studies of competition between it and *Andropogon tectorum* were carried out. The yields of the plants were higher when grown in mixtures than in monocultures. Values of relative yield totals for both species were in 11 test densities greater than unity indicating mutual relationship between them. Association analysis showed that the two species were randomly distributed in the field.

Soil and vegetation samplings in the field show that *T. bracteolata* does well on acid soils with low organic carbon and nitrogen contents. The crude protein of the leaf samples (12.98%-17.98%) was adequate throughout the growing season to meet the minimal 8% crude protein requirement by animals for milk production. *A. tectorum* can only supply adequate protein early in the season when its crude protein ranges from 7.04% to 8.21%.

Nodulation was observed in *T. bracteolata*. The presence of leghaemoglobin at the core of the nodules indicates effectiveness in nitrogen fixation. It is suggested that *T. bracteolata* can be utilized in place of imported pasture species in cropping rangelands. Also, harnessing the nitrogen fixing ability of the plant to improve soil nitrogen content could save the country part of the expenditure on nitrogen fertilizer importation and could reduce environmental pollution resulting from excessive use of the fertilizers.

Keywords: Ecology/ *Tephrosia bracteolata*/ savannah/ germination/ growth rate/ monoculture/ soil nitrogen contents/ *Andropogoneae* grasses

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