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Afforestation of Private Land in the Ashanti Region of Ghana — Experiences with *Tectona grandis*

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Abstract

The Ashanti region in Ghana is located in the transition zone between savannahs and moist deciduous tropical forest and shows a distinct dry season. Although Teak (*Tectona grandis*) is not a natural species in Africa, its growth performance is exceptionally good. A lot of experiences with plantation establishment exist and a “best practice guide” has been drafted. However, plantation establishment of private investors is different to those working on government land with donor money. The involvement of local chiefs is a key-issue that many plantation managers have underestimated. Thus, fire is a major threat to young plantations. DuPaul Wood Treatment Plant has meanwhile seven years of experience in planting teak. A small plantation near Papasi is assessed in terms of vegetation classification, assessment of timber resources (in quantitative and qualitative terms), the description of soil and site conditions, and the chemical analysis of soil conditions.

The Papasi plantation is approximately 202 ha in size, whereof 67.5 ha are covered with one to seven years old Teak stands. Most of the rest is presently under agricultural use (72.5 ha) by the surrounding villages. An area of 17.8 ha is grassland and around 5 ha compromise of natural forest fragments. A post-inventory stratification was carried out which subdivided the stands into “older stands” (planted 1996–1999) and “younger stands” (planted 2000–2002). In all strata, fires in the dry seasons and poor weed management resulted in a high mortality rate (42.5 %) and poor tree qualities. An additional stratification was carried out to subdivide into “poor” and “better stands”. The growing stock of the “better stands” ranged from 87 m³/ha for seven years old stands to 30.96 m³/ha for 5 years old stands. The mean annual increment ranged from 14.5 m³/ha·yr to 6.19 m³/ha·yr. The timber quality assessment identified only 22 % of the stems as pole or saw timber quality, 78 % had to be categorised as firewood or wood for rural constructions purposes.

Based on these results, a silvicultural management concept is elaborated to increase the portion of stands with better growth and quality.

Keywords: Ghana, growth, silviculture, teak