

D-43: Assessment of the survival rate of enrichment planting with *Swietenia macrophylla* (Mahogany) in Kalutara and Galle Districts

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Forests in which the proportion of the valuable species are too low or when natural regeneration cannot be relied on, underplanting is sometimes applied as lines, strips or groups under the broad term 'enrichment planting' with the idea of uplifting the ecological and economic value of the forest. With the objective of assessing the survival rate and growth of underplanted *Swietenia macrophylla*, a study was carried out in Galle and Kalutara Districts where this practice was largely prevalent.

- Two to five year-old line planted Mahogany seedlings were selected at two different forest sites in Kalutara and Galle Districts. All seedlings were enumerated within a plot of 50 x 50 m for each forest site which encompass 6 lines of Mahogany. Height, diameter and condition of the seedlings (with regard to health) were recorded for each seedling.

According to the results, the enrichment planted seedlings grew slower than the seedlings of the same species grown under light, possibly due to the extensive shade conditions found within the forest ecosystem. The mean height growth of seedlings between 1997-1998 was only 2 cm. Significant differences were observed between the Galle and Kalutara Districts in the percentage survival of seedlings where the values for Galle District were higher than those of Kalutara. Further, within the forest, seedlings showed highest percentage survival in the valley area (64.24% in Kalutara and 82.62% in Galle) compared to those of the ridge area (55.21% in Kalutara and 66.77% in Galle District). Seedlings at the midslope area showed values which were in between. The height and diameter growth of seedlings under different light conditions within the forest were also studied in both areas.

The major drawback observed in the enrichment plantings studied was the lack of maintenance since the establishment. Further, the available light plays an important role in the success of Mahogany plantings as the survival and growth were affected by it.