

Some Observations on the Phenology and Growth of *Acacia* Hybrid at Charkai, Dinajpur, Bangladesh

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Hybridization of *Acacia auriculiformis* and *Acacia mangium* occurs naturally because both are pollen-pistil compatible, found within the same habitat with overlapping flowering time and share common pollinators (Zakaria 1991). Natural hybrids of these two species are reported in Sabah (Tham 1976) and Papua New Guinea (Turnbull *et al.* 1986). The tree form of the hybrid of these two species is satisfactory because of better stem straightness, self-pruning stability, better stem circularity and more disease resistance (FRIM 1992). Species/provenance trials of *A. auriculiformis* and *A. mangium* were established at Charkai, Dinajpur, Bangladesh in 1983, 1985 and 1987 at a spacing of 1.83 m x 1.83 m covering an area of 1 ha. The seeds were imported from Australia for these trial plantations. Eight hybrid trees of these two fast growing tree species were observed in the plantation raised in 1983. The hybrids found sporadically distributed in the plantations were identified by the light colour of their bark. Banik *et al.* (1995) also reported some hybrids of these two species at Harbang forest areas of Chittagong Forest Division. Some phenological information and growth performance of these hybrids found at Charkai are reported in this paper.

The phenological observations of the hybrids were made very carefully every day for a period of two years (1993 and 1994). Data so generated reveal that flowering of the hybrid starts in the middle of August with a peak flowering time in

October. However, *Acacia auriculiformis* and *A. mangium* flower at the same time. Fruiting of the hybrid starts in the beginning of December with a peak fruiting time in April.

Data on diameter and height growth of all the hybrid trees and ten surrounding non-hybrid trees reveal that hybrid trees outperformed the non-hybrids in both diameter and height growth performance. The maximum diameter and height of the hybrid attained were 132 cm and 17 m respectively at ten years (recorded in July, 1993), that is, the average annual growth rate is 13.2 cm and 1.7 m for diameter and height of the hybrid respectively. The average annual diameter and height growth of the surrounding non-hybrid trees were 0.8 cm and 0.8 m respectively.

The two species of *Acacia* are being used extensively as plantation species in Bangladesh and other tropical countries of the world for their good survival, promising growth and multiple uses. *A. auriculiformis* is very adaptive to the environmental conditions of Bangladesh, but *A. mangium* is severely attacked by heart rot disease all over the country and some countries in the world. As a result, the Forest Department has already suspended planting of *A. mangium* in Bangladesh. Faizuddin and Dalmacio (1992, 1996) reported significant variations in resistance to pests and diseases, survival, tree quality traits and growth behaviour in different provenances of *A. mangium* in the Philippines.

The hybrids can be propagated successfully by tissue culture (Darus 1992). So, it is recommended to propagate the hybrids vegetatively by cuttings or tissue culture. It is also recommended to test these propagules at field level. This may meet up the growing demand of the wood for the land-hungry people of Bangladesh.

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