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A NOTE ON ACACIA HYBRIDS IN A FOREST PLANTATION IN PENINSULAR MALAYSIA

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Acacia mangium Willd × *A. auriculiformis* A. Cunn. ex Benth hybrids were first spotted at Ulu Kukut, Sabah, East Malaysia, in 1971 (Rufelds 1987). The hybrid possesses some of the outstanding intermediate characteristics of its parents such as better stem form and longer clear bole height than *A. auriculiformis* and lighter branching, circular trunks, smoother bark with whiter colour and smaller phyllodes compared to *A. mangium*.

We observed *Acacia* hybrids at the Compartment 2.4 B, Ulu Sedili Forest Plantation, Peninsular Malaysia, in August 1989. We investigated on its occurrence as well as its form and growth. A 100% survey of the hybrid in the compartment was made. Total height, diameter at breast height (DBH) and clear bole length of ten randomly selected hybrids were recorded. Observations were also carried out on stem straightness, forking, crown and branching characteristics. For comparison, for every hybrid tree assessed and measured, four neighbouring *A. mangium* trees were also assessed and measured.

There are 34 (7.6%) hybrids out of 448 *Acacia* trees planted in that compartment. In general, *Acacia* hybrids have predominant and dominant crowns and smaller branches with a wider angle compared to their neighbouring *A. mangium* trees. They also have rounded trunks and smoother bark. In terms of total height and DBH, the hybrids did better than *A. mangium* (Table 1). Analyses of variance on total height and DBH of the hybrids and *A. mangium* trees revealed a highly significant difference (t-Test; $p=0.01$). For clear bole height, there was no significant difference between the hybrids and *A. mangium* trees.

Due to the superiority and excellent vigor of the hybrid trees compared to their parents, the hybrids definitely have greater potential to be used in future large scale reforestation programmes.

Table 1. Quantitative assessments of *Acacia mangium* trees and their hybrids

Number of tree	<i>Acacia</i> hybrid			<i>Acacia mangium</i>		
	Total height (m)	Diameter at breast height (cm)	Clear bole (m)	Total height (m)	Diameter at breast height (cm)	Clear bole (m)
1	23.4	19.9	13.7	18.2	16.9	14.0
2	23.6	23.7	13.1	19.1	18.1	14.1
3	21.2	21.4	13.4	17.6	16.5	10.9
4	20.7	19.4	9.3	14.8	14.6	9.5
5	22.6	24.3	9.8	16.1	15.2	10.9
6	21.6	19.4	12.0	15.5	13.4	10.2
7	20.6	16.6	12.0	16.4	12.7	8.3
8	18.5	20.1	11.1	16.8	15.3	11.3
9	15.7	14.1	8.1	17.4	16.2	11.5
10	14.6	13.0	9.4	16.7	15.1	8.7
Total	202.5	191.9	111.9	168.6	154.0	109.4
Mean	20.3** ±3.1	19.2** ±3.7	11.2 _{ns} ±2.0	16.9 ±1.3	15.4 ±1.6	10.9 ±2.0

** Significant at $p = 0.01$; ns Not significant

We envisage that with proper tree improvement and breeding activities such as selection of superior phenotype trees and proper controlled cross-pollination of these selected trees, better quality *Acacia* hybrids can be produced in the future.

Enhanced with the application of biotechnology, such as tissue culture, *Acacia* hybrids may be available for large scale planting sooner than expected.

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A NOTE ON THE ERADICATION OF *ACROSTICHUM AUREUM* FERNS IN THE MATANG MANGROVES, PERAK, PENINSULAR MALAYSIA

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Acrostichum aureum is a common mangrove fern that grows rapidly after mangrove forests have been clear felled for timber. It often forms extensive dense thickets of about 3 to 4 m height particularly in the more elevated inland areas which are less frequently inundated by tides.

In the Matang mangroves, these thickets are removed by the Forestry Department as a routine site preparation treatment prior to planting of *Rhizophora* in logged over areas. In the 1970s, eradica-