

PRELIMINARY OBSERVATION ON THE GROWTH OF *THYRSOSTACHYS SIAMENSIS* IN JOHORE, PENINSULAR MALAYSIA

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Thyrsostachys siamensis (buluh tumpat siam) has been known to grow very well in Thailand and the bamboo shoots are eaten as delicacies which are sold commercially for export (Thammincha 1990, 1995). The exports of bamboo are important to the economy of Thailand (Smitinand & Ramyarangsi 1980). Ratchaburi is famous for bamboo baskets made from *T. siamensis*. The bamboo culms are also exported to Germany, England and Italy. Besides being used as food, the species can also be grown as an ornament, and since it can thrive on low fertility soils, it may be planted for soil stabilisation. It is also used as a wind-break.

The species has been grown on a plantation basis and can be managed for sustainable supply. From natural stands, the average production in Thailand is estimated at 1500 culms ha⁻¹. In good years, however, annual production may rise to 2500–3000 culms ha⁻¹. The yearly increment per unit area is dependent on the number of new culms produced each year. The number of new culms varies such that large yields occur in alternate years. The annual increment is the average production in two consecutive years.

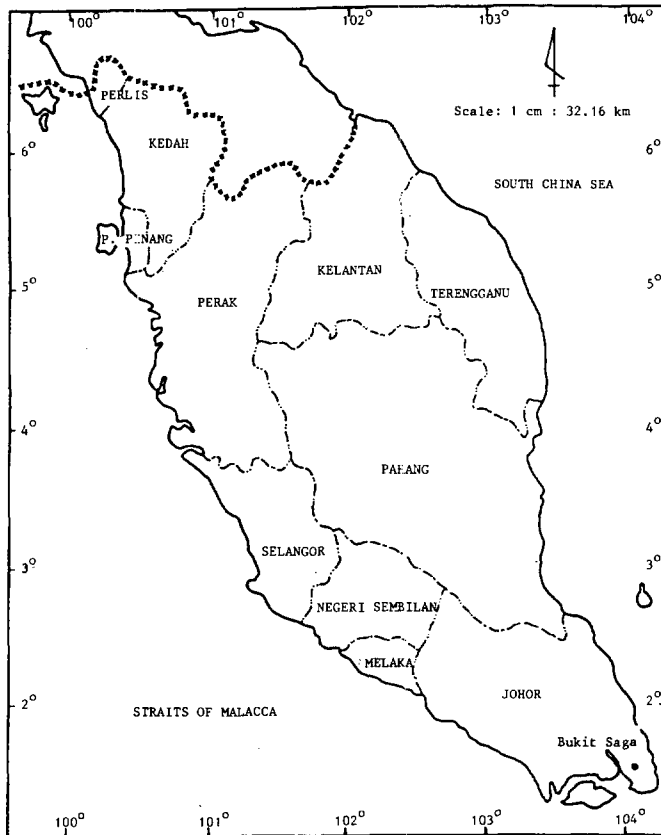
Due to the multiple uses of the species, it should be considered for planting in Malaysia for commercial purposes. In addition, it can also help to supply extra food to the people especially in rural areas. The northern states of Peninsular Malaysia have been importing *T. siamensis* shoots from Thailand. It is also hoped that with the introduction of this species, many bamboo products can be made especially for furniture.

Planting material from Thailand was obtained as rhizome offsets in polybags. Sixty offsets were planted by the East Johore Development Authority (KEJORA) at Bukit Saga, southern Johore. The location is as shown in Figure 1. The average annual rainfall during the three years of observation was 192.9 mm and the wettest season was during the early months of the year, i.e. January, February and March. The average temperature was 28.44 °C. Initially, most of the planting materials were of average height of 0.5 m and were planted in June 1996. The planting hole of 1 × 1 × 1 m was filled with 0.5 kg chicken dung only and then covered back with soil. The holes were dug in a line besides a drain at a distance of 1 × 1 m. Compound fertiliser NPK (15:15:15 green) was applied three times a year at a rate of 250 g per application per clump. The mortality rate was found to be zero. Six months later, on average, one metre was seen added to the original height. Observations were made in June 1997, June 1998 and July 1999. Figure 2 shows the 3-y-old clump of *T. siamensis* in July 1999 at Bukit Saga, Johore. The parameters measured were height, diameter at breast height (dbh) and number of shoots per clump sprouted (Table 1).

The average number of culms in each clump was found to be around 8–10 culms. There was an increase in the average height and dbh of this species for the 3-y duration after planting. The number of shoots per clump also increased from year 1 to year 3 (Table 1). Two-year-old *Gigantochloa ligulata* (buluh tumpat) bamboo taken from the Forest Research Institute Malaysia's (FRIM) nursery, of average height 30 cm, when planted at the same site (Bukit Saga) in January 1996, gave an average height of 1.13 m and average dbh of 1.08 cm at 3 months after planting (Azmy 1999). This early increment in height was seen to almost resemble that of *T. siamensis* planted on the same site.

Table 1. Results observed for 3 y after planting of *Thyrsostachys siamensis*

Year	Average height (m)	Average dbh (cm)	Average No. of shoots sprouted per clump
1	1.18	1.34	1.51
2	2.80	1.73	2.80
3	3.30	1.81	3.30

**Figure 1.** Location of study site

In Thailand, a clump is considered good if it has 30 culms on average, but some clumps may have up to 100 culms each. A 3-y-old plantation of *T. siamensis* raised from seeds produced on average 38 culms per clump with diameter of 1.4–2.3 cm of which 28 culms per clump were harvestable on average (Duriyaprapan & Jansen 1995). The number of culms at Bukit Saga was less in comparison because the land was exposed without any vegetation grown on it. In addition, there was no more top soil left at the site area. Initially before the *T. siamensis* was planted at the study site, the soil near the drain was eroded, but after the species was planted there were signs that erosion was being controlled due to the root system of the bamboo. The results indicate that *T. siamensis* can be grown in Malaysia and with the application of a small amount of compound fertiliser constantly, especially during the early establishment stage, it can grow vigorously with increase in the size of the culm. The species can be planted on a large scale and developed as a commercial crop.



Figure 2. *Thyrsostachys siamensis* planted at Bukit Saga, southern Johore, Malaysia (3-y-old clump in July 1999)

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