

Seven Years Assessment on the Suitability of Cocoa Clones Cultivation in High-Density Planting and Its Management in Malaysia

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Abstract : High-density planting is usually recommended for a small area of planting in order to increase production. The normal planting distance for cocoa (*Theobroma cacao* L.) in Malaysia is 3 m x 3 m. The study was conducted at Cocoa Research and Development Centre, Malaysia Cocoa Board, Jengka, Pahang with the objectives to evaluate the suitability of seven cocoa clones under four different planting densities and to study the interaction between cocoa clones and planting densities. The study was arranged in the split plot with randomized complete block design and replicated three times. The cocoa clone was assigned as the main plot and planting density was assigned as a subplot. The clones used in this study were PBC 123, PBC 112, MCBC4, MCBC 5, QH 1003, QH 22, and BAL 244. The planting distance were 3 m x 3 m (1000 stands/ha), 3 m x 1.5 m (2000 stands/ha), 3 m x 1 m (3000 stands/ha) and (1.5 m x 1.5 m) x 3 m (3333 stands/ha). Evaluation on yield performance was carried out for seven years. Clones of PBC 123, QH 1003, and QH 22 obtained the higher yield, meanwhile MCBC 4, MCBC 5, and BAL 244 obtained the lowest yield. In general, high-density planting can increase cocoa production with good management practices. Among the cocoa management practices, the selection of suitable clones with small branching habits and moderately vigorous and proper pruning activity were the most important factor in high-density planting.

Keywords : clones, management, planting density, *Theobroma cacao*, yield

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