COMPARATIVE EVALUATION OF DRY MATTER PRODUCTION AND NUTRIENT ACCUMULATION IN THE SHOOTS OF *PUERARIA PHASEOLOIDES* BENTH AND *MUCUNA BRACTEATA* D.C. GROWN AS COVER CROPS IN AN IMMATURE RUBBER (*HEVEA BRASILIENSIS*) PLANTATION

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In a comparative study it was observed that the dry matter production of one year old *Pueraria phaseoloides* Benth was higher than that of *Mucuna bracteata* D.C. of the same age. From the second year onwards the dry matter production was higher for *M. bracteata*. Dry matter production was the maximum in the second year for both *P. phaseoloides* (5.46 t/ha) and *M. bracteata* (7.62 t/ha). The N, P, K, Ca and Mg contents of *P. phaseoloides* was 174.17, 13.08, 103.84, 65.35 and 18.03 kg/ha respectively while it was 236.21, 15.21, 79.08, 55.71 and 14.57 kg/ha respectively for *M. bracteata*.

Key words: Biomass, Cover crop, *Hevea brasiliensis*, *Mucuna bracteata*, Nutrient, *Pueraria phaseoloides*.

The beneficial effects of leguminous covers on growth and yield of rubber (*Hevea brasiliensis*) have been well documented (Watson, 1961, 1963; Watson *et al.*, 1964; Mathew *et al.*, 1989; Punnoose *et al.*, 1994). Cover crops help to improve physico-chemical properties of soil, resulting in a more favourable soil environment for root growth and proliferation (Watson, 1957; Soong and Yap, 1976). They also add a large quantity of litter to the soil, which on biological degradation and mineralisation forms humus. The nature, quantity and chemical composition of the dry matter produced varies with the cover crops and it influences the soil fertility (Jeevaratnam, 1961). *P. phaseoloides* and *M. bracteata* are the more popular cover crops grown in rubber plantations in India. The growth characters, nodulation and nitrogen fixation of *M. bracteata* have been studied (Kothandaraman *et al.*, 1987). The comparative efficiency of *M. bracteata* and *P. phaseoloides* on soil nutrient enrichment, building up of microbial population and on soil moisture status have also been reported (Kothandaraman *et al.*, 1989). However, their efficiency in dry matter production and nutrient accumulation over years has not been established. Hence a study was taken up for quantifying the dry matter production and nutrient accumulation by *P. phaseoloides* and *M. bracteata* from the first to the fifth year of growth.

Immature rubber fields, with *P.*

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