

CALOPOGONIUM CAERULEUM - AN ALTERNATE COVER CROP IN RUBBER PLANTATIONS

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Conserving soil and sustaining/improving soil fertility are important in agriculture and maintaining a ground cover is one of the most effective and cheapest means for this purpose. Performance of a shade tolerant cover crop, *Calopogonium caeruleum* (*C. caeruleum*) in rubber plantation was evaluated by establishing it in the initial (1-4 years) and later immaturity (5-7 years) phase (after pineapple intercropping) of rubber at different locations in Kerala. In the trials during the initial phase, the performance of *C. caeruleum* was compared with that of *Mucuna bracteata* (*M. bracteata*), which is a common shade tolerant cover crop in rubber plantations and it was found that growth of *C. caeruleum* was less. Nitrogen (N) Nutrient accumulation in the 2½ year old *C. caeruleum* was 71-76.6, 4.5-6.5, 47.5-60.5, 23.4-48.4 and 7.2-7.8 kg ha⁻¹ of N, P, K, Ca and Mg, respectively. The trial on feasibility of establishing *C. caeruleum* under partial shade, after the removal of pineapple intercrop showed that even though the growth of *C. caeruleum* was slow initially, it established well in the plantation in the later phase. Dry matter production of 3½ year old *C. caeruleum* under partial shade was four t ha⁻¹ and nutrient accumulation was 107.85, 10.25, 79.54, 44.31 and 5.78 kg ha⁻¹ of N, P, K, Ca and Mg, respectively. An improvement in soil properties and soil moisture was observed after the establishment of *C. caeruleum*. Soil pH also increased in the *C. caeruleum* established field. Unlike *Mucuna*, flowering and seed set were noticed in *C. caeruleum* in Kerala. It also survived in the field during summer.

Keywords: *Calopogonium caeruleum*, Cover crop, Partial shade, Rubber plantation

INTRODUCTION

Establishment of leguminous cover crop in the immature phase of rubber reduces weed growth, enrich soil nitrogen and conserve soil. *Pueraria phaseoloides* and *Mucuna bracteata* are the two common cover crops grown in rubber plantations in India. *Pueraria* can easily be established by seeds and stem cuttings in the initial years of rubber plantation. However, it will not survive in the later immaturity phase as it is not shade tolerant. *Mucuna* is shade tolerant and persist in the mature field also. It is also

drought tolerant and survive in the field during summer (Kothandaraman *et al*, 1987). In the case of *Mucuna*, flowering and seed set are not common in South India. Stem cuttings are usually used for propagation of *Mucuna*, but the percentage success is low. Tan *et al*. (1976) reported that another legume, *Calopogonium caeruleum* is a shade tolerant and drought resistant cover crop suitable for rubber. In Malaysia, *C. caeruleum* was established as ground cover in rubber and oil palm plantations (Pushparajah, 1977). If legume covers can be established