

**DISTRIBUTION OF SOIL MICRO-ORGANISMS
UNDER TWO MAIN COVER CROPS OF RUBBER
PLANTATIONS**

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ABSTRACT

Soil microbial community plays a critical role in rubber plantations. Different agronomic practices have caused depletion of soil fertility level including soil biological properties and soil micro fauna. Cover cropping is a major biological land preparation, which the lands can be rehabilitated. However the presence and abundance of microbial population is varied with the environment. Influences of the two major cover crops (*Mucuna bracteata*, *Pueraria phaseoloides*) on microbial community in Sri Lanka were examined under the Nested design, in Kalutara district. Soils were collected from different rubber plantations under 2 major cover crops (*Mucuna bracteata*, *Pueraria phaseoloides*) and a bare land. Microbes (fungi and bacteria) were isolated separately, using dilution plate technique. Soil moisture content, pH and organic matter content were taken and the variations of microbial community were examined and the counts were taken after 3 days. Data were analyzed by SAS software. Results showed that soil microbes had a significant effect on cover crop ($p < 0.001$) but no effect of soil depth ($p > 0.001$) and there is an effect on soil properties (pH, Soil moisture and Carbon content) by cover crops. Cover crop *Mucuna* has more litter accumulation, soil moisture rather than *Pueraria*. But the highest microorganism count were observed under cover crop *Pueraria*, this is due to phenolic compound accumulation of cover crop *Mucuna*. When considering above results we can recommend Cover crop *Mucuna* for rubber plantations in Sri Lanka, since it gives favourable soil properties.

Key words: *Pueraria*, *Mucuna*, Soil micro-organisms, cover crops