EFFCTIVENESS OF *IPIL IPIL* (*Leucaena leucocephala* L.) AND ACACIA (*Acacia leprosa*) ON REHABILITATION OF DEGRADED COCONUT GROWING SOILS

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An experiment was conducted as a part of the ongoing research at *Rathmalagara* estate, *Madampe* belongs to *Andigama* soil series in Low Country Intermediate zone. The experiment was conducted with the objective of investigating the effectiveness of different forest species on rehabilitation of degraded coconut growing soils. Nitrogen fixing tree plantations of *Ipil-ipil* (*Leucaena leucocephala*) and Acacia (*Acacia leprosa*) established in degraded coconut lands were tested taking natural forest as the control. The soil samples were collected at two soil depths from each treatment to analyze for physical chemical and biological properties.

The results revealed that, both microbial activity and net nitrogen mineralization of soil under natural forest were significantly higher than plantation forest types. Though under *Ipil-ipil* plantation didn't show significant difference in microbial activity it showed significantly higher net nitrogen mineralization compared to Acacia plantation. Exchangeable magnesium and organic carbon content also recorded significantly higher in the natural forest but no variation among two plantation forest types. Other soil chemical properties such as pH, electrical conductivity, available phosphorus, total nitrogen and total phosphorus showed no significant difference among natural forest and plantation forest types. The soil moisture content and aggregate stability showed higher in natural forest while lowest bulk density recorded in *Ipil-ipil* plantation.

This study indicated that most of soil characteristics under *Ipil-ipil* and Acacia plantations were closer to characteristics under natural forest and thereby it was proved the capacity of *Ipil-ipil* and Acacia plantations to rehabilitate degraded coconut growing soils.

Key words: Land rehabilitation, Plantation forestry, Soil fertility, Soil degradation