

## **BIOFILMED BIOFERTILIZER ON IMMATURE TEA IN UP COUNTRY TEA SOIL**

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In long term adverse impacts on soil fertility and crop productivity due to chemical fertilizers were a known phenomenon in agriculture. This study investigates the feasibility of Biofilmed Biofertilizer (BFBF) as an alternative to the chemical fertilizer for immature tea in up country tea soil. Experiment was carried out on one and half years old immature tea stand (DT1 cv.) at Holyrood estate, *Talawakelle*. Eight fertilizer treatments were; recommended chemical fertilizer (T200) at a rate of 1500 kg/ha/yr, three types of BFBF, and half of recommended T200 (750 kg/ha/yr) with and without 3 types of BFBF. Pre-isolated beneficial bacteria and fungi were used in preparation of BFBF. Randomized Complete Block Design with three replicates was used on direct planted and rehabilitated tea soil. Physical, chemical and biological properties of soil samples, chemical properties of leaf samples and physiological and growth performances of tea bushes were assessed after one and half years of treatment application.

The results showed that the Biofilmed Biofertilizers with half rate of recommended fertilizer was similar to recommended fertilizer of T200, in terms of soil parameters of microbial biomass carbon in soil, available nitrogen, available phosphorus, organic carbon, cation exchange capacity, pH and bulk density; leaf parameters of total nitrogen, magnesium and phosphorus; growth and physiological parameters of centering weight, stem diameter, relative growth rate of tea bushes in rehabilitated and direct planted situations. Substituting of recommended dosage of T200 is possible with BFBF alone with  $\frac{1}{2}$  T200 in upcountry immature tea lands without any adverse impact on plant growth and leaf production.

**Key words:** Biofilmed biofertilizer, Chemical fertilizer, Tea