THE IMPACT OF MECHANICAL HARVESTING ON YIELD AND REGENERATION IN LOW GROWN TEA IN SRI LANKA

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Manual harvesting of shoots has become a burden, due to most labour consuming field operation in tea cultivation. Mechanical harvesters increase the labour efficiency, though it removes all the growing shoots non-selectively affecting the Sink-Source relationship.

The experiment was designed in a Split Plot with 4 replicates where weekly manual harvesting (M1), weekly alternate side Mechanical half-bush harvesting (M2) and fortnight intervals Mechanical full-bush harvesting (M3), were tested for 3 tea cultivars, viz. TRI 2023, TRI 2025 and TRI 4042. Fresh leaf weights and shoot composition both on harvested crop and plucking table were recorded weekly over 4 months period. Results reveals that the unsorted and sorted leaf yields were significantly higher in M1 than in M2 and M3. The loss of tea yield under mechanical harvesting was in the range of 15-42%. Weight of bud+1L(leaf) shoots was significantly higher in M2 followed by M3 and M1. Both bud+3L and *Banji* shoot weights were higher in M1 than M2 and M3. Both damaged and coarse leaf weights were found to be significantly higher in M2 and M3, than in M1 which decreased the quality of made tea and, increased the cost of production.

Count of bud+L4 on the plucking table before harvesting were significantly higher in M3 than M1 and M2. Mechanical harvesting removed bud+ 1L shoots twice more than manual. Removal of *bunji* shoots of M1, M2, and M3 were 34.1%, 11.6% and 15.5% respectively. Damage shoots count was significantly higher in mechanical harvesting than manual harvesting. Half-bush harvesting and full-bush harvesting method have not greatly affected shoot composition, though not significantly represented in the yield.

Key words: Harvesting, Mechanization, Half bush