UPTAKE AND TRANSLOCATION OF NUTRIENT ELEMENTS IN TEA (*Camellia sinensis* L.) AS INFLUENCED BY CLONE AT TWO LOCATIONS

By

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The notable difference was that the content of magnesium, while in the clones TRI 2024, TRI 2023 and DT1 was rather low in the mature leaves at the plucking table it was much high in this tissue in TRI 2025, probably due to its efficient translocation from roots to mature leaves. Similarly the content of zinc was highest in most of the tissues of the clone TRI 2025 but it varied markedly from tissue to tissue with root showing the highest content and the flush the lowest. The concentration of these nutrients in different tissues as related to the clones and with respect to the efficiency of uptake and translocation is also considered. The levels of nutrients in the tissues are also being discussed in relation to the current fertilizer practices adopted for tea in Sri Lanka.

Abstract

Foliar nutrient analysis is used as a tool for detecting nutrient deficiencies and recommendation of appropriate fertilizer mixtures. The practice adopted by the Tea Research Institute of Sri Lanka is to sample mature leaf from the plucking table as the suitable tissue for such analysis.

In this study an attempt was made to investigate the variation in nutrient content among different tissues such as flush, stems, mature leaves and roots so as to obtain additional information on the reliability of selecting any particular tissue for such analysis and interpretation. Since elements could behave differently in their mode of uptake and translocation, more emphasis is placed on the nutrient status of different tissues, particularly root and shoot to see the translocation of some of the important elements such as nitrogen, phosphorus, potassium, calcium, magnesium, aluminium and zinc. Locationwise differences have also been included.

Results have shown that in most of the clones the highest content of nitrogen, phosphorus, potassium and magnesium was seen in the flush but it contained the lowest content of calcium and aluminium. The mature leaves showed an intermediate value and was fairly consistent for most of the clones. The exceptions were calcium and aluminium, both showing the highest content in the mature leaves. With respect to potassium the young stem contained more potassium than the mature leaves. Of the four clones studied TRI 2025 was unique in that the uptake and translocation of almost all the nutrients found to be much efficient compared to the other three clones.