B 043

Induction of mutation in tea (*Camellia sinensis L.)*

Tea cultivars are mainly propagated asexually, sometimes by budding, grafting but mainly from cuttings. Cross breeding is often limited by specific difficulties such as heterogeneity and subsequent variability of plants. Therefore in tea, mutation induction is the only mean for producing genetic variability within a short period of time. Chemical mutagens have been disappointing on the whole, because of poor uptake and penetration of the chemical. This study was initiated with the objective of identifying the best dose rate for creating desirable mutations by a physical mutagen. Uniform size nursery cuttings of clone TRI 2025 were irradiated with varying dosage of gamma rays from cobalt 60 source and the dose rates were 0 Gy, 20 Gy,

40 Gy, 60 Gy, 80 Gy and 100 Gy. The experimental design was Randomized Complete Block Design with 3 replications. Each treatment represented 10 unrooted tea cuttings per replication. Soon after the treatment, cuttings were planted in soil filled bags which were transferred to a nursery shed where normal cultural practices were carried out. The percentages of survival rates of cuttings were recorded after two months.

The best dose rate for the induction of mutations by gamma rays in unrooted cuttings in TRI 2025 clone is found to be 54 GY.