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The influence of Nitrogen and Potassium fertilizers on peel colour development and stem-end rot disease development of ripe Karuthacolomban mango

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Mango is grown in almost all districts in Sri Lanka, although the dry zone has more suitable environmental conditions for commercial production. Karuthacolomban is one of the mango cultivars indigenous to Sri Lanka and is popular due to its exquisite taste and aroma. Lack of attractive color and high susceptibility to the stem end rot disease are the major post harvest problems in Karuthacolomban mango for both local and export markets.

Trees have been planted, according to the statistical design of Randomized Complete Block Design (RCBD) with 10 blocks. As a pre-harvest technique, recommended dose of Nitrogen (N), Phosphorous (P) and Potassium (K), double dose of Nitrogen with recommended levels of P and K (excess N) and double dose of K with recommended levels of N and P (excess K) were applied to these mango (*Mangifera indica*) trees at two consecutive bearing stages, to find out the effect of nutrients on above problems. The recommended level of NPK was applied as Urea 235g/plant, Triple super phosphate 120g/plant and Murate of Potash 945g/plant, respectively.

Mango fruits were harvested from treated plants to find out the effect of Nitrogen and Potassium on post harvest diseases and peel color development in Karuthacolomban mango. Stalks of every fruit were removed without touching the latex on the skin. Then fruits were cleaned and allowed 1-2 hours to dry in air under the sample preparation. Fruits were harvested at fully mature stage and allowed for natural ripening and induced ripening using ethral at different temperatures in experiment 1. The fruits of prepared sample were inoculated with *Lasiodiplodia theobromae* for stem-end rot disease development. Then fruits were stored 3-4 hours under room temperature at 25±2 ^{0}C and ripening

treatments were followed in experiment 2. Peel colour development and stem-end rot disease intensity were recorded when fruit was at table ripe stage. Analysis was done by using statistical package Minitab/ Freidman test.

Excess K treatment was found to be the most effective fertilizer level for developing peel color and it took more time, hence post harvest life was longer. Excess N fertilizer application did not improve yellow color of the peel. None of the fertilizer levels showed a significant difference on stem-end rot disease development under the conditions of these experiments.

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