

**USE OF REFUSED TEA AS A GROWING MEDIUM
FOR HYDROPONICALLY GROWN TOMATO
(*Lycopersicon esculentum*)**

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Signature of the Candidate

We endorse the declaration by the candidate

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ABSTRACT

Production of tomato (*Lycopersicon esculentum*) under controlled environment using hydroponics technology is gradually increasing in Sri Lanka to cater the year-round demand for tomato with excellent yield and quality parameters. Coir dust is the most common growing medium used in hydroponics in Sri Lanka. As coir dust is considerably expensive and abundantly available only in coastal areas, using coir dust for hydroponics in up country increases the cost of production. But refused tea, which has a potential to use as an alternative growing medium is readily available in up country, as well managed tea estates have been occupied the most of the up country terrain. Therefore, a research was conducted to evaluate the performances of refused tea as a growing medium for hydroponically grown tomato. Different combinations of two growing media were considered as the five treatments in this study including; treatment 1 (T1); coir dust only, treatment 2 (T2); refused tea only, treatment 3 (T3); coir dust and refused tea mixed in the ratio of 1:1, treatment 4 (T4); coir dust and refused tea mixed in the ratio of 1:2 & treatment 5 (T5); coir dust and refused tea mixed in the ratio of 2:1. Complete Randomized Design (CRD) was used as the experimental design with five replicates. The tomato variety Thilina, was grown in grow bags with different treatments and plant growth parameters and yield parameters were evaluated with the time. The results of this research reveal that, out of the five different growing mixtures tested, the plants grown in T3 shows better performances by providing significantly higher total yields with significantly longer fruits at 5% significance level compared to other four media. Therefore, a combination of refused tea and coir dust into 1:1 ratio could be used to produce high quality tomato with higher yields under hydroponics other than using either only coir dust or only refused tea.

Key words: Refused tea, coir dust, hydroponics, tomato, growth and yield parameters