

**EVALUATION OF PHYSICOCHEMICAL PROPERTIES OF
TOMATO VARIETIES (*Solanum lycopersicum*) GROWN IN
UVA REGION, SRI LANKA AND THEIR SUITABILITY FOR
VALUE ADDITION**

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ABSTRACT

Value addition is a viable solution to manage surplus and postharvest losses. Suitability of tomato varieties is one of the critical problems in value addition. Physicochemical properties are important indicators which used to detect suitability of a tomato variety for value addition. The aim of this study is evaluation of physicochemical properties of new eight tomato varieties for their suitability for value addition. Furthermore, physicochemical properties of tomato pulp were evaluated during 10 weeks of storage period under refrigerated conditions. Tomato varieties were named as V2 x 1130 (T₁), Vasantha (T₂), Valouro (T₃), Big Beef (T₄), Tomato Hybrid (BA x 274) (T₅), BT Narita F1 Hybrid (Sirik) (T₆), Hybrid Tomato SVTE 8513 (T₇) and Balaban, F1 Hybrid (Pembe sirik) T₈ were obtained with the assistance of Provincial Department of Agriculture, Uva Province. Under physical parameters, water activity, moisture content, pulp percentage and pulp color (ΔE value based on L*, a*, b* in Hunter color scale) were measured. Under chemical parameters, Total soluble solid (TSS) content, pH value, titratable acidity, lycopene content, antioxidant activity was evaluated. The variety T₇ showed highest TSS content ($4.60 \pm 0.1^\circ\text{Brix}$) in the fresh pulp whereas T₁ variety showed highest TSS content during the storage period. The T₁ variety showed the highest antioxidant activity (75.21 ± 1.15 inhibition %) and highest lycopene content ($175.84 \pm 0.34 \text{mg/kg}$) in the fresh pulp. The highest pH value (4.61 ± 0.01) was found in T₇ variety. Moisture content of the fresh tomato pulp samples not significantly different ($P > 0.05$). Moreover, the highest ΔE value was observed in T₂ variety (18.7 ± 1.11). In all the samples lycopene content and antioxidant activity were decreased ($P \text{ value} < 0.05$) and pH values were slightly increased during storage time. The findings of this study may provide vital information of these varieties and potentially enable their use as raw materials in potential food applications.

Key words: Physicochemical properties, Tomato varieties, Antioxidant activity, Lycopene content