

Development of an Instant Herbal Tea from *Walkoththamalli* (*Scoparia dulcis*) for Reduction of Blood Glucose Level

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The study was carried out to identify the suitable plant part, drying period for the preparation of instant herbal tea of *Walkoththamalli* and to analyze consumer preference, quality of the product, chemical composition and pharmacological effect of the herbal extract to control the blood sugar level.

Whole plant and leaves of the plant were selected as reliable plant parts and dried under 70 °C for 12, 24 and 24 hours to prepare the bags by filling 1.5 g of dried samples and microbial test was performed for four months to check the shelf life of the product by comparing the available standards for black tea. Organoleptic properties of finished product and herbal extract were evaluated using a sensory evaluation with thirty one panelists and Thin Layer Chromatography (TLC) with 5% methanol in chloroform solvent system was used to study chemical compounds available in the 95% ethanol herbal extract. Random blood sugar test and glucose tolerance test with 75 g of oral administration of glucose were used as clinical trails to test the effect of the herbal extract on blood sugar level (leaves dried for 24 hour at 70 °C) using five and three volunteers respectively.

Among the six treatments, leaves dried for 24 hours was recorded the significantly highest ($P < 0.05$) consumer preference for all parameters analyzed in the sensory evaluation. The same sample recorded the lowest microbial activity compared to the other samples. With the TLC all six samples showed that different banding patterns in the plates, which represent the availability of chemically active compounds in the herbal extracts and leaves dried for 24 hours at 70 °C was shown the highest number of bands under 254 nm UV light. The results of random blood sugar test and blood sugar level in glucose tolerance test showed that significant reduction in blood sugar levels of each volunteer with herbal extract than the control. According to the above results leaves dried for 24 hours at 70 °C was the best type to prepare the instant herbal tea from *Walkoththamalli* which is having the ability to reduce the blood sugar level.

Key words: Blood glucose level, Thin Layer Chromatography, Chemical compounds, Microbial activity