COMPARISON AND DETERMINATION OF CAFFEINE AND OTHER CHEMICAL CONSTITUENTS IN DIFFERENT COFFEE VARIETIES

BY

JEEWEN KUMARGE

DEPARTMENT OF AGRICULTURAL CHEMISTRY

FACULTY OF AGRICULTURE

EASTERN UNIVERSITY

SRI LANKA

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ABSTRACT

Coffee is one of the most widely consumed hot beverages all over the world. Coffea Arabica is the most important species and that occupies 80% of the world coffee trade because of it's distinct flavor and aroma. At present coffee is considered as a functional food, primarily due to its high content of antioxidant and other beneficial biological properties. There are some chemical components are present in coffee such as caffeine, phenolic compound, melanoidins, minerals and others which are more important for industrial application and also these components give more health benefits. Caffeine is an alkaloid of the methylxanthiene family. Caffeine is naturally found in the leaves, seeds and fruit of at least 63 plant species worldwide. The one of the most commonly known source of caffeine is coffee. Coffee beans contain 0.8-2.8% caffeine depending on species and origin and it contributes to 10 to 30% of the bitter taste of coffee brews. The amount of caffeine in coffee beverages varies depending upon serving size, the type of product, and brewing method.

Total coffee extent in Sri Lanka is about 6000ha, out of which about 50% is in central province. The central research station, Department of Export Agriculture, Matale they are cultivating many coffee varieties. Hybrido-de-Timor (HDT), HDT x Takari (S9) and HDTxCatura (Catimor) are high yielding varieties. Objective of this study was to investigate the comparative phytochemical, mineral and proximate content between *Coffea arabica* having three different varieties, namely S9, HDT and Catimor that have different genetic characteristics with same agro climatic condition in the plantation. Standard Analytical procedures were followed to analyze phytochemical, mineral and proximate composition. The phytochemical analysis suggested quantitatively higher percentage of Caffeine content in S9 variety (1.029%) than other varieties. The results

of proximate analysis revealed that the S9 variety was richer in acid insoluble ash (3.3347%) and total ash (4.7047%) content while the HDT variety exhibiting greater amount of water soluble matter (24.4307) and crude fat (25.5%). The Catimor variety showed that highest moisture content (0.94467%). In mineral analysis, significantly higher amount of Phosphorous (1.893%), Zinc (0.0363%) and Potassium (1.313%) were observed in S9 variety, while HDT variety contained highest amount of magnesium (0.181%) and Catimor contained highest amount of Ferrous (0.5677%) and Calcium (0.6506%). In sensory evaluation coffee brew of S9 variety get most preference on color (3.931), taste (3.436), aroma (3.8636) and overall acceptance (3.588) like attributes than other varieties. But for mouth feel coffee brew of HDT variety having most preference and value was 3.293.

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