Evaluation of Changes in Theaflavin, Thearubigins, Caffeine and Alcohol Content during Tea Wine Fermentation

R.H.C.S. Arunodi[1*], G.A.A.R. Perera[1], K.G.N.P. Piyasena[2] and E.N.U. Edirisinghe[2]

[1]Department of Export Agriculture,Uva Wellassa University,Badulla,Sri Lanka.
[2]Biochemistry Division, Tea Research Institute of Sri Lanka, Talawakelle
**Corresponding Author E-mail: chamalishashi@gmail.com, TP: +94776239751*

Tea made from tender shoots of tea plant (*Camellia sinensis*) is renowned for its refreshing and health promoting properties. A process for manufacturing wine using tea extract was developed by the Tea Research Institute of Sri Lanka. As a diversified product, tea wine will broaden market for tea. Parties interested to commercialize this product are eager to know the chemical changes undergo during tea wine fermentation. Therefore, the present study was undertaken to investigate the changes in theaflavin, thearubigins, caffeine and alcohol contents during tea wine fermentation. Tea Infusion of 2°Brix was obtained by brewing black tea (Broken Orange Pekoe grade) with boiling water and it was enriched with sugar to form a 22 °Brix must. This prepared must was fermented with *Saccharomyces cerevisiae* in glass canisters fixed with fermentation traps for a period of six weeks. Chemical composition of fermenting wine was determined in weekly interval. Theaflavins ,and thearubigins contents were determined by (Roberts and Smith, (1963) method whereas caffeine and alcohol contents were determined by ISO 14502, (2005) and hydro meter methods respectively. This experiment was conducted in triplicate. Initial theaflavin (16.06±3.5 µg), thearubigins (809.23 ±39.11 µg) and caffeine (93.58±0.54 mg) contents per 100 mL of 22°Brix must decreased to 15.56 ±0.60 µg ,547.23 ±12.92 µg and 86.33±1.20 mg per 100 mL respectively at the end of the fermentation period. Alcohol content of the final product was 11.78% (volume by volume). Theaflavins and thearubigins are black tea polyphenols which contribute to much of physicochemical, organoleptic and therapeutic properties of tea. Further, caffeine is known as a central nervous system stimulant. Therefore, tea wine with its appreciable quantities of theaflavins, thearubigins and caffeine will be a better alternative to other types wines

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