Effect of Different Roasting Temperatures on the Quality of Instant Coffee Cubes Production from *Coffea robusta*

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Coffee is one of the most widely consumed beverages around the world. *Coffea arabica* and *Coffea robusta* are the two common coffee varieties that have grown in commercial production and both of them are differed distinctly in flavor, caffeine contents and other phytochemical compounds such as chlorogenic acid and antioxidants, which are having beneficial properties and allowed coffee to be a functional food. This study aimed to determine the effect of temperature and time profile of roasting on the quality of instant coffee cubes prepared from *Coffea robusta*s and to determine the appropriate treatment (roasting time-temperature combination) out of the three treatments to obtain the best instant coffee cube. Several important phytochemical parameters, shelf life and sensory attributes were evaluated after the production of instant coffee cubes using Association of Official Analytical Collaboration (AOAC) standard methods, Sri Lanka Standards (SLS) 516 and using 30 untrained panelists with a 9-point hedonic scale respectively. Output from the three treatments; Treatment 1: roasting temperature of 80°C for 45 minutes, Treatment 2: roasting temperature of 140°C for 30 minutes and Treatment 3: roasting temperature of 220°C for 10 minutes showed significant impact on some parameters. The treatment of roasted temperature at 220°C for 10 minutes was the best treatment to produce instant coffee cube with higher coffee liquor concentration converted from higher fat content of 12.15%, with least water activity of 0.7574, comparatively higher caffeine content of 2.21%, carbohydrates content of 63.46%, water activity 0.7574, pH of 5.58; Total Soluble Solids 34. However instant coffee cubes produced from the third treatment (at 220°C for 10 minutes) had low antioxidant activity and low Chlorogenic acid content of 0.88±0.4 compared to the other treatments although sensory panelists prefer instant coffee cubes made from the third treatment which have better shelf life attributes.

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