

**DEVELOPMENT AND QUALITY EVALUATION OF CINNAMON
(*Cinnamomum zeylanicum*) INCORPORATED READY-TO-SERVE
NELLI (*Phyllanthus emblica*) BEVERAGE**

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The excessive consumption of unhealthy foods is a root cause of many non-communicable diseases. This study aimed to develop a ready-to-serve (RTS) *Nelli* (*Phyllanthus emblica*), beverage to provide a better alternative in this regard. The functional properties of this product were further improved by incorporating cinnamon oil, extracted by steam distillation of cinnamon (*Cinnamomum zeylanicum*) barks. Thirty three percent (33%) of mechanically extracted *Nelli* juice and 40% of water were mixed with different additives (24% of sugar, 2% of salt, 0.02% of arabic gum, 0.05% of citric acid, and 0.03% of sodium metabisulfite) together with 0.05% of cinnamon oil (v/v) (selected based on preliminary sensory screening) to prepare the main formulation. The quality attributes of the formulation were determined in terms of colour, water activity (a_w), total soluble solids (TSS), pH, titratable acidity (TA) and total polyphenol content (TPC). And the shelf life was determined via aerobic plate count (APC) and yeast and mold count (YMC), on weekly basis, up to four weeks (one month) under the ambient conditions. According to the results, the initial readings of TPC, a_w , TSS, pH and TA of prepared formulation were 33.99 ± 0.78 mg GAEml⁻¹, 0.86, $16.70 \pm 0.35\%$, 2.75 ± 0.05 and 0.57 ± 0.18 respectively. Further, L^* , a^* , b^* colour values of the same formulation were 35.13 ± 1.96 , 1.30 ± 0.17 and 2.60 ± 0.06 respectively. After the one-month duration, TSS, pH, TA and L^* value were not significantly changed in the product ($p < 0.05$). Moreover, microbial counts during the four weeks were found as < 50 CFUml⁻¹ for APC and < 2 CFUml⁻¹ for YMC revealing that they were at safe levels for consumption. In conclusion, *Nelli* RTS beverage with 0.05% cinnamon oil is recognized with acceptable quality and it is shelf-stable for one month at ambient conditions.

Keywords: Cinnamon oil, Formulation, Health, Quality, Shelf life