

**DEVELOPMENT OF VALUE ADDED PRODUCTS FROM
NELLI (*Phyllanthus emblica*) AND THEIR QUALITY
EVALUATION**

A dissertation submitted to the
Faculty of Animal Science and Export Agriculture
Uva Wellassa University
In partial fulfillment of the requirements for the award of
Bachelor of Science in Export Agriculture

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2018

ABSTRACT

Nelli (*Phyllanthus emblica*) is one of the underutilized, seasonal fruit crops which contains higher amount of vitamin C as well as other vitamins and minerals. However, due to lack of awareness on its nutritional composition, astringent and bitter taste of the fruit, usage of it for developing food products is at low level. Therefore, this study was conducted to develop value added products from *nelli*. *Nelli* powder incorporated instant *rasam* mixture was prepared by mixing 30 % (w/w) of *nelli* powder with 70% (w/w) of dehydrated powders of the usual ingredients of traditional *rasam*. For select that ingredient combination, preliminary studies and several sensory evaluations were carried out. Sensory evaluations were carried out using 9-point hedonic scale by 30 panelists and considered sensory parameters were aroma, taste, color and overall acceptability. Developed product was packed in metalized film pouches. Storage life of the product was evaluated up to 2 months at ambient temperature. Proximate analysis was done and resulted values for moisture, total fat, crude fiber, total ash and crude protein contents were $5.33\pm 0.03\%$, $2.17\pm 0.23\%$, $8.52\pm 0.18\%$, $3.18\pm 0.06\%$, $9.17\pm 0.65\%$ respectively. As the main constituent presence in *nelli*, ascorbic acid content was determined and it was significantly reduced ($p<0.05$) during the storage period. According to the microbiological results product was microbiologically safe for consumption up to 2 months of storage period. As second experiment, preserved *nelli* in glucose syrup series were developed. Preliminary studies were conducted to select suitable TSS values of glucose syrup and selected values were 35°, 40° and 45° respectively. Pretreatment was carried out to reduce the bitterness of the fruit. Physicochemical and microbial properties were determined within the 5 weeks of storage period. Ascorbic acid content was significantly reduced ($p<0.05$) during the storage period. Significant amount of microorganisms were not reported during the storage period of 5 weeks. Sensory evaluation was carried out using 9-point hedonic scale by 30 panelists to select the most acceptable one and product with initial TSS value of 45° was selected as the best one. Considered sensory parameters were texture, appearance, color, aroma, taste and overall acceptability. Sensory data of both products were analyzed by Friedman test using MINITAB 18 statistical software. This study encouraged to the development of different value added products from *nelli*.

Key words: *Nelli*, *Rasam*, Sensory, Ascorbic acid