

Assessment of Sensory Acceptability of Beetroot (*Beta vulgaris*) incorporated Buttermilk Wine during Storage

W.M.M.H Thilakarathne^{1*}, M.K Ranasinghe¹, B.M.P Priyadarshani¹ and R.M.T Madushanka¹

¹Department of Animal Science, Uva Wellassa University, Badulla, Sri Lanka

Buttermilk is the by-product produced during butter manufacturing process which contains protein, lactose and minerals in high levels. It has been estimated that the 50% of buttermilk is discarded as a waste product. As an ingredient, buttermilk in product development helps in effective utilization of the by-product. Thus, present study was conducted to develop a wine using buttermilk with incorporation of beetroot (*Beta vulgaris*) and *Saccharomyces cerevisiae*. Preliminary trials were conducted to select best ratio between buttermilk: beetroot with 1:1, 2:1, 3:1 and 4:1. Based on total soluble solids, treatment having 3:1 buttermilk: beetroot ratio was used for further study. Four levels of *Saccharomyces cerevisiae* were used to determine the best level of yeast incorporation to produce the wine. Commercially available wine was used as control. All treatments were evaluated by 30 untrained panelists for color, aroma, mouthfeel, taste and overall acceptability for 42 days of storage. Data from sensory evaluation were analyzed using Friedman non-parametric test using Minitab 17^c. Based on sensory evaluation at day 21, all treatments showed significant difference ($P < 0.05$) with respect to the all sensory attributes while 0.1% *Saccharomyces cerevisiae* incorporated wine showed highest estimated median values for mouthfeel, taste, and overall acceptability; 8.00, 7.86 and 8.38 respectively. Moreover, at day 42, treatments showed significant difference ($P < 0.05$) with all attributes while amongst all treatments 0.1% *Saccharomyces cerevisiae* incorporated wine scored highest estimated median values for mouthfeel, taste and overall acceptability; 8.00, 7.94 and 7.86 respectively. Hence, the study revealed that organoleptically acceptable buttermilk wine could be produced using 0.1% *Saccharomyces cerevisiae* incorporation level with 7.0% (v/v) alcohol content.

Keywords: Beetroot, Buttermilk, *Saccharomyces cerevisiae*, Sensory attributes, Wine