

## ABSTRACT

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### **THE UTILIZATION OF BLACK NIGHTSHADE (*Solanum nigrum* L.) JUICE IN FERMENTED BEVERAGE**

(xvi + 73 pages: 30 figures, 9 tables, and 8 appendices)

*The black nightshade (*Solanum nigrum* L.), which was commonly known as leunca in Indonesia, has been acclaimed for its medicinal effects. Due to its limited use, a processing method to utilize black nightshade into a product that is acceptable for consumer and has better functional properties must be studied. This research was aimed to utilize the black nightshade (*Solanum nigrum* L.) juice in the making of fermented beverage. The black nightshade juice was made with two different pretreatments (no blanching, water blanching at 80°C for 3.3 minutes) and three different ratios of fruit and water (1:1, 1:2, 1:3). Ranking test was conducted by 80 untrained panelists to determine the most preferred juice. The juice with blanching pretreatment and 1:2 ratio of fruit and water was chosen as the most preferred juice. The black nightshade fermented beverage was made with three different sugar concentrations (10%, 12.5%, 15%) and observed twice a week for 21 days. The black nightshade fermented beverage was analyzed physically (color), chemically (antioxidant activity, alcohol content, pH, total titratable acidity, volatile acid, total dissolved solid, total reducing sugar), microbiologically (total yeast count, total plate count, *Escherichia coli*, *Staphylococcus aureus*), and organoleptically (scoring test, hedonic test). The black nightshade fermented beverage with 10% sugar concentration and 14 days of fermentation period was chosen as the selected black nightshade fermented beverage based on its antioxidant activity ( $304.1918 \pm 0.5026$  mg/L) and organoleptic analysis.*

Keywords: Antioxidant, black nightshade, fermentation, *Saccharomyces cerevisiae*

References: 33 (1988-2015)