DEVELOPMENT OF AN *Aloe vera* (*Aloe barbadensis* Miller) INCORPORATED READY-TO-SERVE BEVERAGE

Aloe vera L. or *Aloe vera Burm. f.*, has been well known as a miracle plant due to its remarkable therapeutic properties. Aloe gel possesses over 200 nutrients including acemannan, the major bioactive mucopolysaccharide, which contributes to many health beneficial effects including mainly anti-diabetic effect. Aloe gel has been extensively used as a functional ingredient in food and beverage production. The objectives of this study were to determine the best anti-diabetic process formulation of aloe based ready-to-serve beverage with crushed aloe gel particles and assess its shelf-life. To get the best mouthfeel of the product and to preserve acemannan, a pectinase enzyme treatment and two different pasteurization conditions; high temperature short time (HTST) and low temperature long time (LTLT) were tried out. Effect of possible combinations of above thermal treatments was tested by spectrophotometry, based on acemannan preservation. Proportions of crushed aloe gel particles, sucralose and acidulates were determined by conducting ranking tests based on sensory qualities. The shelf-life of the product was assessed based on physico-chemical, microbiological and sensory qualities at 35±2 °C. The absorbances intended for acemannan were significantly ($p<0.05$) higher in HTST pasturization followed by pectinase enzyme treatment. The beverage developed by incorporating aloe gel, sucralose, citric acid, ascorbic acid, nature identical flavors and permitted preservatives was the most acceptable formula based on sensory qualities. pH, titratable acidity, turbidity, total soluble solid and acemannan content of the beverage 2.82±0.05, 0.52±0.02% w/v (as citric acid), 16.3±0.9 NTU, 0.0±0.0 °Brix and 2427±115 mg dm^{-3}, respectively. The shelf-life was nine months at ambient temperature (27±2 °C). Hence, the developed formula is satisfactory, assessment of the effectiveness of the anti-diabetic activity by *in vivo* studies is important.

Keywords: *Aloe vera* gel, ready-to-serve beverage and anti-diabetic formula