

## Abstract

Aloe Vera (*Aloe Barbadensis* Miller) has many medicinal properties which potentially benefits to human. In order to enhance its property or prolong it, various vitamins and mangosteen extract are added and prepared into 6 formulations A1 to A6. Each formulation is differentiated based on percentage of vitamin C and mangosteen extract; 0-0, 0.5-0, 0-0.5, 0.5-0.5, 0.5-1.0 and 0.5-2.0 %w/v respectively. Both physical and chemical properties were studied; pH, microbial growth, colour, antioxidant (DPPH and TPC) and etc. According to the result, % antioxidant of Aloe Vera gels was ranging from  $44.68 \pm 10.80\%$  to  $85.48 \pm 2.46\%$ . Aloe Vera gel of A6 containing 0.5% vitamin C and 2.0% mangosteen extracts showed the highest antioxidant activity as  $85.48 \pm 2.46\%$  while Aloe Vera gel A4 containing 0.5% vitamin C and 0.5% mangosteen extract showed the highest amount of TPC as  $141.34 \pm 4.89 \mu\text{gGAE/ml}$ . After 8 weeks, the Aloe Vera gel A6 also exhibited the highest antioxidant property as  $91.52 \pm 2.97\%$  and had no significant difference from week 0, followed by A4 which showed antioxidant activity as  $83.02 \pm 1.59\%$ . However, all formulations showed a moderate to high decrease in TPC. On the other hand, Aloe Vera gel A2 containing 0.5% vitamin C and no mangosteen extracts appeared to be more stable in the phenolic content since it exhibited the least decrease of TPC among all samples. According to physical characteristics and antioxidant property of A1 to A6, the Aloe Vera gel A4 could retain their microbiological qualities and physicochemical properties which showed  $83.02 \pm 1.59\%$  antioxidant and TPC as  $12.27 \pm 1.46 \mu\text{gGAE/ml}$  throughout shelf-life study for 8 weeks.

Key words: Aloe Vera, Mangosteen extract, Vitamin C, Antioxidant, Total Phenolic content