ABSTRACT

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STUDY OF PAPAYA (CARICA PAPAYA L.) LEAF UTILIZATION IN THE MAKING OF ANTIDIABETIC FUNCTIONAL DRINK

(xii + 48 pages: 7 tables, 21 figures, and 17 appendices)

Papaya (Carica papaya L.) is one of common fruits in Indonesia, yet the leaf is rarely consumed despite containing various phytocomponents that contribute to health benefit, including antidiabetic activity. The purpose of this research is to produce papaya leaf based functional drink that serves as one of solutions to reduce diabetes rate in Indonesia. There are two variables used in the preliminary research, which are state of leaves (wet and dry) and preparation methods (RT blending and brewing. Highest total phenolic content is obtained by dry, brewing treatment (87.31 GAE/L), highest total flavonoid content is gained by wet, RT blending treatment (27.16 QE/L). While highest antioxidant activity (27.07AAE/L), and antidiabetic activity (50.12%) is shown by wet, brewing treatment. Both dry, RT blending and dry, brewing treatments are toxic with LC50 value of 551.55 ppm and 770.91 ppm respectively. Thus, wet, brewing treatment is used to make the functional drink. Papaya leaf extract then added with few type of spices (ginger, cinnamon, tamarind) with different concentration as well as non caloric sweetener (sucralose) to mask its bitter taste. The most preferred formulation of papaya leaf based functional drink is papaya leaf extract added with tamarind (30g/100ml). It has total phenolic content of 122.90 GAE/L, total flavonoid content of 15.30 QE/L, and antioxidant activity of 39.59 AAE mg/L.

Keywords : Functional drink, antidiabetic activity, diabetes mellitus, papaya leaf