ABSTRACT

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UTILIZATION OF CHICKPEA (*Cicer arietinum* L.), RED KIDNEY BEAN (*Phaseolus vulgaris* L.), AND PIGEON PEA (*Cajanus cajan*) IN THE PRODUCTION OF AQUAFABA

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Aquafaba is a viscous liquid obtained from boiling legumes that can be utilized to substitute egg white. It has similar functional properties with egg white such as foaming ability due to the protein, carbohydrate, and saponins content that leach into the cooking water. Previous researchers mostly used chickpea in the production of aquafaba but other types of legumes such as red kidney bean and pigeon pea that has similar composition with chickpea in which has low fat and high protein and carbohydrates have the possibility to be used to produce aquafaba. In this research several types of chickpea, red kidney bean, and pigeon pea were used to make aquafaba with different boiling time (30,60, and 90 minutes). The aquafaba produce was evaluated in terms of yield, total soluble solids, viscosity, pH, protein, carbohydrate, tannin, foaming capacity, and foam stability of aquafaba. The best aquafaba chosen were the chickpea aquafaba boiled for 90 minutes. It has the lowest yield, 40.55 ± 2.70 % , a viscosity of (38.08 ± 5.66 cPs) and has the high protein content of 35.73 ± 4.05 %) and carbohydrate content (50.79±7.79 %) and a tannin content of (38.15 ± 5.15 mg CE/L). It has foaming capacity and foam stability of 349.71 ± 36.41 % and 89.65 ± 8.70 % in comparison of egg white.

Keywords : Aquafaba, chickpea, red kidney bean, pigeon pea

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