ABSTRACT

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PHYSICOCHEMICAL CHARACTERISTICS OF PHYSICALLY MODIFIED BOGOR TARO (*Colocasia esculenta* L. SCHOTT) STARCH
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Taro (*Colocasia esculenta*) is one of the potential tubers that can be used as the source of functional food. Bogor taro is easy to digest to become simple sugar with the help of alpha-amylase in the body which can be a potential source of high resistant starch. By using physical modification such as hydrothermal methods, the physicochemical characteristics of Bogor Taro can be modified to make it more resistant to digestion enzyme. Four types of heating temperature and three types of moisture content were applied to the Bogor Taro Starch. The result for 100°C with 50% of moisture content shows the highest gelatinization enthalpy (13.36 J/g), increasing amylose content (14.46±0.23%) and decreasing viscosity (20.33±2.75 cP). Further treatment with different heating time showed significant difference ($p \leq 0.05$) in the amylose content, and viscosity. The heating time also showed increasing in the gelatinization enthalpy. Four hours heating time exhibited the best result in obtaining high gelatinization enthalpy (14.9321 J/g), increasing of amylose content (15.66%±0.38%), and decreasing of viscosity (981±5.00 cP). The modified starches show decreasing of swelling and solubility power and decreasing of protein, fat, ash, moisture content, and carbohydrate as compared to the native starch.

Keywords: Bogor Taro, gelatinization enthalpy, amylose, viscosity, *Colocasia esculenta*
References: 51 (2000-2017)