

## ABSTRACT

Grace Josephine Sutomo (00000000617)

### **PHYSICOCHEMICAL CHARACTERISTICS OF OXIDATION METHOD MODIFICATION STARCH OF BOGOR TARO (*Colocasia esculenta* L. SCHOTT)**

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*Bogor Taro (Colocasia esculenta L. Schott) contains 70%-80% starch and gum, the starch in taro is easily digestible by the pancreatic enzymes and often used baby food, it also has higher gelling and pasting properties compared to other root vegetables. This research was aimed to use Bogor taro starch as a functional food through formulating type IV resistant starch by oxidation method. The starch was extracted by filtering the pulverized taro through filter cloth two times. The oxidation method was done in two stages and analyzed for its carboxyl content, viscosity, and color to determine the best result; in stage I the starch was modified under standard condition with differing NaOCl concentration at 1%, 3%, and 5% which showed that the highest carboxyl content is at 5%. Stage II was done to determine the best interaction between reaction time at 30 min, 60 min, and 90 min and pH at 8, 9, 10, the products obtained were analyzed for carboxyl content and reaction time 60 min and pH 10 contain the highest carboxyl content. The final product was analyzed on its resistant starch content, starch content, solubility and swelling power, chemical characteristic, and amylose and amylopectin content. The result obtained shows high amount of resistant starch, low solubility and swelling power, low amount of protein, fat, and mineral, and low amount of amylose and amylopectin which could all be attributed to the oxidation method that worked by degrading hydroxyl group in starch into carbonyl group converted to carboxyl group.*

**Keywords:** resistant starch, physicochemical characteristic, oxidation modification, native starch, modified starch.

**Reference:** 29 (1970-2018)