

# DEVELOPMENT OF PURPLE CORN STEAM CAKE AS A FUNCTIONAL FOOD HIGH IN ANTIOXIDANTS

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## ABSTRACT

Currently, many degenerative diseases are caused by oxidative stress, for example type 2 diabetes mellitus and cardiovascular disease. This disease can be prevented by consuming foods high in antioxidants. Purple corn is a food high in antioxidants because it contains anthocyanin, but currently it is not yet popular as a daily consumed food. The reason purple corn is not yet popular is that purple corn is not yet available on the market and there are not many processed purple corn that can be found. This research aims to diversify processed purple corn by making purple corn steam cake as a functional food that is high in antioxidants by knowing 1) the formulation, 2) the nutritional content which includes carbohydrate content, protein content, fat content, ash content and fiber content, 3) physicochemical properties which include anthocyanin content, antioxidant activity, amylose content, sugar content, texture and color, 4) level of consumer preference, 5) information on nutritional value, 6) selling price of purple corn steam cake.

The research uses the 4D model Research and Development (R&D) method (Define, Design, Develop, and Disseminate). Design stage to select a reference recipe for corn steam cake, design stage to determine the purple corn formulation for making Purple Corn steam cake, Develop stage to determine the nutritional content and physicochemical properties of Purple Corn steam cake as well as nutritional value information, Disseminate stage to determine the level of preference consumers and selling prices. Research was conducted in the Lab. Chemistry Department of PTBB FT UNY in May-September 2023. Data were analyzed using the Anava test followed by a difference test.

The results of the research concluded that: 1) Purple corn steam cakes are the best with 60% substitution, 2) Purple corn steam cakes have a water content of 43%, protein content 6.78%, fat content 1.64%, carbohydrate content 90%, ash content 1.2%, soluble dietary fiber 1.87%, insoluble dietary fiber 8.88%, 3) Purple corn steam cakes have a total anthocyanin content of 8.42 mg/ 100 g, DPPH antioxidant activity 11.86%, amylose content 8.9%, sugar content 46%, hardness texture 7.79 N, chewiness 2.56 N, color getting darker, redder and bluer, 4) Consumers' preference for 60% substitute purple corn steam cakes is color 3.8, aroma 3.33, texture 3.07, taste 3.67, and overall 3.8 (scale 1-5), 5) information on nutritional value per 50 g is that: total energy 114 kcal, energy from fat 4 kcal, % RDA of total fat 1%, protein 3%, carbohydrates 8%, dietary fiber 34% and anthocyanins 2 mg, 6) The selling price of purple corn steam cake is Rp. 2,500/piece.

Kata Kunci: *Purple corn, steam cake, antioxidant, anthocyanin, functional food*