

ABSTRACT

Lia Afriana. 24020122130064. **Potential Antioxidant Activity, Organoleptic Properties, and Proximate Composition of Black Soybean Tempeh with Purple Corn Combination.** Under the supervision of Arina Tri Lunggani and Sri Pujiyanto.

Tempe is a functional food with high antioxidant activity, but its production still relies on imported soybeans. Black soybeans have the potential to enhance functional properties, while purple corn, which is rich in anthocyanins, can improve sensory acceptance and antioxidant activity. This study aimed to evaluate the antioxidant activity, organoleptic properties, and proximate composition of black soybean tempe with the addition of purple corn. The study used a completely randomized design with the following black soybean:purple corn formulations: P0 (100:0), P1 (90:10), P2 (80:20), P3 (70:30), and P4 (60:40) (%). Antioxidant activity was analyzed using the DPPH method; the organoleptic test was conducted by 25 untrained panelists; and proximate analysis (moisture, ash, and protein content) was performed. The results showed that the addition of purple corn up to 40% could inhibit DPPH radicals by 95% with an IC₅₀ value of 10 µg/ml, which is classified as strong. Formulation P2 yielded the best sensory acceptance. The addition of purple corn had no significant effect on protein and ash content but did have a significant effect on moisture content, and all treatments met national quality standards for tempeh. The conclusion of this study is that adding 20% purple corn (P2) can increase antioxidant activity without reducing nutritional quality; considering its sensory and functional values, this is the best formulation.

Keywords: DPPH, fermentation tempeh, functional food, hedonic test