

CHEESE BREAD ENRICHED WITH BIOFORTIFIED COWPEA AND THEIR SENSORY, AND NUTRITIONAL CHARACTERISTICS

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Biofortified agricultural products complement existing nutritional interventions. These foods reach populations with limited access to formal health and market systems. Since there is no standardization in the manufacturing of cheese bread, different raw materials can be used to enrich the product. This study aimed to develop a cheese bread enriched with cowpea that was sensorially acceptable and to determine its nutritional characteristics and antioxidant capacity. Two formulations were prepared using a traditional cheese bread recipe. In both formulations (F1 and F2), starch was partially replaced by cowpea. F1 contained 5.6% cowpea (BRS Xiquexique) and F2 contained 20% cowpea (BRS Aracê). The hedonic scale and intention to purchase were the tests performed with F1 to verify the viability of the product using 100 untrained assessors. Next, the centesimal composition, total energetic value, dietary fiber, minerals, bioactive compounds, and antioxidant activity were determined in F2. The global acceptance average was 7.3 and 67% concerning intent to purchase. Composition values of the cheese bread were 23.3% moisture, 2.1% ash, 49.1% total carbohydrate, 16.2% lipid, 9.3% protein, 8.9% insoluble fiber, 0.7% soluble fiber, and 379.4 kcal. The formulated product is a source of (all mg/100 g) copper (0.07), zinc (1.3) and sodium (347), with high contents of calcium (211), phosphorus (187), and magnesium (25.6), considering the intended audience (children 4-6 years of age). Significant levels of total phenolics (188.4 mg GAE/100g), total flavonoids (85.9 mg EQ/100g), and condensed tannins (7.0 mg EC/100g) were determined. The cheese bread contained low levels of polyamines (< 35 mg/kg) and biogenic amines. The antioxidant capacity was 497.5 and 735.1 µmol TEAC/100g, using the 2,2-diphenyl-1-picrylhydrazyl and 2,2'-azino-bis(3-ethylbenzothiazoline-6-sulphonic acid) radicals,

respectively. The collective data indicate the feasibility of cowpea to improve the nutrition and functional value of cheese bread.

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TITLE OF THE ABSTRACT

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