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Potential of Cowpea (Vigna unguiculata) and Soybean (Glycine max) in Herb and Spice Infused Tofu Production

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ABSTRACT

Introduction: The rise in vegetarianism, veganism and plant-based diets are driven by health, environmental, and ethical concerns. Plant-based alternatives help with lactose intolerance, dairy allergies, and calorie management. Tofu, rich in protein and bioactive compounds, is a key option. Cowpea, a nutrient-rich legume, is being explored as a tofu base. Adding herbs enhances its sensory and nutritional value, making it a healthier alternative to traditional soybean tofu.

Aim: This study aims to develop plant-based tofu by incorporating cowpea with soybean, infused with herbs and spices, and assess their sensory characteristics.

Materials and Methods: Cowpea (100 g) and soybean (100 g) were soaked (5 h), blended with water (500 mL), and sieved for milk extraction. The milk was boiled (90°C) with added herbs/spices: T1 - Garlic (4%), T2 - Cumin (2%), T3 - Curry leaves (4%). Coagulation was done, followed by sieving, pressing, and shaping into tofu. Sensory evaluation was done using a 9-point hedonic scale.

Result: The sensory evaluation of cowpea-soybean tofu with different herbs (T1 - Garlic, T2 - Roasted cumin, T3 - Curry leaves) using a 9-point hedonic scale (9 - Like extremely & 1- Dislike extremely) shows T1 (Garlic tofu) was the most acceptable, scoring highest in appearance (8.24), aroma (8.14), taste (8.18), texture (8.30), and overall acceptability (8.40). T2 (roasted cumin) had moderate acceptance (7.38), while T3 (curry leaves) scored lower. The nutritional composition of 500 g T1 was: energy (702.45 kcal), carbohydrate (64.04 g), protein (59.32 g), fat (20.82 g), fibre (34.53 g), moisture (17.36 g), and ash (7.40 g).

Conclusion: The study concluded that tofu developed using cowpea, soybean, and crushed garlic (4%) is protein-rich and suitable for vegans, lactose-intolerant individuals, and overweight individuals for calorie management.

Keywords: Allium sativum, Cuminum cyminum, Glycine max, Murraya koenigii, Vigna unguiculata

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