STUDIES ON NUTRITIONAL QUALITY AND SENSORY EVALUATION OF CAKE INCORPORATING OYSTER MUSHROOM POWDER *(Pleurotus ostrreatus)*

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ABSTRACT

Mushroom has been relished as a source of food and medicine throughout the world. Mushrooms are highly nutritive being low calories and loaded with good amount of protein, vitamins and minerals and suitable for any age group. Mushroom powder have huge health and nutritional benefits and can solve many problem of under nutrition and malnutrition. Mushroom powder rich source of protein, fat, minerals, fibers and carbohydrate. It also maintaining very low of sugar and fat. Mushroom contain highly moisture and delicate in texture, these cannot be stored for more than 24 hours at the ambient conditions. This leads to the weight loss, veil opening, browning and microbial spoilage of the product making it unsaleable.

This research was conducted on studies on nutritional quality and sensory evaluation of cake incorporating oyster mushroom powder (*Pleurotus oystreatus*). The total mean value of crude protein, crude fat, fiber, ash, fiber, fat and carbohydrates are 14.10%, 2.45%, 12.18%, 6.50% and 48.16% for mushroom powder. Therefore, successfully combined with wheat flour for cake production would be nutritionally advantageous. The cake were developed using wheat flour and oyster mushroom powder. The various ratio of wheat to mushroom powder used 100:00 (T_1), 95:05 (T_2), 90:10 (T_3), 85:15 (T_4), 80:10 (T_5). Each treatments were tested for their physical, nutritional and sensory qualities. Storage studies were tested for their nutritional qualities, sensory evaluation and microbial qualities to every weeks. The result of nutritional, physical and organoleptic qualities were analyzed statistically by ANOVA using SPSS statical packages to evaluate the significance at $P< 0.05$.

According to physical parameters of mushroom cake height, weight, volume and density were increased from 4.00 to 4.68 cm, 316.45 to 383.98 g, 615.43 to 720.57 cm^3 and 0.51 to 0.53 gcm^{-3}. According to nutritional analysis of mushroom cake moisture, ash, protein and fat were increased from 17.66 to 19.47%, 0.46 to 0.89%, 7.07 to 11.44% and 16.92 to 19.92% and carbohydrate content was decreased from 57.81 to 49.14%. In sensory evaluation mushroom cake T_4 gets preference texture (6.80), color (6.70), flavor (6.80), taste (6.80) and overall acceptability (6.60) like attributes than other treatments. T_1, T_3, and T_4 treatments were selected for the storage studies based on the sensory evaluation the overall acceptance of this treatment were (6.40), (6.60), (6.60). These were the highest overall acceptance of whole treatments.

Microbial analysis of storage period was evaluated preferred storage studies for every weeks. After 4 weeks some fungus observed in sample. Based on the analysis cake prepared from five treatments the T_4 (85% wheat flour with 15% mushroom powder) significantly improved sensory evaluation, nutritional analysis to compared to all other treatments. The texture of the cakes with mushroom powder was equally acceptable to the control cake. The overall acceptability of the cakes with mushroom powder was equally acceptable to the control cake.

TABLE OF CONTENT

LIST OF FIGURES

LIST OF TABLES

LIST OF PLATES