



PHYSICAL PROPERTIES OF *Pleurotus* spp. MUSHROOM POWDER

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Introduction. The edible “zeta” mushroom is known to have important nutritional properties. They provide a good source of protein (1), dietary fiber, minerals, vitamins and low fat (2). For this reason, there has been an increasing interest in production and consumption of mushrooms for application in food uses. Hence, the aim of this study was to determine these properties to find possible applications for *Pleurotus* spp. powder in food products.

Methods. Flour was obtained since three strains of *Pleurotus* spp., a grey strain (SEC), a pink strain (RP) and white strain (CP-253), were cultivated on wheat straw and grass hay in a green house. Dried and powdered mature fruitbodies were used as samples to determine proximate composition and color properties. The proximate composition included: a) moisture, b) ash contents determined by (3) expressed as % (3), c) nitrogen was determined by the micro-Kjeldhal method (factor 4.38) d) fat was determined by using the Soxhlet extraction method and e) carbohydrates were determined by difference. Color was determined using color reader C-10 of Konica Minolta Sensing (Japan). Results were analyzed by an ANOVA and a Duncan's test ($p < 0.05$).

Results. Proximate composition of flours is presented in table 1. There was not significant difference ($p < 0.05$) between the three strains in proximate composition. However, it was observed that SEC strain had relatively high content of protein (21.66), ash (6.26) but lower content of carbohydrate than RP and CP-253 strains. The CP-253 strain had lower crude fat content than SEC and RP strains. Color measurement of mushrooms powder is presented in table 2. Significant differences ($p < 0.05$) were observed among three strains in L, a^* and b^* values. The white and grey strains CP-253 and SEC respectively, are significant with more luminosity than RP strain. However, RP strain had higher value of a^* component, than SEC and CP-253 strains, probably is due to

pink color of fresh fruitbodies. Refers to component b^* , SEC strain is less yellow than RP and CP-253 strains.

Table 1. Proximate composition of SEC, RP and CP-253 mushrooms powders.

	MUSHROOM POWDER		
	SEC	RP	CP
MOISTURE (%)	12.58±0.37 ^a	12.35±0.24 ^a	12.50±0.35 ^a
ASH (%)	6.26±0.15 ^a	6.04±0.08 ^a	5.88±0.13 ^a
CRUDE FAT (%)	4.42±0.28 ^a	3.65±0.33 ^a	3.01±0.12 ^a
PROTEIN (Nx4.38)(%)	21.66±0.83 ^a	19.04±0.83 ^a	17.94±0.71 ^a
CARBOHYDRATES (%)	55.06±1.16 ^a	58.91±0.55 ^a	60.64±0.65 ^a

^{a,b} Means in the same row with different letters as superscript are significantly different ($p < 0.05$).

Table 2. Color determination of SEC, RP and CP-253 mushrooms powders.

	MUSHROOM POWDER		
	SEC	RP	CP
L	78.56±0.20 ^a	70.6±0.17 ^b	78.6±0.10 ^a
a^*	2.73±0.20 ^a	10.46±0.05 ^b	2.5±0.40 ^a
b^*	18.6±0.34 ^a	21.36±0.20 ^b	20.43±0.35 ^b

^{a,b} Means in the same row with different letters as superscript are significantly different ($p < 0.05$).

Pleurotus spp. mushrooms powders are potentially useful in processing of food products such as bakery products.

Conclusions. This mushrooms powders had high protein and ash content, but low fat content. The consumption of these powders would mean more balanced and enhanced nutritional diet.

References.

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