

Preparation of soypaneer from different varieties and its chemical analysis

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SUMMARY : The investigation was undertaken to prepare soy paneer from different varieties and its chemical analysis grown in Marathwada region. The chemical parameters like moisture, fat, protein, carbohydrate, ash, phosphorus, and potassium content were studied. The mean moisture, fat, protein, carbohydrate, ash, phosphorus and potassium were found as, 67.78 per cent, 3.40 per cent, 7.85 per cent, 2.66 per cent, 2.53 per cent, 167.8 mg and 323.6 mg, respectively. The yield of soymilk, soy paneer and whey were found as 552 ml, 83.28 g and 426 ml, respectively. The variety JS- 335 was found to be rich in nutritional aspect and yield compared to other varieties taken for investigation.

KEY WORDS : Chemical analysis, Soybean varieties

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Soybean (*Glycine max*) family Leguminosae, subfamily Papilionoidae and genus *Glycine* is a highly nutritional field crop grown in tropical as well as subtropical countries. Among the different food legumes used, soybean ranks first in total production. Soybean with 40 per cent good quality protein and 20 per cent oil content assumes the most predominant position in combating protein calorie malnutrition and oil shortage. Its nutritional value is superior to most of the food legumes. Soybean the “miracle golden beans of the twentieth century” has revolutionized the agricultural as well as general economy of many countries like china and Japan (Balsubramanian, 1972). Raw soybean contains antinutritional factor like trypsin inhibitor, which has been reported more than so years ago. Soybean is also rich in soluble phosphates, potassium and sulphur (Bower, 1939).

A number of varieties of soybean have been developed in Marathwada region and efforts are made to popularize the soybean cultivation (Kale, 1940). However, the nutritional

information on these varieties is limited; therefore, the present study was taken up to analyze the proximate composition from the newly released varieties.

Soybean curd is one of the important non fermented soybean products which have been widely used in a variety of dishes by oriental people for many centuries. This is highly digestible and nutritive product (Liener, 1981) and it also serves as an inexpensive protein source for man.

Tofu, also known as soybean curd, is a soft, cheese-like food made by curdling fresh hot soymilk with a coagulant. Traditionally, the curdling agent used to make tofu is nigari, a compound found in natural ocean water, or calcium sulfate, a naturally occurring mineral. Curds also can be produced by acidic foods like lemon juice or vinegar. The curds then are generally pressed into a solid block.

EXPERIMENTAL METHODS

Soybean sample were collected from Soybean Research Station, MAU, Parbhani. The varieties used for investigation were JS – 335, MAUS – 71, MAUS – 81, MAUS – 67 and MAUS – 32.

The soybean seeds of different varieties were then cleaned and freed from impurities. Then soybeans were soaked in water (1:3) for overnight, after soaking dehulling of soybean was done. Then dehulled beans grind with help of warm water (1:6).

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Filtration was done and milk was obtained, then it was coagulated by using citric acid and paneer was obtained by using paneer press.

The determination of moisture, fat, protein, carbohydrate, crude fibre and ash was done by the standard methods of A.O.A.C. (1975).

The phosphorus and potassium content of soybean samples were also estimated by methods of A.O.A.C. (1975).

EXPERIMENTAL FINDINGS AND ANALYSIS

The experimental findings of the present study have been presented in the following sub heads:

Chemical properties of different varieties of soy paneer :

The data in respect of chemical composition of soy paneer prepared from different varieties viz., MAUS-32, MAUS-67, MAUS-71, MAUS-81 and JS-335 are presented in Table 1.

The moisture content of different varieties of soy paneer varied from 67 to 69 per cent. The variety JS-335 had highest moisture content 69 per cent and variety MAUS-71 had lowest moisture content 67.06 per cent. The fat content of different varieties of soy paneer varied from 3 to 3.95 per cent. The variety JS-335 had highest value and MAUS-71 had lowest value of fat content. The results indicated that the protein content of different varieties of soy paneer varied from 7.5 to 8.3 per cent. However, it was observed that variety JS-335 had highest value and variety MAUS-71 had lowest value of protein content.

The results indicated that the carbohydrate content of different varieties of soy paneer varied from 2.3 to 2.9 per cent. It was observed that variety JS-335 had lowest value and variety MAUS-71 had highest value of carbohydrate content.

The ash content of different varieties varied from 2 to 3 per cent. It was observed that variety JS-335 had lowest value and variety MAUS-32 had highest value of ash content. The phosphorus content of different varieties of soy paneer was found to be in the range from 150 to 198ppm. The variety MAUS-67 indicated the highest value and variety MAUS-32 had lowest value of phosphorus. The potassium content of different varieties varied from 260 to 400 ppm. The variety MAUS-71 had highest value and variety MAUS-67 had lowest value of potassium content.

The data in respect of yield of soymilk, soy paneer and whey prepared from different varieties viz., MAUS-32, MAUS-67, MAUS-71, MAUS-81 and JS-335 are presented in Table 2.

The yield of different varieties of soymilk was found to be in the range of 500 to 600ml. The variety MAUS-67 had highest yield and MAUS-71 and MAUS-32 had lowest yield.

The yield of different varieties of soy paneer was found to be in the range of 70 to 96.1g. The variety MAUS-71 had highest yield and variety MAUS-32 had lowest yield of paneer.

The yield of different varieties of whey was found to be in the range of 400 to 480ml. The variety MAUS-67 had highest yield and variety MAUS-71 had lowest yield.

Table 1: Proximate chemical composition of different varieties of soy paneer (Per 100 g of sample)

Sr. No.	Variety (g)	Moisture (g)	Fat (g)	Protein (g)	Carbohydrate (g)	Ash (g)	Phosphorus (mg)	Potassium (mg)
1.	JS-335	69	3.95	8.3	2.3	2	158	370
2.	MAUS-71	67.06	3.06	7.5	2.9	2.3	165	400
3.	MAUS-81	67.08	3.45	7.9	2.7	2.45	168	308
4.	MAUS-67	67.33	3.30	7.6	2.8	2.9	198	260
5.	MAUS-32	68.45	3.25	7.95	2.6	3	150	280
S.E. ±		0.1417	0.0122	0.0259	0.0239	0.0198	0.5664	0.8360
C.D. at 5 %		0.4265	0.0369	0.0781	0.0721	0.0598	1.7043	2.5156

Table 2: Effect of variety on yield of soymilk, soy paneer and whey (per 100 g edible portion of sample)

Sr. No.	Variety	Yield of soymilk (ml)	Yield of soy paneer (g)	Yield of whey (ml)
1.	JS-335	570	85	430
2.	MAUS-71	500	96.1	400
3.	MAUS-81	590	91.1	410
4.	MAUS-67	600	74.1	480
5.	MAUS-32	500	70.1	410
S.E. ±		4.3345	0.0500	3.7467
C.D. at 5 %		0.1304	1.5074	0.1127

Conclusion :

Amongst the varieties it was found that JS-335 variety was found to be suitable for preparing soymilk and soy paneer.

It was further observed that soy paneer was cheaper compared to milk paneer.

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