



Effect of processing techniques on anti nutritional factors in soybean and soya by products

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● ABSTRACT ●

Soya based products such as soya laddoo, (Bengal dhal flour 50g:soyafLOUR50g),soyachakali (Bengal gram dhal flour 40g:soyafLOUR40g: rice flour 10g) and soyaflakes chiwada (rice flakes 40g:soya flakes40g: groundnuts10g:) were prepared after different processing techniques. The food processing like soaking, germination, degermination, dehulling, drying, roasting, flouring, and flaking were carried out for the preparation of soya products. The soya products were formulated with different combination and standardized with evaluation by organoleptically. All these products were evaluated for anti nutritional factors like phytate phosphorus (PP), trypsin inhibitor activity (TIA), acid detergent fibers, lignin ,cellulose and tannin. These anti nutrients present in the soyabased products a significant decrease was observed after application of different processing techniques. Deep frying in soya oil, flaking, dehulling and roasting reported a significant reduction of anti nutritional factors in soyachakali followed by soyaflakes chiwada and soyaladdoo.

KEY WORDS : Soybean, Soyaproducts, Anti nutritional factors

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● INTRODUCTION ●

Soyabean (*Glycine max* (L) Merrill) is leguminous and oil seed cash crop. The high quality content of amino acid profile, excellent source of macro and micro nutrients and other biological properties, soyabean is recommended for supplementary food in different food preparation by many studies (Chandrashaker and Rani, 2004, and Deshpande *et al.*, 2004).

In spite of this soyabean has cultivated at marginal level in agriculture. Moreover, due to its meaty and beany flavour the consumption of soyabased food are not accustomed by Indian population. Soybean also contains anti nutritional factors like trypsin inhibitor, tannin, phytate phosphorus, dietary fiber and haematogglutinin. Without any processing on soyabean its consumption along with these antinutritional factor can be highly risky for human health.

However, most of the studies revealed that the processing techniques such as soaking, roasting, boiling

and flaking (Despande, 1990; Sahay and Kacharu, 1988) reduces the anti nutritional factors present in soyabean.

Use of proper processing technique and perfect combination of soyabean in the supplementary food can be the better option in the treatment of protein energy mal nutrition. By keeping this view, the present research study has been designed to evaluate the effect of processing techniques on anti nutritional factors in soyabased food products.

● MATERIALS AND METHODS ●

Preparation of sample:

Local variety of soyabean (MH-CH-58), Bengal gram dhal (Phulepragati), rice (Ratnagiri), and rice flakes were procured in a single lot from local market of Kolhapur city in Maharashtra. The samples were cleaned to remove dust and other foreign materials. These samples were kept in clean airtight glass containers at room temperature with labels.

Processing of sample:

The processing techniques like soaking, germination, degermination, dehulling, drying, roasting, flouring, frying, and flaking were used. Soyabean was cleaned, washed in plenty of portable water and kept soaking for 8 to 16 hours

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