

Effect of packaging on shelf-life of soy fortified *Sattu*

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SUMMARY : The soy fortified *Sattu* was prepared with whole and sprouted soybean at 10 and 20 per cent level of fortification. Storage studies were conducted for soy fortified *Sattu* using three different packaging materials *i.e.* LDPE, HDPE and LAF at room temperature. In storage studies free fatty acid content and moisture content were observed for 90 days of storage period. Free fatty acid content of whole soybean supplemented *sattu* significantly increased from 0.31 to 1.16 per cent whereas for sprouted soybean supplemented *Sattu*, values of FFA increased from 0.30 to 1.05 per cent. However, moisture and FFA content of all samples were increased with increase in storage period. The laminated aluminium foil was proved to be best packaging material for storage of *Sattu*.

KEY WORDS : *Sattu*, Fortification, Packaging materials, Free fatty acid content

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The soybean (*Glycine max*) is known as the “Golden Bean” of the 20th century. Soybean has great potential as an exceptionally nutritive and very rich protein food. It can supply the much needed protein to human diets, because it contains above 40 per cent protein of superior quality and all the essential amino acids particularly glycine, tryptophan and lysine, similar to cow milk and animal proteins. Soy sprouts have an advantage over other legume sprouts for not only being protein content but also for containing nutraceuticals ingredients which reduces the risk of range of hazardous diseases like breast cancer, uterus cancer, atherosclerosis and osteoporosis (Kumar *et al.*, 2006).

Sattu, originally powdered roasted chickpeas, have evolved with time to include it with other flours also. The traditional *Sattu* has served humbly the people of Bihar and Jharkhand where the summer temperatures rose to unbearable

heights even without global warming. In rural areas of Maharashtra, *Sattu*, a traditional weaning food, is consumed by all age groups. *Sattu* is prepared from the flour of roasted cereals or legumes or combination of cereal and legumes with added flavouring agents. Rohini *et al.* (1990) reported that traditional *Sattu* is a mixture of Bengal gram and wheat usually in a 1:3 proportion. It is better than any cold drink since it is nutritious and assimilated by the body easily. *Sattu* has its own benefits for all age groups. Deshpande and Bargale (2007) prepared *Sattu* which was packed in LDPE and metal container for storage period of 90 days in summer season (40°C and 38 per cent RH) and rainy season (30°C and 92 per cent RH). The soy fortified *Sattu* could be stored safely for 60 days in humid (30°C and 92 per cent RH) and warm condition (40°C and 38 per cent RH) of storage in metal container while the LDPE packages stored it safely for 30 days in warm conditions and 15 days in humid conditions of storage. The packaging materials *viz.*, low density polyethylene (LDPE), high density polyethylene (HDPE) and laminated aluminium foil (LAF) are known to be fairly good moisture and oxygen resistant and are being used commercially for packaging of snacks food.

The study was planned with the objectives of evaluating the effect of different packaging material substituting whole and sprouted soybean at 10 and 20 per cent in wheat and Bengal gram dhal to compare the shelf-life of product in different packages.

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