

Processing, packaging and storage of pasta from proso millet

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■ **ABSTRACT** : Proso millet (*Panicum miliaceum*) a specific type of staple food popular in India and other parts of the world. There was no significant work on the commercial exploitation in the value addition of proso millet products. Hence, a study was conducted to produce pasta from clean and polished proso millet blended with wheat flour and water under different combinations. Also with a view to improve the shelf life of pasta by packaging interventions, the effect of LDPE and PP usage on the sensory, physico-chemical and biochemical quality of pasta during three months of storage at ambient atmosphere condition was studied. Pasta prepared under equal proportions of millet and wheat flour got maximum overall acceptance in the sensory panel and the rate of loss of most quality attributes was low in pasta stored under LDPE samples as compared to samples packaged under PP. Based on the results obtained in the study it was concluded that pasta could be best preserved up to 3 months at ambient atmospheric condition under LDPE without appreciable quality loss.

■ **KEY WORDS** : Proso millet, Storage, Packaging materials, Cold extrusion

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In India, different kinds of traditional foods made from small millet grains from staple diet for many rural and urban households. Number of technologies has been developed to enhance utility and commercial value of these grains. Pasta is a type of noodle and is a staple food of traditional Italian cuisine. Typically pasta is made from an unleavened dough of a durum wheat flour mixed with water and formed into sheets or various shapes, then cooked and served in any number of dishes. It can be made with flour from other cereals or grains, and eggs may be used instead of water as it was broadly categorized into, dried (pasta secca) and fresh (pasta fresca). Though pasta is a staple food in many countries, they are still considered as snack food here in India. Several studies have been reported in the value addition for different millets (Viraktamath *et al.*, 1971; Purseglove, 1972; Vaidhi *et al.*, 1985; Begum *et al.*, 2003; Veena *et al.*, 2004) but, little attempts have been made to prepare small millets based pasta products perhaps due to many reasons including non-availability of technology.

Good storage quality of processed food is an essential attribute to extend their utilization and the storage quality of processed foods was evaluated by several investigators in terms of sensory characters and chemical components. Sowbhagya and Ali (2001) prepared maize vermicelli with and

without antioxidant and packed in cast polypropylene (CCP) and a laminate of metalized polyester with low density polyethylene (M-PET/PE). The packs were stored at 38°C, 92 per cent RH (accelerated storage) for 100-140 days. Firmness and elasticity of product remained good up to 100 days. Devraju *et al.* (2003) developed pasta with finger millet flour (50%), refined wheat flour (40%), defatted soy/whey protein concentrate (10%) and extruded using both cold (30°C) and hot water (75°C). Pasta with hot water extrusion was better in terms of cooking quality and also cooking loss found to be minimum (12%) and showed non-significant differences in the cooked pasta under sensory attributes after three months of storage. Since there was no significant research has been found under the development of the snack products from the proso millets and also lack of studies on the packaging and storage of ready to cook pasta like product blended with proso millet. Hence, a study was conducted with the objective to develop proso millets based extruded ready to cook pasta product under different formulations packed in different packaging materials for storage studies of three months with biochemical (fat, protein, carbohydrate, crude fibre, ash and moisture content) quality analysis under monthly intervals with the aim to provide a good processing packaging and storage technique for pasta like ready to cook product.