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Food Processing Guest Column

## Aseptic packaging: A boon for Indian fruit processing industry - Chetan Kothari, Tricom Fruit Products Limited

Packaging technology provides light weight and thermally efficient solution to food processing industry



India currently produces about 50 million tones (mt) of fruit (about 9% of the world's production) and about 90 mt of vegetables (11% of the world's production). The Indian food processing industry is primarily export-oriented. India's geographical situation gives it the unique advantage of connectivity to Europe, Middle East, Japan, Singapore, Thailand, Malaysia and Korea. Products that have growing demand in the export market are pickles, chutneys, fruit pulp, canned fruits and vegetables, concentrated pulps and juices, dehydrated vegetables and frozen fruits and vegetables along with processed animal-based products.

Aseptic packaging tends to cost more, but it also allows more delicate processing of foods than alternative methods like canning do. The technology for commercial aseptic processing has been available for half a century and took hold in Europe in the early 1960s. The process involves sterilising the packaging and the food product separately and then filling and sealing the containers in a sterile environment. That allows the food to retain more colour, texture, taste and nutrition than it does when subjected to the more heat-intensive conventional methods used in canning and bottling.

Aseptic processing has been a boon to the food and fruit processing industry, enabling both industry operators face shorter menu development cycles as they juggle labour supply, increased costs, regulatory requirements and new competitors. So they turn to aseptically packaged food products to resolve a number of pressing issues. The technology is also safe and the hygiene level is also maximum.

Food industry operators are now ordering fewer commodity/ingredient items and more prepared items. Pre-made stocks, sauces and bases are the foundation of many signature menu items. The influx of processed foods into the food consumption pattern has thus increased significantly. Ultra high-temperature (UHT) processing is crucial to ensure commercial sterility for aseptic, shelf-stable food products and beverages. Hence, it is critical that the process must be performed in a sterile environment, from the handling of the package until it is sealed.

**In practice, generally there are two specific fields of application of aseptic packaging technology:**

- Packaging of pre-sterilised and sterile products. Examples are milk and dairy products, puddings, desserts, fruit and vegetable juices, soups, sauces, and products with particulates.
- Packaging of non-sterile product to avoid infection by micro-organisms. Examples of this application include fermented dairy products like yoghurt.

**The three main advantages of using aseptic packaging technology are:**

- Packaging materials that are unsuitable for in-package sterilisation can be used. Therefore, light weight materials consuming less space offering convenient features and with low cost such as paper and flexible and semi-rigid plastic materials can be used gainfully.
- Sterilisation process of high-temperature-short time (HTST) for aseptic packaging is thermally efficient and generally gives rise to products of high quality and nutritive value compared to those processed at lower temperatures for longer time.
- Extension of shelf-life of products at normal temperatures by packing them aseptically.

Therefore keeping up with the demand of processed foods in the industry will see further adaptation of aseptic packaging

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