

Aseptic Processing & Packaging in Preserving Nutrition: Brian Hinchliffe

The processing industry today has to look at the whole food chain rather than only what happens in the processing plant. The food chain is made up of people right from farmer through food producer or processor, retailer & distributor and finally to consumers.

Indian scenario is experiencing marked change in economic growth and inflation. Inflation over last two decades has dropped from about 9% to a little above 4%, while the GDP is going up from slightly above 5½% to almost 7%. Although, there economic growth, the population is a peculiar mixture rich and poor, a small fraction of population controls a majority of wealth, while 30% of population is below poverty line. Per capita income is set to double from 2003 to 2015 at US\$ 1,150 and consuming class is set to triple to about 124 million households.

Some of the important issues being focused in media are pesticide in mineral water and carbonated soft drink, adulterated milk, infestation in chocolate and biscuits, emphasizing that Food Safety Awareness is increasing. Six out of ten Indian shoppers have always chosen foods for healthful reasons. There are many other changes in the consumer thinking in the changing India.

Consumers have higher disposal income, with more working women spending less time at home, having better education, favouring processed and packaged foods having health and convenience.

Any food will undergo changes with time even if sterile and packed. Different foods have different sensitivities with some products having more or less sensitivity towards microorganism, oxygen, light and off-flavour. Milk more sensitive to microbes and light whereas juice is sensitive to oxygen.

Due to the changing economic scenario, there are opportunities present for food industry. Farmer can get good value for better quality raw material as industry needs a higher quality product which can only be made from high quality raw material. Food industry wants the material to be processed and packed so it will last longer on shelf. Trade wants a longer life packaged food products with convenience but not preservatives. Consumers need nutrition maintenance for active life of the product as well as healthy food in a very busy life with very little time for preparation, so convenience in foods which could be consumed anytime and anywhere. They also wants value and quality for the money they pay for foods.

The solution for all these is the Aseptic Technology which enables a product to be processed and made sterile and packaged without any preservative and will provide good quality and healthy food with long shelf life.

Two types of products High Acid Foods like fruit juices, yoghurt, tomato product, sauces etc. with pH ranging from 2.5 to 4.5 can be pasteurized to achieve commercial sterility whereas Low Acid Food products like soups, vegetables, milk, meat and egg products have pH values higher than 4.6 and require UHT treatment to achieve commercial sterility. UHT processing ensures minimum losses of nutrients and essential vitamins giving almost "zero bacteria" product by utilizing very high temperature and an extremely short process time.

The product is then packed in aseptic manner without allowing inclusion of any microbes to get into the product, in a packaging material consisting of several layers consisting of polymer, paper and aluminium foil, preventing any transfer of microbes, oxygen, flavour, light and moisture to go across the packaging material causing spoilage of products.

Several product types are processed by Aseptic Technology including juice, nectar, still drinks, white and modified milk, flavoured milk and milk shakes, fruit products with vitamins, herbs, probiotics etc., soya milk and other beverages.

In conclusion, the consumer needs are changing and hence need for packaged foods is increasing. There is also the concern for safe and healthy food on the rise as consumer education and awareness is increasing. The food industry looks for long life products to deliver to consumer and trade requirements. The Aseptic Technology delivers sterile products with long shelf life without preservative and protects the good quality material for a long time. The technology is being accepted all over the world market.
