

Advances in Food and Bioengineering



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Weaning Food: Developing Habit of Munching from Sucking

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ABSTRACT

Weaning food plays a vital role in the all-round growth, development and health of infants. Infants need nutritionally balanced, calorie-dense supplementary food in addition to mother's milk because of the increasing demands of the growing body. The weaning food should be well balanced in terms of energy, fat, protein, vitamins, carbohydrates etc. The developed weaning food samples were analyzed for sensory parameters, physico-chemical parameters, anti-nutrient and in vitro protein digestibility. It is reported that the sprouting also improves the protein content and enhances the in vitro protein digestibility due to the reduction of anti-nutrient contents and thus increases the bioavailability of nutrients. As per the studies the commercial weaning food is generally 3 to 4 times costlier than formulated weaning food.

1. Introduction

Infants are delicate in every aspect and for their proper growth and development; breast milk is the perfect food. It carries various biomolecules which are beneficial to an infant's health. It contains all the immunological factors required for infants to maintain immunity.

Foam-mat Drying Technology

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ABSTRACT

Foam mat drying technology is an alternative method to dehydrate liquid and semi liquid food products. In this process the food product is converted into stable foam by addition of an edible foaming agent. The foam is then spread into thin layers and dried. Foam mat drying is good for heat liable, viscous and sticky food products which cannot be dried using other drying methods. The foaming increases the surface area ensuring fast moisture removal. In this article, the basics of foam and its structure, methods of foaming, types of foaming method and stabilizing agents for the production of stable foam have been analysed.

1. Introduction

Drying is one of the most cost-effective ways of preserving foods of all variety which involves removal of water by application of heat. It is said that drying will never replace canning and freezing because these methods do a better job of retaining the taste, appearance, and nutritive value of fresh food, but drying is an excellent way to preserve foods that can add variety to meals and provide delicious, nutritious snacks. One of the biggest advantages of dried foods is that they take much less storage space than canned or frozen foods. A variety of food sub-types are

Production of Secondary Metabolites from Transgenic Hairy Roots Culture

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ABSTRACT

Plants synthesize large and numerous groups of chemicals. Plants produce many of these compounds through secondary metabolism. A new route for enhancing secondary metabolite production in tissue culture systems is by transforming desirable plant species using the natural vector system *Agrobacterium rhizogenes*. It is the causative agent of hairy root disease in plants. This gram-negative soil bacterium transfers a DNA segment (T-DNA) from its large root-inducing (Ri) plasmid into the genome of the infected plant. The hairy root phenotype is characterized by fast hormone-independent growth, lack of geotropism, lateral branching, and genetic stability. It is owing to their stability and high productivity. The various aspects and applications of HRCs, including phytochemical and recombinant protein production, phytoremediation, molecular breeding, rhizosphere physiology and biochemistry, metabolic engineering, bioreactor design and optimization. The main constraint for commercial exploitation of hairy root cultivations is developing and scaling up appropriate reactor vessels (bioreactors) that permit the growth of interconnected tissues normally unevenly distributed throughout the vessel. This chapter highlights hairy

High-Pressure Technology in Food Processing

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ABSTRACT

The newly advanced technology called High-Pressure Processes has been immersed to reduce the most essential qualities of food items. This technique enhances safety, extending shelf life physical and nutritional properties of food items. HPP inactivates oxidative enzymes and pathogens. It is applicable to those food items which have a high water-retaining capacity. It is an alternative method of thermal processing. It is also called cold Pasteurization. It is also the novel technology of food processing. It is a non-thermal preservation and pasteurization technique that causes little or no change to the nutritional attributes of products being processed. High-Pressure Processes accomplish by applying hydrostatic pressure between 100 to 1000 MPa to the food products. The review paper covers various aspects of high-pressure technology concepts, principles, parameters, advantages, and limitations of High-Pressure Processes.

Keywords: High-Pressure Processes; Food; Preservation; Hurdle technology

Edible Coatings of Fruits and Vegetables

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ABSTRACT

Nowadays, fruits and vegetables are highly demanded in the market because of their nutritional value. Fruits and vegetables have short shelf life due to their perishable nature. About 30% of fruits and vegetables are affected or damaged by insects, microorganisms, pre, and post-harvesting conditions during transport and preservation. Preservation of fruits and vegetables is a big challenge for the world. The edible coating is an effective method to solve this problem. It provides protective edible covering to fruits and vegetables. It is beneficial for consumers and the environment. Today herbal edible coatings are used as a nutraceutical and beneficial for consumer health. Edible coatings are of different types such as hydrocolloids, lipids, and plasticizers. These have good barrier properties to O₂, CO₂, moisture, and water vapor.

Keywords: carboxymethyl cellulose; eucalyptus oil; post-harvest storage.

Pectin: A Versatile Prebiotic Food Additive

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ABSTRACT

Pectin is a polymer found in the cell walls of many plants that allows them to expand and extend their cells. This biopolymer can be harvested from plants and used as a food additive and bioplastic material for a variety of purposes in food and non food applications. Pectin is resistant to human digestive enzymes and is fermented in the intestine by bacteria, which improves gut health. Industrially, it is extracted from citrus peels or apple pomace, and is used as a thickener, water binder and stabilizer in foods, etc. In pectin extraction, method of extraction, process parameters, and substrate are the deciding components controlling the functional properties of pectin including its degree of esterification, methoxyl content and anhydrouronic acid content.

1. Introduction:

It is an interesting feature that un-consumable parts of many agronomic and horticultural crops have been observed to be rich in appreciable amount of pectin, which in some cases is of superior jelly-grade as well. Pectin derived its name from a Greek word $\pi\eta\chi\tau\epsilon\varsigma$ (pektes) meaning 'Coagulated material' which is coined by Henry Braconnot in 1825. It is a naturally occurring complex family of hetero- polysaccharide which