

HACCP IN FRYING PROCESSING - SAFETY ASSURANCE OF FRIED FOODS

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Abstract

Food safety is an increasing requirement for all consumers all over the world. State authorities, consumers, producers and retailers are all involved with food safety issues, and food legislation has been established. Nowadays, HACCP approach, incorporated in Dir. 93/43 EU, has been accepted as the most appropriate tool for ensuring food safety, from raw material handling to consuming of the final product. The major hazards occurring in foodstuffs are of microbiological (pathogens), chemical (toxins, hormones, heavy metals, pesticide residues etc.) and physical (glass, metal etc.) nature. Recently, the Reg. 178/2002 EU has emphasized to the safety through out the food chain.

Frying is a common process for preparation of foods with desirable sensory characteristics. As frying medium various vegetable oils (palm, cottonseed, soybean etc.) are used. Potato chips and French fries are widely consumed all over the world, especially by children and young men. During frying the food absorbs the frying medium resulting in enhancement of its sensory properties and modification of its nutritional quality.

The oil is essentially the means of efficient, even and rapid heat transfer to the food. Frying increases the shelf life of the product, due to the thermal destruction of microorganisms and enzymes, and decreases the water activity at the food surface. Because the oil/fat gets incorporated into the final product, its quality strongly determines the quality of the end product.

The temperature as well as the time of frying has been reported to significantly affect the stability of the oil; higher temperature values and repeated frying resulting in greater deterioration. Various constituents from oxidization or polymerization reactions may be produced as aldehydes, ketones, trans-oils etc. which are considered hazard for human health. In addition, the frying food i.e. potato may contribute to the formation such substances as acrylamide.

In the present work the frying process of potato chips and French fries is examined, the hazards are evaluated and the CCPs as well as the critical limits for their control are determined.