

*Opinion Article*

## Nutritional, physical and functional properties of food

Adam Ekielski\*

Department of Production Engineering, Warsaw University of Life Sciences, Warsaw, Poland.

Received: 16-Aug-2022, Manuscript No. FAFT-22-73959; Editor assigned: 19-Aug-2022, Pre QC No: FAFT-22-73959 (PQ); Reviewed: 05-Sep-2022, QC No: FAFT-22-73959; Revised: 12-Sep-2022, Manuscript No: FAFT-22-73959 (R), Published: 20-Sep-2022

### DESCRIPTION

The study of food items made for different food categories are becoming more and more common on the market. Numerous ailments, including osteoporosis, atherosclerosis, and other dietary-related illnesses, can be brought on by poor eating habits. The creation of functional food, which is loaded with bioactive components, is a direct outcome of older people's growing interest in prevention and health enhancement. Dehydrated food powders with poor dissolving or dispersion can seriously impair food processing, which has an impact on the quality of the finished product and the customer experience. By adjusting the processing circumstances, such as agitation speed, liquid temperature, powder addition rate, and method of addition to the liquid surface, the reconstitution efficacy of malt dextrin powders with varied moisture content and molecular weight has been studied. The thermal behavior of frozen US military rations during storage and transportation was predicted using a numerical simulation of the effects of external temperature conditions. Using their composition and a differential scanning calorimeter, the Thermo-physical parameters of each food item in an army breakfast menu box featuring beefsteaks, concentrated orange juice, peppers & onions, French toast, and Danishes were determined. During the modeling of freezing and thawing, the apparent heat capacity approach was used to account for the latent heat of phase transition. A gel-based model food system and the menu items were used to empirically test the findings of numerical simulation. For the model food system, there was an average variance of about 1°C between numerically projected temperature and experimentally observed temperature, and for the targeted food items, the deviation varied from 2°C to 5°C, depending on the food item. The temperature behavior of maize starch Poly Capro Lactone (PCL) mix films using glycerol as a plasticizer, as well as their structural and physical characteristics (barrier,

mechanical, and optical qualities), Additionally assessed was the stability of the film's attributes. In a matrix having starch-rich and Poly Capro Lactone (PCL) rich sections, blend films demonstrated the phase separation of the polymers. However, a little miscibility of PCL in the starch phase was found due to a change in the glass transition temperature of the starch phase, which partially inhibits amylose crystallization during the creation and storage of films. Although elastic modulus of the films with modest PCL ratios rose, absence of interfacial adhesion between PCL and starch phases exacerbated films' fragility and reduced stretch ability. Starch films' water barrier qualities got better when the PCL in the blend went up, while oxygen permeability went up. These polymer blends, which don't contain any hazardous compounds and are compatible with food, may offer an attractive alternative to starch films for food packaging in situations where those limitations have been resolved. The physical characteristics of milk components have an impact on the nutritional value and aesthetic qualities of the foods they are utilized in. The utility of milk components in food formulations as well as the quality characteristics and acceptance of meals containing these components depend on understanding of the fundamental physical properties of milk components. The chemistry of milk components is well understood, but there is a paucity of essential information on the physical characteristics that determine functioning and quality. The demand for dependable functional ingredients will rise as the formulation and production of food items increase. For the purpose of automating the formulation of food items and ensuring consistent product quality, the food processing sector will place an ever-increasing emphasis on acquiring functional components with dependable, well defined physical and functional attributes. Knowing the physical characteristics of components is also essential for successful ingredient replacement or replication of traditional cuisines. Food's quality, physical attributes, stability, and safety are all impacted by water. Depending on the water content of the meal, water will have a different effect on its physical characteristics.

\*Corresponding author. Adam Ekielski, E-mail: [Adamelski01@edu.pl](mailto:Adamelski01@edu.pl)

Currently available food components have many different uses. Display a range of physicochemical characteristics, starch digestibility, and chemical compositions. A food matrix may be thought of as a portion of the food microstructure, frequently corresponding with a physical space area that interacts with or gives a certain food component certain capabilities. Since it

gives food more desirable functional qualities and improved stability, protein fibrillization has received a lot of attention in recent years, making it a popular choice for use in a variety of applications. Under the right environmental circumstances, protein fibrils may self-assemble and are regarded as cutting-edge dietary components.