FOOD PROCESSING TECHNIQUES AND ITS EFFECTS

Food processing can be defined in many ways; one of them is ‘transformation of the raw ingredients into food, or of food into other forms is food processing’. Food processing is typically used to produce attractive, marketable and to increase the shelf-life of food products. The food products can be basically be divided into different categories like solid food, liquid food, value added food, packed food.

SOLID FOOD PROCESSING

Use of Ultrasound is a well-known and commonly used technology in the food industry for processing the food this is used because of its High frequency waves which can be used as a pretreatment or for improving the main process \(^1\)\(^-\)\(^5\). The treatment of food with ultrasound also kills some of the organisms like Francisella tularensis which causes tularemia \(^6\), \(^7\). Physical technologies like cold gas plasma and periodic light-weight may be promising alternatives for reducing the microbiological risk related to fresh manufacture and each technology have proved their potency for the quick inactivation of microorganisms on varied surfaces \(^8\).

Microwave heating is invented for its operational safety and nutrient retention capability with borderline loss of heat-labile nutrients like B and C vitamins, dietary inhibitor phenols and carotenoids \(^6\), \(^7\). Microwave drying at 450W increases the phenol extractable content from the peel of orange \(^8\).

There are few techniques which might be used for process any kind of food like fruits, vegetables, dairy merchandise, meat, starch merchandise area unit unit air mass Technology \(^12\), this maintains the nutritional qualities for extended time.

LIQUID FOOD PROCESSING

Activated Charcoal is most commonly used for processing the liquid food materials. This is used to remove the impurities to a greater extent along with the other factors like temperature, the viscosity of the fluid etc. \(^13\). This charcoal is also used for de-colorization and purification method. High hydraulics pressure \(^14\) may be wont to preserve nutritionary content and flavor of the drink. Pasteurization \(^15\) is another technique that is employed to extend the steadiness and merchandise period of time.

Heat inactivated process helps in protective the viability of bifidobacteria. Ultrafiltration (UF), Reverse diffusion (RO), and Microfiltration (MF) processes are in use within the dairy farm business \(^16\).

The incorporation of fructooligosacharides and internal secretion in several percentages reckoning on the sort of food, whether or not it's a food, frozen dessert or yoghurt it helps in up the standard of the merchandise alongside the period of time.

PRESERVED FOOD
In order to preserve the freshness of the food many chemicals are used and some of them being Potassium sorbate \(^{17,18}\), sodium benzoate \(^{18}\), calcium chloride, which prevents or inhibits the microbial and fungal proliferation and also helps in increasing the shelf life when combined with the other parameters like air filters, heat treatment and MAP (modified atmosphere packaging). The natural source like Sugars, salt, acids, spices, etc. is used to preserve food \(^{19}\). Some other natural products like unripe banana flour \(^{20}\) can be used for improving the oil content and resistant starch content in the snack items like papad and Solar dryers or open air drying \(^{21}\) can be used to protect the vitamins of the food which are meant for preserving or for export. Hydrocolloid improves the stability, quality like water absorption capacity of certain foods like bread \(^{22}\). Blanching and drying methods \(^{23,24}\) helps in retaining most of the chemical constituents and viscosity of the food.

**CONCLUSION**

Different techniques and its research in food processing is promising and needed by the fast moving societies, but at the same time it should be remembered that the traditional technologies like thermal processing (solar drying) \(^{25}\) and use of antimicrobials are efficient in increasing the value of nutrition but they might not be as effective at ensuring the food safety and retaining the food properties. So there should be balanced combination of traditional methods and the industrial methods to revolutionize the food processing technology such that food security of the world in general and society in particular can be maintained without compromise on the nutritive value.

**REFERENCES**