AGPC3004 POST HARVEST ENGINEERING OF HORTICULTURAL CROPS (3-0-0)

MODULE – I: (07 Hours)

Importance of processing of fruits and vegetables, spices, condiments; Characteristics and properties of horticultural crops important for processing; Preservation Technology: General methods of preservation of fruits and vegetables, Brief description and advantages and disadvantages of different physical/ chemical and other methods of preservation

MODULE – II: (07 Hours)

Flowcharts for preparation of different finished products, Food supply chain; Sorting and grading equipments; Peeling: Different peeling methods and devices (manual peeling, mechanical peeling, chemical peeling, and thermal peeling)

MODULE – III: (07 Hours)

Slicing of horticultural crops: equipment for slicing, shredding, crushing, chopping, juice extraction, etc.; Blanching: Importance and objectives; blanching methods, effects on food (nutrition, colour, pigment, texture);

MODULE – IV: (10 Hours)

Chilling and freezing: Application of refrigeration in different perishable food products, Thermophilic, mesophilic & Psychrophilic micro-organisms, Chilling requirements of different fruits and vegetables, Freezing of food, freezing time calculations, slow and fast freezing, Equipment for chilling and freezing (mechanical & cryogenic), Effect on food during chilling and freezing, Cold storage heat load calculations and cold storage design, refrigerated vehicle and cold chain system; Dryers for fruits and vegetables, Osmo-dehydration;

MODULE – V: (09 Hours)

Handling and transportation of fruits and vegetables, Pack house technology, Minimal processing; Common methods of storage, Low temperature storage, evaporative cooled storage, Controlled atmospheric storage, Modified atmospheric packaging; Post harvest management and equipment for spices; Packaging of horticultural commodities, Packaging requirements (in terms of light transmittance, heat, moisture and gas proof, micro organisms, mechanical strength), Different types of packaging materials commonly Used for raw and processed fruits and vegetables products, bulk and retail packages and packaging machines, Quality control in Fruit and vegetable processing industry.

Suggested Reading

1. Arthey, D. and Ashurst, P. R. 1966. Fruit Processing.
2. Chapman and Hall, New York. Pantastico, E.C.B. 1975.
3. Postharvest physiology, handling and utilization of tropical and subtropical fruits and vegetables AVI Pub. Co., New Delhi. Pandey, R.H. 1997.
4. Postharvest Technology of fruits and vegetables (Principles and practices). Saroj Prakashan, Allahabad Sudheer, K P. and Indira, V. 2007. Post Harvest Engineering of horticultural crops. New india Publishing House.