

FNS 504 PRINCIPLES OF FOOD PROCESSING

39 Hrs (13× 3 units)

Course outcome:

At the end of this course the students will gain knowledge about the-

- CO 1. Basic operation in food processing.
- CO 2. Principles of cold processing of foods and irradiation
- CO 3. Basic principles of thermal processing.
- CO 4. Concept of controlled atmosphere packaging
- CO 5. Interaction between packaging material and food

Unit I: Basic operation in food processing: Mixing, stirring, cooling, separation, evaporation, forming/moulding, processing of extruded products, rendering, refining, tempering, thawing, canning. Basic principles of cold processing of foods and irradiation: Refrigeration, freezing of foods, initial freezing point, freezing curve, changes during the freezing, rate of freezing, damage from intermittent thawing, factors affecting the freezing rate, freezer burn. Irradiation of foods – methods, safety aspects, regulations, food selection.

Unit II: Basic principles of thermal processing: Thermal food processing, canning, steps and process, heat penetration into cans, cold point in food mass, determination of process time, thermal death time determination, TDT curve. Heating food in containers, hydrostatic cooker or cooler, hot pack and hot fill, inoculated pack studies.

Unit III: Basic principles of post food processing operation: Controlled atmosphere, MAP (Modified atmospheric packaging), coating and enrobing, packaging materials specially designed for processed foods, advantages and disadvantages. Interaction between packaging material and food, aseptic processing and aseptic packaging.

REFERENCES

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