

M.Sc. (Ag.) Horticulture
Semester-III
Course Title: Fundamentals of Processing of Vegetables
Course Code: AG513
w.e.f. Session 2020-21

3(2+1)

Unit I

History of food preservation. Present status and future prospects of vegetable preservation industry in India.

Unit II

Spoilage of fresh and processed horticultural produce; biochemical changes and enzymes associated with spoilage of horticultural produce; principal spoilage organisms, food poisoning and their control measures. Role of microorganisms in food preservation.

Unit III

Raw materials for processing. Primary and minimal processing; processing equipment; Layout and establishment of processing industry, FPO licence. Importance of hygiene; Plant sanitation.

Unit IV

Quality assurance and quality control, TQM, GMP. Food standards – FPO, PFA, etc. Food laws and regulations. Food safety – Hazard analysis and critical control points (HACCP). Labelling and labelling act, nutrition labelling. Major value added products from vegetables. Utilization of by-products of vegetable processing industry; Management of waste from processing factory. Investment analysis. Principles and methods of sensory evaluation of fresh and processed vegetables.

Practical

Study of machinery and equipment used in processing of horticultural produce; Chemical analysis for nutritive value of fresh and processed vegetables; Study of different types of spoilages in fresh as well as processed horticultural produce; Classification and identification of spoilage organisms; Study of biochemical changes and enzymes associated with spoilage; Laboratory examination of vegetable products; Sensory evaluation of fresh and processed vegetables; Study of food standards – National, international, CODEX Alimentarius; Visit to processing units to study the layout, equipment, hygiene, sanitation and residual/waste management.

Suggested Readings

- Chadha DS. 2006. The Prevention of Food Adulteration Act. Confed. of Indian Industry.
- Fellow's P. 1988. Food Processing Technology. Ellis Horwood International.
- Desrosier NW. 1977. Elements and Technology. AVI Publ. Co. FAO. 1997. Fruit an
- Arthey D & Dennis C. 1996. Vegetable Processing. Blackie/SpringerVerlag.
- Frazier WC & Westhoff DC. 1995. Food Microbiology. 4th Ed. Tata McGraw Hill.

**M.Sc. (Ag.)/MBA Agribusiness Management
Semester-III**

Course Title: Library and Information Services

Course Code: PGS501

w.e.f. Session 2019-20

1(0+1)

Practical

Introduction to library and its services; Role of libraries in education, research and technology transfer; Classification systems and organization of library; Sources of information- Primary Sources, Secondary Sources and Tertiary Sources; Intricacies of abstracting and indexing services (Science Citation Index, Biological Abstracts, Chemical Abstracts, CABI Abstracts, etc.); Tracing information from reference sources; Literature survey; Citation techniques/Preparation of bibliography; Use of CD-ROM Databases, Online Public Access Catalogue and other computerized library services; Use of Internet including search engines and its resources; e-resources access methods.

Suggested Readings:

- Singh G. Information Sources, Services and Systems, 2013 Edition. Prentice Hall India Learning Private Limited
- Library Science, 2018 Edition. Ramesh Publishing House
- Subhankar Biswas, Durga Sankar Rath. Cataloguing in the New Era: Gazing through the Bodleian Catalogues to RDA, 2017 Edition. Ess Ess Publications