

SEMESTER 1st

SKILL ENHANCEMENT COURSE (SEC)

Subject: Food Science and Technology

Title: HANDLING AND STORAGE OF FRUITS AND VEGETABLES Code: BFS22S102

CREDITS: 2 THEORY: 02 PRACTICAL: 02

CONTACT HOURS: 32T + 32L

Course Objective:

- *To acquaint the students with different postharvest changes in fruits and vegetables.*
- *To acquaint the students with various maturity indices of fruits and vegetables.*
- *To acquaint the students with various storage methods of fruits and vegetables.*

Learning outcome:

- *After completing the course, the students will be able to:*
- *Apply different storage techniques for shelf life enhancement of fruits and vegetables.*
- *Make better selection of fruits and vegetables for processing.*

Part-1 THEORY (2 CREDITS)

UNIT-I

(16 hours)

1. Importance, scope and constraints of fruit and vegetable processing in India and J&K.
2. Fruits-Definition and classification.
3. Vegetables-Definition and classification.
4. Composition and nutritive value of major fruits and vegetables.
5. Production trends in major fruits and vegetables of J&K.
6. Post-harvest changes in fruits and vegetables.

UNIT-II

(16 hours)

1. Harvesting of fruits and vegetables.
2. Maturity-indices of fruits and vegetables.
3. Storage of fruits and vegetables- Cold atmosphere storage.
4. Packaging requirements of fruits and vegetables.
5. Modified atmosphere storage.

Books Recommended:

1. Home scale preservation of fruits and vegetables-CFTRI Lab Manual.
2. The technology of Food preservation by Desrosier.
3. Food science by N.N.Potter.
4. Fruits vegetable products by GirdhariLal, Siddhapa&Tandon.
5. Preservation of fruits &vegetables:Girdharilal,G.S.S.Siddapa and G.L..Tandon IARI New Delhi.
6. Fruit and vegetable preservation by Srivastava.

7. Post- harvest Technology of Fruits & Vegetables-L.R.Verma&V.K.Joshi.
8. Post- harvest management & processing of fruits and vegetables-Satish Kumar Sharma New India Publishing agency-New Delhi.
9. Food preservation principles and practices:ArtiSankhla,RenuMogra and Kusum Babel. Agrotech. . Publishing Academy Udaipur- India.

Part- 2: Laboratory course (Credits: 02)

Course Objectives:

- *To determine maturity indices of fruits and vegetables*
- *To determine proximate composition of Fruits and vegetables.*
- *To understand controlled atmosphere storage of fruits and vegetables.*

Learning outcomes:

- *Accomplish the determination of chemical composition of fruits and vegetables.*
- *Learn about the determination of maturity indices of fruits and vegetables.*
- *Accomplish to minimize post-harvest losses of fruits and vegetables.*

1. Subjective evaluation of fruits and vegetables
2. Identification of various fruit and vegetable varieties
3. Determination of maturity indices of fruits and vegetables: Days from full bloom (DFFB), Starch-iodine ratio, Brix-acid ratio
4. Determination of moisture content, TSS, acidity and firmness of fruits and vegetables
5. Preparation of jam and preserve
6. Preparation of pickle
7. Visit to Controlled atmosphere store
8. Pack-house operations of apple

SUGGESTED READINGS:

1. Siddappa, G.S., Tendon, G. L. (2009). Preservation of Fruits and Vegetables. ICAR, Publications, New Delhi.
2. Srivastava, R.P. and Kumar, Sanjeev (2019). Fruit and Vegetable Preservation- Principles and Practices. 3rd Ed. CBS, Publishers, New Delhi
3. Rehman, M.S. (2020). Handbook of Food Preservation. CRC Press
4. Vaclavik, V. A. and Christian, E.W., (2020). Essentials of Food Science, 4th Edition. Springer International Publishers, London.