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HORT-321 Post-harvest Management and Value Addition of Fruits and Vegetables 2(1+1)

Theory

Importance of post-harvest processing of fruits and vegetables, extent and possible causes of post harvest losses; Pre-harvest factors affecting postharvest quality, maturity, ripening and changes occurring during ripening; Respiration and factors affecting respiration rate; Maturity indices, Harvesting and field handling; Storage (ZECC, cold storage, CA, MA, and hypobaric); Value addition concept; Principles and methods of preservation; Intermediate moisture food- Jam, jelly, marmalade, preserve, candy – Concepts and Standards; Fermented and non-fermented beverages. Tomato products- Concepts and Standards; Drying/ Dehydration of fruits and vegetables – Concept and methods, osmotic drying. Canning – Concepts and Standards, packaging of products.

Practical

Identification and Applications of different types of packaging, containers for shelf life extension. Identification of important tools/equipments/ machines and chemicals required for PHT laboratory, Demonstration of Zero energy cool chamber, Effect of temperature on shelf life and quality of produce. Demonstration of chilling and freezing injury in vegetables and fruits (drying and dehydration). Extraction and preservation of pulps and juices. Preparation of jam, jelly, Pickles, RTS, nectar, squash, osmotically dried products, fruit bar and candy and tomato products (sauce and ketchup), canned products. Quality evaluation of products - physicochemical (Moisture, TSS, acidity and ascorbic acid) and sensory. Visit to processing unit/ industry.

Lecture schedule: Theory

S.N.	Topics	No.of lectures
1.	Importance of post-harvest processing of fruits and vegetables	1
2.	Extent and possible causes of post harvest losses	1
3.	Pre-harvest factors affecting postharvest quality, maturity, ripening and changes occurring during ripening	1
4.	Respiration and factors affecting respiration rate	1
5.	Maturity indices, Harvesting and field handling	1
6.	Storage (ZECC, cold storage, CA, MA, and hypobaric)	1

7.	Value addition concept; Principles and methods of preservation	2
8.	Intermediate moisture food- Jam, jelly, marmalade	1
9.	Preserve, candy – Concepts and Standards	1
10.	Fermented and non-fermented beverages	2
11.	Tomato products- Concepts and Standards	1
12.	Drying/ Dehydration of fruits and vegetables – Concept and methods, osmotic drying	1
13.	Canning – Concepts and Standards, packaging of products	2

Lecture schedule: Practical

S.N.	Topics	No.of lectures
1.	Identification and applications of different types of packaging, containers for shelf life extension	1
2.	Identification of important tools/equipments/ machines and chemicals required for PHT laboratory	1
3.	Demonstration of Zero energy cool chamber	1
4.	Effect of temperature on shelf life and quality of produce (drying and dehydration)	1
5.	Demonstration of chilling and freezing injury in vegetables and fruits	1
6.	Extraction and preservation of pulps and juices	1
7.	Preparation of Jam and Jelly	1
8.	Pickles	1
9.	RTS, nectar and squash	1
10.	Osmotically dried products	1
11.	Fruit bar and Candy	1
12.	Tomato products (sauce and ketchup)	1
13.	Canned products	1
14.	Quality evaluation of products - physico-chemical (Moisture, TSS, acidity and ascorbic acid) and sensory	2
15.	Visit to processing unit/ industry.	1

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