



TEACHING PLAN: POST HARVEST MANAGEMENT AND VALUE ADDITION OF FRUIT AND VEGETABLES

Course Teacher: Dr. Sudhir Pratap

SCHOOL: SOAS		ACADEMIC SESSION: 2023 – 2024		FOR STUDENT’S BATCH: 6 th SEM		
1	Course Code	AHR-302				
2	Course Title	POST HARVEST MANAGEMENT AND VALUE ADDITION OF FRUIT AND VEGETABLES				
3	Credits	2 (1+1)				
4	Learning Hours		Contact Hours	48		
			Assessment	24		
			Guided Study	28		
			Total hours	100		
5	Course Objective	1. To study about the role and importance of post harvest technology in Indian industry. 2. To study about the various management technologies on pre- harvest and post harvest of fruits and vegetables. 3. To study about the conventional and modern packaging and storage methods. 4. To study about processed and fermented products of fruit and vegetables.				
6	Course Outcomes	After the completion of this course the student will be able to understand the following points: 1. To make the students aware of the new innovative technologies of processing, harvesting, drying and canning. 2. Prolong the post harvest storage life of horticultural commodities and increase income through value addition of the products and to reduce post harvest losses. 3. To understand the various packaging and storage methods for preservation of fruits and vegetables after post harvest. 4. To learn the making various processed and fermented products.				
7	Outline Syllabus:					
7.01	Paper Code	Unit		Reference Number	Teaching Methods	
7.02	AHR-302	UNIT-I	a) Importance of post-harvest, Processing of fruits and vegetables b) Extent and possible causes of post harvest losses c) Pre-harvest factors affecting post-harvest quality, maturity, ripening and changes occurring during ripening	E-Course ICAR PP:5-40	Lecture and ppt	
		UNIT-II	a) Respiration and factors affecting respiration rate b) Harvesting and field handling, Value addition concept c) Storage (ZECC, cold storage, CA, MA, and hypobaric)	E-Course ICAR PP:12-21 and 43-62	Lecture and ppt	

		UNIT-III	a) Principles and methods of preservation b) Drying/ Dehydration of fruits and vegetables-Concepts and Methods c) Canning -- Concepts and Standards Packaging of products	E-Course ICAR PP:88-120	Lec ture and ppt
7.03	AHR-302	UNIT-IV	a) Intermediate moisture food- Jam, jelly, marmalade, preserve, candy b) Fermented and non-fermented beverages- Concepts and Standards c) Tomato products-Concepts and Standards	E-Course ICAR PP:121-144	Lec ture and ppt
8	Course Evaluation				
8.1	COURSE ASSESEMENT: 30%				
8.1.1	Attendance	5 %			
8.1.2	Homework	5 %			
8.1.3	ClassTest	5 %			
8.1.5	Presentation	5%			
8.1.6	Any other	20%			
8.2	MTE	10%			
8.3	End-term examination: 50%				
9	Text Books & References				
9.1	Text book	1. E-Course of ICAR, New Delhi			
9.2	Reference	1. Hui, Y.H. (2008). Handbook of fruit and vegetable processing. Wiley India Pvt. Ltd., New Delhi. 2. Sharma, S.K. (2010). Postharvest management and processing of fruits and vegetables. New India Publishing Agency, New Delhi. 3. Sharma, S.K. and Nautiyal, M.C. (2009). Postharvest technology of horticultural crops. New India Publishing Agency, New Delhi. 1. Wills, R.B.H, McGlasson, W.S, Graham, D. and Joyce, D.C. (2009). Postharvest: An introduction to the physiology and handling of fruits, vegetables and ornamentals. CABI International, Cambridge, USA.			
9.3	Video References	Subscribe the channel https://www.youtube.com/channel/UCBWSYpP57pe_z9cXz25Qj7g https://youtu.be/BMIUAVhzRuc			

Mapping of Outcomes v. Topics

Outcome no. → Syllabus topic↓	1	2	3	4
Paper Code,Unit I (a)	✓			
Paper Code. Unit I (b)		✓		
Paper Code. Unit I (c)		✓		
Paper Code,Unit II (a)			✓	
Paper Code. Unit II(b)	✓	✓		
Paper Code. Unit II(c)		✓		
Paper Code,Unit III (a)			✓	
Paper Code. Unit III(b)	✓			
Paper Code. Unit III(c)	✓			
Paper Code,Unit IV (a)	✓		✓	✓
Paper Code. Unit IV(b)	✓		✓	✓
Paper Code. Unit IV(c)	✓		✓	✓

QUESTION BANK

DESCRIPTIVE QUESTION

1. Differentiate between horticultural maturity and physiological maturity. Discuss importance of maturity index in fruits and vegetables?
2. What is maturity index? Write maturity indices for mango, apple, sapota and pomegranate?
3. What do you understand by post harvest technology? How would you judge the maturity of fruits?
4. Differentiate between climacteric and non-climacteric fruits. Write different ripening systems followed in India?
5. What is mechanical harvesting? What are its advantages and disadvantages over manual harvesting?
6. What are different modes of mechanical harvesting?
7. Why packing of fruits is important? Write characteristics of a modern packing material?
8. Why storage of fruits is required? Write briefly different storage systems adopted for fruits?
9. What is value addition? Write different dried products which you have seen in the market?
10. Describe briefly different fermented products which can be prepared from fruits?
11. Differentiate between candied, glazed and crystallized fruit?
12. Differentiate between jam and jelly?

13. Write in brief the principle of use of high temperature in fruit and vegetable preservation?
14. Write down the procedure of making jam of 1 kg apple with flow chart?
15. Write down the procedure of making jelly of 5 kg guava with flow chart?
16. Write down the procedure of making RTS with flow chart?
17. Write down the procedure of making tomato sauce with flow chart?
18. Write down the procedure of making tomato ketchup with flow chart?
19. Write down the procedure of making preserve of aonla of 5kg with flow chart?
20. Explain the importance of post harvest technology in processing industry of India?

PROJECTS/ASSIGNMENT (To be given to group of students)

1. Assignment
2. Field Visit
3. MOOC Courses