Fruit Grower (FRGR)
Core Qualification File Syllabus

Details of Theory Syllabus

Sl.No.	CONTENTS	DETAILS
1.	Importance of fruits in human diet and classification of fruits crops: (4Hrs)	Importance of fruits in human nutrition Classification of fruits on the basis of the number of ovaries and the number of flowers involved in their formation. Role of Fruit Crop producers
2.	Selection of land; Area identification; Land preparation :(6Hrs)	2.1. Selection of land for fruit orchard 2.2. Area identification for fruit orchard 2.3. Land preparation for planting of fruit crops
3.	Establishment of orchard and different methods of planting : (4Hrs)	3.1. Planning for orchard establishment 3.2. Preliminary operations for orchard establishment 3.3. What are the different methods of planting
4	Outline of propagation of fruit crops (Sexual and Asexual) : (4Hrs)	4.1. Needs of propagation 4.2.Sexual method of propagation 4.3.Asexual method of propagation 4.4. Advantages and disadvantages
5	Method of fertilizer application and irrigation : (4Hrs)	5.1. Definition and example of manures & fertilizers. 5.2. Different method of fertilizer application 5.3. What is irrigation? 5.4. Different method of irrigation in orchard

6	Cultivation of some important fruit crops: mango, litchi, banana, citrus (sweet orange, mandarin orange), pineapple, guava, papaya, dragon fruit and coconut (in respect of varieties, propagation, climate and soil, spacing, nutrient requirement, inter culture operation, pests and diseases) : (30Hrs)	6.1. Cultivation of mango in respect of varieties, propagation, climate and soil, spacing, nutrient requirement, inter culture operation, pests and diseases. 6.2. Cultivation of litchi in respect of varieties, propagation, climate and soil, spacing, nutrient requirement, inter culture operation, pests and diseases. 6.3. Cultivation of banana in respect of varieties, propagation, climate and soil, spacing, nutrient requirement, inter culture operation, pests and diseases 6.4. Cultivation of citrus in respect of varieties, propagation, climate and soil, spacing, nutrient requirement, inter culture operation, pests and diseases. 6.5. Cultivation of pineapple in respect of varieties, propagation, climate and soil, spacing, nutrient requirement, inter culture operation, pests and diseases. 6.6. Cultivation of guava in respect of varieties, propagation, climate and soil, spacing, nutrient requirement, inter culture operation, pests and diseases. 6.7. Cultivation of papaya in respect of varieties, propagation, climate and soil, spacing, nutrient requirement, inter culture operation, pests and diseases. 6.8. Cultivation of dragon fruit in respect of varieties, propagation, climate and soil, spacing, nutrient requirement, support &training, pests and diseases. 6.9. Cultivation of coconut in respect of varieties, propagation, climate and soil, spacing, nutrient requirement, inter culture operation, pests and diseases.
7	General concept of High Density Planting (HDP) : (4Hrs)	7.1. Definition of High density planting. 7.2.Advantages of HDP 7.3. Characteristics of HDP
8	Post- harvest managements: Harvesting, washing and cleaning, sorting, grading; packaging, transportation and Storage : (6Hrs)	8.1. Importance of Post- harvest technology 8.2. When to Harvest Horticulture Crops? 8.3. Brief idea on washing and cleaning, sorting, 8.4. Brief idea on grading; packaging, transportation 8.5. Factors affecting storage
9	Ripening: Changes during ripening , ripening agents and delaying ripening methods : (6Hrs)	9.1. What is ripening? 9.2. Classification on the basis ripening 9.3. What changes takes place during ripening? 9.4.What are the commercial ripening agents? 9.5. What are the common methods of delay ripening?
10	Economics of fruit production : (4Hrs)	10.1. What is Cost: Benefit ratio 10.2. Calculate the cost of cultivation of mango & banana
	TOTAL	**72 Hrs**

Detail of Practical Syllabus

SL NO	CONTENT	DETAILS
1.	Layout and land preparation :(6Hrs)	Site selection for orchard Preparation of land for orchard Fencing of orchard land
2.	Different methods of propagation : (8Hrs)	2.1. Propagation through seeds 2.2.Practicing propagation through layering& Cutting 2.3. Practicing propagation through budding& grafting
3.	Different system of planting.: (8Hrs)	3.1.System of planting: Square system & Rectangular 3.2.System of planting: Triangular & Hexagonal 3.3. System of planting: Quincunx & Contour
4.	Manures and fertilizers application, irrigation, drainage, and intercultural operations :(8 Hrs)	4.1. Demonstrate different methods of manures and fertilizers application 4.2.Demonstrate different methods of irrigation & drainage 4.3.Practicing intercultural operations
5	Identification of major fruits & varieties:(10 Hrs)	5.1.Identification of different varieties of mango 5.2. Identification of different varieties of banana 5.3. Identification of different varieties of guava 5.4. Identification of different groups of citrus
6	Pre-treatment of banana suckers, desuckering in banana, sex forms in papaya:(6Hrs)	6.1.Pre-treatment of banana suckers for control of pests & diseases 6.2.Practicing desuckering in banana 6.3. Demonstrate different sex forms in papaya.
7	Identification important of pests and diseases of fruit crops:(10Hrs)	7.1. Identification important pests: mango & litchi. 7.2. Identification important diseases: mango & litchi 7.3. Identification important pests: banana& coconut 7.4. Identification important diseases: banana & coconut
8	Harvesting, cleaning, packing& ripening(10Hrs)	8.1. Demonstrate the process of harvesting 8.2. Demonstrate the process of cleaning & packing 8.3. Use of different agents for ripening
9	Visit to a commercial fruit orchard (14Hrs)	9.1.Acquaintance with different fruit plants 9.2. Develop an idea about bearing habits of fruits 9.3. Identify the fruit crops bearing on current or past season growth.
10	Projects: (16 Hrs)	10.1. Any two projects each of 8 Hrs.
	Total	**96 Hrs.**

Details of Project (Any two)

Sl. No.	Content (Any two,each 8 Hrs.)	Details
1.	Project I (8 Hrs)	Project on a Model Orchard with different Fruit Crops [Example: mango, banana, litchi, guava)
2.	Project II (8 Hrs)	Calculate cost of cultivation for establishment one hectare Mango Orchard.
3.	Project III (8 Hrs)	Calculate cost of cultivation for establishment one hectare Dragon fruit Orchard.
4.	Project IV (8 Hrs)	Project on a production unit for value-added products of mango / guava [Example: types of value-added products, production unit, process of production, quality, marketing and economics]

OUTCOMES

Outcomes to be assessed	Assessment criteria for the outcome
1.Recognize and recall the importance of fruits in human diet and classify the fruits crops.	1.1 Identify the different types of fruits in the human diet with examples and their uses. 1.2 Describe the role of fruit crop producers. 1.3Identify the morphological characteristics (leaf, stem, flower, economic part, etc.) of fruit crops. 1.4 Prepare maps or mark areas on maps showing the area of cultivation of different fruit crops.
2. Identify, Select and prepare the layout of land for commercial orchards.	2.1 List the procedure for suitable land selection for cultivation of fruit crops. 2.2 Prepare proper layout of land. 2.3 Justify the methods of land preparation 2.4. Identify different farm implements (tractor, power tiller, foot sprayer, Pruning Secateur, watering can etc.) 2.5 Describe the name, functions and purpose of use of different farm implements.
3. Plan the layout of orchard management for orchard establishment and different methods of planting	3.1Maintain the steps for establishment of orchards. 3.2Finalized the location and site. 3.3 Follow up different methods of planting in different lands. 3.4 Proper maintenance of young fruit orchards. 3.5 Layout of different methods of orchard management.
4.Illustrate the outline of propagation of fruit crops (Sexual and Asexual) & different methods of vegetative propagation	4.1 Identify the needs of the propagation. 4.2 Describe the methods of sexual and asexual propagation 4.3 List out advantages and disadvantages of sexual and asexual propagation. 4.4 Summarize the importance of sexual and asexual propagation of fruit crops. 4.5 Explain different vegetative Propagation. 4.6 Demonstration the methods of collection & rootstock selection. 4.7 Describe the layering, cutting, budding, grafting, micro propagation (tissue culture).
5 Identify the role of fertilizer and methods of application of irrigation system	5.1 Identify and list out different fertilizers. 5.2 List out the different field applications of fertilizer. 5.3 Demonstrate the precautions of fertilizer application, irrigation and intercultural operations. 5.4 Determine the time of fertilizer application. 5.5 Justify the advantages & disadvantages of fertilizer & irrigation application. 5.6 Describe the intercultural operations in the fruit orchard. 5.7 Demonstrate different methods of manures and fertilizers application 5.8 Identify deficiency symptoms of nutrient elements. 5.9 Demonstrate different methods of irrigation & drainage 5.10 Understand the importance of intercultural operations.

6.Apply various cultivation techniques and methods of important fruit crops with the identification of pests and diseases of fruit crops	6.1 Recognize cultivation technique of mango, litchi, banana, citrus, pineapple, guava, papaya, dragon fruit and coconut in respect of varieties, propagation, climate and soil, spacing, nutrient requirement, inter culture operation, pests and diseases. 6.2 Identify different varieties of mango, banana, guava and citrus fruits. 6.3 Identify different pests: Mango and Litchi. 6.4 Identify different diseases: mango & litchi 6.5 Identify different pests: banana & coconut 6.6 Identify different diseases: banana & coconut
7.Plan and execute the concept of High Density Planting (HDP)	7.1 Identify the importance of high density planting. 7.2. Narrate advantages of HDP 7.3. List out the characteristics of HDP 7.4 Justify higher density plantation gives higher yield also acquaintance with different fruit plants 7.5 Describe about bearing habits of fruits 7.6 Identify the fruit crops bearing on current or past season growth.
8.Summarize the post harvest management system.	8.1 List out the objectives of Post- harvest technology 8.2 Summarize the details of timing of Harvest Horticulture Crops. 8.3. Explain and give brief idea on washing and cleaning, sorting, 8.4 Explain and give brief idea on grading; packaging, transportation 8.5 Identify the factors affecting storage 8.6 Demonstrate the process of harvesting 8.7 Demonstrate the process of cleaning & packing 8.8 Describe the d different agents for ripening
9.Paraphrase the process and technology of ripening of fruits	9.1. Identify the process about the ripening of fruits. 9.2 List out the methods of ripening of fruits. 9.3. Explain the changes takes place during ripening. 9.4 Identify the commercial ripening agents. 9.5 Summarize the common methods of delay ripening.
10. Illustrate marketing strategy skill of economy of fruit production.	10.1 Identify the marketing channels (such as kishan mandies, retailers, processors, etc.) and price competitiveness (on-farm value to on-market value) of different fruit crops. 10.2 List out the role different agencies play in determining the prices and export quality standards and their supply chain. 10.3 Identify the markets and buyers at local and regional level for fruit crop produce. 10.4 Calculate the economics of production and net profit (such as cost of cultivation, gross return, net income and benefit: cost ratio) for major fruit crops. 10.5 Summarize the importance, enrollment procedure and compensation claims in crop insurance programmes.