Syllabus for Contract Farming & Banana Ripening Assistant

Course Name	Contract Farming & Banana Ripening Assistant
Sector	Food Processing
Course Code	FPT/2024/CFBA/376
Level	3
Occupation	Contract Firming & Banana Ripening Assistant
Job Description	Contract Farming & Banana Ripening Assistant is responsible for ensuring the timely and efficient firming of contracts and overseeing the ripening process of bananas. They will also responsible for banana ripening process, monitoring temperature, humidity and optimize ripening quality and minimize waste.
Course Duration	Total Duration 390 Hrs (T-90, P-180, OJT-60 and ES-60)
Trainees' Entry Qualification	Grade 10 OR Grade 8 pass and pursuing continuous schooling in regular school with vocational subject OR 8th grade pass with 2 yrs relevant experience OR 5th grade pass with 5 years relevant experience 0R Previous relevant Qualification of NSQF Level 2 with one yr experience OR Previous relevant Qualification of NSQF Level 2.5 with 6 months experience
Trainers Qualification	M.Sc in Agricultural with 1 year experience in the relevant field OR B.Sc in Agricultural with 3 years experience in the relevant field

Structure of Course:

Module No.	Module name	Outcome	Compulsory/ Elective	Theory (Hrs)	Practical (Hrs)	OJT (Hrs.)	Total (Hrs) [Multiple of 30]
1	**Banana varieties and Contract Farming**	Identify Banana Varieties and Criteria for Contract Farming	Compulsory	10	20		30
2	**Banana Cultivation and Quality Management**	Perform Cultivation of Banana using Good Agricultural practices (GAP) and best nursery practices (BNP)	Compulsory	20	40		60
3	**Pest & Disease Management**	Identify types of fungal infections and pest	Compulsory	20	40		60

Module No.	Module name	Outcome	Compulsory/ Elective	Theory (Hrs)	Practical (Hrs)	OJT (Hrs.)	Total (Hrs) [Multiple of 30]
		damage of banana tree as well as preventive measures.					
4	**Harvesting, Cutting & Cutting**	Perform harvesting, cutting, and crating of bananas	Compulsory	10	20		30
5	**Ripening technique**	Demonstrate various techniques for banana ripening with attention to associated health hazards and quality.	Compulsory	10	20		30
6	**Monitor and control ripening chamber**	Install and operate a banana ripening chamber equipped with all auxiliary systems ensuring fruit quality and safety.	Compulsory	10	20		30
7	**Quality parameter**	Analyze Quality parameter for Banana during ripening		10	20		30
8	**OJT**	Work in real job situation with special emphasis on basic safety and hazards in this domain (OJT).	Compulsory	-	-	60	6**0**
9	**Employability Skill**	As per guided curriculum	Compulsory	60	-	-	6**0**
		TOTAL		**150**	**180**	**60**	**390**

SYLLABUS:

Module No. 1: Banana varieties and Contract Farming

Outcome: Identify Banana Varieties and Criteria for Contract Farming

Theory Content:

1.1 Diversity of Banana Varieties (Popular Varieties & Local Varieties)
1.2 Select Criteria for Contract Farming
1.3 study the economic advantage and Market Demand of banana Contract Farming.
1.4 Discuss Technological Innovation in Variety Management
1.5 Outline advancements in banana cultivation, including genetic modification for disease resistance, improved shelf life, and enhanced nutritional content in certain varieties.
1.6 Elaborate precision agriculture techniques, employed in managing different banana varieties under contract farming to optimize resource use and increase productivity.
1.7 Discuss the economic viability of cultivating different banana varieties under contract farming agreements, considering factors such as input costs, market prices, and potential returns.

Practical Content:

1.1 Identify of common banana plants (Popular Varieties & Local Varieties), parts used, utility, picture drawing.

1.2 Demonstrate Proper identification methodology of Banana Varieties (Popular Varieties & Local Varieties)

1.3 Highlight category of banana cultivation, including genetic modification for disease resistance, improved shelf life, and enhanced nutritional content in certain varieties.

1.4 Demonstrate techniques contract farming of banana to optimize resource use and increase productivity.

1.5 Perform survey of Indian market for supply and demand of different banana varieties under contract farming agreements.

Module No. 2: Banana Cultivation and Quality Management.

Outcome: Perform Cultivation of Banana using Good Agricultural practices (GAP) and best nursery practices (BNP)

Theory Content:

2.1 Explores innovative and advanced methods used in banana farming to enhance productivity, quality, and sustainability

2.2 Describe the methods of Good Agricultural practices (GAP) for banana cultivation

2.3 Explain Planting method, Irrigation method, weeding method under GAP.

2.4 Illustrate Application of different types of planting materials.

2.5 Discuss the importance of selecting banana varieties that are well-suited to the local climate and soil conditions, ensuring optimal yield and quality.

2.6 Elaborate Best nursery practices for different banana varieties.

2.7 Highlight types Fertilizer (organic) and Pesticides (organic) used in banana cultivation.

2.8 Discuss the use of tissue culture techniques for mass production of disease-free and genetically uniform banana planting material.

2.9 Explore the advantages of using high-quality planting material, such as improved yield, disease resistance, and early fruiting.

2.10 Discuss the benefits of cover cropping and mulching in banana plantations to conserve soil moisture, suppress weeds, and improve soil structure.

2.11 Explore the implementation of automated irrigation systems based on real-time data to ensure optimal water usage and prevent water stress in banana plants.

2.12 Explore the use of biofertilizers to enhance soil fertility, nutrient availability, and overall plant health.

Practical Content:

2.1 Demonstrate the method of selecting banana varieties that are well-suited to the local climate and soil conditions, ensuring optimal yield and quality.

2.2 Conduct the methods of Good Agricultural practices (GAP) for banana cultivation.

2.3 Demonstrate Best nursery practices for different banana varieties.

2.4 List out different types of planting materials used in banana cultivation.

2.5 Highlight Fertilizer (organic) and Pesticides (organic) used in banana cultivation.

2.6 Demonstrate Planting method, Irrigation method, weeding method applicable in banana cultivation.

2.7 Demonstrate cover cropping and mulching in banana plantations

Module No. 3: Pest & Disease Management

Outcome: Identify types of fungal infections and pest damage of banana tree as well as preventive measures.

Theory Content:

3.1 Discuss on fungal infections like Panama disease (caused by the Fusarium wilt fungus) and Black Sigatoka (caused by the Mycosphaerella fijiensis fungus) of banana.
3.2 Outline Pests such as banana weevils and nematodes capable of significant damage to banana plants.
3.3 Describe symptom of fungal attack and pest damage.
3.4 Highlight precaution and control technique of Pest & Disease in banana.
3.5 Explain Good Sanitation Practices by Remove and destroy any infected plant material, including leaves, pseudostems, and fruit, to prevent the spread of diseases.

Practical Content:

3.1 Identify types of fungal infections and pest damage of banana tree.
3.2 Illustrate symptom of fungal attack and pest damage.
3.4 Demonstrate control technique of Pest & Disease in banana.
3.5 Demonstrate Good Sanitation Practices to prevent the spread of diseases.
3.6 Maintain Good irrigation practices for preventing water-related diseases such as Fusarium wilt and avoid overwatering, especially during cool and wet conditions, which can promote fungal growth.
3.7 Maintain balanced soil fertility to promote healthy plant growth and improve resistance to diseases.
3.8 Demonstrate use of fungicides or other chemical treatments for control of diseases.

Module No. 4: Harvesting, Cutting & Cutting

Outcome: Perform harvesting, cutting, and crating of bananas

Theory Content:

4.1 Explain Harvesting Index of Banana (size, Maturity, colour Maturity, flavor Maturity)
4.2 Concept of Good Harvesting practices (GHP)
4.3 Illustrate Cutting Technique of banana from the Bunch (Tools, Positioning, Handling)
4.4 Elaborate crating system like Crates, Packing, Stacking and ventilation to maintain fruit quality during transit.
4.5 Procedure to minimize post-harvest losses.

Practical Content:

4.1 Demonstrate stage of maturity depending on the banana variety and market preference.
4.2 Assess fruit quality based on factors such as uniformity in size and shape, absence of physical damage or blemishes, and optimal flavor development.
4.3 Check the fill of individual fruit in the bunch.
4.4 Ensure that the bananas are well-filled, plump, and evenly developed.
4.5 Monitor the color of the bananas.
4.6 Identify the Harvesting Point
4.7 Use sharp, clean cutting tools such as machetes, knives, or pruning shears for harvesting.

Ensure that the tools are sanitized to prevent the spread of diseases.

4.8 Ensure a clean cut to minimize damage to the fruit and plant.

4.9 Handle the harvested bunches with care to prevent bruising or damage to the fruit.

4.10 Choose sturdy, well-ventilated crates or boxes designed specifically for banana transport

4.11 Arrange the harvested bunches carefully in the crates to prevent overcrowding and bruising.

4.12 Stack the crates securely to prevent shifting or toppling during transportation.

4.13 Provide adequate ventilation around the crates to allow airflow and prevent heat buildup.

4.14 Label the crates with essential information such as the banana variety, harvest date, and destination.

Module No. 5: Ripening technique

Outcome: Demonstrate various techniques for banana ripening with attention to associated health hazards and quality.

Theory Content:

5.1 Describe the different technique of banana ripening (Natural Ripening, Paper Bag Method, Ripening with Other Fruits, Ripening in Warm Environment, Ripening in a Closed Space, Commercial Ripening Rooms)

5.2 Explain Natural ripening of bananas occurs primarily due to the release of ethylene gas by the fruit itself.

5.3 Illustrate Artificial ripening using calcium carbide is a practice that involves the use of a chemical compound, calcium carbide (CaC2), to induce ripening in fruits such as bananas.

5.4 Highlight Health Hazards of calcium carbide- Calcium carbide can contain impurities such as arsenic and phosphorus, which are harmful to human health.

5.5 Identify Quality and Flavor degradation during Fruits ripened using calcium carbide may lack the quality, flavor, and nutritional value of naturally ripened fruits.

Practical Content:

5.1 Demonstrate different technique of banana ripening (Natural Ripening, Paper Bag Method, Ripening with Other Fruits, Ripening in Warm Environment, Ripening in a Closed Space, Commercial Ripening Rooms)

5.2 Select bananas that are mature but still green.

5.3 Place the green bananas in a well-ventilated area at room temperature. Avoid storing them in plastic bags, as this can trap moisture and lead to premature spoilage.

5.4 Ensure that there is adequate air circulation around the bananas to allow the ethylene gas to disperse.

5.5 Monitor the bananas regularly for ripeness. As they ripen, you'll notice changes in color from green to yellow, and the fruit will become softer.

5.6 Demonstrate Artificial ripening using calcium carbide.

5.7 Apply Small amounts of calcium carbide are placed in a container or wrapped in paper and then placed near the fruits, usually in a closed environment such as a container or a room.

5.8 Highlight Health Hazards of calcium carbide and Quality and Flavor degradation during Fruits ripened using calcium carbide.

Module No. 6: Monitor and control ripening chamber

Outcome: Install and operate a banana ripening chamber equipped with all auxiliary systems ensuring fruit quality and safety.

Theory Content:

6.1 Outline Insulated Enclosure to create a controlled environment conducive to fruit ripening.

6.2 Highlight Temperature Control device - The ideal temperature for ripening bananas is typically between 18 to 24°C (64 to 75°F).

6.3 Highlight Humidity Control device- The ideal humidity for ripening bananas is around 85% to 95%. This can be achieved using humidifiers or by controlling ventilation to prevent moisture loss.

6.4 Describe Ethylene Gas Management system- Ethylene generators or ethylene scrubbers can be used to adjust ethylene levels as needed for the ripening process.

6.5 Elaborate Air Circulation using fans or ventilation systems.

6.6 Set Ripening Racks or Pallets for proper airflow around the fruits and easy access for monitoring and handling.

6.7 Install Monitoring and Control System inside the chamber. This system can include sensors, controllers, and automated actuators to maintain optimal conditions for ripening.

6.8 Install Inspection Windows or door within chamber

6.9 Design the ripening chamber for easy cleaning and sanitation to prevent contamination

6.10 Ensure the quality and safety of the ripened fruits.

Practical Content:

6.1 Install well-insulated enclosure to maintain stable temperature and humidity levels.

6.2 Install a temperature control system to regulate the temperature inside the chamber.

6.3 Incorporate a humidity control system to maintain optimal humidity levels.

6.4 Integrate an ethylene gas management system to control the concentration of ethylene gas within the chamber.

6.5 Ensure proper air circulation within the chamber to distribute temperature, humidity, and ethylene gas evenly.

6.6 Install ripening racks or pallets within the chamber to hold the fruits.

6.7 Implement a monitoring and control system to track and adjust temperature, humidity, and ethylene levels within the chamber.

6.8 Install inspection windows or doors to allow operators to visually inspect the fruits without opening the chamber, minimizing temperature and humidity fluctuations.

6.9 Demonstrate cleaning and sanitation process to prevent contamination and ensure the quality and safety of the ripened fruits.

6.10 Incorporate safety features such as emergency ventilation systems, gas detectors (for ethylene), and fire suppression systems to ensure safe operation of the ripening chamber.

Module No. 7: Quality parameter

Outcome: Analyze Quality parameter for Banana during ripening

Theory Content:

7.1 Describe quality parameters to ensure that the banana meet desired standards. (ripeness, flavor, appearance, and overall quality of the bananas).

7.2 Assessing shelf life involves evaluating factors such as susceptibility to bruising, mold growth,

and texture changes post-ripening.
7.3 Ensure that bananas ripened in the chamber meet desired standards for flavor, appearance, texture, and shelf life, resulting in high-quality fruits suitable for market distribution and consumer satisfaction.

Practical Content:

7.1 Identify color of the banana peel is a crucial indicator of ripeness.
7.2 Monitor firmness helps determine the stage of ripeness, with ripe bananas yielding slightly to pressure without being overly soft or mushy.
7.3 Monitor aroma can help assess the progress of ripening and detect any off-flavors or odors that may indicate spoilage or improper ripening conditions.
7.4 Measure sugar content, typically expressed as Brix degrees, helps assess sweetness and flavor development during ripening.
7.5 Monitor acidity levels, usually expressed as pH, helps assess fruit maturity and flavor balance.
7.6 Monitor ethylene production and the fruit's sensitivity to ethylene helps regulate ripening conditions within the chamber and ensure uniform ripening.
7.7 Assessing the texture of ripened bananas involves evaluating factors such as smoothness, creaminess, and lack of grittiness.
7.8 Monitor weight loss during ripening helps assess moisture loss and dehydration. Excessive weight loss may indicate improper ripening conditions or inadequate humidity control within the chamber.
7.9 Assess shelf life involves evaluating factors such as susceptibility to bruising, mold growth, and texture changes post-ripening.

Module 8: OJT

Outcome: Work in real job situation with special emphasis on basic safety and hazards in this domain

Practical Content:

Assessor will check report prepared for this component of Practical training of the course and assess whether competency has been developed to work in the real job situation with special emphasis on basic safety and hazards in this domain. (The trainee is expected to undertake work in actual workplace under any supervisor / contractor for **60 Hours.**)

Module 9: Employability Skills **(60 Hrs)**

Key Learning Outcomes

Introduction to Employability Skills Duration: 1.5 Hours

After completing this programme, participants will be able to:

1. Discuss the Employability Skills required for jobs in various industries
2. List different learning and employability related GOI and private portals and their usage

Constitutional values - Citizenship Duration: 1.5 Hours

3. Explain the constitutional values, including civic rights and duties, citizenship, responsibility towards society and personal values and ethics such as honesty, integrity, caring and respecting others that are required to become a responsible citizen
4. Show how to practice different environmentally sustainable practices.

Becoming a Professional in the 21st Century Duration: 2.5 Hours

5. Discuss importance of relevant 21st century skills.
6. Exhibit 21st century skills like Self-Awareness, Behavior Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn etc. in personal or professional life.
7. Describe the benefits of continuous learning.

Basic English Skills Duration: 10 Hours

8. Show how to use basic English sentences for everyday conversation in different contexts, in person and over the telephone
9. Read and interpret text written in basic English
10. Write a short note/paragraph / letter/e -mail using basic English

Career Development & Goal Setting Duration: 2 Hours

11. Create a career development plan with well-defined short- and long-term goals

Communication Skills

Duration: 5 Hours

12. Demonstrate how to communicate effectively using verbal and nonverbal communication etiquette.
13. Explain the importance of active listening for effective communication
14. Discuss the significance of working collaboratively with others in a team

Diversity & Inclusion Duration: 2.5 Hours

15. Demonstrate how to behave, communicate, and conduct oneself appropriately with all genders and PwD
16. Discuss the significance of escalating sexual harassment issues as per POSH act.

Financial and Legal Literacy

Duration:5 Hours

17. Outline the importance of selecting the right financial institution, product, and service
18. Demonstrate how to carry out offline and online financial transactions, safely and securely

19. List the common components of salary and compute income, expenditure, taxes, investments etc.
20. Discuss the legal rights, laws, and aids

Essential Digital Skills Duration: 10 Hours

21. Describe the role of digital technology in today's life
22. Demonstrate how to operate digital devices and use the associated applications and features, safely and securely
23. Discuss the significance of displaying responsible online behavior while browsing, using various social media platforms, e-mails, etc., safely and securely
24. Create sample word documents, excel sheets and presentations using basic features
25. utilize virtual collaboration tools to work effectively

Entrepreneurship

Duration: 7 Hours

26. Explain the types of entrepreneurship and enterprises
27. Discuss how to identify opportunities for potential business, sources of funding and associated financial and legal risks with its mitigation plan
28. Describe the 4Ps of Marketing-Product, Price, Place and Promotion and apply them as per requirement
29. Create a sample business plan, for the selected business opportunity

Customer Service

Duration: 5 Hours

30. Describe the significance of analyzing different types and needs of customers
31. Explain the significance of identifying customer needs and responding to them in a professional manner.
32. Discuss the significance of maintaining hygiene and dressing appropriately

Getting Ready for apprenticeship & Jobs

Duration: 8 Hours

33. Create a professional Curriculum Vitae (CV)
34. Use various offline and online job search sources such as employment exchanges, recruitment agencies, and job portals respectively
35. Discuss the significance of maintaining hygiene and confidence during an interview
36. Perform a mock interview
37. List the steps for searching and registering for apprenticeship opportunities

Learning Outcome – Assessment Criteria

Module No.	Outcome	Assessment Criteria
1	Identify Banana Varieties and Criteria for Contract Farming	**After completion of this module students will be able to:** 1.1 Identify of common banana plants (Popular Varieties & Local Varieties), parts used, utility, picture drawing. 1.2 Demonstrate Proper identification methodology of Banana Varieties (Popular Varieties & Local Varieties) 1.3 Highlight category of banana cultivation, including genetic modification for disease resistance, improved shelf life, and enhanced nutritional content in certain varieties. 1.4 Demonstrate techniques contract farming of banana to optimize resource use and increase productivity. 1.5 Perform survey of Indian market for supply and demand of different banana varieties under contract farming agreements.
2	Perform Cultivation of Banana using Good Agricultural practices (GAP) and best nursery practices (BNP)	**After completion of this module students will be able to:** **2**.1 Demonstrate the method of selecting banana varieties that are well-suited to the local climate and soil conditions, ensuring optimal yield and quality. 2.2 Conduct the methods of Good Agricultural practices (GAP) for banana cultivation. 2.3 Demonstrate Best nursery practices for different banana varieties. 2.4 Identify different types of planting materials used in banana cultivation. 2.5 Apply Fertilizer (organic) and Pesticides (organic) used in banana cultivation. 2.6 Demonstrate Planting method, Irrigation method, weeding method applicable in banana cultivation. 2.7 Demonstrate cover cropping and mulching in banana plantations
3	Identify types of fungal infections and pest damage of banana tree as well as preventive measures.	**After completion of this module students will be able to:** 3.1 Identify types of fungal infections and pest damage of banana tree. 3.2 Identify symptom of fungal attack and pest damage. 3.4 Demonstrate control technique of Pest & Disease in banana. 3.5 Demonstrate Good Sanitation Practices to prevent the spread of diseases. 3.6 Maintain Good irrigation practices for preventing water-related diseases such as Fusarium wilt and avoid overwatering, especially during cool and wet conditions, which can promote fungal growth. 3.7 Maintain balanced soil fertility to promote healthy plant growth and improve resistance to diseases. 3.8 Demonstrate use of fungicides or other chemical treatments for control of diseases.

Module No.	Outcome	Assessment Criteria
4	Perform harvesting, cutting, and crating of bananas	**After completion of this module students will be able to:** 4.1 Demonstrate stage of maturity depending on the banana variety and market preference. 4.2 Assess fruit quality based on factors such as uniformity in size and shape, absence of physical damage or blemishes, and optimal flavor development. 4.3 Check the fill of individual fruit in the bunch. 4.4 Ensure that the bananas are well-filled, plump, and evenly developed. 4.5 Monitor the color of the bananas. 4.6 Identify the Harvesting Point 4.7 Use sharp, clean cutting tools such as machetes, knives, or pruning shears for harvesting. Ensure that the tools are sanitized to prevent the spread of diseases. 4.8 Ensure a clean cut to minimize damage to the fruit and plant. 4.9 Handle the harvested bunches with care to prevent bruising or damage to the fruit. 4.10 Choose sturdy, well-ventilated crates or boxes designed specifically for banana transport 4.11 Arrange the harvested bunches carefully in the crates to prevent overcrowding and bruising. 4.12 Stack the crates securely to prevent shifting or toppling during transportation. 4.13 Provide adequate ventilation around the crates to allow airflow and prevent heat buildup. 4.14 Label the crates with essential information such as the banana variety, harvest date, and destination.
5	Demonstrate various techniques for banana ripening with attention to associated health hazards and quality.	**After completion of this module students will be able to:** 5.1 Demonstrate different technique of banana ripening (Natural Ripening, Paper Bag Method, Ripening with Other Fruits, Ripening in Warm Environment, Ripening in a Closed Space, Commercial Ripening Rooms) 5.2 Select bananas that are mature but still green. 5.3 Place the green bananas in a well-ventilated area at room temperature. Avoid storing them in plastic bags, as this can trap moisture and lead to premature spoilage. 5.4 Ensure that there is adequate air circulation around the bananas to allow the ethylene gas to disperse. 5.5 Monitor the bananas regularly for ripeness. As they ripen, you'll notice changes in color from green to yellow, and the fruit will become softer. 5.6 Demonstrate Artificial ripening using calcium carbide. 5.7 Apply Small amounts of calcium carbide are placed in a container or wrapped in paper and then placed near the fruits, usually in a closed environment such as a container or a room. 5.8 Identify Health Hazards of calcium carbide and Quality and Flavor degradation during Fruits ripened using calcium carbide.
6	Install and operate a banana ripening chamber equipped with all auxiliary systems ensuring fruit quality and safety.	**After completion of this module students will be able to:** 6.1 Install well-insulated enclosure to maintain stable temperature and humidity levels. 6.2 Install a temperature control system to regulate the temperature inside the chamber. 6.3 Incorporate a humidity control system to maintain optimal humidity levels. 6.4 Integrate an ethylene gas management system to control the concentration of ethylene gas within the chamber. 6.5 Ensure proper air circulation within the chamber to distribute temperature, humidity, and ethylene gas evenly.

Module No.	Outcome	Assessment Criteria
		6.6 Install ripening racks or pallets within the chamber to hold the fruits. 6.7 Implement a monitoring and control system to track and adjust temperature, humidity, and ethylene levels within the chamber. 6.8 Install inspection windows or doors to allow operators to visually inspect the fruits without opening the chamber, minimizing temperature and humidity fluctuations. 6.9 Demonstrate cleaning and sanitation process to prevent contamination and ensure the quality and safety of the ripened fruits. 6.10 Implement safety features such as emergency ventilation systems, gas detectors (for ethylene), and fire suppression systems to ensure safe operation of the ripening chamber. .
7	Analyze Quality parameter for Banana during ripening	**After completion of this module students will be able to:** 7.1 Identify color of the banana peel is a crucial indicator of ripeness. 7.2 Monitor firmness helps determine the stage of ripeness, with ripe bananas yielding slightly to pressure without being overly soft or mushy. 7.3 Monitoring aroma can help assess the progress of ripening and detect any off-flavors or odors that may indicate spoilage or improper ripening conditions. 7.4 Measure sugar content, typically expressed as Brix degrees, helps assess sweetness and flavor development during ripening. 7.5 Monitor acidity levels, usually expressed as pH, helps assess fruit maturity and flavor balance. 7.6 Monitor ethylene production and the fruit's sensitivity to ethylene helps regulate ripening conditions within the chamber and ensure uniform ripening. 7.7 Assess the texture of ripened bananas involves evaluating factors such as smoothness, creaminess, and lack of grittiness. 7.8 Monitoring weight loss during ripening helps assess moisture loss and dehydration. Excessive weight loss may indicate improper ripening conditions or inadequate humidity control within the chamber. 7.9 Assess shelf life involves evaluating factors such as susceptibility to bruising, mold growth, and texture changes post-ripening.
8	OJT	Work in real job situation with special emphasis on basic safety and hazards in this domain (OJT).
9	Employability Skill	As per guided curriculum

List of Tools, Equipment & materials needed for 30 Trainees (Practical)

Sl no	Tools and Equipment	Quantity
1	Kodal	03
2	Belcha	03
3	sickle	03
4	Khurpi	03
5	Watering can	03
6	knife	03
7	Grafting tools	03
8	Axe	03
9	Pruning knife	03
10	Polypots	06
11	Plastic sheet	30 metre
12	Mother beds	02
13	Sunken beds	02
14	50% agro nets	30 meter
15	Banana Ripening Chamber	1
16	Evaporating Unit	1
17	Cold room cabinet	1
18	Cold Storage insulated panel	12
19	Pack sealing machine	02
20	Weighing Balance (Digital) -120 gm capacity	02
21	Laboratory Weighing Balance (Digital) – 20 kg capacity	02
22	Ethylene gas monitoring system	1
23	Moisture indicator	1
24	Temperature indicator	1
25	calcium carbide Chamber	2

Marks Distribution

Outcome	Outcome Code	Total Th marks	Total Pr marks	Total OJT marks
Identify Banana Varieties and Criteria for Contract Farming	FPT/1113/OC1	20	80	0
Perform Cultivation of Banana using Good Agricultural practices (GAP) and best nursery practices (BNP)	FPT/1113/OC2	30	130	0
Identify types of fungal infections and pest damage of banana tree as well as preventive measures.	FPT/1113/OC3	30	120	0
Perform harvesting, cutting, and crating of bananas	FPT/1113/OC4	10	80	0
Demonstrate various techniques for banana ripening with attention to associated health hazards and quality.	FPT/1113/OC5	20	80	0
Install and operate a banana ripening chamber equipped with all auxiliary systems ensuring fruit quality and safety.	FPT/1113/OC6	20	80	0
Analyze Quality parameter for Banana during ripening	FPT/1113/OC7	20	80	0
Work in real job situation with special emphasis on basic safety and hazards in this domain (OJT).	FPT/1113/OC8	0	0	150

Employability Skills – 60 Hrs	DGT/VSQ/N0102	50	0	0