

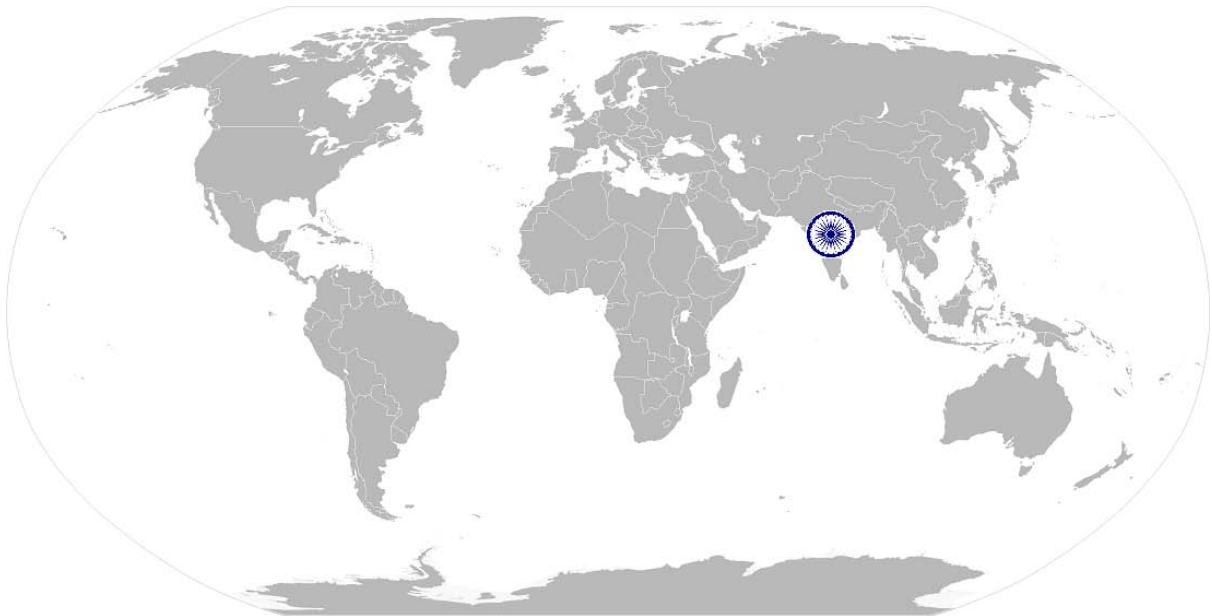
AGR / N 0010
Integrated Nutrient Management in Banana Cultivation

C. Procedures of fertilizer / micro nutrient application	The individual on the job needs to know and understand: KC1. Appropriate methods of application of various fertilizers and micro nutrients KC2. Timing in a day and location of the application KC3. Time of application of fertilizers / nutrient in the crop life cycle
D. Weed Management	The individual on the job needs to know and understand: KD1. Interaction affects of the soil type, level of the land and water availability on the crop growth and its yield KD2. Timing and method of irrigation and drainage appropriate for a given soil type and climatic condition
Skills (S) [Optional]	
A. Core Skills/ Generic Skills	Reading and Comprehension Skills
	The individual on the job needs to know and understand how to: SA1. Update oneself about the latest technologies used in Banana plantation by reading the newspaper and magazines SA2. Keep abreast with the latest knowledge by reading brochures and pamphlets
	Oral Communication (Listening and Speaking skills)
	The individual on the job needs to know and understand how to: SA3. Maintain effective relationships with neighbouring farmers, extension workers and experts SA4. Communicate clearly and effectively with various stakeholders SA5. Co-operate with others in accordance with required procedures SA6. understand information and grasp its meaning SA7. Seek advice from senior people and experts
B. Professional Skills	Decision Making
	The individual on the job needs to know and understand how to: SB1. Make decisions pertaining to the concerned area of work SB2. Identify problems that may arise in carrying out tasks and take preventative action following various procedures SB3. Follow basic arithmetic and algebraic principles
	Plan and Organize
	The individual on the job needs to know and understand: SB4. Plan and organize nutrient management all through the crop production cycle as per recommendations
	Workshop Centricity
	The individual on the job needs to know and understand how to: SB5. Participate in Banana exhibition/seminar/workshop SB6. Make use of exposure visit SB7. Work with Banana experts
	Labour Management
	The individual on the job needs to know and understand how to: SB8. Manage relationships with labourers SB9. Build relationships and use human centric approach
	Problem Solving

AGR / N 0010

Integrated Nutrient Management in Banana Cultivation

	<p>The individual on the job needs to know and understand how to:</p> <p>SB10. Think through the problem, evaluate the possible solution(s) and take up an optimum /best possible solution(s)</p> <p>SB11. Identify creative & innovative solutions to resolve delays</p>
	<p>Analytical Thinking</p>
	<p>The individual on the job needs to know and understand how to:</p> <p>SB12. Monitor the growing Banana plant and in terms of deficiencies so far to take appropriate remedial reason</p>
	<p>Critical Thinking</p>
	<p>The individual on the job needs to know and understand how to:</p> <p>SB13. Apply, analyze, and evaluate the information gathered from observation, experience, reasoning, or communication, as a guide to thought and action</p> <p>SB14. Take up his own working and learning</p>

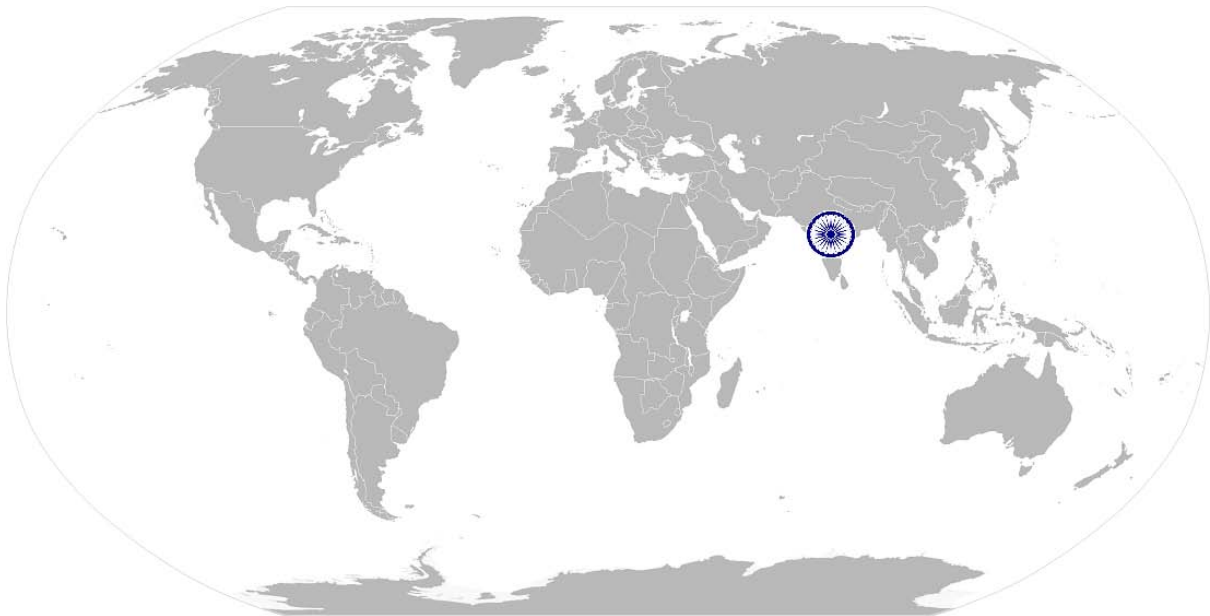


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Industry	Agriculture	Drafted on	24/06/13
Industry Sub-sector	Horticulture	Last reviewed on	08/08/13
		Next review date	10/02/14



National Occupational Standard



Overview

This unit is about dealing with Banana pest and Disease Management practices.

AGR / N 0011 Integrated Pest and Disease Management in Banana Cultivation

National Occupational Standard

Unit Code	AGR / N 0011
Unit Title (Task)	Integrated Pest and Disease Management in Banana Cultivation
Description	This OS is for a Banana grower who is responsible for carrying out pest and disease management
Scope	This unit/task covers the following: <ul style="list-style-type: none"> • Identification of pests and understanding behaviour • Identification of diseases • Preventive and curative methods
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Identification Of Pests And Understanding Behavior	To be competent, the individual on the job must be able to: <ul style="list-style-type: none"> PC1. Identify the types of pests associated (banana weevil, thrips, nematodes, etc) PC2. Identify the stage of crop and pest incidence – pest calendar PC3. Identify the signs and symptoms of damage PC4. Identify the pest life cycle – estimate the duration PC5. Identify the natural enemies of the pests (naids/dragon flies, trichogramma, mirid bug, lady bird beetles, spiders, preying mantids etc)
Identification Of Diseases	<ul style="list-style-type: none"> PC6. Identify the types of diseases associated (Sigathoka, Bunchy top, Panama wilt, Bacterial Blight, Cercospora leaf sport etc.,) PC7. Identify the crop stage and disease incidence – disease calendar PC8. Identify the signs and symptoms of different diseases (leaf spots, discoloured areas, leaf margins drying, stunted growth) PC9. Identify the mode of transmission (implements, vectors, water, rain, wind)
Preventive And Curative Methods	<ul style="list-style-type: none"> PC10. Clear stubbles to drive away the diapausing larvae PC11. Use of resistant varieties PC12. Take up seedling / planting material treatment PC13. Use various traps (light, pheromone etc) PC14. Erect bird perches PC15. Do Pest and disease control <ul style="list-style-type: none"> a. Chemical approaches b. Non-chemical approaches
Knowledge and Understanding (K)	
A. Organizational Context	The individual on the job needs to know and understand: <ul style="list-style-type: none"> KA1. Effective working relationships and how to work effectively with others in the garden
B. Technical Knowledge	The individual on the job needs to know and understand: <ul style="list-style-type: none"> KB1. Methods of planting & cultivate KB2. Procedures of garden maintenance KB3. Methods & advantages of integrated nutrient management KB4. Principles of Nutrient Management

AGR / N 0011 Integrated Pest and Disease Management in Banana Cultivation

	KB5. Floral display methods & procedures KB6. Behavior of the pest (like diurnal or nocturnal, egg laying behavior, attraction to colors etc) KB7. Training & Pruning methods, their advantages & limitations KB8. Laying & maintenance of drip & sprinkler KB9. Types and methods of irrigation KB10. Integrated pest & Disease Management KB11. Types of chemicals & fertilizers available – causes and effects KB12. Natural pesticides – causes & effects
Skills (S) [Optional]	
A. Core Skills/ Generic Skills	Writing Skills
	The individual on the job needs to know and understand how to: SA1. Keep records SA2. Report problems to the appropriate personnel like extension worker, agriculture officer etc in a timely manner
	Reading Skills
	The individual on the job needs to know and understand how to: SA3. Update oneself about the latest technologies used in pest and disease management in banana by reading the newspaper and magazines
	Oral Communication (Listening and Speaking skills)
	The individual on the job needs to know and understand how to: SA1. Maintain effective relationships with farmers, extension workers and experts SA2. Communicate clearly and effectively with various stakeholders SA3. Understand information and grasp its meaning SA4. Seek advice from seniors and experts
B. Professional Skills	Decision Making
	The individual on the job needs to know and understand how to: SB1. Make decisions pertaining to the concerned area of work SB2. Identify problems that may arise in carrying out tasks and take preventive action following workplace procedures
	Plan and Organize
	The individual on the job needs to know and understand how to: SB3. Plan and implement timely banana pest and disease management
	Workshop Centricity
	The individual on the job needs to know and understand how to: SB4. Participate in Banana exhibition/seminar/workshop. SB5. Attend refresher training SB6. Exchange visit SB7. Work with banana experts
	Labour Management
	The individual on the job needs to know and understand how to: SB8. Manage relationships with labourers SB9. Build relationships and use human centric approach

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	Problem Solving
	The individual on the job needs to know and understand how to: SB10. Think through the problem, evaluate the possible solution(s) and suggest an optimum /best possible solution(s) SB11. Identify creative & innovative solutions to resolve delays
	Analytical Thinking
	The individual on the job needs to know and understand how to: SB12. Monitor and maintain the condition of tools and equipment required for banana pest management SB13. Monitor the banana pests and diseases and maintain the plants in good condition SB14. Maintain the records of stage of crop and pest / disease incidence and options used.
	Critical Thinking
	The individual on the job needs to know and understand how to: SB15. Apply, analyze, and evaluate the information gathered from observation, experience, reasoning, or communication, as a guide to thought and action

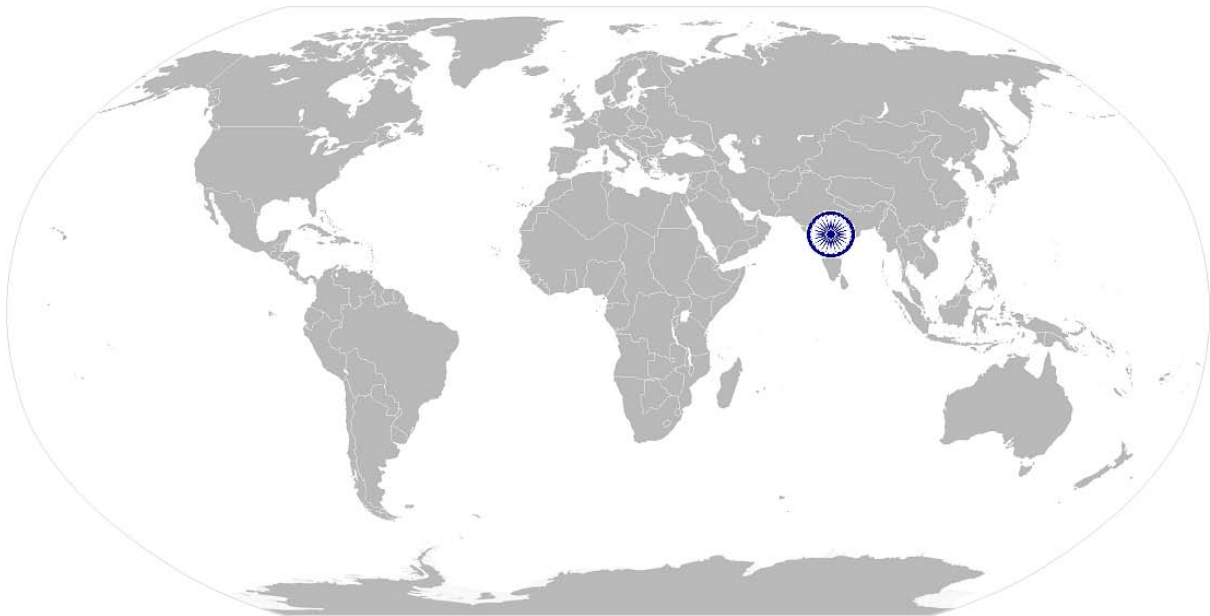


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Credits(NVEQF/NVQF/NSQF) [OPTIONAL]	TBD	Version number	1.0
Industry	Agriculture	Drafted on	24/06/13
Industry Sub-sector	Horticulture	Last reviewed on	08/08/13
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National Occupational Standard



Overview

This unit is about dealing with Irrigation Management and Other Operations in Banana cultivation.

Irrigation Management and Other Operations in Banana Cultivation

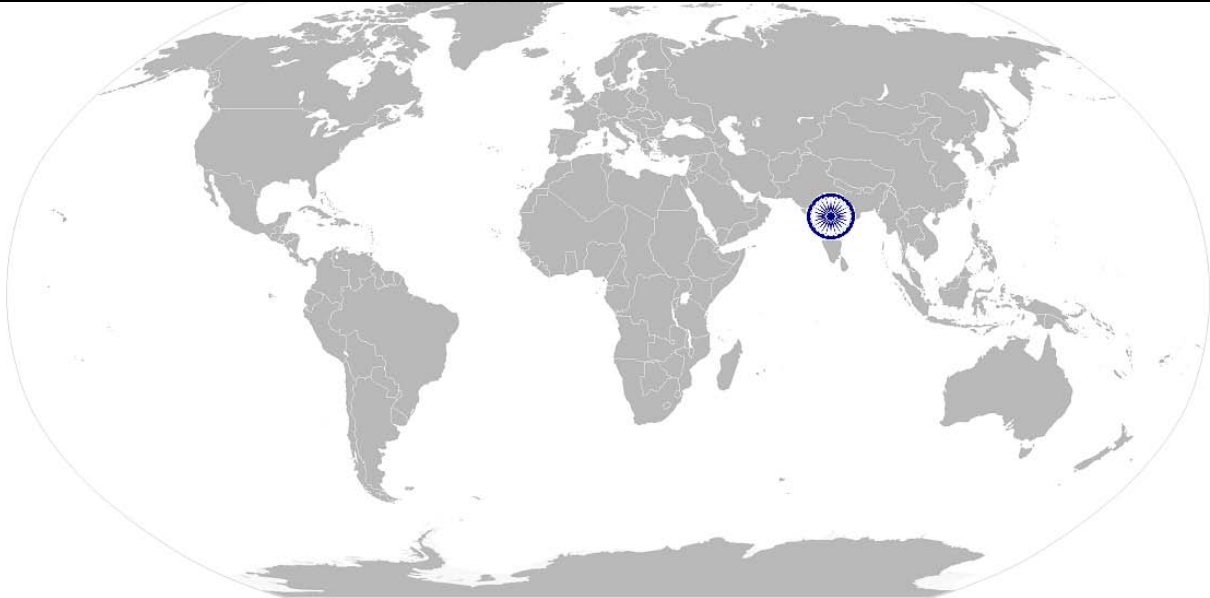
Unit Code	AGR / N 0012
Unit Title (Task)	Irrigation Management and Other Operations in Banana cultivation.
Description	This OS is for a Banana grower who is responsible for Irrigation and other Operations in Banana Cultivation.
Scope	This unit/task covers the following: <ul style="list-style-type: none"> • Irrigation Management • Other Farm Operations
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Irrigation Management	To be competent, the user / individual on the job must be able to: PC1. Use of Irrigation Method based on the availability of the resource and soil type PC2. Adopt methods of precision farming (Drip Irrigation) PC3. Use of existing resource efficiently say use fertigation
Other Farm Operations	PC4. Prune / remove of dry leave, water shoots as per requirement and procedures PC5. Protect the plantation from strong winds by growing tall plants along the farm border or stacking of plants by wooden stick tide or bamboo poles, based on the availability of such material and resource use efficiency PC6. Earthing up as per the recommended procedures and timing PC7. Remove of female hands
Knowledge and Understanding (K)	
A. Irrigation Management	The individual on the job needs to know and understand: KA1. Various methods of irrigation and resource use efficiency KA2. Methods of precision farming and their application in crop cultivation KA3. Timing and method of irrigation appropriate for a given soil type
B. Other farm operations	The individual on the job needs to know and understand : KB1. Various operations that have the potential increase the yield and decrease the incidence of pests and diseases KB2. Latest technological developments that has the potential to increase the crop yield and resource use efficiency.
Skills (S) [Optional]	
A. Core Skills/ Generic Skills	Reading and Comprehension Skills
	The individual on the job needs to know and understand how to: SA1. Update oneself about the latest technologies used in Banana irrigation methods by reading the newspaper and magazines
	Oral Communication (Listening and Speaking skills)

AGR / N 0012
Irrigation Management and Other Operations in Banana Cultivation

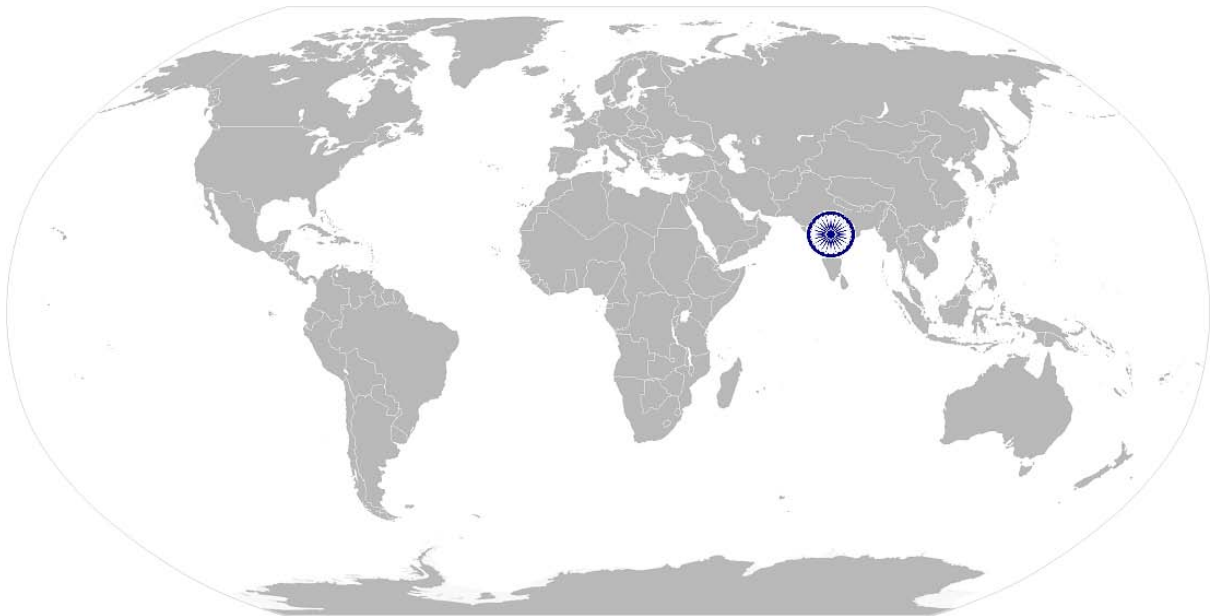
	<p>The individual on the job needs to know and understand how to:</p> <p>SA2. Maintain effective working relationships with neighbouring farmers, extension workers & experts</p> <p>SA3. Communicate clearly and effectively with various stakeholders</p> <p>SA4. Co-operate with others in accordance with required procedures</p> <p>SA5. Seek advice from seniors & experts</p>
B. Professional Skills	Decision Making
	<p>The individual on the job needs to know and understand how to:</p> <p>SB1. Make decisions pertaining to the concerned area of work</p> <p>SB2. Identify problems that may arise in carrying out tasks and take preventive action following workplace procedures</p> <p>SB3. Follow basic arithmetic and algebraic principles</p>
	Plan and Organize
	<p>The individual on the job needs to know and understand how to:</p> <p>SB4. Plan and organize irrigation timely & in association with other farmers in case of canal irrigation</p> <p>SB5. Use ideas in particular situations</p>
	Workshop Centricity
	<p>The individual on the job needs to know and understand how to:</p> <p>SB6. Participate in Banana exhibition/seminar/workshop/auction.</p> <p>SB7. Make use of exposure visit</p> <p>SB8. Work with Banana experts</p>
	Labour Management
	<p>The individual on the job needs to know and understand how to:</p> <p>SB9. Manage relationships with labourers</p> <p>SB10. Build relationships and use human centric approach</p>
	Problem Solving
	<p>The individual on the job needs to know and understand how to:</p> <p>SB11. Think through the problem, evaluate the possible solution(s) and suggest an optimum /best possible solution(s)</p> <p>SB12. Identify creative & innovative solutions to resolve delays</p>
	Analytical Thinking
	<p>The individual on the job needs to know and understand how to:</p> <p>SB13. Monitor and maintain the condition of tools and equipment</p>
	Critical Thinking
	<p>The individual on the job needs to know and understand how to:</p> <p>SB14. Apply, analyze, and evaluate the information gathered from observation, experience, reasoning, or communication, as a guide to thought and action</p> <p>SB15. Take up his own working and learning</p>

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Industry Sub-sector	Horticulture	Last reviewed on	08/08/13
		Next review date	10/02/14



National Occupational Standard



Overview

This unit is about dealing with Harvesting and Post Harvest Management in Banana cultivation.

AGR / N 0013 Harvesting and Post Harvest Management in Banana Cultivation

Unit Code	AGR / N 0013
Unit Title (Task)	Harvesting and Post Harvest Management in Banana Cultivation
Description	This OS is for a Banana farmer who is responsible for Harvesting and Post Harvest Management.
Scope	This unit/task covers the following: <ul style="list-style-type: none"> • Harvesting • Storage • Post Harvest Management
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Harvesting	To be competent, the individual on the job must be able to: <ul style="list-style-type: none"> PC1. Harvest the crop at the appropriate time recommended such as when fingers are fairly evenly rounded etc., PC2. Keep the bunch out of light, in cool and shady place PC3. Place harvested bunch in well padded basket before transporting to the collection site
Storage	<ul style="list-style-type: none"> PC4. Keep Bananas refrigerated to delay the process of ripening PC5. Store as per the recommended procedures
Post Harvest Management	<ul style="list-style-type: none"> PC6. Use Wooden or cardboard boxes / plastic crates / bamboo baskets / gunny bags or any other material as per the market requirement and demand and for handle in an efficient and effective manner PC7. Choose means for transportation, say by trucks/lorries / rail wagons for distant markets based on the requirement and cost dynamics involved. PC8. Decide on storage or sale based on the prevailing market rates across the markets and the cost of storage
Knowledge and Understanding (K)	
A. Harvesting	The individual on the job needs to know and understand: <ul style="list-style-type: none"> KA1. Various methods of harvesting KA2. Precautions to be taken while handling the fruits during harvest KA3. Advantages of grading (at the time of harvesting) in the price determination KA4. Influence of crop stage of harvesting and method of harvesting, on the keeping quality of the fruits and the affect on storage losses
B. Storage	The individual on the job needs to know and understand: <ul style="list-style-type: none"> KB1. Use various Methods of Storage and their influence on the fruit quality and on the health on the consumer KB2. Take up various methods of storage and their cost dynamics
C. Post Harvest Handling	The individual on the job needs to know and understand: <ul style="list-style-type: none"> KC1. Advantages and challenges of various latest developments (both institutional and technical) on the keeping quality and revenue.

AGR / N 0013 Harvesting and Post Harvest Management in Banana Cultivation

Skills (S) [Optional]	
A. Core Skills/ Generic Skills	Reading and Comprehension Skills
	The individual on the job needs to know and understand how to: SA1. Update about the latest technologies used in Banana plantation by reading the newspaper and magazines SA2. Read the hazards of use and contamination written on the labels of chemicals
	Oral Communication (Listening and Speaking skills)
	The individual on the job needs to know and understand how to: SA3. Maintain effective relationships with neighbour farmers, extension workers and experts SA4. Communicate clearly and effectively with various stakeholders SA5. Understand information and grasp its meaning SA6. Seek advice from seniors and experts
B. Professional Skills	Decision Making
	The individual on the job needs to know and understand how to: SB1. Make decisions pertaining to the concerned area of work SB2. Identify problems that may arise in carrying out tasks and take preventative action following workplace procedures SB3. Follow basic arithmetic and algebraic principles
	Plan and Organize
	The individual on the job needs to know and understand how to: SB4. Plan and organize Banana harvesting procedure in a timely and effective manner
	Workshop Centricity
	The individual on the job needs to know and understand how to: SB5. Participate in Banana exhibition/seminar/workshop SB6. Make use of exposure visit SB7. Work with Banana experts
	Labour Management
	The individual on the job needs to know and understand how to: SB8. Manage relationships with labourers SB9. Build relationships and use human centric approach
	Problem Solving
	The individual on the job needs to know and understand how to: SB10. Think through the problem, evaluate the possible solution(s) and take up an optimum /best possible solution(s) SB11. Identify creative & innovative solutions to resolve delays
	Analytical Thinking
	The individual on the job needs to know and understand how to: SB12. Monitor and maintain the condition of tools and equipment required for Banana growing
Critical Thinking	

AGR / N 0013 Harvesting and Post Harvest Management in Banana Cultivation

	<p>The individual on the job needs to know and understand how to:</p> <p>SB13. Apply, analyze, and evaluate the information gathered from observation, experience, reasoning, or communication, as a guide to thought and action</p> <p>SB14. Take up his own working and learning</p>
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