

Model Curriculum

Cold Storage Manager

SECTOR: AGRICULTURE & ALLIED
SUB-SECTOR: AGRICULTURE INDUSTRIES
OCCUPATION: POST-HARVEST SUPPLY CHAIN
MANAGEMENT

REF ID: AGR/Q7506, v1.0

NSQF LEVEL: 7



Certificate

**CURRICULUM COMPLIANCE TO
QUALIFICATION PACK – NATIONAL OCCUPATIONAL
STANDARDS**

is hereby issued by the
AGRICULTURE SKILL COUNCIL OF INDIA

for the
MODEL CURRICULUM

Complying to National Occupational Standards of
Job Role/ Qualification Pack: **'Cold Storage Manager' QP No. 'AGR/Q7506, v1.0 NSQF Level 7'**

Date of Issuance: June 30th, 2015
Valid up to: July 10th, 2022

S. S. Anand
Authorised Signatory
(Agriculture Skill Council of India)

** Valid up to the next review date of the Qualification Pack*

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Cold Storage Manager

CURRICULUM / SYLLABUS

This program is aimed at training candidates for the job of a “Cold Storage Manager”, in the “Agriculture & Allied” Sector/Industry and aims at building the following key competencies amongst the learner

Program Name	Cold Storage Manager		
Qualification Pack Name & Reference ID.	AGR/Q7506, v1.0		
Version No.	1.0	Version Update Date	22/08/2019
Pre-requisites to Training	Graduation		
Training Outcomes	<p>After completing this programme, participants will be able to:</p> <ul style="list-style-type: none"> • Plan & manage the Cold storage operations: Cold Storage work environment, budget preparation • Manage the Cold storage operations: cost planning, managing packaging, storing • Undertake Inventory management: Product inventory, targeted customers, potential suppliers, purchase, sales prediction • Motivate the workers: motivate and enhance team performance, guide the employees • Maintain health and safety at the cold storage: Hazard analysis, safety measures implementation 		

This course encompasses 6 out of 6 National Occupational Standards (NOS) of “Cold Storage Manager” Qualification Pack issued by “Agriculture Skill Council of India”.

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	Introduction Theory Duration (hh:mm) 5:00 Practical Duration (hh:mm) 0:00 Corresponding NOS Code	<ul style="list-style-type: none"> • Display general discipline in the class room (Do’s & Don’ts) • Study the scope and importance of preservation/storage of fruits and vegetables • Describe the role of a Cold Storage Manager 	Laptop, white board, marker, projector
2	Plan & Manage the cost according to the allocated budget Theory Duration (hh:mm) 20:00 Practical Duration (hh:mm) 40:00 Corresponding NOS Code AGR/N7523	<ul style="list-style-type: none"> • Describe the method to plan and estimate the resources • Explain different types of budget • Describe the components of an operating budget • Illustrate different cost budgeting techniques • Detail the budget required for the cold storage management • Enlist different types of cost • Estimate the site operating budget • Estimate the production cost • Estimate the site labour cost • Conduct market survey to understand the marketers’ specification • Assess the risk factors • Describe ways to optimally utilize the resources • Describe ways to reduce the cost • Describe ways to assess the cost performance • Describe ways to manage and control the actual costs as compared to the estimated ones 	Laptop, white board, marker, projector
3	Meet the Marketers Specification Theory Duration (hh:mm) 10:00 Practical Duration (hh:mm) 25:00 Corresponding NOS	<ul style="list-style-type: none"> • Describe the shelf life of different types of produce • Explain the storage requirements of different types of produce • Describe ways to aggregate the market demand • Update knowledge about the marketer needs and specification • Explain the storage requirements criticality of marketer’s specifications • Describe the operational challenges associated with specific requirements 	Laptop, white board, marker, projector

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	Code AGR/ N7524	<ul style="list-style-type: none"> • Illustrate ways to maintain a good working relationship with marketers • Stay update with the market price of produce • Identify the new technologies that can help meet marketer's specifications • Describe ways to balance between the cost accrued and achieving the set standards 	
4	Manage Cold Storage Operations Theory Duration (hh:mm) 20:00 Practical Duration (hh:mm) 50:00 Corresponding NOS Code AGR/N7525	<ul style="list-style-type: none"> • Explain the storage and transportation losses occurring due to inefficient storage practices • Identify different types of machinery installed in the cold storage • Describe the operations of all the machinery installed in the Cold storage • Explain the natural fruit ripening process • Describe the methods used for enhancing the shelf life of the produce in a cold storage • Assess the work process and productivity • Assess the resource performance • Assess the integrated earned value • Describe innovative ways to improve the work productivity and reduce the cost • Describe ways to introduce sustainable practices in the system • Illustrate ways to deliver to the quality needs of the customers • Illustrate ways to supervise the infrastructure and activities inside the cold storage premises • Describe ways to develop and maintain documentation of various procedures • Demonstrate good record keeping method • Develop meaningful reports/dashboards for sharing with the higher management • Identify ways to assess the training needs of the workers and supervisors • Describe ways to improve the efficiency of the workforce • Describe ways to co-ordinate with seniors and co-workers 	Laptop, white board, marker, projector
5	Manage inventory of the cold storage Theory Duration (hh:mm) 10:00	<ul style="list-style-type: none"> • Demonstrate ways to achieve 100% capacity utilization of the cold storage • Demonstrate ways to adopt adherence to the quality standards • Describe ways to predict the sales • Work-out the inventory turnover ratio 	Laptop, white board, marker, projector

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	Practical Duration (hh:mm) 35:00 Corresponding NOS Code AGR/N7526	<ul style="list-style-type: none"> • Demonstrate ways to minimize the wastages • Demonstrate ways to manage inward and outward inventory • Demonstrate ways to develop end-to-end tracking system • Describe different shipping methods • Operate the Inventory Management Software • Describe ways to optimize the inventory • Develop reporting system to track the daily and weekly movement of produce 	
6	Promote excellence & team work among the employees Theory duration (hh:mm) 10:00 Practical duration (hh:mm) 25:00 Corresponding NOS code AGR/N7527	<ul style="list-style-type: none"> • Explain the ideal work environment • Describe the 6 S principle • Describe the workforce planning and resource hiring process • Analyse the employees' involvement in the cold storage operations • Explain the concept of Key Performance Indicators (KPIs) • Describe methods to review the employees' performance • Describe the ways to enhance employees' performance • Illustrate team building activities • Explain the ways to enhance the professional and technical knowledge of self • Motivate the employees and enhance team performance 	Laptop, white board, marker, projector
7	Maintain Health and Safety at Cold Storage premises Theory duration (hh:mm) 10:00 Practical duration (hh:mm) 20:00 Corresponding NOS code AGR/N7522	<ul style="list-style-type: none"> • Explain different operational and occupational hazards • Identify the Personal Protective Equipment (PPE) required at the workplace • Describe the safety measures to be adopted at the workplace • Describe the relevant BIS/ISO/IS rules and regulations • Prepare a safety checklist to be adhered to before operation of the machineries • Describe ways to ensure the workers' health and safety • Describe the ways to maintain a clean & efficient work environment • Describe the HACCP standards • Dispose-off the waste in a safe and environment-friendly manner • Describe the emergency procedures to be followed • Explain the process of risk 	Laptop, white board, marker, projector, First Aid Box, Fire extinguisher, Warm clothes, head cap, boots

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		management <ul style="list-style-type: none"> Describe ways to reduce the environmental damage Demonstrate ways to achieve quality standards 	
	Total Duration: Theory Duration (hh:mm) 85:00 Practical Duration (hh:mm) 195:00	Unique Equipment Required: Laptop, white board, marker, projector, Cold Storage, First Aid Box, Fire extinguisher, Warm clothes, head cap, boots	

Grand Total Course Duration: **280 Hours, 0 Minutes**

(This syllabus/ curriculum has been approved by [Agriculture Skill Council of India](#))

Trainer Prerequisites for Job role: “Cold Storage Manager” mapped to Qualification Pack: “AGR/Q7506, v1.0”

Sr. No.	Area	Details
1	Description	Trainer is responsible for educating the trainees – weekly cost planning, managing packaging, storing, overseeing maintenance and housekeeping of Cold Storages, quality norms/standards and procedure of reporting to the management.
2	Personal Attributes	Trainer should be Subject Matter Expert, he/ she should have good communication skills, leadership skills, observation skills, practical oriented skills
3	Minimum Educational Qualifications	Graduate with 10+2 (Science)
4a	Domain Certification	Certified for Job Role: “Cold Storage Manager” mapped to QP: “AGR/Q7506,v1.0”. Minimum accepted score is 80%.
4b	Platform Certification	Certified for the Job Role: “Trainer”, mapped to the Qualification Pack: “MEP/Q2601”. Minimum accepted score is 80%
5	Experience	<ul style="list-style-type: none"> • Post Graduate Diploma/MBA-Supply Chain management/Agribusiness Management/Marketing • BBA with 2 years of relevant experience • Graduate (Agriculture / Horticulture/ Forestry) with 2 years of relevant experience • Any other Graduate with 10+2 in Science with 3 years of relevant experience

Annexure: Assessment Criteria

Job Role	Cold Storage Manager
Qualification Pack	AGR/Q7506, v1.0
Sector Skill Council	Agriculture

Guidelines for Assessment:

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.
2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
3. Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/option NOS/set of NOS.
4. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below).
5. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criterion.
6. To pass the Qualification Pack , every trainee should score a minimum of 70% of aggregate marks to successfully clear the assessment.
7. In case of *unsuccessful completion*, the trainee may seek reassessment on the Qualification Pack.

Assessment Outcomes	Assessment Criteria for outcomes	Total Mark	Out Of	Marks Allocation	
				Theory	Skills Practical
1.AGR/N7523 Plan & manage cost according to the allocated budget	PC1. plan and manage financial budgeting of Cold storage	120	30	15	15
	PC2.understand detailed site operating budget		20	10	10
	PC3.communicate production cost to the management team of Cold storage		20	10	10
	PC4.update regularly site labour cost against the budgeted cost of Cold storage		15	7	8
	PC5.manage the production team to achieve the financial objective		20	10	10
	PC6.Understand marketers' specification		15	8	7
			120	60	60
2.AGR/N7524 Meet the marketers' specifications	PC1.communicate about the cost of the Cold storage	60	15	8	7
	PC2.communicate about Cold storage operations		5	3	2
	PC3.co-ordinate with the new technologies and market specifications to the partners		10	5	5
	PC4.update knowledge about the marketer needs and specification		10	5	5
	PC5.ensure storage of fruits as per marketers specifications		10	5	5
	PC6.maintain good working relationship with marketers		5	2	3
	PC7.stay update with market price of produce		5	2	3
			60	30	30
3.AGR/N7525 Manage Cold storage Operations	PC1.take responsibility for the effectiveness of Cold storage function system	150	20	10	10
	PC2.do best practices to enable the company shareholder and clients to meet financial objectives though maintaining the quality standards required by marketers		20	10	10
	PC3.understand all fruits, vegetables are to be handle effectively to reduce the storage & transportation losses		20	10	10
	PC4.understand the operations of all the machinery installed in the Cold storage		10	5	5
	PC5.take Responsibility for cost saving in the Cold storage process by using innovative ideas		15	7	8
	PC6.understand methods for ripening of fruits in ethical ways		15	7	8
	PC7.understand the fruit market situation to identify measures to earn profit in to Cold storage account		15	8	7

	PC8. Identify the training needs & assign the supervisor for different workshops organized by institute for upgrad the Cold storage operations.		10	5	5
	PC9. give training to supervisors and worker for increasing the work efficiency		15	8	7
	PC10. co-ordinate with workers and supervisors in local language		10	5	5
			150	75	75
4.AGR/N7526 Manage inventory of the Cold Storage	PC1. ensure the inward inventory of fruits and vegetables as per order in Cold storage	90	10	5	5
	PC2. ensure rework and fruit loss are minimized.		10	5	5
	PC3. understand of current polices for growers as well as marketers		10	5	5
	PC4. focus on the management of		20	10	10
	-inventory of Cold storage according to the defined protocol				
	-quality & standards				
	-capacity utilization				
	PC5. have clear picture of Cold storage both inward and outward inventory		10	5	5
	PC6. use inventory management software for Cold storage.		10	5	5
	PC7. ensure the produce meet out quality control standards of fruits and vegetables as per standard		10	5	5
PC8. check daily report on both received and sorted goods inventory from the Cold storage keeper.	5	2	3		
PC9. check daily report of logistic department for supply of goods	5	3	2		
			90	45	45
5.AGR/N7527 Promote excellence & teamwork among the employees	PC1. analyse performance measures implemented and keep up to date	90	10	5	5
	PC2. improve processes & minimize waste		5	3	2
	PC3. follow the new and advanced technologies		5	2	3
	PC4. utilize 6S principles.		10	5	5
	PC6. motivate and enhance team performance		5	2	3
	PC7. Review employees formally & informally		5	2	3
	PC8. manage teams and other employees		3	2	1
	PC9. maintain team sprit among the workers		3	1	2
	PC10. guide the employees		3	2	1
	PC11. maintain the work culture in the Cold storage		3	2	1
	PC12. monitor staff performance monthly.		3	1	2
	PC13. maintain Cold storage staff by recruiting, selecting, orienting, and training workers		10	5	5

	PC14.establish personal networks		5	3	2
	PC15.identify skill gaps & give feedback to the employees		10	5	5
	PC16.maintain the Cold storage performance by training, coaching and counseling		5	3	2
	PC17.update professional and technical knowledge through educational workshops		5	2	3
			90	45	45
6.AGR/N7522 Maintain Health and Safety at Cold storage premises	PC1.identify accidental risks to Cold storage workers and bystanders and actions to be taken to reduce these risks	90	3	2	1
	PC2.identify work for which protective clothing or equipment is required		4	2	2
	PC3.ensure that Cold storage workers wear appropriate protective clothing or use equipment while performing those duties		3	2	1
	PC4.ensure that all procedures and work instructions for controlling risk are followed closely		4	2	2
	PC5.ensure safety measures when handling the preservative materials.		3	2	1
	PC6.undertake basic safety checks before operation of all equipments and tools.		3	2	1
	PC7.dispose off waste safely and correctly in a designated area as per company's SOP		3	1	2
	PC8.ensure that Cold storage workers perform their duties in a manner which minimizes environmental damage		5	2	3
	PC9.provide appropriate first aid to Cold storage workers as per SOP in case of accidents and injuries		4	2	2
	PC10.ensure that medical waste is disposed of in accordance with company's SOP and local regulations		2	1	1
	PC11.report any accidents, incidents or problems without delay to Cold storage manager and take necessary immediate action to reduce further danger		4	2	2
	PC12.implement the company's Health and Safety Policy, ensuring safe working conditions and practices within the Cold storage		5	2	3
	PC13. represent the department on the Health & Safety Committee as required.		3	1	2
	PC14.implement the company's Health and Safety Policy, ensuring safe working Conditions and practices within the Cold storage		4	2	2
	PC15. identify health risks to Cold storage workers and bystanders and actions to be taken to reduce these risks		3	2	1
	PC16.ensure that all procedures and work instructions for controlling health risk are followed closely		3	1	2

	PC17.ensure clean and chlorinated water for daily use of workers		5	2	3
	PC18.ensure regular preventive health checkup of Cold storage workers by doctor		4	2	2
	PC19.ensure prompt treatment of Cold storage workers in case of illness noticed by the qualified doctor		4	2	2
	PC20.follow SOPs for dealing with accidents, fires or any other type of emergencies to prevent human lives		3	2	1
	PC21.ensure odorless and clean environment to Cold storage workers		4	2	2
	PC22.ensure no accidental injury to Cold storage workers		4	2	2
	PC23.ensure no productivity loss or absenteeism form work of Cold storage workers due to illness		2	1	1
	PC24.ensure no occupational health hazard to Cold storage workers		4	2	2
	PC25.overall responsibility for all aspects of the effective supervision training & development and health, safety & welfare of the Cold storage Workers		4	2	2
			90	45	45
	GRAND TOTAL	600	600	300	300