

Model Curriculum

Floriculturist – Protected Cultivation

SECTOR: AGRICULTURE & ALLIED
SUB-SECTOR: AGRICULTURE CROP PRODUCTION
OCCUPATION: FLORICULTURE FARMING
REF ID: AGR/Q0702, V1.0
NSQF LEVEL: 4



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: '**Floriculturist –Protected Cultivation**' QP No. '**AGR/Qo7o2 NSQF Level 4**'

Date of Issuance: March 15th, 2015

Valid up to: March 31st, 2019

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



Authorised Signatory
(Agriculture Skill Council of India)

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Floriculturist – Protected Cultivation

CURRICULUM / SYLLABUS

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

Program Name	Floriculturist – Protected Cultivation		
Qualification Pack Name & Reference ID. ID	AGR/Q0702, v1.0		
Version No.	1.0	Version Update Date	
Pre-requisites to Training	No entry level barrier; 5 th Standard Passed, preferably		
Training Outcomes	<p>After completing this programme, participants will be able to:</p> <ul style="list-style-type: none"> • Cultivate flowers in Green House :Site Selection, Design selection, Soil testing, soil treatment, land preparation, transplantation, etc • Manage Flower Crop in Green house: Inputs procurement, Land preparation, planting, soil testing, application of fertilizer & nutrients, irrigation, etc • Harvest and manage the quality: Time of Harvesting, method of harvesting, post harvest practice, packing, storage and transportation. • Become well versed with Environment Health & Safety: Well versed with health and safety measures in terms of personal safety and others as well. 		

This course encompasses 4 out of 4 National Occupational Standards (NOS) of “Floriculturist – Protected Cultivation” 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) Corresponding NOS Code	<ul style="list-style-type: none"> Understand the General Discipline in the class room (Do’s & Don’ts) Understand the Role of a Floriculturist – Protected Cultivation Learn and practice Basic skills of communication Learn and Practice Basic reading capabilities to enable reading of signs, notices and/or cautions at site 	Laptop, white board, marker, projector
2	Pre cultivation operations of Floriculture in Green House Theory Duration (hh:mm) 30:00 Practical Duration (hh:mm) 40:00 Corresponding NOS Code AGR/N0704	<ul style="list-style-type: none"> Undertake Pre – Cultivation Practices <ul style="list-style-type: none"> - Site Selection for Green House - Selection of Green House Design - Soil Testing - Water Testing - Identify the available resources - Market feasibility Undertake Crop Selection <ul style="list-style-type: none"> - Pest and Disease resistance - High Yield Variety - Drought tolerant Undertake Land preparation Undertake Transplantation of seedlings 	White Board, Marker, Laptop, projector, Tractor, Leveler, Soil Sampling equipments, soil testing instruments, Spade, Green House
3	Cultivation operations of Floriculture in Green House Theory Duration (hh:mm) 20:00 Practical Duration (hh:mm) 30:00 Corresponding NOS Code AGR/ N0705	<ul style="list-style-type: none"> Estimate Nutrients requirement for flower crop production Procure Inputs as per the crop need Undertake Cultivation of Flower Crops <ul style="list-style-type: none"> - Type of Flower for Cultivation - Crop Spacing - Time of Planting - Seed rate requirement Undertake Application of Fertilizers/manures <ul style="list-style-type: none"> - Time of application - Dosage - Method of Application Undertake Training /Pruning (If Necessary) Follow Irrigation Schedule for Flower Crop <ul style="list-style-type: none"> - Frequency - Time of Irrigation - Method of Irrigation-drip etc - Drainage practices Undertake Pest and Disease management <ul style="list-style-type: none"> - Identify Pests and their infestation level in the field 	Marker, Laptop, projector, Fertilizers/Plant protection chemicals, Sprayer machine, Gloves, irrigation equipments, Green House

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<ul style="list-style-type: none"> - Apply Pesticides - Undertake Precautions while applying pesticides - Undertake Integrated Pest Management (IPM) Practices - Identify Disease symptoms - Identify the source for diseases - Identify tools/equipments for application of chemicals - Apply Chemicals to prevent/curb diseases 	
4	<p>Harvest & Post Harvest management in Floriculture</p> <p>Theory Duration (hh:mm) 20:00</p> <p>Practical Duration (hh:mm) 30:00</p> <p>Corresponding NOS Code AGR/N0703</p>	<ul style="list-style-type: none"> • Understand the methods of harvesting • Undertake timely harvesting • Undertake Post Harvest Practices <ul style="list-style-type: none"> - Receiving, Handling of harvested flower crops - Grading of harvested crop - Identify and use the packing materials - Packing of Harvested flower crops - Storage of Packed crop - Transportation 	White Board, Marker, Laptop, projector, Transportation Vehicle, Packing materials – Scissor, Polythene, Storage infrastructure
5	<p>Maintain Health & Safety at the work place</p> <p>Theory Duration (hh:mm) 10:00</p> <p>Practical Duration (hh:mm) 15:00</p> <p>Corresponding NOS Code AGR/N9903</p>	<ul style="list-style-type: none"> • Perform General safety Rules • Gain Knowledge of various health hazards relevant to workplace and basic first aid training. • Understand the basic safety checks and other common reported hazards before all field operation • Understand, identify and study the use of equipment and materials safely and correctly • Understand and handle the emergency situation in workplace 	White Board, Marker, Laptop, projector, First Aid, Safety clothes, Gloves, etc
	<p>Total Duration:</p> <p>Theory Duration (hh:mm) 85:00</p> <p>Practical Duration (hh:mm) 115:00</p>	<p>Unique Equipment Required:</p> <p>White Board, Marker, Laptop, projector, Green House, Tractor, Leveler, Soil Sampling equipments, soil testing instruments, Spade, Fertilizers/Plant protection chemicals, Sprayer machine, Irrigation Equipments,, First Aid, Safety clothes, Gloves, etc</p>	

Grand Total Course Duration: **200 Hours, 0 Minutes**

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

Trainer Prerequisites for Job role :“Floriculturist – Protected Cultivation” mapped to Qualification Pack: “AGR/Q0702, v1.0”

Sr. No.	Area	Details
1	Description	Trainer is responsible for providing the education and skills development training related to various activities of flower cultivation involving preparatory cultivation, cultivation and post harvest management in Green House.
2	Personal Attributes	Trainer should be Subject Matter Specialist. He/ She should have good communication and observation skill, leadership skill, practical oriented skill
3	Minimum Educational Qualifications	Diploma in Agriculture/Horticulture
4a	Domain Certification	Certified for Job Role: “Floriculturist – Protected Cultivation” mapped to QP: “AGR/Q0702, v1.0”. Minimum accepted score is 80%.
4b	Platform Certification	Certified for the Job Role: “Trainer”, mapped to the Qualification Pack: “MEP/Q0102”. Minimum accepted score is 80%
5	Experience	<ul style="list-style-type: none"> • Post Graduate (Agriculture / Horticulture / Botany/Forestry) • B. Sc (Agriculture / Horticulture / Botany/Forestry) with 1 Year relevant experience • B.Sc with 3 Years relevant experience and a total of 5 years work experience • Diploma in Agriculture/Horticulture with 5 Years relevant experience • 10+2 with Elective Agriculture with 5 Years relevant experience

Annexure: Assessment Criteria

Assessment Criteria	
Job Role	Floriculture – Protected Cultivation
Qualification Pack	AGR/Q0702, v1.0
Sector Skill Council	Agriculture

Sr. No.	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).
4	Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criterion.
5	To pass the Qualification Pack , every trainee should score a minimum of 70% of aggregate marks to successfully clear the assessment.
6	In case of <i>unsuccessful completion</i> , the trainee may seek reassessment on the Qualification Pack.

Assessable Outcome	Assessment Criteria	Total Marks (300)	Out Of	Marks Allocation	
				Theory	Skills Practical
AGR/N 0704 Pre Cultivation Operations of Floriculture in Green House	PC1. Select appropriate site based on standard operational procedures and criteria	90	3	1	2
	PC2. Select greenhouse design according to location and climatic conditions		3	1	2
	PC3. maintain greenhouse		5	2	3
	PC4. decide the size of greenhouse as per requirement		3	1	2
	PC5. Procure quality material to be used for greenhouse preparation		2	1	1
	PC6. take soil sample as per standard procedures		4	2	2
	PC7. take up pH test		2	1	1
	PC8. take up EC test		2	1	1
	PC9. amend soil as per need		3	2	1
	PC10. take water sample		3	2	1
	PC11. perform pH test		2	1	1
	PC12. perform EC test		2	1	1

PC13. select the crops as per the green house design, Climate, Soil and Water	4	2	2
PC14. select the right variety	3	2	1
PC15. Use chemicals for seed treatment as per package of practices	5	3	2
PC16. Understand basic working of seed treatment process	2	1	1
PC17. Seed treatment process	5	3	2
PC18. Labeling of treated seeds	2	1	1
PC19. Awareness about legal ramifications of seed treatment	2	1	1
PC20. Clean the land	2	1	1
PC21. Ploughing or digging	2	1	1
PC22. Level the land	2	1	1
PC23. Construct drains	5	2	3
PC24. Prepare holes for planting	4	2	2
PC25. Installation of temperature control systems	5	2	3
PC26. Installing and operating irrigation and drainage systems	5	3	2

AGR / N 0705 Cultivation Operations of Floriculture in Green House	PC27. Take soil sample		2	1	1
	PC28. Test soil and amend accordingly		2	1	1
	PC29. Transplant seedlings		2	1	1
	PC30. Uproot the undesired plants		2	1	1
	Total		90	45	45
	PC31. Apply recommended dose of manure and fertilizers	120	5	2	3
	PC32. Ensure healthy growth of leaf by the regular application of fertilizers		4	2	2
	PC33. Apply manure/fertilizer after pruning		4	2	2
	PC34. Apply micro-nutrients by foliar spray		5	3	2
	PC35. Make weekly Fertigation schedule		10	5	5
	PC36. Centring (or decentring), to promote the growth of auxiliary buds and lateral branches are formed.		10	5	5
	PC37. Train growing branches for further lateral branch formation, good spread and establishment of budding surface		10	5	5
	PC38. Pruning plant as per pruning cycle		5	2	3
	PC39. Table training for bushes		5	2	3

PC40. Pruning carried out to keep the plant continuously under vegetative stage	4	2	2
PC41. Deshooting to remove unwanted shoots which may give rise small buds	4	2	2
PC42. Harvest rain water	10	5	5
PC43. Take up sprinkler irrigation	2	1	1
PC44. Take up Micro irrigation	4	2	2
PC45. Take up poly pipe irrigation	2	1	1
PC46. Maintain drainage	5	3	2
PC47. Remove rogue /infected plant/ plant parts	5	3	2
PC48. Perform weeding manually / chemical	4	2	2
PC49. Spray systemic / contact fungicide / insecticide / biopesticide	5	2	3
PC50. Perform field sanitation	10	5	5
PC51. Spray contact fungicide	2	1	1
PC52. Transplant insect pest repellent plants	5	3	2
Total	120	60	60

AGR / N 0703 Harvest & Post Harvest Management in Floriculture	PC1. Decide on the harvesting time	75	15	7	8
	PC2. Take up appropriate Harvesting practices		20	10	10
	PC3. Take up post harvesting value addition (Grading, packing)		25	14	11
	PC4. Appropriate storage practices		15	8	7
	Total		75	39	36
AGR/N9903 Maintain Health and safety at the workplace	PC1. undertake basic safety checks before operation of all machinery and vehicles and hazards are reported to the appropriate supervisor	15	1	0	1
	PC2. work for which protective clothing or equipment is required is identified and the appropriate protective clothing or equipment is used in performing these duties in accordance with workplace policy.		1	1	0
	PC3. read and understand the hazards of use and contamination mentioned on the labels of pesticides/fumigants etc		1	1	0
	PC4. assess risks prior to performing manual handling jobs, and work according to currently recommended safe practice.		1	0	1
	PC5. use equipment and materials safely and correctly and return the same to designated storage when not in use		1	0	1
	PC6. dispose of waste safely and correctly in a designated area		1	0	1
	PC7. recognise risks to bystanders and take action to reduce risk associated with jobs in the workplace		1	1	0
	PC8. perform your work in a manner which minimizes environmental damage all procedures and work instructions for controlling risk are followed closely.		1	0	1

PC9. report any accidents, incidents or problems without delay to an appropriate person and take necessary immediate action to reduce further danger.			1	0	1
PC10. follow procedures for dealing with accidents, fires and emergencies, including communicating location and directions to emergency.			1	1	0
PC11. follow emergency procedures to company standard / workplace requirements			1	1	0
PC12. use emergency equipment in accordance with manufacturers' specifications and workplace requirements			1	0	1
PC13. provide treatment appropriate to the patient's injuries in accordance with recognized first aid techniques			1	0	1
PC14. recover (if practical), clean, inspect/test, refurbish, replace and store the first aid equipment as appropriate			1	0	1
PC15. report details of first aid administered in accordance with workplace procedures.			1	1	0
			15	6	9
Total					
	300	300	150	150	
Percentage Weightage:			50%	50%	
Minimum Pass% to qualify (aggregate):					70%