

# 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**



**Skill India**  
शिक्षण-सहायक-संस्था



**ASCI**  
Agriculture Skill Council of India



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# 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' OP No. 'AGR/Qo702 NSQF Level 4'

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

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

## TABLE OF CONTENTS

<b>1. Curriculum</b>	<b>04</b>
<b>2. Trainer Prerequisites</b>	<b>07</b>
<b>3. Annexure: Assessment Criteria</b>	<b>08</b>

# 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

<b>Program Name</b>	<b>Floriculturist – Protected Cultivation</b>		
<b>Qualification Pack Name &amp; Reference ID. ID</b>	AGR/Qo702, v1.0		
<b>Version No.</b>	1.0	<b>Version Update Date</b>	
<b>Pre-requisites to Training</b>	No entry level barrier; 5th Standard Passed preferable.		
<b>Training Outcomes</b>	<p><b>After completing this programme, participants will be able to:</b></p> <ul style="list-style-type: none"> <li>• <b>Perform pre-cultivation practices in Green House :</b>Site Selection, Design selection, Soil testing, soil treatment, land preparation, transplantation, etc</li> <li>• <b>Cultivate and Manage Flower Crop in Green house:</b> Inputs procurement, Land preparation, planting, soil testing, application of fertilizer &amp; nutrients, irrigation, etc</li> <li>• <b>Harvest the crop and maintain the quality:</b> Time of Harvesting, method of harvesting, post harvest practice, packing, storage and transportation.</li> <li>• <b>Become well versed with Environment Health &amp; Safety:</b> Well versed with health and safety measures in terms of personal safety and others as well.</li> </ul>		

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	<b>Introduction</b>  <b>Theory Duration</b> (hh:mm) 5:00  <b>Practical Duration</b> (hh:mm)  <b>Corresponding NOS Code</b>	<ul style="list-style-type: none"> <li>Understand the General Discipline in the class room (Do’s &amp; Don’ts)</li> <li>Understand the Role of a Floriculturist – Protected Cultivation</li> <li>Learn and practice Basic skills of communication</li> <li>Learn and Practice Basic reading capabilities to enable reading of signs, notices and/or cautions at site</li> </ul>	Laptop, white board, marker, projector
2	<b>Pre cultivation operations of Floriculture in Green House</b>  <b>Theory Duration</b> (hh:mm) 30:00  <b>Practical Duration</b> (hh:mm) 40:00  <b>Corresponding NOS Code</b> AGR/No704	<ul style="list-style-type: none"> <li>Pre – Cultivation Practices               <ul style="list-style-type: none"> <li>Site Selection for Green House</li> <li>Selection of Green House Design</li> <li>Soil Testing</li> <li>Water Testing</li> <li>Identify the available resources</li> <li>Market feasibility</li> </ul> </li> <li>Crop Selection               <ul style="list-style-type: none"> <li>Pest and Disease resistance</li> <li>High Yield Variety</li> <li>Drought tolerant</li> </ul> </li> <li>Land preparation</li> <li>Transplantation of seedlings</li> </ul>	White Board, Marker, Laptop, projector, Tractor, Leveler, Soil Sampling equipments, soil testing instruments, Spade, Green House
3	<b>Cultivation operations of Floriculture in Green House</b>  <b>Theory Duration</b> (hh:mm) 20:00  <b>Practical Duration</b> (hh:mm) 30:00  <b>Corresponding NOS Code</b> AGR/ No705	<ul style="list-style-type: none"> <li>Estimation of Nutrients requirement for flower crop production</li> <li>Procurement of Inputs</li> <li>Cultivation of Flower Crops               <ul style="list-style-type: none"> <li>Type of Flower for Cultivation</li> <li>Crop Spacing</li> <li>Time of Planting</li> <li>Seed rate requirement</li> </ul> </li> <li>Application of Fertilizers/manures               <ul style="list-style-type: none"> <li>Time of application</li> <li>Dosage</li> <li>Method of Application</li> </ul> </li> <li>Training /Pruning (If Necessary)</li> <li>Irrigation Schedule for Flower Crop               <ul style="list-style-type: none"> <li>Frequency</li> <li>Time of Irrigation</li> <li>Method of Irrigation</li> <li>Drainage practices</li> </ul> </li> <li>Pest and Disease management               <ul style="list-style-type: none"> <li>Identification of Pests</li> <li>Precautions</li> <li>Application of Chemicals</li> <li>Identification of Disease symptoms</li> </ul> </li> </ul>	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"> <li>- Identify the source for diseases</li> <li>- Application of Chemicals</li> <li>- Identify tools/equipments for application of chemicals</li> </ul>	
4	<b>Harvest &amp; Post Harvest management in Floriculture</b>  <b>Theory Duration</b> (hh:mm) 20:00  <b>Practical Duration</b> (hh:mm) 30:00  <b>Corresponding NOS Code</b> AGR/No706	<ul style="list-style-type: none"> <li>• Method of harvesting</li> <li>• Time of Harvesting</li> <li>• Post Harvest Practices               <ul style="list-style-type: none"> <li>- Receiving, Handling of harvested flower crops</li> <li>- Grading of harvested crop</li> <li>- Identify and use the packing materials</li> <li>- Packing of Harvested flower crops</li> <li>- Storage of Packed crop</li> <li>- Transportation</li> </ul> </li> </ul>	White Board, Marker, Laptop, projector, Transportation Vehicle, Packing materials – Scissor, Polythene, Storage infrastructure
5	<b>Maintain Health &amp; Safety at the work place</b>  <b>Theory Duration</b> (hh:mm) 10:00  <b>Practical Duration</b> (hh:mm) 15:00  <b>Corresponding NOS Code</b> AGR/N9903	<ul style="list-style-type: none"> <li>• Perform General safety Rules</li> <li>• Gain Knowledge of various health hazards relevant to workplace and basic first aid training.</li> <li>• Understand the basic safety checks and other common reported hazards before all field operation</li> <li>• Understand, identify and study the use of equipment and materials safely and correctly</li> <li>• Understand and handle the emergency situation in workplace</li> </ul>	White Board, Marker, Laptop, projector, First Aid, Safety clothes, Gloves, etc
	<b>Total Duration:</b>  <b>Theory Duration</b> (hh:mm) <b>85:00</b>  <b>Practical Duration</b> (hh:mm) <b>115:00</b>	<b>Unique Equipment Required:</b> 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	

Grand Total Course Duration: **200Hours, 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	<b>Description</b>	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	<b>Personal Attributes</b>	Trainer should be Subject Matter Specialist. He/ She should have good communication and observation skill, leadership skill, practical oriented skill
3	<b>Minimum Educational Qualifications</b>	Diploma, Bachelor Degree in Agriculture Science/ Horticulture Science
4a	<b>Domain Certification</b>	Certified for Job Role: “Floriculturist – Protected Cultivation” mapped to QP: “AGR/Q0702, v1.0”. Minimum accepted score is 80%.
4b	<b>Platform Certification</b>	Certified for the Job Role: “Trainer”, mapped to the Qualification Pack: “SSC/Q1402”. Minimum accepted score is 70%
5	<b>Experience</b>	<ul style="list-style-type: none"> <li>• Post graduate with an experience of 1 Year,</li> <li>• Graduate with experience of 3 + Years,</li> <li>• Diploma with relevant experience of 5+ Years.</li> </ul>

## Annexure: Assessment Criteria

<b>Assessment Criteria</b>	
<b>Job Role</b>	Floriculture – Protected Cultivation
<b>Qualification Pack</b>	AGR/Q0702, v1.0
<b>Sector Skill Council</b>	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	Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training centre (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 criteria
5	To pass the Qualification Pack, every trainee should score a minimum of 70% in aggregate
6	The marks are allocated PC wise; however, every NOS will carry a weight age in the total marks allocated to the specific QP



Assessable Outcome	Assessment Criteria	Total Marks (300)	Out Of	Marks Allocation	
				Theory	Skills Practical
<b>1. AGR/N 0704 Pre Cultivation Operations of Floriculture in Green House</b>	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

	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
	<b>Total</b>		<b>90</b>	<b>45</b>	<b>45</b>
<b>2. AGR / N N 0705 Cultivation Operations of Floriculture in Green House</b>	PC31. Apply recommended dose of manure and fertilizers	<b>120</b>	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
<b>Total</b>	<b>120</b>	<b>60</b>	<b>60</b>

3. AGR/N 0706 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
	<b>Total</b>		<b>75</b>	<b>39</b>	<b>36</b>
4. 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
			<b>15</b>	<b>6</b>	<b>9</b>
	<b>Total</b>	<b>300</b>	<b>300</b>	<b>150</b>	<b>150</b>
	<b>Percentage Weightage:</b>			<b>50%</b>	<b>50%</b>

	<u>Minimum Pass% to qualify (aggregate):</u>			<u>60%</u>
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