

# Model Curriculum

## Pesticide & Fertilizer Applicator

**SECTOR: AGRICULTURE & ALLIED**

**SUB-SECTOR: AGRICULTURE CROP PRODUCTION**

**OCCUPATION: Farm Management**

**REF ID: AGR/Q1202, v1.0**

**NSQF LEVEL: 3**



## 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: **'Pesticide & Fertilizer Applicator'** OP No. **'AGR/Q 1202 NSQF Level 3'**

Date of Issuance: November 30<sup>th</sup>, 2015

Valid up to: March 31<sup>st</sup>, 2018

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



Authorised Signatory  
(Agriculture Skill Council of India)

# Pesticide & Fertilizer Applicator

## CURRICULUM / SYLLABUS

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

<b>Program Name</b>	<b>Pesticide &amp; Fertilizer Applicator</b>		
<b>Qualification Pack Name &amp; Reference ID. ID</b>	AGR/Q1202, v1.0		
<b>Version No.</b>	1.0	<b>Version Update Date</b>	
<b>Pre-requisites to Training</b>	No Formal Education		
<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>Identify major insect-pest, diseases of area specific crops:</b> Insect Pest attack on plants, plant diseases, life cycle of insect-pest</li> <li>• <b>Prepare plant protection solutions:</b> Identify and select the equipments, use of chemicals, preparation of solution, dosage, spraying</li> </ul> <p><b>Well versed with health &amp; safety at the work place:</b> Well versed with health and safety measures in terms of personal safety and others at work place.</p>		

This course encompasses 3 out of 3 National Occupational Standards (NOS) of “Pesticide & Fertilizer Applicator” 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) 10:00  <b>Practical Duration</b> (hh:mm) 10:00  <b>Corresponding NOS Code</b>	<ul style="list-style-type: none"> <li>Understand General Discipline in the class room (Do's &amp; Don'ts)</li> <li>Understand Role of a Pesticide and Fertilizer Applicator</li> <li>Study the Introduction to Plant Protection</li> <li>Study and understand the Economic importance of plant protection</li> <li>Learn Basic skills of communication</li> <li>Learn Basic reading capabilities to enable reading of signs, notices and/or cautions at site.</li> </ul>	Laptop, white board, marker, projector, Chemicals
2	<b>Understand major pests of area specific crops along with their fertilizer need</b>  <b>Theory Duration</b> (hh:mm) 30:00  <b>Practical Duration</b> (hh:mm) 40:00  <b>Corresponding NOS Code</b> AGR / N1210	<ul style="list-style-type: none"> <li>Understand the morphology, biology, seasonal &amp; crop specificity of insect-pests</li> <li>Understand the life cycle of insect-pests</li> <li>Gain knowledge about the symptoms of diseases, effects and influencing environmental factors for disease occurrence.</li> <li>Understand the nutrient deficiency of plant</li> <li>Study the fertilizer requirement for the crop</li> </ul>	Laptop, white board, marker, projector, chemicals
3	<b>Use different plant protection chemicals &amp; equipments</b>  <b>Theory Duration</b> (hh:mm) 40:00  <b>Practical Duration</b> (hh:mm) 45:00  <b>Corresponding NOS Code</b> AGR/N1211	<ul style="list-style-type: none"> <li>Study the different Types of Plant Protection</li> <li>Formulate/prepare the spraying solution</li> <li>Understand the Factors influencing formulation and application</li> <li>Study and Understand the pesticide/insecticide/chemical hazards</li> <li>Gain knowledge about the ecofriendly pesticides</li> <li>Identify, select and use plant protection equipments</li> </ul>	Laptop, white board, marker, projector, chemicals, sprayer, can
4	<b>Maintain Health and safety at the work place</b>  <b>Theory Duration</b> (hh:mm)	<ul style="list-style-type: none"> <li>Understand the basic safety checks and other common reported hazards before all farm operation</li> <li>Proper use of equipment and materials safely and correctly</li> </ul>	Laptop, white board, marker, projector, mask, shoes, gloves, first

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	10:00 <b>Practical Duration</b> (hh:mm) 15:00 <b>Corresponding NOS Code</b> AGR/N5003	<ul style="list-style-type: none"> <li>Handle emergency situation in workplace and during any farm operation</li> <li>Practice general safety procedures follow during processing unit</li> </ul>	aid kit
	<b>Total Duration:</b>  <b>Theory Duration</b> (hh:mm) <b>90:00</b>  <b>Practical Duration</b> (hh:mm) <b>110:00</b>	<b>Unique Equipment Required:</b> Laptop, white board, marker, projector, chemicals, mask, sprayer, can, shoes, gloves, first aid kit	

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: “Pesticide and Fertilizer Applicator” mapped to Qualification Pack: “AGR/Q1202, v1.0”

Sr. No.	Area	Details
1	<b>Description</b>	Trainer provides education on different crops, pest and diseases, climate change, different types of chemicals, dosage, method of using etc
2	<b>Personal Attributes</b>	Trainer should have awareness about the chemical hazards, good communication and observation skills, practical oriented skills, and leadership skills. Trainer should be subject matter expert.
3	<b>Minimum Educational Qualifications</b>	Diploma, Bachelor Degree in Agriculture/Horticulture
4a	<b>Domain Certification</b>	Certified for Job Role: “Pesticide and Fertilizer Applicator” mapped to QP: “AGR/Q1202, 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>• MSc (Agriculture) with an experience of 1 Year,</li> <li>• BSc (Agriculture/Horticulture) 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>	Pesticide and Fertilizer Applicator
<b>Qualification Pack</b>	AGR/Q1202, 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 50% 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

			Marks Allocation		
Assessable Outcome	Assessment Criteria	Total Marks	Out Of	Theory	Skills Practical
1. AGR / N 1210 – Understand major pests of area specific crops along with their fertilizer need	PC.1 understand the cropping pattern in the area	<b>120</b>	10	6	4
	PC.2 diagnose the causes of pest damage symptoms by analysing feeding methods and behaviour		12	6	6
	PC3. identify the factors that determine the occurrence of pest damage and its importance		10	4	6
	PC4. recognize the important pests of specific crops in order to identify, anticipate and prevent the damage each may cause, and to select the most appropriate control measures or combination of measures for specific circumstances		12	6	6
	PC5. conduct field observation for pests judging the intensity of occurrence		10	4	6
	PC6. collect samples of pests and damaged crops		10	4	6
	PC7. ascertain the insect-pests and confirm its growth stage		8	4	4
	PC8. ascertain the disease infesting the crops		10	4	6
	PC9. ascertain the weed-pests		8	4	4
	PC10. understand the importance and application of different types of fertilizers		10	5	5
	PC11. determine the requirement of plants as per the cropping pattern and soil conditions		10	4	6
	PC.12 Classify tillage implements into Primary tillage implements, Secondary Tillage implements, levelling equipment and trailer		10	4	6
		<b>120</b>	<b>120</b>	<b>55</b>	<b>65</b>
AGR / N 1211 - Use different	PC.1 identify important agro-chemicals viz-a-viz their application	<b>120</b>	6	3	3



plant protection chemicals & equipments	PC2. understand the colour coding & symbols used for pesticides	4	2	2
	PC3. comprehend the information given in the labels	4	2	2
	PC4. understand the proper application technologies available for pesticide and fertilizer application on various crops	6	2	4
	PC5. select the most appropriate control measures or combination of measures for specific circumstances	6	3	3
	PC6. familiarize with different types of pesticide and fertilizer formulations	6	3	3
	PC7. prepare stock solutions and solution of pesticides/ fertilizers	6	3	3
	PC8. prepare Bordeaux mixture and paste	6	3	3
	PC9. identify different plant protection equipments (PPEs)- dusters, sprayers, seed treating equipments, fogging machine etc	6	2	4
	PC10. understand different components of PPEs- their functions & practical use in the field	4	2	2
	PC11. dismantle and assemble the common type of PPEs	4	2	2
	PC12. calibrate and adjust the PPEs	4	2	2
	PC13. undertake cleaning, oiling and lubrication of PPEs	2	1	1
	PC14. detect faults in the PPEs and undertake remedial action	2	1	1
	PC15. transport and store pesticides/fertilizers and containers in accordance with the safety manual	2	1	1
	PC16. confirm that the environmental conditions are appropriate for the work to be carried out	2	1	1
	PC17. use personal protective equipments during work	2	1	1
	PC18. assess the risk factors involved in the application of pesticides and fertilizers	4	2	2
	PC19. select a suitable site for preparation of spray solution	2	0	2

	PC20. use the correct preparation procedures in accordance with instructions		2	0	2
	PC21. use all equipments correctly in accordance with instructions		4	2	2
	PC22. calculate the minimum application rate to achieve the desired level of control		4	2	2
	PC23. apply the pesticide in a way which minimises the risks to non-target species and the environment		4	2	2
	PC24. assess the need of subsequent sprayings for controlling pests		4	2	2
	PC25. achieve full protection of crops from the pests		4	2	2
	PC26. achieve better productivity of crops by applying pesticides and fertilizers		4	2	2
	PC27. use antidotes and first aid treatment in case of chemical poisoning		4	2	2
	PC28. maintain personal hygiene throughout		4	2	2
	PC29. maintain and store the equipment correctly after use and clear the site thoroughly		4	2	2
	PC30. keep the records accurate, legible and complete		4	2	2
		<b>120</b>	<b>120</b>	<b>56</b>	<b>64</b>
3. AGR / N 09903 - Maintain Health & Safety at the workplace	PC1. undertake basic safety checks before operation of all machinery and vehicles and hazards are reported to the appropriate supervisor	<b>60</b>	2	1	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.		2	1	1
	PC3. read and understand the hazards of use and contamination mentioned on the labels of pesticides/fumigants etc		5	2	3

PC4. assess risks prior to performing manual handling jobs, and work according to currently recommended safe practice.	5	3	2
PC5. use equipment and materials safely and correctly and return the same to designated storage when not in use	5	2	3
PC6. dispose of waste safely and correctly in a designated area	2	1	1
PC7. recognise risks to bystanders and take action to reduce risk associated with jobs in the workplace	5	3	2
PC8. perform your work in a manner which minimizes environmental damage all procedures and work instructions for controlling risk are followed closely.	2	1	1
PC9. report any accidents, incidents or problems without delay to an appropriate person and take necessary immediate action to reduce further danger.	2	1	1
PC10. follow procedures for dealing with accidents, fires and emergencies, including communicating location and directions to emergency.	5	2	3
PC11. follow emergency procedures to company standard / workplace requirements	5	2	3
PC12. use emergency equipment in accordance with manufacturers' specifications and workplace requirements	5	3	2
PC13. provide treatment appropriate to the patient's injuries in accordance with recognized first aid techniques	5	3	2
PC14. recover (if practical), clean, inspect/test, refurbish, replace and store the first aid equipment as appropriate	6	3	3
PC15. report details of first aid administered in accordance with workplace procedures	4	2	2
	<b>60</b>	<b>30</b>	<b>30</b>
	<b>300</b>	<b>300</b>	<b>159</b>

	<u>Percentage Weightage:</u>			<u>47%</u>	<u>53%</u>
	<u>Minimum Pass% to qualify:</u>			<u>60%</u>	