







## **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' QP No. 'AGR/ Q 1202 NSQF Level 3'

Date of Issuance: November 30th, 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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# Pesticide & Fertilizer Applicator

**CURRICULUM / SYLLABUS** 

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

Program Name	Pesticide & Fertilizer Applicator			
Qualification Pack Name & Reference ID. ID	AGR/Q1202, v1.0			
Version No.	1.0 Version Update Date			
Pre-requisites to Training	8 <sup>th</sup> Standard Pass			
Training Outcomes	<ul> <li>Identify majo         Pest attack on         Prepare plant equipments, u spraying         Well versed w     </li> </ul>	Pest attack on plants, plant diseases, life cycle of insect-pest  • Prepare plant protection solutions: Identify and select the equipments, use of chemicals, preparation of solution, dosage, spraying  Well versed with health & safety at the work place: Well versed with health and safety measures in terms of personal safety and		









This course encompasses  $\underline{3}$  out of  $\underline{3}$  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	Introduction Theory Duration (hh:mm) 10:00 Practical Duration (hh:mm) 10:00 Corresponding NOS Code	<ul> <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	Understand major pests of area specific crops along with their fertilizer need  Theory Duration (hh:mm) 30:00  Practical Duration (hh:mm) 40:00  Corresponding NOS Code AGR / N1210	<ul> <li>Understand the morphology, biology, seasonal &amp; crop specificality 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	Use different plant protection chemicals & equipments  Theory Duration (hh:mm) 40:00  Practical Duration (hh:mm) 45:00  Corresponding NOS Code AGR/N1211	<ul> <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	Maintain Health and safety at the work place  Theory Duration (hh:mm) 10:00	<ul> <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 Laptop, white board, marker, projector, mask, shoes, gloves, first aid kit

Pesticide & Fertilizer Applicator









Sr. No.	Module	Key Learning Outcomes	Equipment Required
	Practical Duration (hh:mm) 15:00 Corresponding NOS Code AGR/N5003	<ul> <li>Handle emergency situation in workplace and during any farm operation</li> <li>Practice general safety procedures follow during processing unit</li> </ul>	
	Total Duration: Theory Duration 90:00 Practical Duration 110:00	Unique Equipment Required: Laptop, white board, marker, projector, chercan, shoes, gloves, first aid kit	micals, mask, sprayer,

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	Description	Trainer provides education on different crops, pest and diseases, climate change, different types of chemicals, dosage, method of using etc
2	Personal Attributes	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	Minimum Educational Qualifications	Diploma in Agriculture
4a	Domain Certification	Certified for Job Role: "Pesticide and Fertilizer Applicator" mapped to QP: "AGR/Q1202, 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> <li>Post Graduate (Agriculture / Horticulture / Botany/Forestry/Chemistry/Biotechnology)</li> <li>B. Sc. (Agriculture / Horticulture / Botany / Forestry/Biotechnology) with 1 year of relevant work experience</li> <li>B.Sc. with 3 years of relevant work experience</li> <li>Diploma in Agricultural Extension Services for Input Dealers (DAESI) with 3 years of relevant work experience and total 5 years of work experience</li> <li>Diploma in Agriculture with 3 years of relevant work experience and total 5 years of work experience</li> </ul>









#### **Annexure: Assessment Criteria**

Assessment Criteria	
Job Role	Pesticide and Fertilizer Applicator
Qualification Pack	AGR/Q1202, v1.0
Sector Skill Council	Agriculture

Sr.	Guidelines for Assessment
No.	
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 50% of aggregate marks to successfully clear the assessment.
6	In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.









				Marks Al	llocation
Assessable Outcome	Assessment Criteria	Total Marks	Out Of	Theory	Skills Practical
	PC.1 understand the cropping pattern in the area  PC.2 diagnose the causes of pest damage symptoms by analysing feeding methods and behaviour  PC3. identify the factors that determine the occurrence of pest damage and its importance  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  PC5. conduct field observation for pests judging the intensity of occurrence  PC6. collect samples of pests and damaged crops  PC7. ascertain the insect-pests and confirm its growth stage  PC8. ascertain the disease infesting the crops  PC9. ascertain the weed-pests  PC10. understand the importance and application of different types of fertilizers		10 12 10 10 12 10 10 8 10	6 6 4 4 4 4 4 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
		120	120	55	65









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	PC.1 identify important agro-chemicals				
	viz-a-viz their application		6	3	3
	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		<u> </u>	2	7
	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
AGR / N 1211 -	PC10. understand different components		Ŭ.		'
Use different	of PPEs- their functions & practical use in				
plant	the field	120	4	2	2
protection	PC11. dismantle and assemble the	0			
chemicals & equipments	common type of PPEs		4	2	2
equipments					
	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 thouroughly		4	2	2
	PC30. keep the records accurate, legible and complete		4	2	2
		120	120	56	64
3. AGR/N	PC1. undertake basic safety checks before operation of all machinery and vehicles and hazards are reported to the appropriate supervisor		2	1	1
09903 - Maintain Health & Safety at the workplace	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.	60	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
		60	30	30
	300	300	141	159









Grand Total		
Percentage Weightage:	<u>47%</u>	<u>53%</u>
Minimum Pass% to qualify:	50	0%