Model Curriculum

Chillies Cultivator

SECTOR: AGRICULTURE & ALLIED
SUB-SECTOR: AGRICULTURE CROP PRODUCTION
OCCUPATION: SPICE CROP CULTIVATION
REF ID: AGR/Q0601, 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: 'Chillies Cultivator' QP No. 'AGR/Q0601 NSQF Level 4'

Date of Issuance: March 15th, 2015

Valid up to: March 31st, 2016

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

Authorised Signatory
(Agriculture Skill Council of India)

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Chillies Cultivator

CURRICULUM / SYLLABUS

This program is aimed at training candidates for the job of a "Chillies Cultivator", in the "Agriculture & Allied" Sector/Industry and aims at building the following key competencies amongst the learner

Program Name	**Chillies Cultivator**		
Qualification Pack Name & Reference ID. ID	AGR/Q0601, v1.0		
Version No.	1.0	**Version Update Date**	
Pre-requisites to Training	No entry barrier, 5th standard passed preferable		
Training Outcomes	**After completing this programme, participants will be able to:** • **Select the Crop variety:** Analyse the Geographical conditions, resources available, select the crop variety, high yielding variety, pest and disease tolerant variety, hybrid varieties • **Grow and manage crop:** Inputs requirement, Preparation of field, sowing, soil testing, application of fertilizer & nutrients, quality management, crop management • **Maintain the quality of the produce:** Time of Harvesting, Moisture level of the produce, post harvest practice, packing 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 10 out of 10 National Occupational Standards (NOS) of "Chillies Crop Cultivator" 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) 5:00 **Corresponding NOS Code**	• Understand the General Discipline in the class room (Do's & Don'ts) • Understand the Role of a Chillies crop cultivator • Study the different varieties of Chilly Crop • Understand and study the Scopes and Opportunities of Spice Crops cultivation	Laptop, white board, marker, projector,
2	**Seed selection & seedling production in chillies** **Theory Duration** (hh:mm) 5:00 **Practical Duration** (hh:mm) 10:00 **Corresponding NOS Code** AGR/N0605	• Understand the geographical conditions – Soil condition, soil nutrients, humidity, rainfall, etc • Different varieties of Chilly Crop - Insect Pest resistant - Disease Resistant - Draught tolerant - High Yield Variety • Select the crop variety which is suitable for geographical condition • Identify right quality and appropriate quantity of seeds • Identify the Vendor/Supplier • Procure the seed • Seed Treatment • Nursery Preparation & management • Tools/equipments for Nursery preparation	White Board, Marker, Laptop, projector,
3	**Soil preparation and transplantation of chillies** **Theory Duration** (hh:mm) 8:00 **Practical Duration** (hh:mm) 10:00 **Corresponding NOS Code** AGR/ N0606	• Suitable soil condition required for the crop • Perform the soil sampling and soil testing • Understand the soil characteristic • Land preparation - Ploughing - Levelling - Ridges and Furrow preparation - Application of FYM and Fertilizers • Transplantation of Plants - Time of Transplantation - Stage of Transplantation • Identification of Suitable intercrops and planting	Marker, Laptop, projector, land leveler, digger, spade, mulching materials
4	**Soil Nutrient Management in spice Crops** (hh:mm)	• Understand the Nutrient requirement for the cultivation of Chilly Crop • Soil Sampling and testing • Micro and Macro Nutrients in soil	White Board, Marker, Laptop, projector, Sprayer, fertilizers, bio

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	07:00 **Practical Duration** (hh:mm) 12:00 **Corresponding NOS Code** AGR/N0601	• Understand the required fertilizer dosage for the nutrient enrichment in soil • Understand the method of nitrogen fixation in soil • Understand the various soil microorganisms beneficial for the nutrient enrichment in soil • Bio fertilizer/organic manure usage in the cultivation of Chilly Crop. • Estimate the quantity of fertilizer to be applied at various stages in relation to NPK and other secondary nutrients. • Maintain the record of application of fertilizers and intervals	fertilizers,
5	**Weed management in Spice crops** **Theory Duration** (hh:mm) 07:00 **Practical Duration** (hh:mm) 12:00 **Corresponding NOS Code** AGR/N0602	• Understand the common weeds in Chilly crop cultivation • Understand the hazards of weed in Chilly crop cultivation • Understand the use of chemical herbicides and bio- herbicides • Application of herbicides - Identification of herbicide - Dosage of herbicide • Understand and perform the Manual/ mechanized weeding • Perform Mulching • Identify and use the tools/equipments required for the Weed Management	White Board, Marker, Laptop, projector, Chemicals, Sprayer, Mechanical Weeder
6	**Integrated Pest and Diseases Management in Spice Crops** **Theory Duration** (hh:mm) 07:00 **Practical Duration** (hh:mm) 12:00 **Corresponding NOS Code** AGR/N0403	• Understand the major pests and disease in Chilly Crop • Understand the Characters of different insect pests • Understand the symptoms of and precaution measures for different diseases • Follow the Package of Practice for the Chilly Crop cultivation • Understand the suitable chemical for the insect pest and diseases attack • Identify, select and place the different insect traps in the field • Understand the importance of Integrated Pest and Disease Management • Perform the Integrated Pest and Disease Management	White Board, Marker, Laptop, projector, chemicals, traps, sprayer, mask, gloves
7	**Irrigation Management in Spice Crops** **Theory Duration** (hh:mm) 05:00	• Understand the Water requirement for the cultivation of Chilly crop • Plan for the Irrigation system • Understand the importance of fertigation and perform as and when required • Understand the soil texture, porosity etc	White Board, Marker, Laptop, projector, chemicals, traps, sprayer, mask, gloves

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	Practical Duration (hh:mm) 12:00 **Corresponding NOS Code** AGR/N0604	• Perform the water drainage in the field • Understand the effects of water clogging in the field • Understand the required optimum moisture level in the field for Chilly cultivation • Prepare Irrigation Schedule • Perform the Irrigation Management	
8	**Harvestand post- harvest management in Chillies** **Theory Duration** (hh:mm) 10:00 **Practical Duration** (hh:mm) 12:00 **Corresponding NOS Code** AGR/N0607	• Do's and don'ts during crop harvesting • Harvesting of the crop: Crop maturity,moisture content during harvesting, leaf colour, time of harvesting, climatic conditions etc • Understand and practice the proper method of harvesting and handling of harvested crop • Understand about the physical admixture during harvesting and post harvesting process • Perform the sorting and grading of the harvested crop • Understand the normal shelf life of the Bulb crop • Understand the importance of curing • Take precautions to avoid the sprouting in Bulb crop • Understand the importance of Post harvest Management • Identify and use the tools/equipments required for the storing of fruits • Understand the different storage pest • Make arrangements for the • Transportation	White Board, Marker, Laptop, projector, pre cooling chamber,
9	**Basic farm management** **Theory Duration** (hh:mm) 6:00 **Practical Duration** (hh:mm) 10:00 **Corresponding NOS Code** AGR/N9901	• Estimate the cost of production of Chilly crop • Estimate the required investment • Practice Farm management- Soil testing, selection of crop variety, Crop Calendar, Crop rotation, intercrops, schedule for fertilizer, pesticide/chemical application, irrigation schedule, harvesting schedule etc • Identify the near market area and keep update on the market prices • Keep record on the investment and expenditures	White Board, Marker, Laptop, projector, record keeping book,
10	**Assimilating market information** **Theory Duration** (hh:mm)	• Understand the suitable market platform for Chilly crops • Collect the Market information from the reliable sources • Understand the right time, place for the	White Board, Marker, Laptop, projector,

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	5:00 **Practical Duration** (hh:mm) 5:00 **Corresponding NOS Code** AGR/N9902	market of the produce • Analyze the market information	
11	**Maintain Health & Safety at the work place** **Theory Duration** (hh:mm) 5:00 **Practical Duration** (hh:mm) 10:00 **Corresponding NOS Code** AGR/N9903	• 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 farm operation • Understand, identify and study the use of equipment ,processing machine and materials safely and correctly • Understand and handle the emergency situation in workplace and during any farm operation	White Board, Marker, Laptop, projector, Nose masks, first aid kit,
	Total Duration: **Theory Duration** (hh:mm) **70:00** **Practical Duration** (hh:mm) **110:00**	**Unique Equipment Required:** White Board, Marker, Laptop, projector, Record Keeping Book, chemicals, land leveler, digger, spade, mulching materials, insect traps, sprayer, mask, gloves, irrigation equipments	

Grand Total Course Duration: **180 Hours, 0 Minutes**

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

Trainer Prerequisites for Job role: "Chillies Cultivator" mapped to Qualification Pack: "AGR/Q0601, v1.0"

Sr. No.	Area	Details
1	**Description**	Trainer is responsible for providing the education and skills development training on cultivation of chillies as per the package of practices recommended for a particular agronomic climate zone, type of soil, rainfall pattern and climatic condition to achieve the yield as per the genetic potential of given variety and sell the produce as per the competitive market prices without distress sale.
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, Bachelor Degree in Agriculture Science
4a	**Domain Certification**	Certified for Job Role: "Chillies Cultivator" mapped to QP: "AGR/Q0601, v1.0". Minimum accepted score is 80%.
4b	**Platform Certification**	Certified for the Job Role: "Trainer", mapped to the Qualification Pack: "SSC/Q1402". Minimum accepted score is 70%
5	**Experience**	• Post graduate with an experience of 1 Year, • Graduate with experience of 3 + Years, • Diploma with relevant experience of 5+ Years.

Annexure: Assessment Criteria

Assessment Criteria	
Job Role	Chillies Cultivator
Qualification Pack	AGR/Q0601, 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	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 canter 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		Out Of	Marks Allocation	
				Theory	Skills Practical
1. AGR/N0605 Seed selection and seedling production in Chillies	PC1. identify various and appropriate variety (including hybrids) of chilli crop	60	10	5	5
	PC2. identify various vendors / suppliers (including government nurseries /department) of the seed that are certified		5	2	3
	PC3. procure seeds in appropriate quantity		5	2	3
	PC4. treatment of seeds prior to sowing		8	4	4
	PC5. identify market rates for chilli seeds		4	2	2
	PC6. prepare nursery area with appropriate slanting slope		8	4	4
	PC7. cover the nursery area with shade net and insect proof nylon net		3	2	1
	PC8. mix cocopeat with neem cake to prepare portrays		4	2	2
	PC9. plant the seed at correct depth and appropriate spacing		4	2	2
	PC10. water the seedling at appropriate time with appropriate method		4	2	2
	PC11. interact with agricultural experts for their guidance		5	3	2
	Total		**60**	**30**	**30**
2. AGR/ N0606 Soil preparation and transplantation of chillies	PC1. undertake soil testing at authorized centres	60	15	8	7
	PC2. plough the land to get appropriate tilth		5	2	3
	PC3. prepare the land with ridges and furrows		10	5	5
	PC4. apply farmyard manure and fertilizers		10	5	5
	PC5. transplant seedling at appropriate time, stage and spacing		10	5	5
	PC6. intercrop with crops like onion, coriander, maize etc		10	5	5
	Total		**60**	**30**	**30**

3. AGR/ N0601 Soil fertility management in spice crops	PC1. understand the basic macro & micro nutrients with their functions	90	25	13	12
	PC2. undertake testing of soil to determine its nutrient status and fertilizer needs from authorized laboratory		15	7	8
	PC3. collect soil testing report		5	0	5
	PC4. select appropriate organic fertilizer including farm yard manure for its application		15	10	5
	PC5. apply organic and inorganic fertilizer in correct dosage and apt time		20	10	10
	PC6. apply vermicompost and interaction with its expert		10	5	5
	Total		**90**	**45**	**45**
4. AGR/N0602 Weed management in spice crops	PC1. identify the types of weeds in the crop	60	15	7	8
	PC2. maintain records of the weeds and share it with experts		10	5	5
	PC3. apply correct dosage of herbicide for controlling weeds		10	5	5
	PC4. undertake manual weeding at appropriate time and intervals		15	8	7
	PC5. incorporate mulching to control weeds in the plant		10	5	5
	Total		**60**	**30**	**30**
5. AGR/N0603 Integrated pest and disease management in spice crops	PC1. identifying different types of pests in spice crops such as aphids, cutworm, whitefly, termites	90	10	5	1
	PC2. identify stages of crop and pest incidence		6	3	3
	PC3. diagnose symptoms and extent of damage		6	3	3
	PC4. identify major diseases in specific spice crops such as powdery mildew, bacterial spot, alternia, anthracnose, leaf spot etc		10	5	5
	PC5. identify crop stage and disease incidence – disease calendar		6	3	3
	PC6. identify early signs and symptoms of various types of diseases		6	3	3

	PC7. identify mode of transmissions (implements, vectors, water, rain wind)		4	2	2
	PC8. use of resistant varieties		4	2	2
	PC9. scouting at regular intervals to prevent pest incidence		8	4	4
	PC10. perform crop rotation with suitable crops		6	3	3
	PC11. use various types of traps		6	3	3
	PC12. use various types of biological, mechanical and chemical control with their advantages and disadvantages		10	5	5
	PC13. use various sprays as recommended by state agricultural university, spice crop experts		8	4	4
	Total		**90**	**45**	**45**
6. AGR/N0604 Irrigation management in spice crops	PC1. identify characteristics of good irrigation systems	**60**	5	2	3
	PC2. indentify advantages & disadvantages of irrigation channels and watering through hoses buckets etc		5	2	3
	PC3. incorporate micro-irrigation techniques such as drip irrigation using appropriate equipments		10	5	5
	PC4. interact with micro-irrigation expert for effective usage		5	3	2
	PC5. ensure appropriate water supply to the crop at various life cycles (from seeding to entire duration of the crop)		5	3	2
	PC6. place main and sub pipes and lateral pipes for drip irrigation (if applicable)		10	5	5
	PC7. ensure spread of water in the entire field		5	2	3
	PC8. ensure proper water drainage		5	2	3
	PC9. identify disease due to increase in moisture and take corrective actions		10	6	4
	Total		**60**	**30**	**30**
7. AGR/ N0607	PC1. harvest the crop at appropriate stage	**90**	10	5	5

Harvest and post harvest management in chillies	PC2. harvest the crop at right time (usually first picking after 75 days of transplanting)		8	4	4
	PC3. undertake picking of chillies		8	4	4
	PC4. undertake drying of chillies		8	4	4
	PC5. undertake grading of the chillies		8	4	4
	PC6. undertake packing of the chillies		8	4	4
	PC7. maintain ideal storage condition		10	5	5
	PC8. undertake marketing of the crop		5	3	2
	PC9. identify the right market for sale of produce		10	5	5
	PC10. analyze the right time for sale considering the periodical demand for the produce		5	2	3
	PC11. coordinate and negotiate with procurement assistant of the buyer for best price		10	5	5
	Total		**90**	**45**	**45**
8. AGR/ N9901 Basic farm management	PC1. choose the crop based on agro-climatic condition of the region	**30**	2	1	1
	PC2. take sample of the soil for testing		1	0	1
	PC3. perform intercropping with suitable and recommended crops (as per the main crop cultivated)		2	1	1
	PC4. perform crop rotation with suitable crops		2	1	1
	PC5. interact with agriculture / extension expert for crop planning		1	1	0
	PC6. choose crop based on the economic advantage		2	1	1
	PC7. maintain crop production activity record		1	1	0
	PC8. maintain crop calendars		1	1	0
	PC9. maintain calendars of weed		1	1	0
	PC10. maintain insect and pest calendar		2	1	1
	PC11. Ascertain total cost of production (land, production practices, labour, equipment, fuel, administrative cost etc.)		2	1	1

	PC12. maintain records of investment and expenditure		2	1	1
	PC13. maintain necessary books of accounts		2	1	1
	PC14. identify government schemes and their eligibility for availing themselves of the same		2	1	1
	PC15. identify the nearest market		2	1	1
	PC16. identify local traders, mandis in the villages and nearby and compare the rates		2	1	1
	PC17. identify market rates of the produce season wise		2	1	1
	PC18. arrange cost-effective transportation of produce to the market		1	0	1
	Total		**30**	**16**	**14**
9. AGR/N9902 Assimilating market information	PC1. understand the different sources of information at village-level through other farmers, neighbours, relatives, agricultural extension workers, agriculture specialists, concerned government and private departments like gram panchayat, co-operative societies and SHGs etc.	**30**	1	1	0
	PC2. identify different sources of information at market level through commission agents, mandi samitis and input dealers		1	1	0
	PC3. identify different sources of information through media sources like radio, newspapers, television, magazine internet, SMS in mobile phones etc.		1	0	1
	PC4. identify the appropriate sources of specific market information and proper ways to collect the required information		1	0	1
	PC5. identify the reliable source of information		1	0	1

	PC6. ascertain methods of collecting information through personal visit, telephone, internet and published reports, magazines and articles, workshops, attending seminars and training by agriculture extension service providers		2	1	1
	PC7. ascertain periodicity and cost of assessing market information		2	1	1
	PC8. ascertain availability and non-availability of specific market information		1	0	1
	PC9. perform documentation for analyzing market information		1	0	1
	PC10. evaluate the authenticity of information received		2	1	1
	PC11. analyze the information for taking decision		2	1	1
	PC12. utilize market information for taking cost effective production decisions		2	1	1
	PC13. understand quality-wise and variety-wise prices of different products such as seeds, pest, fertilizer, etc		2	1	1
	PC14. use market information and decide on crop and area be to sown which could result in better productivity for the season		2	1	1
	PC15. utilize market information for taking effective pre-harvesting decisions like seed preparation, land preparation, nutrition management, weed management, pest and diseases management and irrigation management		2	1	1
	PC16. utilize market information for appropriate post-harvesting decision like drying , grading, bagging, transportation, processing and storage		2	1	1

	PC17. decide on marketing parameters like where to sell, when to sell, to whom to sell and what quantity to sell etc. which leads to profit		2	1	1
	PC18. understand benefits derived from market information		1	0	1
	PC19. make projections/future price movements through information sources		1	1	0
	PC20. understand price fluctuations in markets and take appropriate decision		1	1	0
	Total		**30**	**14**	**16**
10. AGR/N9903 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	**30**	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		2	1	1
	PC4. Assess risks prior to performing manual handling jobs, and work according to currently recommended safe practice.		2	1	1
	PC5. use equipment and materials safely and correctly and return the same to designated storage when not in use		2	1	1
	PC6. dispose of waste safely and correctly in a designated area		2	1	1
	PC7. recognize risks to bystanders and take action to reduce risk associated with jobs in the workplace		3	2	1

	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.		1	0	1
	PC10. Follow procedures for dealing with accidents, fires and emergencies, including communicating location and directions to emergency.		2	1	1
	PC11. follow emergency procedures to company standard / workplace requirements		2	1	1
	PC12. use emergency equipment in accordance with manufacturers' specifications and workplace requirements		2	1	1
	PC13. provide treatment appropriate to the patient's injuries in accordance with recognized first aid techniques		2	1	1
	PC14. recover (if practical), clean, inspect/test, refurbish, replace and store the first aid equipment as appropriate		2	1	1
	PC15. report details of first aid administered in accordance with workplace procedures.		2	1	1
			30	**15**	**15**
	TOTAL	**600**	**600**	**300**	**300**
	Percentage Weightage:			50%	50%
	Minimum Pass% to qualify (aggregate):			60%	