

Model Curriculum

Vermicompost Producer

SECTOR: AGRICULTURE & ALLIED
SUB-SECTOR: AGRICULTURE CROP PRODUCTION
OCCUPATION: PLANTATION CROP CULTIVATION
REF ID: AGR/Q1203, 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: **'Vermicompost Producer'** QP No. **'AGR/Q1203 NSQF Level 4'**

Date of Issuance: October 20th, 2016

Valid up to: March 31st, 2019

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



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Authorised Signatory
(Agriculture Skill Council of India)

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Vermicompost Producer

CURRICULUM / SYLLABUS

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

Program Name	Vermicompost Producer		
Qualification Pack Name & Reference ID. ID	AGR/Q1203, v1.0		
Version No.	1.0	Version Update Date	
Pre-requisites to Training	5 th standard pass, preferably		
Training Outcomes	<p>After completing this programme, participants will be able to:</p> <ul style="list-style-type: none"> • Identify & arrange resources/ inputs for vermicompost unit: correct species of earthworm, site location for vermibed etc • Undertake good quality vermicompost production using appropriate techniques: preparation of vermibed, ensure proper environmental conditions, control predators, harvest vermicompost, vermiwash & earthworms • Undertake basic entrepreneurial activities for small vermicompost unit: arrangement of finance, pooling of resources, market linkages etc • Practice health & safety at the work place: Well versed with health and safety measures in terms of personal as well as others' safety. 		

This course encompasses 5 out of 5 National Occupational Standards (NOS) of “Vermicompost Producer” Qualification Pack issued by “Agriculture Skill Council of India”.

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	Introduction Theory Duration (hh:mm) 05:00 Practical Duration (hh:mm) 00:00 Corresponding NOS Code Bridge Module	<ul style="list-style-type: none"> Understand General Discipline in the class room (Do's & Don'ts) Study the Scope & importance of Organic farming in India Understand the usage & market demand for vermicompost Understand the Role of a 'Vermicompost Producer' 	Laptop, white board, marker, projector
2	Identify appropriate site & prepare bed for vermicomposting Theory Duration (hh:mm) 15:00 Practical Duration (hh:mm) 20:00 Corresponding NOS Code AGR / N01212	<ul style="list-style-type: none"> Identify appropriate site for vermicompost unit Construct vermicompost structure Prepare vermicompost bed as per the specifications Identify & source appropriate type of organic wastes Ensure proper coverage & appropriate moisture level Comply with the occupational health & safety requirements relevant to work 	Laptop, white board, marker, projector, Audio-visual aids, White Marker, gunny bag, plastic sheet, Shovels, spades, crowbars, iron baskets, dung fork, buckets, bamboo baskets, trowel, Plumbing and fitting tools, Power operated shredder, Sieving machine with wire mesh sieves, Culture trays (plastic), Wheel barrows, Water pumps with pipe/dripper
3	Inoculate earthworms in prepared unit & manage vermicomposting process Theory Duration (hh:mm) 15:00 Practical Duration (hh:mm) 30:00 Corresponding NOS Code AGR/N1213	<ul style="list-style-type: none"> Identify & procure correct species of earthworm from authentic source Ensure favourable thriving condition prior to releasing earthworms into bed Inoculate earthworms into vermicomposting units Ensure proper moisture and aeration in the vermicompost bed Prepare feed and manage vermicomposting unit Control predator attacks- birds, animals & insects, diseases such as sour crop etc Harvest vermicompost 	Laptop, white board, marker, projector, Audio-visual aids, earthworms, plastic sheet, Shovels, spades, crowbars, iron baskets, dung fork, buckets, bamboo baskets, trowel, Power operated shredder, Sieving machine with wire mesh sieves, Culture trays (plastic), Water pumps with pipe/dripper

Sr. No.	Module	Key Learning Outcomes	Equipment Required
4	<p>Identify maturity of vermicompost and harvest using approved procedures</p> <p>Theory Duration (hh:mm) 15:00</p> <p>Practical Duration (hh:mm) 30:00</p> <p>Corresponding NOS Code AGR/N1214</p>	<ul style="list-style-type: none"> Identify maturity of prepared vermicompost Harvest mature vermicompost at appropriate stage using tub method, container etc Collect & store the vermicompost in shady place Harvest earthworms using appropriate technique- trapping method, sieving method, manual method, self-harvesting method etc Segregate the vermiculture collected into cocoons, juveniles, adults etc as per the work requirements Collect worms in containers, weigh, sort, grade, transfer in ready bed or prepare for sale Recycle the process by refilling the bed with required materials 	Laptop, white board, marker, projector, Audio-visual aids, Shovels, spades, crowbars, iron baskets, dung fork, buckets, bamboo baskets, trowel, Weighing scale, Weighing machine (platform type), Gunny bags, Bag sealing machine, Culture trays (plastic), Wheel barrows
5	<p>Undertake basic entrepreneurial activities for small enterprise</p> <p>Theory Duration (hh:mm) 30:00</p> <p>Practical Duration (hh:mm) 20:00</p> <p>Corresponding NOS Code AGR/N9908</p>	<ul style="list-style-type: none"> Assess demand & supply of vermicompost in the market Seek information regarding subsidies/loan available through govt institutions Avail loan from the financial institutions Identify & develop appropriate marketing channels Track prices prevailing in the market and formulate competitive pricing mechanism Maintain book of accounts Calculate B:C ratio Comply with relevant regulations in marketing & sale of the produce 	Laptop, white board, marker, projector, Audio-visual aids, pen, paper
6	<p>Maintain Health & Safety at the work place</p> <p>Theory Duration (hh:mm) 10:00</p> <p>Practical Duration (hh:mm) 10:00</p> <p>Corresponding NOS Code AGR/N9903</p>	<ul style="list-style-type: none"> Maintain a clean & efficient workplace Render appropriate emergency procedures On Time Reporting to appropriate person. Practice General safety and first aid 	Laptop, white board, marker, projector, , Personal protective equipment Like: Helmet / head gear, Cotton / woolen safety gloves, Safety boots, Safety Harness; First Aid Kit: Bandages, Adhesive bandages, Betadine Solution / ointment, Pain relief spray / ointment, Antiseptic liquid; Phone directory, Search lights, fire

Sr. No.	Module	Key Learning Outcomes	Equipment Required
7	Soft Skills/ Computer Literacy/ Financial Literacy Theory Duration (hh:mm) 10:00 Practical Duration (hh:mm) 10:00 Corresponding NOS Code	<ul style="list-style-type: none"> • Basic Communication Skills • Basic Computer Skills • Various types of documents and their uses- Birth certificate, 10th Certificate, Ration Card, Voter Id Card, Aadhar Card, PAN card, Driving License, Bank Pass Book • Various types of loan/credit available (relevant to the trainees' requirement) and the process to avail the same 	extinguisher Computer, Audio-visual aids, Projector
	Total Duration: Theory Duration (hh:mm) 100:00 Practical Duration (hh:mm) 120:00	Unique Equipment Required: Laptop, white board, marker, projector, Audio-visual aids, Shovels, spades, crowbars, iron baskets, dung fork, buckets, bamboo baskets, trowel, Plumbing and fitting tools, Power operated shredder, Sieving machine with wire mesh sieves, power operated with motor , Weighing scale, Weighing machine (platform type), Bag sealing machine, Culture trays (plastic), Wheel barrows, Water pumps with pipe/ dripper	

Grand Total Course Duration: **220 Hours, 0 Minutes**

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

Trainer Prerequisites for Job role: “Vermicompost Producer” mapped to Qualification Pack: “AGR/Q1203, v1.0”

Sr. No.	Area	Details
1	Description	Trainer is responsible for educating the trainees – Identify & arrange resources for setting up vermicompost unit, Construct vermicompost structure, prepare vermibed, favourable thriving conditions for worms, control of predators, harvest & storage of vermicompost & by-products, basic entrepreneurship skills.
2	Personal Attributes	Trainer should be Subject Matter Expert. He/ she should have good communication, leadership, observation and practical oriented skills.
3	Minimum Educational Qualifications	Bachelor’s Degree, Preferably in Agriculture
4a	Domain Certification	Certified for Job Role: “ <u>Vermicompost Producer</u> ” mapped to QP: “ <u>AGR/Q1203 v1.0</u> ”. Minimum accepted score is 80%.
4b	Platform Certification	Recommended that the Trainer is certified for the Job Role: “Trainer”, mapped to the Qualification Pack: “SSC/Q1402”. Minimum accepted % as per respective SSC guidelines is 70%.
5	Experience	<ul style="list-style-type: none"> • M.Sc (Agriculture) with 1 Year relevant experience • B.Sc.(Agriculture) with 2 Years relevant experience • Any Graduate with 3+ years experience in relevant field • Any +2 having 5/6 Years of experience in Vermicompost Production

Annexure: Assessment Criteria

Assessment Criteria	
Job Role	Vermicompost Producer
Qualification Pack	AGR/Q1203, 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 center based on this criteria
5	To pass the Qualification Pack, every trainee should score a minimum of 70% in aggregate
6	In case of successfully passing only certain number of NOS's, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack

Assessable Outcomes	Assessment Criteria	Total Marks	Out of	Theory	Practical Skills
AGR/N1209 Identify appropriate site and prepare bed for vermicomposting	PC1. comply with occupational health and safety requirements relevant to work	100	5	3	2
	PC2. assess possible risks and hazards in the work environment and exercise safety precautions to minimize injury to self and others		4	2	2
	PC3. comply with relevant safety practices while handling sharp tools and equipment		4	2	2
	PC4. confirm that the selected tools are in good working condition		4	2	2
	PC5. select suitable location based on factors such as accessibility to road; availability of bio-wastes; good ventilation; etc.		4	2	2
	PC6. ensure that the selected site is located close to dairy farms or places with high population of cattle to procure cow dung and farm wastes		4	2	2
	PC7. verify that water resource is available in the vicinity of the vermicomposting area		4	2	2
	PC8. confirm the availability of farm labour in the selected location		3	1	2
	PC9. select appropriate vermicomposting method based on the following factors		4	2	2
	PC10. obtain appropriate tools, accessories and construction raw materials as per vermicomposting method selected		4	2	2
	PC11. identify shady area in the selected site to construct the vermicompost unit as per approved procedures		4	2	2
	PC12. provide correct, safe and accurate instructions to workers for any construction work and follow the same where contributing to construction		4	2	2
	PC13. prepare vermibed of appropriate height/level using suitable raw materials as per approved vermicomposting practices		4	2	2
	PC14. ensure that the bottom of the vermicomposting unit is covered with appropriate materials such as layer of tiles, broken bricks, coarse sand, moist loamy soil, coconut husk or polythene sheet, etc.		4	2	2

	PC15. select the appropriate kind of raw materials to make vermibed as per resource availability and feasibility		4	2	2
	PC16. confirm that the selected organic wastes are free from non-biodegradable materials such as stones, glass pieces, plastics, ceramic tubes/bulbs, etc.		4	2	2
	PC17. select the appropriate type of organic wastes required to be used for making vermicomposting heap as per standard requirements		4	2	2
	PC18. identify reliable source(s) to ensure continuous supply of food material/organic waste required as feeds for vermes/earthworms		4	2	2
	PC19. verify that organic wastes are shredded into small pieces prior to mixing in accordance with good vermicomposting practices		4	2	2
	PC20. ensure that the mixture is transferred into the vermicomposting unit following approved procedures or as alternating layers of shredded organic wastes and cow dung slurry in correct proportion		4	2	2
	PC21. ensure that the layer or height of the heap is maintained as per standard quality requirements		4	2	2
	PC22. check that the top layer of the vermicomposting unit is properly covered with soil, cow dung, leaves, straws or other crop wastes as per good vermicomposting practices		4	2	2
	PC23. ensure that the mixture or heap is allowed to decompose in the vermibed for required length of days depending on the vermicomposting method selected		4	2	2
	PC24. check that appropriate moisture level is maintained during the process in line with standard procedure requirements		4	2	2
	PC25. leave the work area in a safe condition in line with environmental health & safety		4	2	2
	Total		100	50	50

AGR/N1210 Inoculate earthworms in prepared unit and manage vermicomposting process	PC1. identify reliable source for procuring earthworm species for vermicomposting follow approved vermicomposting practices while selecting earthworm species	100	4	2	2
	PC2. select the correct types of earthworm to carry out composting		4	2	2
	PC3. ensure that the quantity of earthworms selected is appropriate and proportionate to the size of the vermicomposting bed		4	2	2
	PC4. establish the favourable thriving conditions prior to releasing earthworms into the bed		4	2	2
	PC5. verify that the organic wastes have undergone required state of decomposition prior to introducing the earthworms		4	2	2
	PC6. check that the selected earthworms are uniformly released over the decomposed materials as per required quality standards		4	2	2
	PC7. ensure that moisture level is maintained as per standard vermicomposting practices		4	2	2
	PC8. verify that the decomposed matter is loosened enough to allow air to pass through		4	2	2
	PC9. ensure that the heap is properly covered with appropriate material such as leaves, barks, bamboos, dried crop wastes, etc.		4	2	2
	PC10. protect the vermicomposting unit against adverse weather conditions, such as rains, winds, heat, etc.		4	2	2
	PC11. ensure that the earthworms are allowed to feed on the decomposed materials for required period of time as per standard vermicomposting procedures		4	2	2
	PC12. collect required organic wastes and cow dung to make heap for vermicomposting in accordance with good vermicomposting practices		4	2	2

	PC13. confirm that the collected raw materials are in correct ratio as per given vermicomposting requirements		4	2	2
	PC14. verify that the cattle dung is properly dried in sunlight or allowed to cool for specified length of time prior to using		4	2	2
	PC15. prepare the feed separately in the work environment for transferring earthworms post harvesting		4	2	2
	PC16. check that the heap is allowed to decompose for required period of time		4	2	2
	PC17. sprinkle water over the heap in every 2-3 days to ensure that temperature does not increase above the required level		4	2	2
	PC18. allow excess water to drain from the unit through appropriately constructed channels		4	2	2
	PC19. collect the nutrients rich excess water/vermiwash in containers for further utilization		4	2	2
	PC20. use approved procedures to aerate the decomposed material with respect to the type of vermicomposting type selected		4	2	2
	PC21. ensure that the vermibed is properly covered with appropriate materials such as wire mesh, gunny bag, etc. to prevent birds from picking the earthworms		4	2	2
	PC22. comply with relevant agricultural practices to protect earthworms from some animals and insects such as red mites, ants, flatworm, centipedes, rats, etc.		4	2	2
	PC23. treat vermibed with insecticide in appropriate amount at the time of filling to prevent attacks by predators		4	2	2
	PC24. establish favourable environmental conditions during the vermicomposting process against diseases such as 'sour crop'		4	2	2
	PC25. leave the work area in a safe condition and in accordance with environmental health & safety		4	2	2
		Total	100	50	50
AGR/N1211 Identify maturity	PC1. use appropriate personal protective equipment suitable to the type of work	100	6	3	3

of vermicompost and harvest using approved procedures	PC2. obtain tools and materials needed in carrying out harvesting procedures	5	2	3
	PC3. confirm the tools and accessories selected are undamaged and safe to use	5	2	3
	PC4. adhere with health and safety guidelines relevant to the work area	5	2	3
	PC5. identify the appropriate harvesting stage of compost on the basis of the following quality parameters	6	3	3
	PC6. collect the top layer manually following approved procedures and in accordance with the vermicomposting method used such as tub method, container, etc.	5	2	3
	PC7. verify that harvesting of the worm castings are limited to layer above the earthworms presence	5	2	3
	PC8. ensure that the collected vermicompost is stored in a shady dry place in line with approved procedures	5	2	3
	PC9. feed the worms with partially decomposed organic wastes (prepared in correct ratio) to continue composting cycle relevant to the type of method selected	5	2	3
	PC10. remove the upper layer of the stable and mature compost before harvesting the earthworms as per approved procedures	5	2	3
	PC11. carry out harvesting of earthworms using technique appropriate to the type of vermicomposting method adopted	6	3	3
	PC12. ensure that the vermiculture collected is segregated into cocoons, juveniles, adults, etc. as per work requirements	5	1	4
	PC13. check that approved post-harvesting procedures are followed	5	1	4
	PC14. recycle the process by refilling the bed with partially prepared organic wastes in required quantity and ratio as per the type of vermicomposting method selected	6	3	3

	PC15. ensure that the compost collected is sun dried and sieved to obtain good quality material		5	1	4
	PC16. pack the compost in bags or containers made of suitable materials		6	3	3
	PC17. store the bags or containers in cool and dry place		5	2	3
	PC18. ensure pest control practices are followed during storing		5	2	3
	PC19. leave the work place in an environmentally safe condition		5	2	3
		Total	100	40	60
AGR/N9908 Undertake basic entrepreneurial activities for small enterprise	PC1. seek information regarding demand and supply of produce in the market	100	10	5	5
	PC2. identify target customers and assess their needs such as amount required, purpose, quality, expectations, etc.		10	5	5
	PC3. perform basic accounting such calculating expenditure incurred, costing and pricing of produce		10	5	5
	PC4. ensure that the cost of production, transportation and marketing are included in costing and pricing		10	5	5
	PC5. collect information related to various subsidies/funds offered by the Government, authorized state units and other financial institutions involved with the promotion of the produce		10	5	5
	PC6. comply with relevant regulations in marketing of the produce		10	5	5
	PC7. track information related to wholesale and retail price of the produce		10	5	5
	PC8. record daily sell and purchase of items in designated log books, register, etc.		10	5	5
	PC9. record quantity, quality, date of manufacture and batch number of every produce accurately		10	5	5
	PC10. identify appropriate marketing channels related to the produce considering requirements and constraints		10	5	5
		Total	100	50	50

AGR/N9903 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	100	8	4	4
	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		8	4	4
	PC3. read and understand the hazards of use and contamination mentioned on the labels of pesticides/fumigants etc		8	4	4
	PC4. assess risks prior to performing manual handling jobs, and work according to currently recommended safe practice		8	4	4
	PC5. use equipment and materials safely and correctly and return the same to designated storage when not in use		8	4	4
	PC6. dispose of waste safely and correctly in a designated area		6	3	3
	PC7. recognize risks to bystanders and take action to reduce risk associated with jobs in the workplace		6	3	3
	PC8. perform your work in a manner which minimizes environmental damage all procedures and work instructions for controlling risk are followed closely		6	3	3
	PC9. report any accidents, incidents or problems without delay to an appropriate person and take necessary immediate action to reduce further danger		6	3	3
	PC10. follow procedures for dealing with accidents, fires and emergencies, including communicating location and directions to emergency		6	3	3
	PC11. follow emergency procedures to company standard / workplace requirements		6	3	3
	PC12. use emergency equipment in accordance with manufacturers' specifications and workplace requirements		6	3	3
	PC13. provide treatment appropriate to the patient's injuries in accordance with recognized first aid techniques		6	3	3

	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		6	3	3
		Total	100	50	50
Total		500	500	240	260
Percentage Weightage:				48%	52%
Minimum Pass% to qualify (aggregate):				60%	