Model Curriculum

Neera Technician

SECTOR: AGRICULTURE & ALLIED
SUB-SECTOR: AGRICULTURE CROP PRODUCTION
OCCUPATION: PLANTATION CROP CULTIVATION
REF ID: AGR/Q0505, 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: 'Neera Technician' QP No. 'AGR/ Q0505 NSQF Level 3'

Date of Issuance: February 15th, 2017

Valid up to: March 31st, 2020

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

Authorised Signatory
(Agriculture Skill Council of India)

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Neera Technician

CURRICULUM / SYLLABUS

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

Program Name	**Neera Technician**		
Qualification Pack Name & Reference ID. ID	AGR/Q0505, 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:** • **Climb coconut palm using ropes & husks:** undertake climbing of palms using ropes & husks • **Preparation, Collection, Handling & Processing of Neera:** identify right inflorescence stage, beating & cutting of inflorescence, collection & handling of neera, storage, transportation & primary processing of neera • **Advise farmers on coconut palm cultivation:** undertake soil nutrient management, integrated pest & disease management, irrigation practices, intercropping, mixed cropping, organic farming 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 7 out of 7 National Occupational Standards (NOS) of "Neera Technician" 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	• Understand General Discipline in the class room (Do's & Don'ts) • Study the Scope & importance of Plantation crops especially coconut in India • Understand the Role of a 'Neera Technician' and the possible progression pathways	Laptop, white board, marker, projector
2	**Coconut Palm climbing using ropes and husks** **Theory Duration** (hh:mm) 05:00 **Practical Duration** (hh:mm) 30:00 **Corresponding NOS Code** AGR / N0523	• Identify right kind of ropes & husks for climbing palms • Learn the art of tying husks on to the palms using ropes • Undertake precautionary measures before & during climbing palms • Develop skills to climb palms gradually from 15 ft to 40ft • Undertake fitness activities- yoga, breathing & free hand exercises • Undertake proper treatment in case of injuries/mishap • Understand facilities available for health/ medical/ life insurance • Get acquainted with financial literacy	Laptop, white board, marker, projector, Audio-visual aids, White Marker, ropes, husks, first aid kit
3	**Preparation & tapping of coconut inflorescence** **Theory Duration** (hh:mm) 10:00 **Practical Duration** (hh:mm) 25:00 **Corresponding NOS Code** AGR/N0524	• Identify the growth and maturity stage of an inflorescence by its appearance • clean the inflorescence with disinfectant, to get rid off any micro-organisms • tie the inflorescence with strings at different segments • beat the inflorescence with right force and rhythm to stimulate formation of neera • rub the inflorescence from its bottom to the tip in order for neera to rise up to its tip • cut the tip of the inflorescence & apply clay on the exposed part • collect the neera by placing a can containing anti-fermenting solution below the inflorescence	Laptop, white board, marker, projector, Audio-visual aids, disinfectant, sprayer, strings, stick, knife, clay, storage can/collection box, anti-fermenting solution
4	**Collection & handling of**	• Clean and prepare tapping tools &	Laptop, white board,

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	Neera and Primary neera processing **Theory Duration** (hh:mm) 10:00 **Practical Duration** (hh:mm) 25:00 **Corresponding NOS Code** AGR/N0525	collection boxes before and after tapping • Apply anti-fermenting solution each time the can is placed under the inflorescence for neera collection • Measure the quantity and quality of neera using different measuring instruments • Understand the advantages of grading/purpose of use (at the time of neera collection) • Understand various methods of storage of neera and its influence on the quality, processing and on the health on the consumer • Undertake safe & hygienic handling and storage of neera at appropriate temperature in ice boxes using latest technology • Arrange for safe transportation of neera to processing facility/market • Undertake primary processing of neera and different neera products	marker, projector, Audio-visual aids, tapping tools, collection box, measuring can, pH meter, ice boxes, anti fermenting solution
5	**Integrated Nutrient Management in coconut cultivation** **Theory Duration** (hh:mm) 10:00 **Practical Duration** (hh:mm) 10:00 **Corresponding NOS Code** AGR/N0517	• Understand role of fertilizers & manure at different growth stages of coconut palms • Undertake soil sampling • Understand the importance of soil testing and use of recommended doses of fertilizers and manure • Ensure usage of green manure, bio-fertilizers and another cultural practices for maintaining & improving soil health • Identify different weeds & undertake weed control activities • Proper application of fertilizers & weedicides	Laptop, white board, marker, projector, Audio-visual aids, khurpa, sickle, weeder, sparyer, chemicals
6	**Integrated Pest & Disease Management in coconut cultivation** **Theory Duration** (hh:mm) 10:00 **Practical Duration** (hh:mm) 15:00	• Identify different types of pest infesting coconut palm, their behaviour & their infesting stage • Identify different diseases, physiological disorders etc • Identify signs & symptoms of damage • Identify crop stages & pest/disease incidence • Identify pest life cycle & their natural enemies • Undertake preventive & curative methods- chemical, biological &	Laptop, white board, marker, projector, Audio-visual aids, chemicals, sprayer,

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	Corresponding NOS Code AGR/N0518	mechanical • Undertake proper application of pesticides etc	
7	**Optimal cultivation practices in coconut palm cultivation** **Theory Duration** (hh:mm) 10:00 **Practical Duration** (hh:mm) 15:00 **Corresponding NOS Code** AGR/N0519	• Undertake appropriate irrigation method & follow timely schedule • Undertake soil moisture conservation techniques like mulching etc • Undertake intercropping & mixed cropping depending on the climatic requirement & resource availability • Emphasize on organic farming practices for ecological security	Laptop, white board, marker, projector, Audio-visual aids, spade
8	**Maintain Health & Safety at the work place** **Theory Duration** (hh:mm) 05:00 **Practical Duration** (hh:mm) 15:00 **Corresponding NOS Code** AGR/N9903	• 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, 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 extinguisher
	Total Duration: **Theory Duration** (hh:mm) **65:00** **Practical Duration** (hh:mm) **135:00**	**Unique Equipment Required:** Laptop, white board, marker, projector, Audio-visual aids, Climbing machine, ropes, husks, first aid kit, disinfectant, sprayer, strings, stick, knife, clay, collection box, measuring can, pH meter, ice boxes, anti fermenting solution, khurpa, weeder	

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: "Neera Technician" mapped to Qualification Pack: "AGR/Q0505, v1.0"

Sr. No.	Area	Details
1	**Description**	Trainer is responsible for educating the trainees – Coconut Palm climbing using ropes & husks, Preparation & tapping of coconut inflorescence, Collection & handling of Neera, Primary Neera processing, Optimal Cultivation practices along with pest, disease & nutrient management, health & safety at the workplace
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**	Diploma in Agriculture
4a	**Domain Certification**	Certified for Job Role: "Neera Technician" mapped to QP: "AGR/Q0505, 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**	• M Sc (Agriculture / Horticulture / Botany) • B. Sc. (Agriculture / Horticulture / Botany) with 1 year of relevant work experience • B.Sc. with 3 years of relevant work experience and 5 years of total work experience • Diploma in Agriculture with 3 years of relevant work experience and 5 years of total work experience

Annexure: Assessment Criteria

Assessment Criteria	
Job Role	Neera Technician
Qualification Pack	AGR/Q0505, 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	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.

Assessable Outcome	Assessment Criteria	Total Mark (600)	Out Of	Theory	Skills Practical
1.AGR /N0523 Coconut palm climbing using ropes and husks	PC.1Identify the right kind of ropes and husks which can be used for climbing	60	5	2	3
	PC2. Master the skill of tying husks on to the rope, in such a way that the rope/husk does not slip or break when a person steps on it		5	2	3
	PC.3Develop skills to climb palms of height up to 15 feet on 1st day		4	0	4
	PC.4 Develop skills to climb palms of height up to 25 feet on 2nd day		4	0	4
	PC.5Develop skills to climb palms of height up to 35 feet on 3rd day		4	0	4
	PC.6 Develop skills to climb palms of height up to 40 feet on 4th day		4	0	4
	PC.7Treat wounds, injuries, bees and wasp attacks, fractures etc		5	1	4
	PC.8Perform Yoga, breathing exercises, free hand exercises		4	0	4
	PC.9 Get acquainted with Health/Medical/life insurance envisaged for Neera technician		5	3	2
	PC.10 Learn Banking aspects such as how to start a savings account, systematic savings and investment		10	5	5
	PC.11 Perform basic accounting and Book keeping		10	5	5
			60	18	42
2.AGR /N0524 Preparation and tapping of coconut inflorescence	PC.1Acquire scientific knowledge of coconut inflorescence	90	10	5	5
	PC.2Identify the growth and maturity stage of an inflorescence by its appearance		10	6	4
	PC3. Clean the inflorescence with disinfectant, to get rid off any micro-organisms.		10	6	4
	PC.4 Tying the inflorescence with strings at different segments.		15	9	6
	PC.5 Use stick to beat the inflorescence with right force and rhythm in order to stimulate formation of Neera		10	5	5
	PC.6 Rub the inflorescence from its bottom to the tip in order for Neera to rise up to its tip		10	5	5

	PC.7 Cut the tip of the inflorescence		10	5	5
	PC.8 Apply clay on the exposed part inflorescence and tie it with coconut leaf, inorder to prevent Neera from flowing down.		10	6	4
	PC.9 Place a can, which contains anti-fermenting solution, below the inflorescence so that Neera gets collected.		5	3	2
			90	50	40
3.AGR /N0525 Collection & handling of Neera and primary Neera processing	PC1. Clean and prepare tapping tools, collection boxes before and after tapping	90	15	6	9
	PC2. Apply anti-fermenting solution each time the can is placed, under the inflorescence, for Neera collection		10	5	5
	PC3. Measure the quantity and quality of Neera using different measuring instruments such as measuring cans and pH meter		10	6	4
	PC4. Maintain Neera in an appropriate temperature and hygiene environment i.e in ice boxes, while transporting it to the processing plant.		10	6	4
	PC5. Choose means for transportation, say by trucks/lorries / rail wagons for distant markets based on the requirement and cost dynamics involved		5	2	3
	PC6. Store Neera without any microbial contamination till it is sent for processing.		10	5	5
	PC7. Decide on storage at ambient temperature and ice boxed at low temperature or sale based on the prevailing market rates across the markets and the cost of storage		10	5	5
	PC8. Primary processing of Neera and Neera based products.		20	10	10
			90	45	45
4.AGR /N0517 Integrated Nutrient Management in Coconut Palm cultivation	PC.1Take soil sample as per the recommended sampling procedure from the field	90	10	4	6
	PC.2Dry the soil and prepare samples as per procedure		6	3	3
	PC.3 Pack, label and submit to nearby soil testing laboratory for analysis		6	3	3
	PC.4 Collect the soil analysis report from the lab		2	0	2
	PC.5 Collect the recommended organic and inorganic fertilizer dosage from Agriculture Department based on the soil analysis report.		5	2	3
	PC.6 Regular manuring from the first year of planting is essential to achieve higher		5	3	2

	productivity.				
	PC.7Apply the manure to the soil as per recommended dosage and procedure		10	5	5
	PC.8Ascertain Green manure/ eco-friendly botanicals/biofertliser that can be applied		10	5	5
	PC.9Adopt various cultural practices that enhances the soil nutrient status for the benefit of Coconut crop stand		8	4	4
	PC.10 Apply fertilisers for macro and micro nutrients as per the recommended dosage, timing, placement locations and method of application		10	5	5
	PC.11Take up Weed control as per recommendation		10	5	5
	PC.12 Remove rogue infected plant/ plant parts		8	4	4
			90	43	47
5.AGR/N0518 Integrated Pest and Disease Management in Coconut cultivation	PC1.Identify the types of pests associated (Rhinoceros beetle, Black headed caterpillar Red palm weevil, termites, etc)	120	10	6	4
	PC2.Identify the stage of crop and pest incidence – pest calendar		5	2	3
	PC3.Identify the signs and symptoms of damage		10	6	4
	PC4.Identify the pest life cycle – estimate the duration		5	3	2
	PC5. Identify the natural enemies of the pests (naids/dragon flies, trichogramma, mirid bug, lady bird beetles, spiders, preying mantids etc)		5	2	3
	PC6.Identify the types of diseases associated (Bud Rot, Leaf Rot, Stem Bleeding,etc.)		10	6	4
	PC7. Identify special problems in coconut palm (pencil point disorder, button shedding, barren nuts etc.)		8	4	4
	PC8.Identify physiological disorders (lack of major nutrients/minor nutrients)		5	2	3
	PC9. Identify the crop stage and disease incidence – disease calendar		4	2	2
	PC10.Identify the signs and symptoms of different diseases		5	2	3
	PC.11 Identify the mode of transmission of disease		4	2	2
	PC12.Rejuvenation of existing garden by thinning of thickly populated gardens and ensuring adequate manuring and irrigation		4	2	2
	PC13.Use of resistant varieties		5	3	2
	PC14.Take up seedling / planting material treatment		5	3	2
	PC15.Perform cutting and burning the		5	3	2

	severely affected portions of palms as a whole which cannot be saved				
	PC16. Remove affected tissues of crown		5	3	2
	PC17.Use various traps (light, pheromone etc)		5	3	2
	PC18.Do Pest and disease control				0
	a.Chemical approaches		10	6	4
	b.Non-chemical approaches		10	6	4
			120	66	54
6.AGR /N0519 Optimal cultivation practices in coconut palm cultivation	PC1.Use appropriate Irrigation Method and follow irrigation schedule based on the availability of the resource, climate, age of plant and soil typeetc	**90**	10	6	4
	PC2.Adopt methods of precision farming (Drip/ Basin Irrigation)		10	4	6
	PC3.Use of existing resource efficiently say use fertigation		8	4	4
	PC4. Manage Drought and practice soil moisture conservation by mulching with coconut husks/leaves/coir pith or by burial of coconut husk or coir pith		5	3	2
	PC5.Select crops that can be taken as inter/mixed crop based on the climatic requirement of the inter/mixed crop, irrigation facilities and soil type, market and price		10	5	5
	PC6.Consider the canopy size, age and spacing of the coconut at the time of selection of inter/mixed crop		5	2	3
	PC7.Consider Green crops and Cover Crops that may also be raised to increase the organic matter content of the soil and to prevent soil erosion		8	4	4
	PC8. Consider taking Multiple crops depending upon the suitability.		5	3	2
	PC9. Apply recommended quantity of water and manures and fertilizers to the intercrops separately.		10	5	5
	PC10.Prune / remove of dry leave as per requirement and procedures		4	2	2
	PC11.Remove dead plants		2	0	2
	PC12.Do tillage		5	3	2
	PC13.Utilize recycled palm waste		4	2	2
	PC14.Apply organic manure		4	2	2
			90	45	45
7.AGR/N9903 Health & Safety at the work place	PC1.undertake basic safety checks before operation of all machinery and vehicles and hazards are reported to the appropriate supervisor	**60**	4	2	2
	PC2.work for which protective clothing or equipment is required is identified and the appropriate protective clothing or		4	2	2

	equipment is used in performing these duties in accordance with workplace policy.				
	PC3. read and understand the hazards of use and contamination mentioned on the labels of pesticides/fumigants etc		4	2	2
	PC4. assess risks prior to performing manual handling jobs, and work according to currently recommended safe practice.		4	5	-1
	PC5.use equipment and materials safely and correctly and return the same to designated storage when not in use		4	2	2
	PC6. dispose of waste safely and correctly in a designated area		4	2	2
	PC7.recognise 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		4	2	2
	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.		4	2	2
	PC11.follow emergency procedures to company standard / workplace requirements		4	2	2
	PC12. use emergency equipment in accordance with manufacturers' specifications and workplace requirements		4	2	2
	PC13. provide treatment appropriate to the patient's injuries in accordance with recognized first aid techniques		4	2	2
	PC14.recover (if practical), clean, inspect/test, refurbish, replace and store the first aid equipment as appropriate		4	2	2
	PC15.report details of first aid administered in accordance with workplace procedures.		4	2	2
			60	33	27
Total			**600**	**300**	**300**
Percentage Weightage:				**50%**	**50%**
Minimum Pass% to qualify (aggregate):				**50%**	