

Model Curriculum

Medicinal Plants Grower

SECTOR: AGRICULTURE & ALLIED

SUB-SECTOR: AGRICULTURE CROP PRODUCTION

OCCUPATION: MEDICINAL & AROMATIC PLANT CULTIVATION

REF ID: AGR/Q0901, 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: **'Medicinal Plants Grower'** QP No. **'AGR/Q0901 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



Authorised Signatory
(Agriculture Skill Council of India)

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Sr. No.	Module	Key Learning Outcomes	Equipment Required
	Corresponding NOS Code AGR/N0904	<ul style="list-style-type: none"> Maintain book of accounts Calculate B:C ratio Comply with relevant regulations in marketing & sale of the produce 	
6	Maintain Health & Safety at the workplace Theory Duration (hh:mm) 10:00 Practical Duration (hh:mm) 10:00 Corresponding NOS Code AGR/N9903	<ul style="list-style-type: none"> Identify risks to health & safety at the workplace and measures to be taken to control them Maintain a clean & efficient workplace Practice General safety and first aid administration Render appropriate emergency procedures On Time Reporting to appropriate person. 	Laptop, white board, marker, projector, , Personal protective equipment Like: Helmet / head gear, rubber gloves, Safety boots, 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) 70:00 Practical Duration (hh:mm) 110:00	Unique Equipment Required: Laptop, white board, marker, projector, Audio-visual aids, Axes, crow bar, wheel barrows, boxes, plastic buckets, watering cans, wire cutters, digging forks, hammer, nails, hoes, hand pruning knives, respiratory masks, sprayers, saws, scissors, secateurs, budding and grafting knives, budding and grafting tape, germination trays, khurpis, iron pan, spade, forks, containers, nursery media, seed storage equipment (glass bottles, paper bags), vermiculite, perlite, data entry book, knife, wire, pruning scissor, secateurs, polythene bags, seed trays, plant labels, wheel barrow	

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: “Medicinal Plants Grower” mapped to Qualification Pack: “AGR/Q0901, v1.0”

Sr. No.	Area	Details
1	Description	Trainer is responsible for educating the trainees – select site & construct nursery for medicinal plants, prepare nursery beds, procure & sow/plant quality planting materials, carry out plant propagation, nutrient management, pest & disease management, irrigation, harvest & post-harvest procedures of medicinal plants, market related activities, health & safety practices
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: “Medicinal Plants Grower” mapped to QP: “AGR/Q0901 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 % as per respective SSC guidelines is 80%.
5	Experience	<ul style="list-style-type: none"> • M Sc (Medicinal Plant/ Horticulture /Botany/Forestry) • B. Sc. (Agriculture / Horticulture /Botany/Forestry) with 2 years of relevant experience • Diploma in Agriculture with 5 years of relevant experience

Annexure: Assessment Criteria

Assessment Criteria	
Job Role	Medicinal Plants Grower
Qualification Pack	AGR/Q0901, 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 centre 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	Skills Practical
AGR/N0901 Select appropriate site and construct nursery using approved procedures	PC1. comply with relevant health and safety regulations pertaining to construction of medicinal plants nursery	100	6	3	3
	PC2. select appropriate personal protective equipment specific to tasks		5	2	3
	PC3. assess possible risks and hazards in the work environment and comply with safety measures to minimize injury to self and others		5	3	2
	PC4. exercise safe handling practices while handling sharp construction tools and equipment		5	2	3
	PC5. undertake nursery site assessment based on the following requirements		5	2	3
	PC6. locate site easily accessible by main roads		4	2	2
	PC7. ensure that available land is sufficient to construct structures such as seedlings area; potting beds area; paths between beds; soil storage; thatched shelter; compost making area; etc.		4	2	2
	PC8. confirm that selected nursery site receives required amount of sunlight		4	2	2
	PC9. check that the selected site is gently sloped to allow proper drainage of access water as per standard nursery construction requirements		5	3	2
	PC10. ensure that the identified site is located far from sources of industrial wastes, effluents and other pollutants in line with required quality standards		5	3	2
	PC11. investigate the quality of soil using approved techniques wherever applicable		4	2	2
	PC12. check that identified location is free of strong winds		4	2	2

	PC13. prepare suitable design and layout before commencing nursery construction		4	2	2
	PC14. check that the design and layout include some or all of the importance elements as per nursery operation requirements		6	3	3
	PC15. ensure that the nursery structures a designed to reduce water retention and soil erosion		4	2	2
	PC16. use approved construction techniques to build required infrastructures such as good nursery drainage system		7	3	4
	PC17. comply with approved procedures while clearing land of rocks, trees, stumps and shrubs, debris, etc.		3	1	2
	PC18. protect nursery plants from animals intrusion by constructing fence or wall of appropriate dimensions as per relevant nursery construction practices		5	2	3
	PC19. leave the work area in a safe condition		3	2	1
	PC20. return used tools and materials in appropriate storage area		4	2	2
	PC21. dispose wastes materials in accordance with environmental health & safety guidelines		4	3	1
	PC22. report any work related problems or issues to responsible authority and seek guidance on how to rectify problems		4	2	2
		Total	100	50	50
AGR/N0902 Prepare nursery beds and carry out propagation using good agricultural practices (GAP)	PC1. comply with relevant health and safety regulations pertaining to cultivation of medicinal plants	130	5	2	3

PC2. select appropriate personal protective equipment specific to tasks	4	3	1
PC3. assess possible risks and hazards in the work environment and comply with safety measures to minimize injury to self and others	5	2	3
PC4. exercise safe handling practices while handling sharp agricultural tools and equipment	5	2	3
PC5. select appropriate tools and materials required to prepare nursery beds and carry out propagation	5	2	3
PC6. prepare required type of bed(s) of appropriate length and width	3	1	2
PC7. tilt the soil properly using appropriate techniques to make it favorable for growing seeds and planting materials	4	3	1
PC8. use good agricultural practices to control the growth of weeds	4	2	2
PC9. establish the following information of the target seeds/planting materials	3	1	2
PC10. ensure that the seeds/planting materials are obtained from reliable source	4	2	2
PC11. obtain the following information related to seeds/planting materials from the producer	4	3	1
PC12. identify the approved propagation method of the target species	4	2	2
PC13. check that the correct parts are selected to carry out propagation through vegetative parts or special and modified organs	3	1	2
PC14. procure good quality seeds that are free of pests, diseases, weeds, foreign and inert matter	4	1	3
PC15. ensure that minimum damage is caused to the mother during the collection of vegetative parts/suckers	4	3	1

PC16. verify that stem cuttings selected for root induction are uniform in length and diameter appropriate to the species	3	1	2
PC17. check that root cuttings are uniform in size and maturity in terms of aerial and underground parts	3	1	2
PC18. use approved techniques to carry out propagation as per the type of species selected	6	3	3
PC19. comply with correct seedling rate per unit of land for the plant species	5	3	2
PC20. refer to the standard depth of seed placement appropriate for the plant species	3	2	1
PC21. comply with approved seed placement distances specific to the type of medicinal plants selected during sowing	5	2	3
PC22. carry out core activities such as sowing, planting, watering, weeding, transplanting, prophylactory sprays, etc. using appropriate techniques and as per given schedules and species type	4	2	2
PC23. ensure that replenishment of mortality population are carried out within the recommended time frame and gestation period of the plant species	6	3	3
PC24. monitor seedling for signs of stress and diseases in accordance with good agricultural practices	5	2	3
PC25. record number of species raised, expenditure incurred, stock status of fertilizer/manure material, monthly sales, etc. where applicable	5	3	2
PC26. select appropriate planting time/season as per the type of medicinal plants	6	3	3

	PC27. verify that seedlings are uprooted and transplanted using good agricultural practices		5	2	3
	PC28. plant vegetative parts or parts are planted in the cultivation land under favourable soil and agro-climatic conditions		5	2	3
	PC29. apply organic manures such as manures, vermicompost, green leafy manure and biofertilizers as per requirements		4	2	2
	PC30. estimate the water requirements of the plant species on the basis of available agronomic conditions		4	2	2
	PC31. control the problems of waterlogging by providing proper draining system		2	0	2
	PC32. carry out inter-cultivation practices to reduce the incidence of weeds		3	1	2
	PC33. use approved pest management procedures to minimize the loss of medicinal properties of species		5	3	2
		Total	140	67	73
AGR/N0903 Harvest and post-harvest procedures of medicinal plants	PC1. comply with relevant health and safety regulations pertaining to cultivation of medicinal plants	130	6	3	3
	PC2. select appropriate personal protective equipment specific to tasks		4	2	2
	PC3. assess possible risks and hazards in the work environment and comply with safety measures to minimize injury to self and others		6	3	3
	PC4. exercise safe handling practices while working with sharp agricultural tools and cutters		3	1	2
	PC5. ensure that the work environment is clean and hygienic work		4	2	2

PC6. identify corrected parts to be harvested based on the type of the medicinal plants such as leaves, stems, roots, whole plant, etc.	4	2	2
PC7. apply good harvesting practices such as selecting appropriate season and time for harvesting; maturity of plant; etc.	4	1	3
PC8. follow approved cutting techniques while using tools to harvest	4	2	2
PC9. undertake control measures to prevent contamination of harvested plant parts with soil particles and weeds	6	3	3
PC10. ensure that tools and containers used to collect harvested parts are regularly cleaned as per approved procedures	5	2	3
PC11. select metal containers that do not contaminate of medicinal properties harvest plant parts	6	3	3
PC12. use approved cleaning methods to separate soil particles based on the type of species	7	4	3
PC13. dehydrate water content from plant matter using approved procedures	5	2	3
PC14. check that the dried items are shuffled routinely to allow air pass through intermittently	5	2	3
PC15. estimate appropriate length of time required for drying depending upon the state of dried plant parts, i.e. brittleness, soginess, etc.	5	2	3
PC16. sort and grade the harvests as per required quality specifications	5	3	2
PC17. check that the selected that storage area is clean, wellventilated and dry	4	2	2
PC18. protect the storage area from direct sunlight, dust, rain, rodents, insects, and livestock, etc.	4	2	2

	PC19. ensure that any visible foreign particles are separate during drying, sorting and storing		5	3	2
	PC20. isolate toxic weeds using good agricultural practices		5	2	3
	PC21. store organic and nonorganic dried plant materials separately		5	2	3
	PC22. check that highly aromatic plants are stored at a reasonable distance		4	1	3
	PC23. select appropriate packing materials based on shelf-life requirements and type of species		4	2	2
	PC24. ensure that dried plant materials are not damage while packing		6	4	2
	PC25. label the packed item correctly with all the required information		4	2	2
	PC26. adhere to relevant regulations related to cultivation of medicinal plants		6	4	2
	PC27. record information such as quality, quantity, medicinal plant type, expenditure incurred in operation, etc. in appropriate registers, record book and logs		4	2	2
		Total	130	63	67
AGR/N0904 Undertake basic market related activities of medicinal plants	PC1. seek information regarding demand and supply of medicinal plants in the market	60	6	3	3
	PC2. identify target customers and assess their needs such as amount required, purpose, quality, expectations, etc.		6	3	3
	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		6	3	3

	PC5. collect information related to various subsidies offered by the Government, authorized state units and other financial institutions involved with the promotion of the medicinal plants		6	2	4
	PC6. comply with relevant regulations in marketing of the produce		4	2	2
	PC7. track information related to wholesale and retail price of the produce		5	2	3
	PC8. record daily sell and purchase of items in designated log books, register, etc.		6	3	3
	PC9. record quantity, quality, date of manufacture and batch number of every produce accurately		4	2	2
	PC 10. identify key marketing channels involved related to the produce such as retailers, nurseries, vegetable vendors, related companies, marketing associations, etc.		7	4	3
		Total	60	29	31
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	80	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		6	3	3
	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.		6	3	3
	PC5. use equipment and materials safely and correctly and return the same to designated storage when not in use		7	4	3

PC6. dispose of waste safely and correctly in a designated area		6	3	3
PC7. recognise risks to bystanders and take action to reduce risk associated with jobs in the workplace		5	2	3
PC8. perform your work in a manner which minimizes environmental damage all procedures and work instructions for controlling risk are followed closely		10	5	5
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		10	5	5
PC11. follow emergency procedures to company standard / workplace requirements		8	4	4
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	530	259	271
	Percentage Weightage:		49%	51%
	Minimum Pass% to qualify (aggregate):		70%	