

Model Curriculum

Aquaculture Technician

SECTOR: AGRICULTURE & ALLIED
SUB-SECTOR: FISHERIES
OCCUPATION: AQUACULTURE
REF ID: AGR/Q4903, V1.0
NSQF LEVEL: 5



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: **'Aquaculture Technician'** QP No. **'AGR/Q4,903 NSQF Level 5'**

Date of Issuance: November 16th, 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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Aquaculture Technician

CURRICULUM / SYLLABUS

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

Program Name	Aquaculture Technician		
Qualification Pack Name & Reference ID.	AGR/Q4903, v1.0		
Version No.	1.0	Version Update Date	
Pre-requisites to Training	Class 10, preferably		
Training Outcomes	<p>After completing this programme, participants will be able to:</p> <ul style="list-style-type: none"> • Identify/familiarize with different species for culture operations: finfish and/or shellfish • Perform pond preparation activities: water intake activities, water treatment, pre-stocking pond preparation • Perform various culture operations: post-stocking pond preparation like feeding; periodic soil, water and fish sampling and netting operation etc • Perform harvest & post-harvest activities: understand marketable size of fish and ensure desirable harvesting with minimum handling • Practice health & safety at the work place: Well versed with health, safety and sanitation practices for self and spawns/seedlings/fish 		

This course encompasses 3 out of 3 National Occupational Standards (NOS) of “Aquaculture 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	<ul style="list-style-type: none"> Understand General Discipline in the class room (Do's & Don'ts) Study the Scope & importance of Aquaculture in India Understand the Role of an Aquaculture Technician and the progression pathways Identify different species that can be cultured 	Laptop, white board, marker, projector
2	Undertake pond preparation activities Theory Duration (hh:mm) 20:00 Practical Duration (hh:mm) 50:00 Corresponding NOS Code AGR / N4916	<ul style="list-style-type: none"> Perform water intake and storage activities from source to reservoir to pond Undertake water and soil treatment Control aquatic weeds & insects Undertake fertilization of pond Undertake acclimatization procedures Stocking the seed at appropriate density & species ratio 	Laptop, white board, marker, projector, Audio-visual aids, Water pump, Air or Oxygen diffusers, Aerators, Mechanical filters - like leaf filters, Tubes, Power backup
3	Carry out culture operations Theory Duration (hh:mm) 30:00 Practical Duration (hh:mm) 50:00 Corresponding NOS Code AGR/N4917	<ul style="list-style-type: none"> Perform post-stocking pond culture operations Carry out feed formulation and proper feeding Carry out periodic soil, water and fish sampling and netting operation Identify diseased fish Quarantine the diseased fish Apply manure/ fertilizer and therapeutics as prescribed Take care of the farm implements, nets and gears Undertake periodic pond maintenance activity Assess marketable size of fish and select desired size of fish for harvesting Ensure proper harvesting with minimum handling Undertake post-harvest care of the produce 	Laptop, white board, marker, projector, Audio-visual aids, Grinder, Mixer, Pelletiser, Profi-Feeders, scareheron, weed eradication equipments, Dip net or any other harvesting gear, Power backup
4	Ensure safety, hygiene	<ul style="list-style-type: none"> Ensure safety measures and upkeep of 	Laptop, white

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	and sanitation practices for culture operations Theory Duration (hh:mm) 15:00 Practical Duration (hh:mm) 30:00 Corresponding NOS Code AGR/N4918	water bodies used in fish culture <ul style="list-style-type: none"> • Maintain personal hygiene & safety • Maintain health & hygiene of seed during transportation and at various stages of growth & maturity 	board, marker, projector, PPEs, first aid box
	Total Duration: Theory Duration (hh:mm) 70:00 Practical Duration (hh:mm) 130:00	Unique Equipment Required: Laptop, white board, marker, projector, Audio-visual aids, Water pump, Air or Oxygen diffusers, Aerators, Mechanical filters - like leaf filters, Tubes, Power backup, Grinder, Mixer, Pelletiser, Profi-Feeders, weed eradication equipments, Dip net or any other harvesting gear, safety shoes, goggles, first aid box	

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: “Aquaculture Technician” mapped to Qualification Pack: “AGR/Q4903, v1.0”

Sr. No.	Area	Details
1	Description	Trainer is responsible for educating the trainees – Various Pond preparation activities, Various Culture Operations, Safety & hygienic practices for culture
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, Preferably in Fisheries
4a	Domain Certification	Certified for Job Role: “Aquaculture Technician” mapped to QP: “AGR/Q4903, 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. F. Sc • B. F. Sc • B. Sc Agriculture/Zoology with 1 year of relevant experience and 3 years of total experience • Any graduate with 4 years of relevant work experience • Diploma in fisheries with 2 years of relevant work experience • 10+2 with 5 years of relevant work experience

Annexure: Assessment Criteria

Assessment Criteria	
Job Role	Aquaculture Technician
Qualification Pack	AGR/Q4903, 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

Assessment outcomes	Assessment criteria for outcomes	Marks Allocation			
		Total Marks	Out Of	Theory	Skills Practical
1. AGR/N4916: Undertake pond preparation activities	PC1. ensure drawing of quality water from source to reservoir up to desired level	100	8	2	6
	PC2. choose appropriate method of water treatment such as chlorination		9	2	7
	PC3. decide on proportion of water to be pumped to culture pond		8	2	6
	PC4. carry out draining of perennial pond and leave for sun drying		8	2	6
	PC5. take decision on types, dosages and methods of application of basal manuring, liming and soil treatment in case of new pond		9	3	6
	PC6. use appropriate methods of eradication of aquatic weed		8	2	6
	PC7. advise workers on the safety measures while applying the chemicals		8	2	6
	PC8. determine the appropriate method of eradicating predatory and weed fishes		9	3	6
	PC9. determine the different types of liming material and its method of application in pond to be used at various stage of culture operation		9	3	6
	PC10. determine the types of fertilizers to be applied to the pond at different stage of culture operation.		8	3	5
	PC11. choose appropriate measures for controlling aquatic insects prior to seed stocking		8	3	5
	PC12. ensure seed stocking after due acclimatization and at appropriate density and species ratio		8	3	5
			100	30	70
2. AGR/N4917: Carry out culture operations	PC1. ensure supplementary feeding with proper feeding schedule	100	6	2	4
	PC2. decide the daily ration of supplementary feed and guide the field staff on split feeding if required		6	2	4
	PC3. ensure periodic soil, water and fish sampling and netting operation for proper management of the crop		6	2	4
	PC4. determine appropriate type and dosages of manure, fertilizer, lime and therapeutic application		6	2	4
	PC5. ensure proper aeration and water		6	2	4

	replenishment in the culture pond				
	PC6. select good feed with appropriate protein component, feed ingredient, etc.		6	1	5
	PC7. ensure proper feeding schedule is followed		6	2	4
	PC8. check for diseased or dying fish		5	1	4
	PC9. separate the diseased fish from the healthy fish and put them in a quarantine tank, in case of disease outbreak		6	2	4
	PC10. diagnose the problem/disease and consult a specialist for solution		6	1	5
	PC11. carry out preventive and prophylactic measures in culture pond		6	2	4
	PC12. monitor the condition of fish in the quarantine tank for signs of improvement		6	2	4
	PC13. decide on time of harvest of the crop		5	2	3
	PC14. use nets of appropriate mesh size to catch graded size in case of partial harvesting		6	1	5
	PC15. ensure proper quality maintenance of harvested stock		6	2	4
	PC16. ensure minimum handling during harvest till marketing		6	2	4
	PC17. ensure the harvested fish is ready for transportation		6	2	4
			100	30	70
3. AGR/N4918: Ensure safety, hygiene and sanitation practices for culture operations	PC1. ensure suitable measures for protection of from natural calamities such as flood, protect dyke from erosion or break	100	5	2	3
	PC2. ensure protection and prevent escape of the cultured organisms		5	2	3
	PC3. identify common predators and preying organisms in water bodies		4	1	3
	PC4. apply suitable methods such as fencing to keep away predators in water bodies to protect fish culture		5	1	4
	PC5. restrict entry of unauthorized persons into the premises		5	1	4
	PC6. be fully aware of the dosage, toxicity level and method of application of chemicals / medicines used for fish culture		5	1	4
	PC7. ensure all chemicals are adequately labelled and stored safely		4	1	3
	PC8. identify a quarantine area and implement protocols of quarantine		5	1	4
	PC9. be aware of the possibilities of		5	2	3

	bacterial (water borne, air borne, formite borne)and other contamination from human handling				
	PC10. apply effective systems and routines to ensure healthy and hygienic conditions during all stages of fish culture including transportation and marketing		5	2	3
	PC11. ensure that the fish culture premises are constantly monitored/inspected for breaches in the protection provided by health and hygiene measures		5	2	3
	PC12. undertake basic safety checks before operation of any equipments		4	1	3
	PC13. wear protective clothing and gear as and when required and ensure adherence to safety guidelines		5	1	4
	PC14. report potential hazards to the supervisor immediately		4	1	3
	PC15. follow standard procedures to deal with accidents and emergency situations		5	2	3
	PC16. use first aid kit as and when required and provide appropriate treatment in case of any injuries		5	1	4
	PC17. ensure maintenance of suitable soil and water quality parameters at all times with frequent tests		5	2	3
	PC18. ensure specified feed is provided to organisms at regular intervals and excess feeding is avoided		5	2	3
	PC19. carry out regular inspection of organisms for possible presence of parasites, pathogenic infections, any phenotypic disorder, spot, etc. which are usually the signs of ailments or disease outbreak		5	2	3
	PC20. ensure all nets, utensils and vessels used are decontaminated and clean		4	1	3
	PC21. implement effective security measures for prevention of theft/sabotage		5	1	4
			100	30	70
	Total	300	300	90	210
	Percentage Weightage:			30%	70%
	Minimum Pass% to qualify (aggregate):				70%