

# QUALIFICATIONS PACK - OCCUPATIONAL STANDARDS FOR AGRICULTURE AND ALLIED INDUSTRY



## What are Occupational Standards(OS)?

OS describe what individuals need to do, know and understand in order to carry out a particular job role or function

OS are performance standards that individuals must achieve when carrying out functions in the workplace, together with specifications of the underpinning knowledge and understanding

## Contents

1. Introduction and Contacts.....	[1]
2. Qualifications Pack.....	[2]
3. Glossary of Key Terms.....	[3]
4. OS Units.....	[5]
5. Annexure:Nomenclature for QP & OS.....	[22]
6. Assessment Criteria.....	[24]

## Introduction

### Qualifications Pack-Micro-Irrigation Technician

**SECTOR:** AGRICULTURE AND ALLIED

**SUB-SECTOR:** Agriculture Crop production

**OCCUPATION:** Precision Farming

**REFERENCE ID:**AGR/Q1002

**ALIGNED TO:** NCO-2015/3142.0101

**Micro-Irrigation Technician:**The individual holds a very critical role in the installation and function of micro-irrigation system that not only uses the existing natural resources efficiently but also benefits the farmers in terms of decreased cost of cultivation in the long run.

**Brief Job Description:**The individual is responsible for Installation, Testing, Commissioning of Micro Irrigation System at field level and thus ensure uninterrupted supply of water to the plant stand on the farm.

**Personal Attributes:** This job requires the individual to work independently and be comfortable in making decisions pertaining to his/her area of work. Requires clarity, skill to basic arithmetic and algebraic principles. The individual should be result oriented and is responsible for his own working and learning. The individual should also be able to demonstrate skills of using various tools and decision making for instant problem solving.

Job Details	Qualifications Pack Code	AGR/Q1002		
	Job Role	Micro-Irrigation Technician		
	Credits(NSQF)	TBD	Version number	1.0
	Sector	Agriculture And Allied	Drafted on	25/02/14
	Sub-sector	Agriculture Crop Production	Last reviewed on	14/06/17
	Occupation	Precision Farming	Next review date	14/06/21
	NSQC Clearance on	18/06/2015		

Job Role	Micro-Irrigation Technician
Role Description	A Micro-Irrigation Technician is responsible for Installation, Testing, Commissioning of Micro-Irrigation System at farmer's field for better water management and increase in yield of crop.
NSQF level	4
Minimum Educational Qualifications	8 <sup>th</sup> Standard Pass, Preferably
Maximum Educational Qualifications	Not Applicable
Training (Suggested but not mandatory)	Not Applicable
Minimum Job Entry Age	18years
Experience	One year of on job experience under supervision / apprenticeship
Applicable National Occupational Standards (NOS)	<b>Compulsory:</b> <ol style="list-style-type: none"> <li><a href="#">AGR/N1004 - Designing and Layout of Micro-Irrigation System</a></li> <li><a href="#">AGR/N1005 - Installation of Micro-Irrigation System</a></li> <li><a href="#">AGR/N1006 - Maintenance of Micro-Irrigation System</a></li> <li><a href="#">AGR/N9903 - Maintain Health &amp; Safety at the workplace</a></li> </ol>
Performance Criteria	As described in the relevant OS units

Definitions

Keywords /Terms	Description
Sector	Sector is a conglomeration of different business operations having similar businesses and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components
Occupation	Occupation is a set of job roles, which perform similar/related set of functions in an industry.
Function	Function is an activity necessary for achieving the key purpose of the sector, occupation, or area of work, which can be carried out by a person or a group of persons. Functions are identified through functional analysis and form the basis of OS.
Job Role	Job role defines a unique set of functions that together form a unique employment opportunity in an organization.
OS	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the knowledge and understanding they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria	Performance Criteria are statements that together specify the standard of performance required when carrying out a task.
NOS	NOS are Occupational Standards which apply uniquely in the Indian context.
Qualifications Pack Code	Qualifications Pack Code is a unique reference code that identifies a qualifications pack.
Qualifications Pack	Qualifications Pack comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A Qualifications Pack is assigned a unique qualification pack code.
Unit Code	Unit Code is a unique identifier for an Occupational Standard, which is denoted by an 'N'.
Unit Title	Unit Title gives a clear overall statement about what the incumbent should be able to do.
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
Knowledge and Understanding	Knowledge and Understanding are statements which together specify the technical, generic, professional and organizational specific knowledge that an individual needs in order to perform to the required standard.
Organizational Context	Organizational Context includes the way the organization is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Technical Knowledge	Technical Knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills or Generic Skills	Core Skills or Generic Skills are a group of skills that are key to learning and working in today's world. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to

*Qualifications Pack For Micro Irrigation Technician*

	most job roles.
Vertical	Vertical may exist within a sub-sector representing different domain areas or the client industries served by the industry
<b>Keywords /Terms</b>	<b>Description</b>
OJT	On Job Training
OS	Occupation Standard
NOS	National Occupation Standard
NSQF	National Skills Qualification Framework
AGR	Agriculture
MIS	Micro Irrigation System

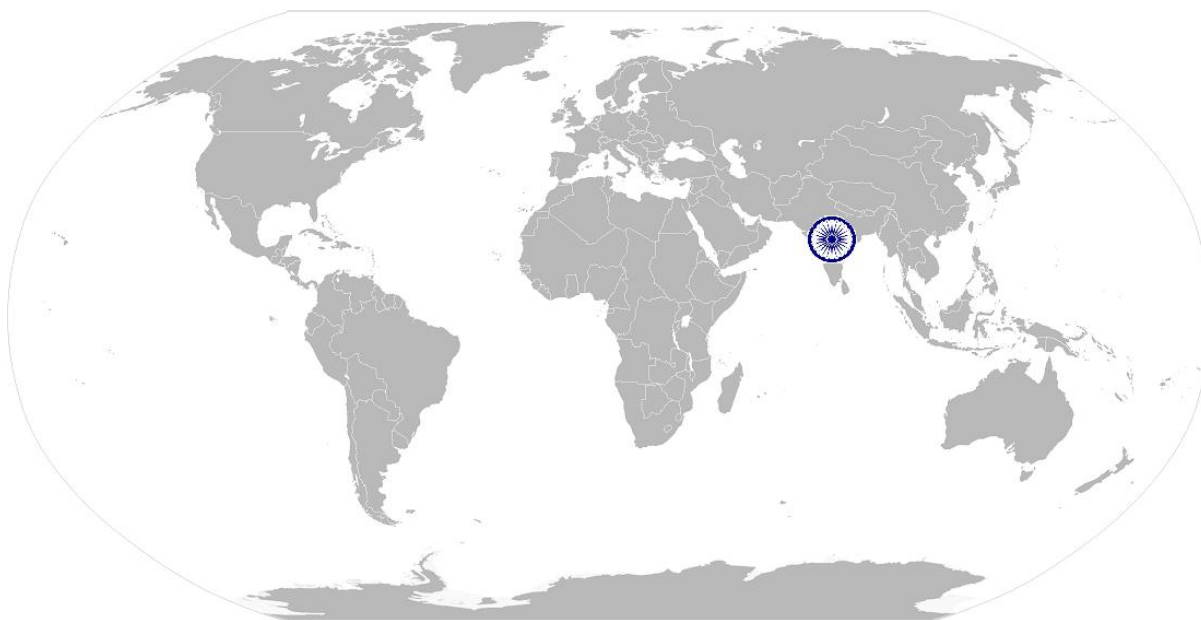
Acronyms

AGR/ N1004

Designing and Layout of Micro Irrigation System

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# National Occupational Standard



## Overview

This unit is about an Irrigation Technician responsible for Designing and lay out the Micro Irrigation System at farmer's field, according to the crop layout.

**AGR/ N1004**

**Designing and Layout of Micro Irrigation System**

National Occupational Standard

<b>Unit Code</b>	<b>AGR/ N1004</b>
<b>Unit Title (Task)</b>	<b>Designing and Layout of Micro Irrigation Systems</b>
<b>Description</b>	This OS unit is about an Irrigation Technician who is responsible for designing and laying out the Micro Irrigation System at farmer's field according to the crops for better water management and increase in yield of crop.
<b>Scope</b>	This unit/task covers the following: <ul style="list-style-type: none"> <li>• Designing the Micro Irrigation System</li> <li>• Layout plan of designed irrigation system</li> </ul>
<b>Performance Criteria(PC) w.r.t. the Scope</b>	
<b>Element</b>	<b>Performance Criteria</b>
<b>Design the Micro Irrigation System</b>	To be competent, the user / individual on the job must be able to: <ul style="list-style-type: none"> <li>PC1. identify the characteristics of the soil, climatic conditions, land gradient, crop etc., essential for designing the system</li> <li>PC2. follow micro irrigation principles in the design of the micro irrigation system in the field</li> </ul>
<b>Layout Plan Of Designed Irrigation System</b>	To be competent, the user / individual on the job must be able to: <ul style="list-style-type: none"> <li>PC3. layout irrigation system as per the legend used in drawing.</li> <li>PC4. handle the site deviation if required.</li> <li>PC5. take note of basics of crop cultivation such as spacing, water requirement, spacing of the crop stand, nature of rooting etc.</li> </ul>
<b>Knowledge and Understanding (K)</b>	
<b>A. Organizational Context</b> (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: <ul style="list-style-type: none"> <li>KA1. relevant legislation, standards, policies, and procedures in work</li> <li>KA2. relevant health and safety requirements applicable in the work environment</li> <li>KA3. own job role and responsibilities and sources for information pertaining to work</li> <li>KA4. who to approach for support in order to obtain work related information, clarifications and support</li> <li>KA5. importance of following health, hygiene, safety and quality standards and the impact of not following the standards on consumers and the business</li> <li>KA6. documentation and related procedures applicable in the context of work</li> </ul>
<b>B. Technical Knowledge</b>	The individual on the job needs to know and understand : <ul style="list-style-type: none"> <li>KB1. Effective working relationships and how to work effectively with both the farmers and the company</li> <li>KB2. Farmers need assessment and time management</li> <li>KB3. Basic crop cultivation practices</li> </ul>

**AGR/ N1004**

**Designing and Layout of Micro Irrigation System**

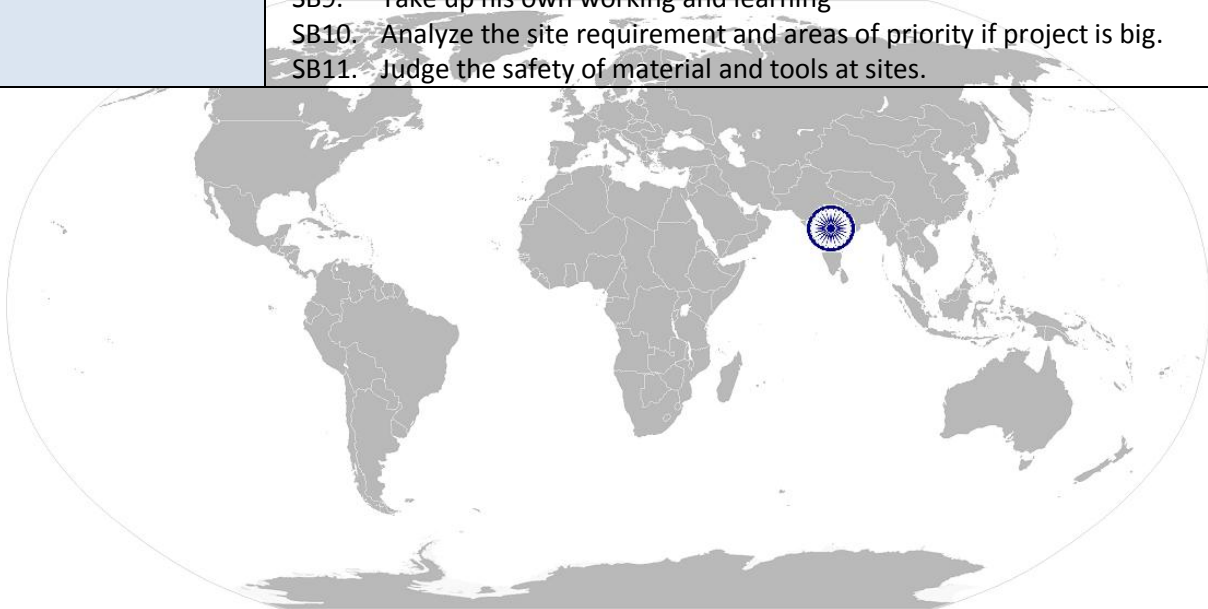
	KB4. Crop parameters and specifications of micro irrigation system KB5. Process of designing and laying the micro irrigation system in the field in field	
<b>Skills (S)</b>		
<b>A. Core Skills/ Generic Skills</b>	<b>Writing Skills</b>	
	The individual on the job needs to know and understand how to: SA1. Submit the bills & expenses incurred at site. SA2. Report problems to the appropriate personnel in a timely manner SA3. Write descriptions and details about incidents in reports SA4. Follow basic arithmetic and algebraic principles	
	<b>Reading Skills</b>	
	The individual on the job needs to know and understand how to: SA5. Read instruction manuals for hand tool and equipments SA6. Read instructions on Irrigation Layout with special legend and notes. SA7. Read and Understand Bill Of Materials (Product Code & Description)	
	<b>Oral Communication (Listening and Speaking skills)</b>	
	The individual on the job needs to know and understand how to: SA8. Receive instructions and seek advice from supervisors and managers SA9. Provide direction and instructions to co workers / labourers SA10. Make Friendly and cordial communication with farmers at and off the fields.	
	<b>B. Professional Skills</b>	<b>Decision Making</b>
		The individual on the job needs to know and understand how to: SB1. In the event of deviation, take decision on pipe size/ fittings SB2. Recall and demonstrate practical skills, routine and repetitive in a range of applications, using appropriate rule and tool, using quality concepts mentioned above.
		<b>Plan and Organize</b>
		The individual on the job needs to know and understand how to: SB3. Use ideas in particular situations with consent of seniors SB4. Customise a given technology of MIS or variants of technologies to farmer's needs and priorities.
<b>Customer Centricity</b>		
The individual on the job needs to know and understand how to: SB5. manage relationships with co-workers and other farmers		
<b>Problem Solving</b>		



**AGR/ N1004**

**Designing and Layout of Micro Irrigation System**

	<p>The individual on the job needs to know and understand how to:</p> <p>SB6. Think through the problem, evaluate the possible solution(s) and suggest and propose an optimum /best possible solution(s)</p> <p>SB7. Equipment Selection: Determine the kind of tools and equipment needed to do a job</p>
	<p><b>Analytical Thinking</b></p>
	<p>The individual on the job needs to know and understand how to:</p> <p>SB8. Use different designing tools and equipment in the field</p>
	<p><b>Critical Thinking</b></p>
	<p>The individual on the job needs to know and understand how to:</p> <p>SB9. Take up his own working and learning</p> <p>SB10. Analyze the site requirement and areas of priority if project is big.</p> <p>SB11. Judge the safety of material and tools at sites.</p>



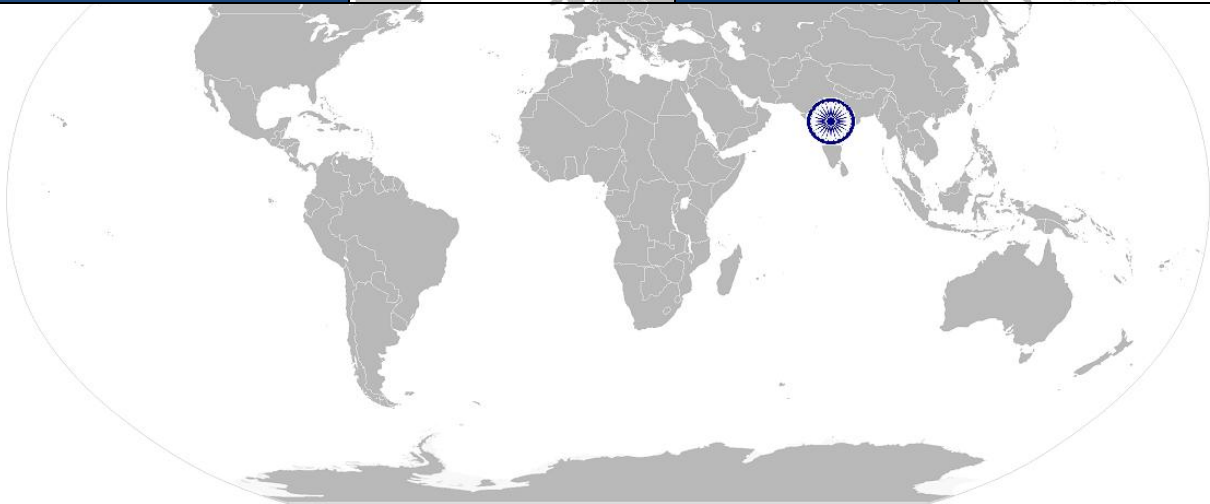


**AGR/ N1004**

**Designing and Layout of Micro Irrigation System**

**NOS Version Control**

<b>NOS Code</b>	<b>AGR/ N1004</b>		
<b>Credits(NSQF)</b>	<b>TBD</b>	<b>Version number</b>	<b>1.0</b>
<b>Sector</b>	<b>Agriculture And Allied</b>	<b>Drafted on</b>	<b>25/02/14</b>
<b>Sub-sector</b>	<b>Agriculture Crop Production</b>	<b>Last reviewed on</b>	<b>14/06/17</b>
<b>Occupation</b>	<b>Precision Farming</b>	<b>Next review date</b>	<b>14/06/21</b>

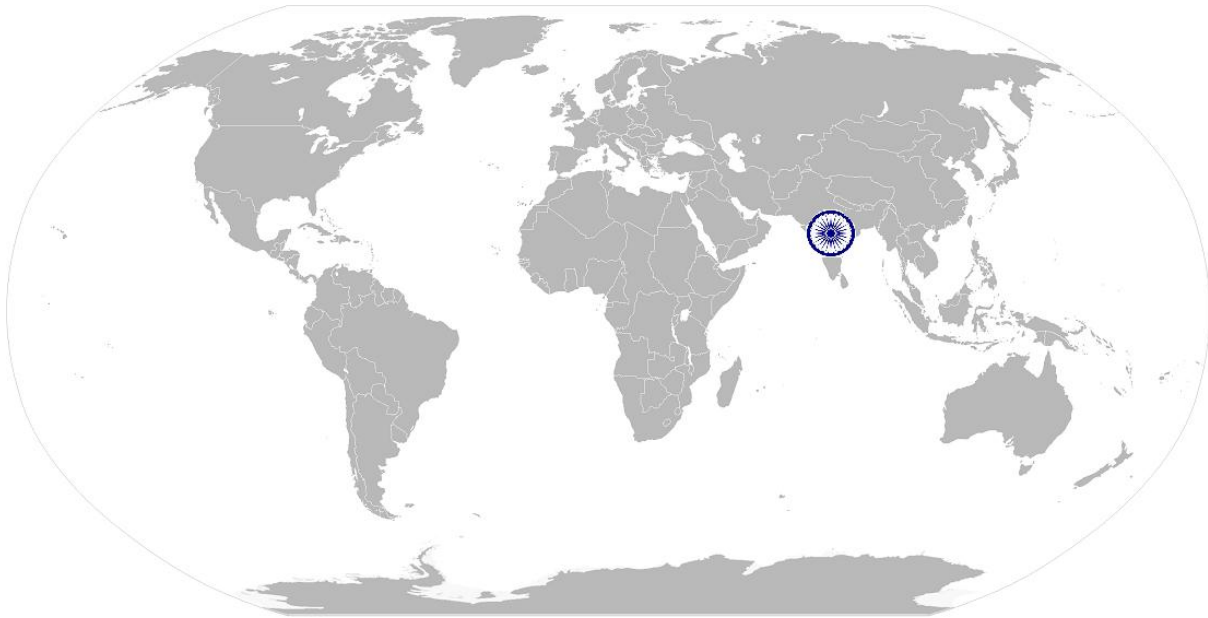


AGR/ N1005

Installation of Micro Irrigation System

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# National Occupational Standard



## Overview

This unit is about Installation of Micro Irrigation System at farmer's field and also training of farmers on how to use it.

**AGR/ N1005**

**Installation of Micro Irrigation System**

National Occupational Standard

<b>Unit Code</b>	<b>AGR/ N1005</b>
<b>Unit Title (Task)</b>	<b>Installation of Micro Irrigation Systems</b>
<b>Description</b>	This OS unit is about Installation, Testing and Commissioning of Micro Irrigation System at farmer's field for better water management and increase in yield of crop.
<b>Scope</b>	This unit/task covers the following: <ul style="list-style-type: none"> <li>• Components of Micro Irrigation System</li> <li>• Installation Techniques</li> <li>• Training of Farmers</li> </ul>
<b>Performance Criteria(PC) w.r.t. the Scope</b>	
<b>Element</b>	<b>Performance Criteria</b>
<b>Components of Micro Irrigation System</b>	To be competent, the user / individual on the job must be able to: PC1. identify various components of MIS PC2. identify f various parts of the MI units for timely fitting and installation
<b>Installation Techniques</b>	To be competent, the user / individual on the job must be able to: PC3. use right components at the right place for better installation PC4. do quick and error free installation of the MIS PC5. test and commission the MIS after installation
<b>Training of Farmers</b>	To be competent, the user / individual on the job must be able to: PC6. train farmers on using the system PC7. explain farmers on how to retrieve the system after harvest and again laying the pipelines
<b>Knowledge and Understanding (K)</b>	
<b>A. Organizational Context</b> (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: KA1. relevant legislation, standards, policies, and procedures in work KA2. relevant health and safety requirements applicable in the work environment KA3. own job role and responsibilities and sources for information pertaining to work KA4. who to approach for support in order to obtain work related information, clarifications and support KA5. importance of following health, hygiene, safety and quality standards and the impact of not following the standards on consumers and the business KA6. documentation and related procedures applicable in the context of work

**AGR/ N1005**

**Installation of Micro Irrigation System**

<b>B. Technical Knowledge</b>	<p>The individual on the job needs to know and understand:</p> <p>KB1. Effective working relationships and how to work effectively with the farmers, co workers and the labourers</p> <p>KB2. Organizational / farmers needs and time management</p> <p>KB3. Types of Pumps, Piping Networks and other related equipments.</p> <p>KB4. PVC &amp; GI Fittings and its applications</p> <p>KB5. Basic hydraulics like pressure, flow etc.</p> <p>KB6. Types of chemicals to be used during maintenance of MIS</p> <p>KB7. Training farmers on the process of using</p> <p>KB8. Accessories needed for proper installation.</p> <p>KB9. Knowledge of tools required for installation of MIS.</p>
<b>Skills (S)</b>	
<b>A. Core Skills/ Generic Skills</b>	<b>Writing Skills</b>
	<p>The individual on the job needs to know and understand how to:</p> <p>SA1. Submit the bills &amp; expenses incurred at site.</p> <p>SA2. Report problems to the appropriate personnel in a timely manner</p> <p>SA3. Write descriptions and details about incidents in reports</p> <p>SA4. Follow basic arithmetic and algebraic principles</p>
	<b>Reading Skills</b>
	<p>The individual on the job needs to know and understand how to:</p> <p>SA5. Read instruction manuals for hand tool and equipments</p> <p>SA6. Read instructions on Irrigation Layout with special legend and notes.</p> <p>SA7. Read and Understand Bill Of Materials (Product Code &amp; Description)</p> <p>SA8. Read Operational and Maintenance Manual</p>
	<b>Oral Communication (Listening and Speaking skills)</b>
	<p>The individual on the job needs to know and understand how to:</p> <p>SA9. Able to communicate with farmers on the process of using it</p> <p>SA10. Receive instructions and seek advice from supervisors and managers</p> <p>SA11. Provide direction and instructions to their crew and other workers</p> <p>SA12. Make Friendly and cordial communication with farmers at and off the fields.</p>
<b>B. Professional Skills</b>	<b>Decision Making</b>
	<p>The individual on the job needs to know and understand how to:</p> <p>SB1. In the event of deviation take decision on pipe size/ fittings.</p> <p>SB2. Recall and demonstrate practical skills, routine and repetitive in a range of applications, using appropriate rule and tool, using quality concepts mentioned above.</p>
	<b>Plan and Organize</b>

**AGR/ N1005**

**Installation of Micro Irrigation System**

	<p>The individual on the job needs to know and understand how to:</p> <p>SB3. Use ideas in particular situations with consent of seniors</p> <p>SB4. Customise a given technology of MIS or variants of technologies to farmer's needs and priorities.</p>
	<p><b>Customer Centricity</b></p>
	<p>The individual on the job needs to know and understand how to:</p> <p>SB5. manage relationships with co-workers and other farmers</p>
	<p><b>Problem Solving</b></p>
	<p>The individual on the job needs to know and understand how to:</p> <p>SB6. Think through the problem, evaluate the possible solution(s) and suggest an optimum /best possible solution(s)</p> <p>SB7. Equipment Selection: Determine the kind of tools and equipment needed to do a job</p> <p>SB8. Troubleshooting: Determine what is causing an operating error and deciding what to do about it</p>
	<p><b>Analytical Thinking</b></p>
	<p>The individual on the job needs to know and understand how to:</p> <p>SB9. Monitor and maintain the condition of tools and equipment</p> <p>SB10. In case of complexity in the farmer's field, come out with creative / innovative and simple solutions for the benefit of the farmer.</p>
<p><b>Critical Thinking</b></p>	
<p>The individual on the job needs to know and understand how to:</p> <p>SB11. Take up his own working and learning</p> <p>SB12. Analyze the Site requirement and areas of priority if project is big.</p> <p>SB13. Judge the safety of Material and tools at sites.</p>	

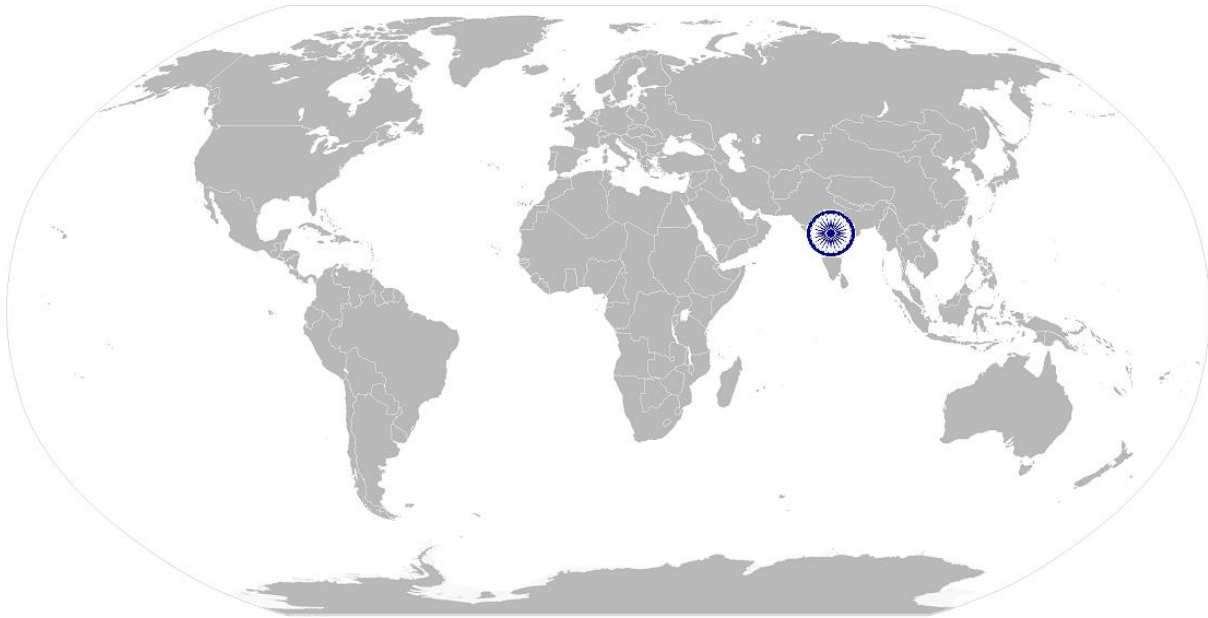
## AGR/ N1005      Installation of Micro Irrigation System

### NOS Version Control

<b>NOS Code</b>	<b>AGR/ N1005</b>		
<b>Credits(NSQF)</b>	<b>TBD</b>	<b>Version number</b>	<b>1.0</b>
<b>Sector</b>	<b>Agriculture And Allied</b>	<b>Drafted on</b>	<b>25/02/14</b>
<b>Sub-sector</b>	<b>Agriculture Crop Production</b>	<b>Last reviewed on</b>	<b>14/06/17</b>
<b>Occupation</b>	<b>Precision Farming</b>	<b>Next review date</b>	<b>14/06/21</b>



# National Occupational Standard



## Overview

This unit is about Maintenance of Micro Irrigation System at farmer's field.



**AGR/ N1006**

**Maintenance of Micro Irrigation System**

National Occupational Standard

<b>Unit Code</b>	<b>AGR/ N1006</b>
<b>Unit Title (Task)</b>	<b>Maintenance of Micro Irrigation Systems</b>
<b>Description</b>	This OS unit is about trouble shooting and maintenance of Micro Irrigation System at farmer's field for smooth functioning of the MI System in farmer's field.
<b>Scope</b>	This unit/task covers the following: <ul style="list-style-type: none"> <li>• Trouble shooting the problems that occur in the farmer's field</li> <li>• Maintenance of micro irrigation system</li> </ul>
<b>Performance Criteria(PC) w.r.t. the Scope</b>	
<b>Element</b>	<b>Performance Criteria</b>
<b>Trouble Shooting the problems that occur in the farmer's field</b>	To be competent, the individual on the job must be able to: <ul style="list-style-type: none"> <li>PC1. identify various problems farmer may come across in the farmer's field.</li> <li>PC2. address the common problems during the installation of the system</li> <li>PC3. rectify common problem in MI System faced by farmers</li> </ul>
<b>Maintenance of Micro Irrigation System</b>	To be competent, the individual on the job must be able to: <ul style="list-style-type: none"> <li>PC4. do System cleaning as per the field situation in terms of type of soil and its other characteristics.</li> <li>PC5. fix the system clogging due to fertigation</li> <li>PC6. follow various maintenance guidelines prescribed for a given micro irrigation system</li> </ul>
<b>Knowledge and Understanding (K)</b>	
<b>A. Organizational Context</b> (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: <ul style="list-style-type: none"> <li>KA1. relevant legislation, standards, policies, and procedures in work</li> <li>KA2. relevant health and safety requirements applicable in the work environment</li> <li>KA3. own job role and responsibilities and sources for information pertaining to work</li> <li>KA4. who to approach for support in order to obtain work related information, clarifications and support</li> <li>KA5. importance of following health, hygiene, safety and quality standards and the impact of not following the standards on consumers and the business</li> <li>KA6. documentation and related procedures applicable in the context of work</li> </ul>
<b>B. Technical Knowledge</b>	The individual on the job needs to know and understand: <ul style="list-style-type: none"> <li>KB1. Effective working relationships and how to work effectively with co workers, farmers and labourers.</li> <li>KB2. Organizational / farmers needs and time management</li> </ul>

**AGR/ N1006**

**Maintenance of Micro Irrigation System**

	KB3. Types of Pumps, Piping Networks and other related equipments. KB4. PVC & GI Fittings and its applications KB5. Basic hydraulics like pressure, flow etc. KB6. Types of chemicals to be used during maintenance of MIS KB7. Knowledge about the common problems of the MIS KB8. Spare parts needed in various components KB9. Maintenance guidelines and procedures KB10. Acidification and various methods of systems cleaning
<b>Skills (S)</b>	
<b>A. Core Skills/ Generic Skills</b>	<b>Writing Skills</b>
	The individual on the job needs to know and understand how to: SA1. Submit the bills & expenses incurred at site. SA2. Report problems to the appropriate personnel in a timely manner SA3. Write descriptions and details about incidents in reports SA4. Do basic arithmetic and algebraic principles
	<b>Reading Skills</b>
	The individual on the job needs to know and understand how to: SA5. Read instruction manuals for hand tool and equipments SA6. Read instructions on Irrigation layout with special legend and notes. SA7. Read and Understand Bill Of Materials ( Product Code & Description) SA8. Read Operational and Maintenance Manual
	<b>Oral Communication (Listening and Speaking skills)</b>
	The individual on the job needs to know and understand how to: SA9. Receive instructions and seek advice from supervisors and managers SA10. Provide direction and instructions to co workers, farmers and labourers SA11. Make friendly and cordial communication with farmers at and off the fields
<b>B. Professional Skills</b>	<b>Decision Making</b>
	The individual on the job needs to know and understand how to: SB1. In the event of deviation take decision on pipe size/ fittings. SB2. Recall and demonstrate practical skills, routine and repetitive in a range of applications, using appropriate rule and tool, using quality concepts mentioned above.
	<b>Plan and Organize</b>
	The individual on the job needs to know and understand how to: SB3. Use ideas in particular situations with consent of seniors SB4. Customise a given technology of irrigation system or variants of technologies to farmer's needs and priorities.

**AGR/ N1006**

**Maintenance of Micro Irrigation System**

	<b>Customer Centricity</b>
	The individual on the job needs to know and understand how to: SB5. manage relationships with co-workers and other farmers
	<b>Problem Solving</b>
	The individual on the job needs to know and understand how to: SB6. Think through the problem, evaluate the possible solution(s) and suggest / propose an optimum /best possible solution(s) SB7. Equipment Selection: Determine the kind of tools and equipment needed to do a job SB8. Troubleshooting: Determine what is causing an operating error and deciding what to do about it
	<b>Analytical Thinking</b>
	The individual on the job needs to know and understand how to: SB9. Monitor and maintain the condition of tools and equipment
<b>Critical Thinking</b>	
The individual on the job needs to know and understand how to: SB10. Take up his own working and learning SB11. Analyze the site requirement and areas of priority if project is big. SB12. Judge the safety of material and tools at sites.	



**AGR/ N1006                      Maintenance of Micro Irrigation System**

**NOS Version Control**

<b>NOS Code</b>	<b>AGR/N1006</b>		
<b>Credits(NSQF)</b>	<b>TBD</b>	<b>Version number</b>	<b>1.0</b>
<b>Sector</b>	<b>Agriculture And Allied</b>	<b>Drafted on</b>	<b>25/02/14</b>
<b>Sub-sector</b>	<b>Agriculture Crop Production</b>	<b>Last reviewed on</b>	<b>14/06/17</b>
<b>Occupation</b>	<b>Precision Farming</b>	<b>Next review date</b>	<b>14/06/21</b>

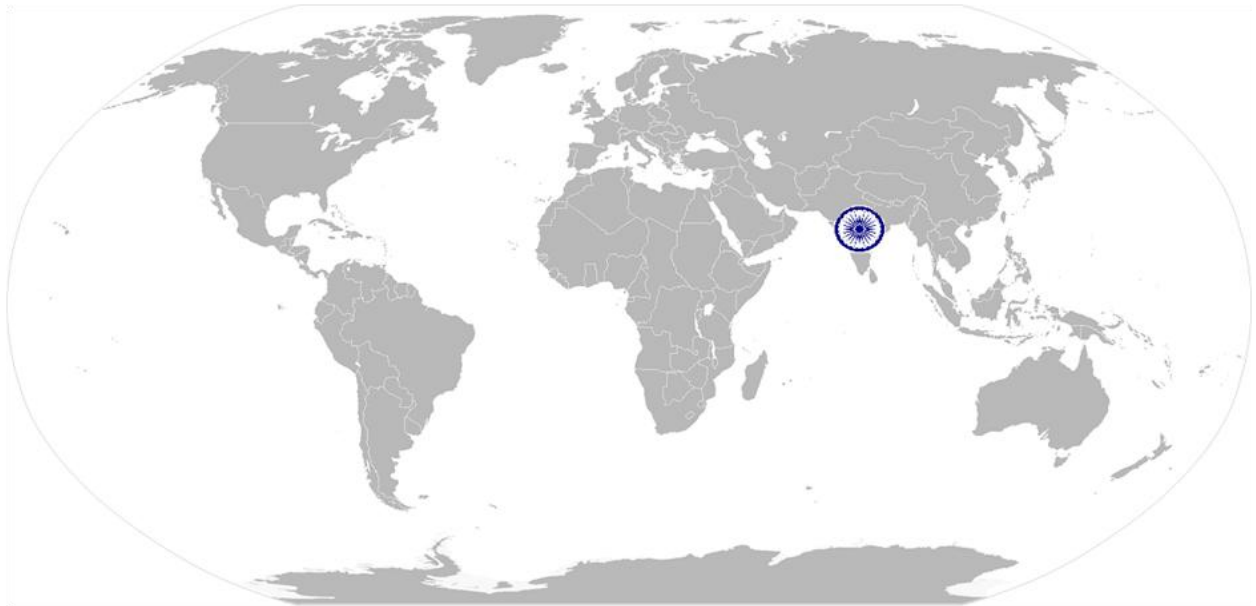


AGR/N9903

Maintain Health & Safety at the workplace

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# National Occupational Standard



## Overview

This unit is about maintaining health & safety of self and others at the workplace.

## AGR/N9903

## Maintain Health & Safety at the workplace

<b>Unit Code</b>	AGR / N9903
<b>Unit Title (Task)</b>	Maintain Health & Safety at the workplace
<b>Description</b>	This OS is for the cultivator who is responsible for maintaining health and safety of self and others co workers at workplace
<b>Scope</b>	This unit/task covers the following: <ul style="list-style-type: none"> <li>• Maintain clean and efficient workplace</li> <li>• Render appropriate emergency procedures</li> </ul>
<b>Performance Criteria (PC) w.r.t. the Scope</b>	
<b>Element</b>	<b>Performance Criteria</b>
<b>Maintaining clean and efficient workplace</b>	<p>To be competent, the individual must be able to:</p> <p>PC1. undertake basic safety checks before operation of all machinery and vehicles and hazards are reported to the appropriate supervisor</p> <p>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.</p> <p>PC3. read and understand the hazards of use and contamination mentioned on the labels of pesticides/fumigants etc</p> <p>PC4. assess risks prior to performing manual handling jobs, and work according to currently recommended safe practice.</p> <p>PC5. use equipment and materials safely and correctly and return the same to designated storage when not in use</p> <p>PC6. dispose of waste safely and correctly in a designated area</p> <p>PC7. recognise risks to bystanders and take action to reduce risk associated with jobs in the workplace</p> <p>PC8. perform your work in a manner which minimizes environmental damage all procedures and work instructions for controlling risk are followed closely.</p> <p>PC9. report any accidents, incidents or problems without delay to an appropriate person and take necessary immediate action to reduce further danger.</p>
<b>Render appropriate emergency procedures</b>	<p>To be competent, the individual must be able to:</p> <p>PC10. follow procedures for dealing with accidents, fires and emergencies, including communicating location and directions to emergency.</p> <p>PC11. follow emergency procedures to company standard / workplace requirements</p> <p>PC12. use emergency equipment in accordance with manufacturers'</p>

**AGR/N9903**

**Maintain Health & Safety at the workplace**

	<p>specifications and workplace requirements</p> <p>PC13. provide treatment appropriate to the patient's injuries in accordance with recognized first aid techniques</p> <p>PC14. recover (if practical), clean, inspect/test, refurbish, replace and store the first aid equipment as appropriate</p> <p>PC15. report details of first aid administered in accordance with workplace procedures.</p>
<b>Knowledge and Understanding (K)</b>	
<p><b>A. Organizational Context</b> (Knowledge of the company / organization and its processes)</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. relevant legislation, standards, policies, and procedures in work</p> <p>KA2. relevant health and safety requirements applicable in the work environment</p> <p>KA3. own job role and responsibilities and sources for information pertaining to work</p> <p>KA4. who to approach for support in order to obtain work related information, clarifications and support</p> <p>KA5. importance of following health, hygiene, safety and quality standards and the impact of not following the standards on consumers and the business</p> <p>KA6. documentation and related procedures applicable in the context of work</p>
<p><b>B. Technical Knowledge</b></p>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. personal hygiene and fitness requirements</p> <p>KB2. your general duties under the relevant health and safety legislation</p> <p>KB3. what personal protective equipment and clothing should be worn and how it is cared for</p> <p>KB4. the correct and safe way to use materials and equipment required for your work</p> <p>KB5. the importance of good housekeeping in the workplace</p> <p>KB6. safe disposal methods for waste</p> <p>KB7. methods for minimizing environmental damage during work</p> <p>KB8. the risks to health and safety and the measures to be taken to control those risks in your area of work</p> <p>KB9. workplace procedures and requirements for the treatment of workplace injuries/illnesses.</p> <p>KB10. basic emergency first aid procedure</p> <p>KB11. local emergency services</p> <p>KB12. why accidents, incidents and problems should be reported and the appropriate action to take</p>
<b>Skills (S)</b>	



**AGR/N9903**

**Maintain Health & Safety at the workplace**

<b>A. Core Skills/ Generic Skills</b>	<b>Writing Skills</b>
	The user/ individual on the job needs to know and understand how to: SA1. mention the data which are required for record keeping purpose SA2. report problems to the appropriate personnel in a timely manner SA3. write descriptions and details about incidents in reports
	<b>Reading Skills</b>
	The user/ individual on the job needs to know and understand how to: SA4. read instruction manual for hand tool and equipments
	<b>Oral Communication (Listening and Speaking skills)</b>
	The user/individual on the job needs to know and understand how to: SA5. communicate clearly and effectively with others like farmers, concerned officer/stakeholders SA6. comprehends information shared by senior people and experts
<b>B. Professional Skills</b>	<b>Decision Making</b>
	The user/individual on the job needs to know and understand how to: SB1. make decisions pertaining to types of tools to be used SB2. identify need of first aid and render it accordingly
	<b>Plan and Organize</b>
	The user/individual on the job needs to know and understand how to: SB3. schedule daily activities and drawing up priorities; allocate start times, estimation of completion times and materials, equipment and assistance required for completion.
	<b>Customer Centricity</b>
	The user/individual on the job needs to know and understand how to: SB4. manage relationships with co-workers and managers of the who may be stressed, frustrated, confused or angry
	<b>Problem Solving</b>
	The user/individual on the job needs to know and understand how to: SB5. Identify problems immediately and take up solutions quickly to resolve delays
	<b>Analytical Thinking</b>
	The user/individual on the job needs to know and understand how to: SB6. monitor and maintain the condition of tools and equipment SB7. assess situation & identify appropriate control measures
<b>Critical Thinking</b>	
The individual on the job needs to know and understand how to: SB8. take up one's own learning	

AGR/N9903

Maintain Health & Safety at the workplace

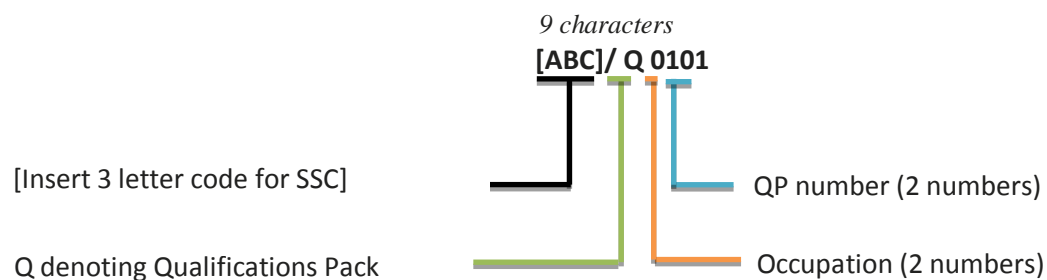
### NOS Version Control

NOS Code	AGR / N9903		
Credits(NSQF)	TBD	Version number	1.0
Sector	Agriculture And Allied	Drafted on	25/02/14
Sub-sector	Agriculture Crop Production	Last reviewed on	14/06/17
Occupation	Precision Farming	Next review date	14/06/21

## Annexure

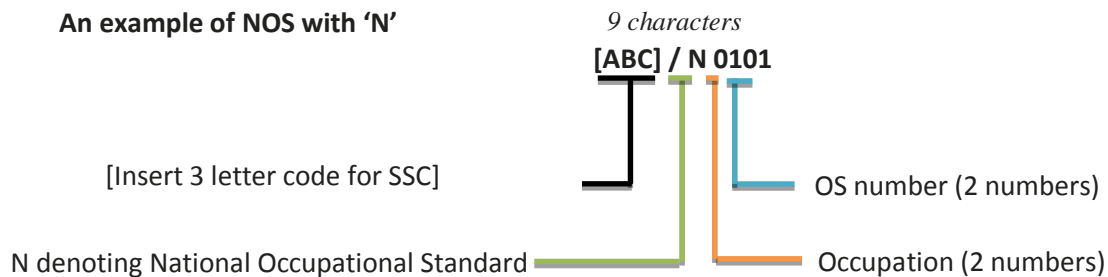
### Nomenclature for QP and NOS

#### Qualifications Pack



#### Occupational Standard

##### An example of NOS with 'N'



### Qualification Pack For Micro Irrigation Technician

The following acronyms/codes have been used in the nomenclature above:

Sub-sector	Range of Occupation numbers
<b>Agriculture Crop Production</b>	<b>01 – 40</b>
<b>Dairying</b>	<b>41 – 42</b>
<b>Poultry</b>	<b>43 – 44</b>
<b>Animal Husbandry</b>	<b>45 – 48</b>
<b>Fisheries</b>	<b>49 – 51</b>
<b>Agriculture Allied Activities</b>	<b>52 – 60</b>
<b>Forestry, Environment and Renewable Energy Management</b>	<b>61 - 70</b>
<b>Agriculture Industries</b>	<b>71 – 90</b>
<b>Generic Occupations</b>	<b>96 - 99</b>

Sequence	Description	Example
<b>Three letters</b>	Industry name	AGR
<b>Slash</b>	/	/
<b>Next letter</b>	Whether QP or NOS	Q or N
<b>Next two numbers</b>	Occupation code	01
<b>Next two numbers</b>	OS number	01

Note:

- The range of occupation numbers have been decided based on the number of existing and future occupations in a segment
- Occupation numbers from 91 – 95 have been intentionally left blank to accommodate any emerging segment in future.

## CRITERIA FOR ASSESSMENT OF TRAINEES

**Job Role** Micro-Irrigation Technician

**Qualification Pack** AGR/Q1002

**Sector Skill Council** Agriculture

### **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 70% of aggregate marks to successfully clear the assessment.
6. In case of *unsuccessful completion*, the trainee may seek reassessment on the Qualification Pack.

Assessment outcomes	Assessment Criteria for outcomes	Total Mark (225)	Out Of	Marks Allocation	
				Theory	Skills Practical
1.AGR/N1004 Designing and Layout of Micro Irrigation System	PC1. Identify the characteristics of the soil, climatic conditions, land gradient, crop etc., essential for designing the system	50	10	6	4

### Qualification Pack For Micro Irrigation Technician

	PC2.Follow Micro Irrigation Principles in the design of the Micro Irrigation System in the field		10	5	5
	PC3.Layout Irrigation System as per the legend used in drawing.		10	5	5
	PC4.Handle the site deviation if required.		10	5	5
	PC5.Take note of basics of crop cultivation such as spacing, water requirement, spacing of the crop stand, nature of rooting etc.,		10	5	5
			50	26	24
2.AGR/N1005 Installation of Micro Irrigation	PC1.Identify various components of MIS	<b>100</b>	15	10	5

Qualification Pack For Micro Irrigation Technician

System	PC2. Identify f various parts of the MI units for timely fitting and installation		15	10	5
	PC3. Use right components at the right place for better installation		10	10	0
	PC4.Do quick and error free installation of the MIS		30	15	15
	PC5.Test and Commission the MIS after installation		10	5	5
	PC6.Train farmers on using the system		10	0	10
	PC7.Explain farmers on how to retrieve the system after harvest and again laying the pipelines		10	0	10
			100	50	50



### Qualification Pack For Micro Irrigation Technician

3.AGR/N1006 Maintenance of Micro Irrigation System	PC1. Identify various problems farmer may come across in the farmer's field.	10	6	4
	PC2. Address the common problems during the installation of the system	10	6	4
	PC3. Rectify common problem in MI System faced by farmers	5	5	0
	PC4. Do System cleaning as per the field situation in terms of type of soil and its other characteristics.	10	3	7
	PC5. Fix the system clogging due to fertigation	5	2	3
	<b>50</b>			

*Qualification Pack For Micro Irrigation Technician*

	PC6.Follow various maintenance guidelines prescribed for a given micro irrigation system		10	3	7
			50	25	25
	PC1.undertake basic safety checks before operation of all machinery and vehicles and hazards are reported to the appropriate supervisor		5	3	2
4.AGR/N9903 Maintain Health & Safety at the workplace	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	2	0
	PC3.read and understand the hazards of use and contamination mentioned on the labels of	<b>25</b>	1	0	1

### Qualification Pack For Micro Irrigation Technician

pesticides/fumigants etc				
PC4.assess risks prior to performing manual handling jobs, and work according to currently recommended safe practice.		1	1	0
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		3	2	1
PC7.recognise risks to bystanders and take action to reduce risk associated with jobs in the workplace		1	0	1
PC8.perform your work in a manner which minimizes environmental damage all procedures and work instructions for controlling risk are followed closely.		1	1	0
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.		1	0	1
PC11.follow emergency procedures to company standard / workplace requirements		1	0	1
PC12.use emergency equipment in accordance with manufacturers' specifications and workplace requirements		1	0	1
PC13.provide treatment appropriate to the patient's injuries in accordance with recognized first aid techniques		1	1	0
PC14.recover (if practical), clean, inspect/test, refurbish, replace and store the first aid equipment as appropriate		1	0	1
PC15.report details of first aid administered in accordance with workplace procedures.		1	0	1
		<b>25</b>	<b>12</b>	<b>13</b>
<b>TOTAL</b>	<b>225</b>	<b>225</b>	<b>113</b>	<b>112</b>

SSC	QPCode	Name of the QP	NSQF Level	Equipment Name	Minimum number of Equipment required (per batch of 30)	Unit Type	Is this a mandatory Equipment to be available at the Training Center (Yes/No)	Dimension/Specification/Description of the Equipment/ ANY OTHER REMARK
Agriculture	AGR/Q1002	Micro Irrigation Technician		HDPE Pipe	10	Ft	Y	63, 75,& 90mm,
Agriculture	AGR/Q1002	Micro Irrigation Technician		PVC Pipe	10	Ft	Y	63, 75 &, 90mm,
Agriculture	AGR/Q1002	Micro Irrigation Technician		Lateral Line	10	Ft	Y	16, 32mm
Agriculture	AGR/Q1002	Micro Irrigation Technician		Disk Filter,	2	Nos	Y	Each
Agriculture	AGR/Q1002	Micro Irrigation Technician		Screen Filter,	2	Nos	N	
Agriculture	AGR/Q1002	Micro Irrigation Technician		Sand Filter	2	Nos	N	
Agriculture	AGR/Q1002	Micro Irrigation Technician		Drip Line	10	Ft	Y	12,16mm,
Agriculture	AGR/Q1002	Micro Irrigation Technician		Ball Valve	2	Nos	Y	63, 75, & 90mm
Agriculture	AGR/Q1002	Micro Irrigation Technician		Service Saddle	2	Nos	Y	63 x 32mm and 75 x 32mm
Agriculture	AGR/Q1002	Micro Irrigation Technician		Tee-(T)	2	Nos	Y	63 & 75mm
Agriculture	AGR/Q1002	Micro Irrigation Technician		Elbow (L)	2	Nos	Y	63 & 75mm
Agriculture	AGR/Q1002	Micro Irrigation Technician		Cutter	1	Nos	Y	
Agriculture	AGR/Q1002	Micro Irrigation Technician		Axa with Blade	1	Nos	Y	
Agriculture	AGR/Q1002	Micro Irrigation Technician		Punching Machine	1	Nos	Y	

Agriculture	AGR/Q1002	Micro Irrigation Technician		Pipe Wrench	1	Nos	Y	
Agriculture	AGR/Q1002	Micro Irrigation Technician		Different Size of Spanner	2	Set	Y	10/12, 12/13, 13/14, 14/15,
Agriculture	AGR/Q1002	Micro Irrigation Technician		Hand Gloves	1	Pair	N	
Agriculture	AGR/Q1002	Micro Irrigation Technician		Safety Shoes	1	Pair	N	
Agriculture	AGR/Q1002	Micro Irrigation Technician		Solvent Cement	2	Nos	N	Each
Agriculture	AGR/Q1002	Micro Irrigation Technician		Thread	2	Nos	N	
Agriculture	AGR/Q1002	Micro Irrigation Technician		Safeda	2	Nos	N	
Agriculture	AGR/Q1002	Micro Irrigation Technician		Connector	2	Nos	Y	12mm, 16mm
Agriculture	AGR/Q1002	Micro Irrigation Technician		Gromate	2	Nos	Y	12mm, 16mm
Agriculture	AGR/Q1002	Micro Irrigation Technician		Pressure Gauge	2	Nos	Y	
Agriculture	AGR/Q1002	Micro Irrigation Technician		Fertilizer Tank/ Ventury	1	Nos	Y	
Agriculture	AGR/Q1002	Micro Irrigation Technician		End Cap, Flush Valve,	2	Nos	N	63mm, 75mm
Agriculture	AGR/Q1002	Micro Irrigation Technician		Drawing Sheet,Chart Paper, Pencil,Rubber, Cutter, Scale, Colour Marker-Red,Blue, Black, Green	5	Nos	N	Each
Agriculture	AGR/Q1002	Micro Irrigation Technician		Kudal	2	Nos	Y	
Agriculture	AGR/Q1002	Micro Irrigation Technician		Khurpi	2	Nos	Y	

Agriculture	AGR/Q1002	Micro Irrigation Technician		Fawda	2	Nos	Y	
Agriculture	AGR/Q1002	Micro Irrigation Technician		Sprinkler With Stand and Micro Tube (Complete Assembly )	2	Nos	Y	
Agriculture	AGR/Q1002	Micro Irrigation Technician		Driper8LPH-PC and NON PC	2	Nos	Y	
Agriculture	AGR/Q1002	Micro Irrigation Technician		Driper- 4LPH- PC and NON PC	2	Nos	Y	