

## Qualification Pack



# Cereal Crop Grower

Electives: Wheat/ Rice/ Maize/ Millet

QP Code: AGR/Q0105

Version: 2.0

NSQF Level: 3

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## Qualification Pack

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## Qualification Pack

### AGR/Q0105: Cereal Crop Grower

#### Brief Job Description

A Cereal Crop Grower cultivates varieties of cereal crops as per the package of practices recommended for a particular cereal crop and agro-climatic zones to achieve yields as per the genetic potential of a given variety. The individual is also responsible for harvesting the produce along with carrying out its post-harvest management and marketing.

#### Personal Attributes

The individual must be physically fit to work for long durations. The person must have the ability to make decisions independently and coordinate with others to achieve the work objectives. The individual must know how to read, write and perform basic calculations.

#### Applicable National Occupational Standards (NOS)

##### Compulsory NOS:

1. [AGR/N0125: Select and prepare the site and sow the cereal seeds](#)
2. [AGR/N0108: Carry out macro and micronutrient management of field crops](#)
3. [AGR/N0109: Manage weed growth in crop fields](#)
4. [AGR/N0126: Perform integrated pest and disease management for cereal crop](#)
5. [AGR/N0111: Perform irrigation management for field crops](#)
6. [AGR/N0127: Carry out harvesting, post-harvest management and marketing of cereals](#)
7. [AGR/N9922: Engage in collective farming/activity](#)
8. [AGR/N9903: Maintain health and safety at the workplace](#)
9. [DGT/VSQ/N0101: Employability Skills \(30 Hours\)](#)

##### Electives (mandatory to select at least one):

###### Elective 1: Wheat

This OS unit is about the cultivation of wheat crop.

1. [AGR/N0124: Carry out cultivation of wheat](#)

###### Elective 2: Rice

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This OS unit is about the cultivation of rice crop.

1. [AGR/N0123: Carry out cultivation of rice](#)

### Elective 3: Maize

This OS unit is about the cultivation of maize crop.

1. [AGR/N0122: Carry out cultivation of maize](#)

### Elective 4: Millet

This OS unit is about the cultivation of millet crop.

1. [AGR/N0121: Carry out cultivation of millets](#)

## Qualification Pack (QP) Parameters

<b>Sector</b>	Agriculture
<b>Sub-Sector</b>	Agriculture Crop Production
<b>Occupation</b>	Field Crops Cultivation (Food Crops)
<b>Country</b>	India
<b>NSQF Level</b>	3
<b>Credits</b>	13
<b>Aligned to NCO/ISCO/ISIC Code</b>	NCO-2015/6111.0101

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<b>Minimum Educational Qualification &amp; Experience</b>	10th Class OR 8th Class (with two years of (NTC/ NAC) after 8th) OR 8th grade pass and pursuing continuous schooling in regular school with vocational subject OR 8th grade pass with 2 Years of experience relevant experience OR 5th grade pass with 5 Years of experience relevant experience OR Previous relevant Qualification of NSQF Level (Level 2) with 1 Year of experience relevant experience OR Previous relevant Qualification of NSQF Level (Level 2.5) with 6 Months of experience relevant experience
<b>Minimum Level of Education for Training in School</b>	8th Class
<b>Pre-Requisite License or Training</b>	NA
<b>Minimum Job Entry Age</b>	16 Years
<b>Last Reviewed On</b>	NA
<b>Next Review Date</b>	27/01/2025
<b>NSQC Approval Date</b>	27/01/2022
<b>Version</b>	2.0
<b>Reference code on NQR</b>	QG-04-AG-00415-2023-V1.1-ASCI
<b>NQR Version</b>	1.1

## Qualification Pack

### AGR/N0125: Select and prepare the site and sow the cereal seeds

#### Description

This OS unit is about preparing for the cultivation of cereals, which includes the selection of site and preparation of the field along with the preparation and sowing of cereal planting material.

#### Scope

The scope covers the following :

- Select and prepare the site for the cultivation of cereals
- Procure and prepare the planting material
- Sow the cereal seeds

#### Elements and Performance Criteria

##### *Select and prepare the site for the cultivation of cereals*

To be competent, the user/individual on the job must be able to:

- PC1.** check the site has conducive climatic conditions for the cultivation of cereals and is free from limiting factors such as flooding, drought, extreme heat and cold
- PC2.** coordinate with an authorised lab to determine if the soil is suitable for the cultivation of the proposed cereal crop
- PC3.** ensure the site is accessible and has availability of quality water, labour and other inputs
- PC4.** identify the risks associated with the cultivation of cereals at the site and take appropriate preventive measures
- PC5.** prepare the field for sowing the cereal seeds
- PC6.** create drainage channels in the field for the effective drainage of water

##### *Procure and prepare the planting material*

To be competent, the user/individual on the job must be able to:

- PC7.** select the appropriate varieties of cereals such as hybrids to be cultivated based on the climate
- PC8.** select an approved vendor based on the quality and price of seeds of the proposed cereal crop
- PC9.** procure seeds of the proposed cereal crop according to the soil conditions, time of planting, cultivation duration, marketability, etc.
- PC10.** treat the seeds with the recommended pesticides and fungicides, using them in the recommended dose
- PC11.** store the treated seeds at the recommended temperature and humidity, ensuring hygienic conditions in the storage area

##### *Sow the cereal seeds*

To be competent, the user/individual on the job must be able to:

- PC12.** select an appropriate method for sowing the cereal seeds such as broadcasting and mechanised sowing

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- PC13.** prepare the seed sowing equipment, setting the correct specifications for use according to the selected cereal crop
- PC14.** sow the cereal seeds using the relevant machinery and tools, maintaining the recommended seed rate and planting density for the selected cereal crop to ensure its healthy growth

### *Optimise resource utilisation*

To be competent, the user/individual on the job must be able to:

- PC15.** optimise the usage of water, electricity and other resources in the relevant tasks and processes
- PC16.** connect electrical tools and equipment safely and turn them off when not in use

### *Perform waste management*

To be competent, the user/individual on the job must be able to:

- PC17.** segregate waste into appropriate categories
- PC18.** recycle the recyclable waste appropriately and dispose the non-recyclable waste in an environment-friendly manner

### *Practice inclusion at work*

To be competent, the user/individual on the job must be able to:

- PC19.** adopt gender-neutral behaviour at work
- PC20.** empathise with Persons with Disabilities (PwD)

## Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** major cereals and their common varieties, along with their cultivation period and yield
- KU2.** vulnerability of different cereal varieties to various pests and diseases and resistance to various abiotic stresses
- KU3.** the criteria for selecting a site for the cultivation of different types of cereals
- KU4.** various agro-climatic zones in India suitable for the cultivation of varieties of cereals
- KU5.** the site, climate, soil type, soil fertility, nature of subsoil and soil depth suited for growing cereals
- KU6.** the process of getting the soil sample tested through an authorised lab to determine the soil's suitability for the cultivation of cereals
- KU7.** various inputs required for the cultivation of cereals such as water, fertilisers, pesticides, labour, etc.
- KU8.** the process of preparing the field for sowing cereal seeds
- KU9.** the criteria for selecting a cereal variety to be cultivated, such as climate along with resistance to various pests and diseases
- KU10.** the cultivation period, appropriate time for sowing and yield of different varieties of cereals
- KU11.** the process of procuring and treating cereal seeds
- KU12.** the appropriate temperature and humidity for storing the treated cereal seeds
- KU13.** different methods for sowing cereal seeds such as broadcasting and mechanised sowing
- KU14.** use of the relevant tools and equipment for sowing cereal seeds
- KU15.** the recommended planting density to be maintained while sowing cereal seeds

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- KU16.** the benefits and different ways of resource optimisation
- KU17.** the criteria for segregating waste into appropriate categories
- KU18.** how to recycle and dispose different types of waste
- KU19.** the importance of following environmental and ecological farming best practices to minimise the impact on the environment
- KU20.** the importance of showing empathy to PwD and practising gender equality at work

## Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** maintain work-related notes and records
- GS2.** read the relevant literature to get the latest updates about the field of work
- GS3.** perform basic calculations
- GS4.** listen attentively to understand the information/ instructions being shared
- GS5.** communicate clearly and politely
- GS6.** plan and prioritise tasks to ensure timely completion
- GS7.** evaluate all possible solutions to a problem to select the best one
- GS8.** co-ordinate with the co-workers to achieve the work objectives
- GS9.** identify possible disruptions to work and take appropriate preventive measures
- GS10.** take quick decisions to deal with workplace emergencies/ accidents

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### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Select and prepare the site for the cultivation of cereals</i>	<b>8</b>	<b>10</b>	-	<b>6</b>
<b>PC1.</b> check the site has conducive climatic conditions for the cultivation of cereals and is free from limiting factors such as flooding, drought, extreme heat and cold	-	-	-	-
<b>PC2.</b> coordinate with an authorised lab to determine if the soil is suitable for the cultivation of the proposed cereal crop	-	-	-	-
<b>PC3.</b> ensure the site is accessible and has availability of quality water, labour and other inputs	-	-	-	-
<b>PC4.</b> identify the risks associated with the cultivation of cereals at the site and take appropriate preventive measures	-	-	-	-
<b>PC5.</b> prepare the field for sowing the cereal seeds	-	-	-	-
<b>PC6.</b> create drainage channels in the field for the effective drainage of water	-	-	-	-
<i>Procure and prepare the planting material</i>	<b>6</b>	<b>8</b>	-	<b>8</b>
<b>PC7.</b> select the appropriate varieties of cereals such as hybrids to be cultivated based on the climate	-	-	-	-
<b>PC8.</b> select an approved vendor based on the quality and price of seeds of the proposed cereal crop	-	-	-	-
<b>PC9.</b> procure seeds of the proposed cereal crop according to the soil conditions, time of planting, cultivation duration, marketability, etc.	-	-	-	-
<b>PC10.</b> treat the seeds with the recommended pesticides and fungicides, using them in the recommended dose	-	-	-	-
<b>PC11.</b> store the treated seeds at the recommended temperature and humidity, ensuring hygienic conditions in the storage area	-	-	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Sow the cereal seeds</i>	4	6	-	4
<b>PC12.</b> select an appropriate method for sowing the cereal seeds such as broadcasting and mechanised sowing	-	-	-	-
<b>PC13.</b> prepare the seed sowing equipment, setting the correct specifications for use according to the selected cereal crop	-	-	-	-
<b>PC14.</b> sow the cereal seeds using the relevant machinery and tools, maintaining the recommended seed rate and planting density for the selected cereal crop to ensure its healthy growth	-	-	-	-
<i>Optimise resource utilisation</i>	4	6	-	4
<b>PC15.</b> optimise the usage of water, electricity and other resources in the relevant tasks and processes	-	-	-	-
<b>PC16.</b> connect electrical tools and equipment safely and turn them off when not in use	-	-	-	-
<i>Perform waste management</i>	4	6	-	4
<b>PC17.</b> segregate waste into appropriate categories	-	-	-	-
<b>PC18.</b> recycle the recyclable waste appropriately and dispose the non-recyclable waste in an environment-friendly manner	-	-	-	-
<i>Practice inclusion at work</i>	4	4	-	4
<b>PC19.</b> adopt gender-neutral behaviour at work	-	-	-	-
<b>PC20.</b> empathise with Persons with Disabilities (PwD)	-	-	-	-
<b>NOS Total</b>	<b>30</b>	<b>40</b>	<b>-</b>	<b>30</b>

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### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	AGR/N0125
<b>NOS Name</b>	Select and prepare the site and sow the cereal seeds
<b>Sector</b>	Agriculture
<b>Sub-Sector</b>	Agriculture Crop Production
<b>Occupation</b>	Field Crops Cultivation (Food Crops)
<b>NSQF Level</b>	4
<b>Credits</b>	1
<b>Version</b>	1.0
<b>Last Reviewed Date</b>	27/01/2022
<b>Next Review Date</b>	27/01/2025
<b>NSQC Clearance Date</b>	27/01/2022

## Qualification Pack

### AGR/N0108: Carry out macro and micronutrient management of field crops

#### Description

This OS unit is about managing the macro and micronutrient needs of field crops to ensure their optimum growth.

#### Scope

The scope covers the following :

- Determine the macro and micronutrients requirements
- Apply fertilisers to the soil
- Perform soil conservation

#### Elements and Performance Criteria

##### *Determine the macro and micronutrients requirements*

To be competent, the user/individual on the job must be able to:

- PC1.** coordinate with an authorised lab to get the soil sample tested, ensuring the sample is collected from the field, packed and labelled as per the applicable procedure
- PC2.** interpret the soil analysis report to determine the micro and macronutrients requirements of the soil based on the planned crop variety or coordinate with an expert for the purpose
- PC3.** select the appropriate organic and inorganic fertilisers, ensuring they contain the required nutrients in the recommended quantity
- PC4.** prepare organic fertilisers such as farmyard manure, vermicompost and inorganic fertiliser solutions, ensuring personal safety

##### *Apply fertilisers to the soil*

To be competent, the user/individual on the job must be able to:

- PC5.** prepare the mixture of liquid fertilisers for application in the field, using them in the recommended quantity
- PC6.** prepare the field for the application of fertilisers
- PC7.** apply organic and inorganic fertilisers containing the required macro and micronutrients to the soil in the recommended dose
- PC8.** regulate the dose of fertiliser according to the crop cycle
- PC9.** maintain the record of fertilisers used in the field

##### *Perform soil conservation*

To be competent, the user/individual on the job must be able to:

- PC10.** prepare a soil nutrition supplementation calendar based on the stages of the crop's growth
- PC11.** follow the recommended practices for soil conservation, such as mulching to conserve soil moisture and application of organic fertilisers

#### Knowledge and Understanding (KU)

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The individual on the job needs to know and understand:

- KU1.** the basic concepts of plant nutrition and soil fertility
- KU2.** different types of macro and micronutrients, their properties and functions
- KU3.** common symptoms of nutrient deficiency in plants
- KU4.** the use of different types of green manure and nitrogen-fixing crops
- KU5.** the process of soil sampling and testing
- KU6.** how to interpret the soil analysis report to determine the macro and micronutrient requirements of the soil
- KU7.** different soil types, their advantages and disadvantages with reference to the presence of various nutrients
- KU8.** how to prepare the mixture of liquid fertilisers, using them in the recommended quantity
- KU9.** how to prepare the field for the application of fertilisers
- KU10.** the appropriate time, methods and dose for the application of different types of fertilisers for a variety of crops
- KU11.** the importance of regulating the dose of fertiliser according to the crop cycle
- KU12.** importance of soil conservation and various soil conservation practices
- KU13.** the importance of getting the soil tested through a government-approved soil-testing laboratory to determine the macro and micronutrients present in it, and the requirement of adding the nutrients manually
- KU14.** varieties of organic and inorganic fertilisers to be applied to the soil to improve its fertility, and the nutrient content in them
- KU15.** the process of preparing organic fertilisers such as farmyard manure, vermicompost and inorganic fertiliser solutions
- KU16.** how to apply organic and inorganic fertilisers to the soil and the recommended dose to be used
- KU17.** the harmful effects of over-dosage of fertilisers
- KU18.** applicable documentation requirements
- KU19.** the process of preparing a soil nutrition supplementation calendar based on the stages of the crop's growth

## Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** maintain work-related notes and records
- GS2.** communicate politely and professionally
- GS3.** read the relevant literature to learn about the latest developments in the field of work
- GS4.** listen attentively to understand the information/ instructions being shared
- GS5.** plan and prioritise tasks to ensure timely completion
- GS6.** co-ordinate with the co-workers to achieve the work objectives
- GS7.** evaluate all possible solutions to a problem to select the best one
- GS8.** identify possible disruptions to work and take appropriate preventive measures



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**GS9.** take quick decisions to deal with workplace emergencies/ accidents

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### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Determine the macro and micronutrients requirements</i>	<b>12</b>	<b>10</b>	-	<b>8</b>
<b>PC1.</b> coordinate with an authorised lab to get the soil sample tested, ensuring the sample is collected from the field, packed and labelled as per the applicable procedure	-	-	-	-
<b>PC2.</b> interpret the soil analysis report to determine the micro and macronutrients requirements of the soil based on the planned crop variety or coordinate with an expert for the purpose	-	-	-	-
<b>PC3.</b> select the appropriate organic and inorganic fertilisers, ensuring they contain the required nutrients in the recommended quantity	-	-	-	-
<b>PC4.</b> prepare organic fertilisers such as farmyard manure, vermicompost and inorganic fertiliser solutions, ensuring personal safety	-	-	-	-
<i>Apply fertilisers to the soil</i>	<b>10</b>	<b>16</b>	-	<b>10</b>
<b>PC5.</b> prepare the mixture of liquid fertilisers for application in the field, using them in the recommended quantity	-	-	-	-
<b>PC6.</b> prepare the field for the application of fertilisers	-	-	-	-
<b>PC7.</b> apply organic and inorganic fertilisers containing the required macro and micronutrients to the soil in the recommended dose	-	-	-	-
<b>PC8.</b> regulate the dose of fertiliser according to the crop cycle	-	-	-	-
<b>PC9.</b> maintain the record of fertilisers used in the field	-	-	-	-
<i>Perform soil conservation</i>	<b>8</b>	<b>14</b>	-	<b>12</b>
<b>PC10.</b> prepare a soil nutrition supplementation calendar based on the stages of the crop's growth	-	-	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC11.</b> follow the recommended practices for soil conservation, such as mulching to conserve soil moisture and application of organic fertilisers	-	-	-	-
<b>NOS Total</b>	<b>30</b>	<b>40</b>	-	<b>30</b>

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### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	AGR/N0108
<b>NOS Name</b>	Carry out macro and micronutrient management of field crops
<b>Sector</b>	Agriculture
<b>Sub-Sector</b>	Agriculture Crop Production
<b>Occupation</b>	Field Crops Cultivation(Food Crops)
<b>NSQF Level</b>	4
<b>Credits</b>	1
<b>Version</b>	2.0
<b>Last Reviewed Date</b>	24/02/2022
<b>Next Review Date</b>	27/01/2025
<b>NSQC Clearance Date</b>	27/01/2022

## Qualification Pack

### AGR/N0109: Manage weed growth in crop fields

#### Description

This OS unit is about managing the growth of weeds in crop fields. It covers both preventive and remedial measures for weed control.

#### Scope

The scope covers the following :

- Identify weed growth
- Perform weed management

#### Elements and Performance Criteria

##### *Identify weed growth*

To be competent, the user/individual on the job must be able to:

- PC1.** inspect the field, bunds, thrashing yard, granary, composting area, and irrigation and drainage channels periodically to identify weed growth
- PC2.** maintain the record of observations with respect to weed identification and their growth

##### *Perform weed management*

To be competent, the user/individual on the job must be able to:

- PC3.** select an appropriate combination of different types of intercultural and mechanical methods for effective weed control such as trash mulching, solarisation and pasteurisation
- PC4.** select and prepare the recommended herbicide/ bio-herbicide solution suitable to the crop
- PC5.** spray the herbicide/ bio-herbicide safely in the recommended dose
- PC6.** remove weeds manually using the appropriate hand tools and implements, as required
- PC7.** retain the weeds of importance during the weeding process
- PC8.** maintain the herbicides and herbicide application equipment separately to prevent cross-contamination with other chemicals

#### Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** the critical period for organic weed control, reducing the dependence on herbicides and weedicides
- KU2.** the adverse effect of different types of weed on crop growth such as grass, broad leaves, sedges
- KU3.** different weed control methods such as preventative, intercultural, mechanical, biological and chemicals
- KU4.** advantages and disadvantages of different weeding methods
- KU5.** the critical period of crop-weed competition
- KU6.** different manual weeding techniques

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- KU7.** the use of relevant weeding equipment such as hoe and spade
- KU8.** use of pre-emergent and post-emergent herbicides
- KU9.** differences between blanket and spot application of herbicides
- KU10.** the process of soil solarisation and pasteurisation
- KU11.** environmental norms to be adhered to during herbicide application
- KU12.** the effect of herbicide residue on different types of crop
- KU13.** ways to minimise pollution caused by overuse of herbicides
- KU14.** the importance of inspecting the field regularly to identify weed growth
- KU15.** the appropriate combination of different types of intercultural and mechanical methods for effective weed control such as solarisation and pasteurisation
- KU16.** the process of selecting and preparing the recommended herbicide/ bio-herbicide solution suitable to the crop
- KU17.** how to spray herbicide/ bio-herbicide safely on the crop
- KU18.** the importance of retaining the weeds of importance during the weeding process
- KU19.** the importance of maintaining the herbicides and herbicide application equipment separately to prevent cross-contamination with other chemicals

## Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** maintain work-related notes and records
- GS2.** read the relevant guides, manuals and literature to get the latest updates about the field of work
- GS3.** communicate clearly and politely
- GS4.** listen attentively to understand the instructions being given
- GS5.** identify effective solutions to work-related issues
- GS6.** plan and prioritise tasks to ensure timely completion
- GS7.** take quick decisions in case of an emergency/ accident
- GS8.** plan effective use of time and resources

## Qualification Pack

### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Identify weed growth</i>	<b>10</b>	<b>12</b>	-	<b>14</b>
<b>PC1.</b> inspect the field, bunds, thrashing yard, granary, composting area, and irrigation and drainage channels periodically to identify weed growth	-	-	-	-
<b>PC2.</b> maintain the record of observations with respect to weed identification and their growth	-	-	-	-
<i>Perform weed management</i>	<b>20</b>	<b>28</b>	-	<b>16</b>
<b>PC3.</b> select an appropriate combination of different types of intercultural and mechanical methods for effective weed control such as trash mulching, solarisation and pasteurisation	-	-	-	-
<b>PC4.</b> select and prepare the recommended herbicide/ bio-herbicide solution suitable to the crop	-	-	-	-
<b>PC5.</b> spray the herbicide/ bio-herbicide safely in the recommended dose	-	-	-	-
<b>PC6.</b> remove weeds manually using the appropriate hand tools and implements, as required	-	-	-	-
<b>PC7.</b> retain the weeds of importance during the weeding process	-	-	-	-
<b>PC8.</b> maintain the herbicides and herbicide application equipment separately to prevent cross- contamination with other chemicals	-	-	-	-
<b>NOS Total</b>	<b>30</b>	<b>40</b>	-	<b>30</b>

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### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	AGR/N0109
<b>NOS Name</b>	Manage weed growth in crop fields
<b>Sector</b>	Agriculture
<b>Sub-Sector</b>	Agriculture Crop Production
<b>Occupation</b>	Field Crops Cultivation(Food Crops)
<b>NSQF Level</b>	4
<b>Credits</b>	1
<b>Version</b>	2.0
<b>Last Reviewed Date</b>	24/02/2022
<b>Next Review Date</b>	27/01/2025
<b>NSQC Clearance Date</b>	27/01/2022

## Qualification Pack

# AGR/N0126: Perform integrated pest and disease management for cereal crop

## Description

This OS unit is about performing integrated pest management for cereal crop and taking various measures to prevent and control insects, pests, and diseases in it.

## Scope

The scope covers the following :

- Follow preventive measures to control pests and disease
- Identify pests and diseases in cereal crop
- Identify and apply the necessary treatment

## Elements and Performance Criteria

### *Follow preventive measures to control pests and disease*

To be competent, the user/individual on the job must be able to:

- PC1.** use pest and disease-resistant varieties of cereals, ensuring their timely sowing, following the recommended hygiene practices in the field
- PC2.** carry out crop rotation with suitable crops
- PC3.** follow the recommended practices to restrict the entry of pathogens into the field through planting material, irrigation water, workers, tools and equipment, and vectors such as whitefly
- PC4.** identify and remove the diseased crop to prevent the spread of pests and diseases to healthy crop
- PC5.** use the recommended combination of cultural, biological, mechanical and chemical control methods for effective pest and disease prevention
- PC6.** follow the appropriate integrated pest management techniques like trash mulching, de-trashing, pest egg destruction, bund freeing, water draining, usage of bio-control agents, etc.

### *Identify pests and diseases in cereal crop*

To be competent, the user/individual on the job must be able to:

- PC7.** follow the recommended Integrated Pest Management (IPM) methods such as light and pheromone traps to identify the presence and population of pests, insects and vectors such as stem borer, leaf folder, Fall Armyworm, Panicle mites etc.
- PC8.** conduct regular field visits to identify major cereal crop diseases such as leaf spot, leaf blight, anthracnose, Powdery mildew, root rot, rust, yellow mosaic, etc.
- PC9.** determine the stage of pest and disease incidence along with the extent of damage and economic threshold levels (ETL) of the pests
- PC10.** co-ordinate with the agricultural extension service agents and diagnostic clinics to determine the causal organism for the disease and its treatment

### *Identify and apply the necessary treatment*

To be competent, the user/individual on the job must be able to:

## Qualification Pack

- PC11.** identify natural enemies of the cereal pests such as ladybird, ground beetles, hoverfly and adopt them for pest control according to the advice of agricultural extension workers, Krishi Vigyan Kendra (KVK), diagnostic clinics, etc.
- PC12.** apply the recommended treatment as per the prescription to remove pests and disease
- PC13.** follow the recommended safety practices while applying any treatment, such as using the relevant PPE
- PC14.** maintain the record of the use of any pesticides, insecticides and any other treatment

## Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** various types of diseases found in cereals and their symptoms
- KU2.** different biotic and abiotic factors causing diseases and disorders in plants
- KU3.** different modes of transmission of disease such as implements, vectors, rain, wind, etc.
- KU4.** the importance of adopting safe production methods for a safe and hygienic produce
- KU5.** advantages of biological control of pests and disease, such as bio-pesticides and pheromones used in IPM (Integrated Pest Management)
- KU6.** the minimum residue levels and Protected Health Information (PHI) for different types of pesticides
- KU7.** use of the pesticide spraying tools and equipment
- KU8.** applicable national and international standards on pesticide residues
- KU9.** the benefits of using pest and disease-resistant varieties of cereals
- KU10.** recommended practices to be followed to restrict the entry of pathogens into the field through planting material, irrigation water, workers, tools and equipment, and vectors such as whitefly
- KU11.** the practice of crop rotation with suitable crops
- KU12.** the importance of identifying and removing the diseased crop to prevent the spread of pest and disease to the healthy crop
- KU13.** use of the recommended combination of biological, mechanical and chemical control methods for effective pest and disease prevention such as traps, sticky plates etc.
- KU14.** how to identify different types of pests in cereal crops such as stem borer, leaf folder, Fall Armyworm, Panicle mites etc.
- KU15.** the signs of plant disease vectors and major cereal crop diseases such as leaf spot, leaf blight, anthracnose, Powdery mildew, root rot, rust, yellow mosaic, etc.
- KU16.** the process of determining the stage of pest incidence along with the extent of damage and economic threshold levels (ETL) of the pests
- KU17.** use of IPM methods such as light and pheromone traps to identify the presence and population of insects and vectors
- KU18.** the process of determining the causal organism for the disease and its treatment
- KU19.** natural enemies of cereal pests such as ladybird, ground beetles, hoverfly and the benefits of adopting them
- KU20.** the importance of applying the recommended treatment as per the prescription and maintaining the record of their use

## Qualification Pack

- KU21.** how to use the recommended PPE while applying harmful chemicals
- KU22.** how to minimise pollution caused by the overuse of pesticides
- KU23.** the banned pesticide formulations
- KU24.** how to deal with chemical poisoning

### Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** write work-related notes
- GS2.** read the relevant literature to get the latest updates about the field of work
- GS3.** perform basic calculations
- GS4.** listen attentively to understand the information/ instructions being shared
- GS5.** communicate clearly and politely
- GS6.** plan and prioritise tasks to ensure timely completion
- GS7.** evaluate all possible solutions to a problem to select the best one
- GS8.** co-ordinate with the co-workers to achieve the work objectives
- GS9.** identify possible disruptions to work and take appropriate preventive measures
- GS10.** take quick decisions to deal with workplace emergencies/ accidents

## Qualification Pack

### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Follow preventive measures to control pests and disease</i>	<b>10</b>	<b>16</b>	-	<b>12</b>
<b>PC1.</b> use pest and disease-resistant varieties of cereals, ensuring their timely sowing, following the recommended hygiene practices in the field	-	-	-	-
<b>PC2.</b> carry out crop rotation with suitable crops	-	-	-	-
<b>PC3.</b> follow the recommended practices to restrict the entry of pathogens into the field through planting material, irrigation water, workers, tools and equipment, and vectors such as whitefly	-	-	-	-
<b>PC4.</b> identify and remove the diseased crop to prevent the spread of pests and diseases to healthy crop	-	-	-	-
<b>PC5.</b> use the recommended combination of cultural, biological, mechanical and chemical control methods for effective pest and disease prevention	-	-	-	-
<b>PC6.</b> follow the appropriate integrated pest management techniques like trash mulching, de-trashing, pest egg destruction, bund freeing, water draining, usage of bio-control agents, etc.	-	-	-	-
<i>Identify pests and diseases in cereal crop</i>	<b>8</b>	<b>14</b>	-	<b>10</b>
<b>PC7.</b> follow the recommended Integrated Pest Management (IPM) methods such as light and pheromone traps to identify the presence and population of pests, insects and vectors such as stem borer, leaf folder, Fall Armyworm, Panicle mites etc.	-	-	-	-
<b>PC8.</b> conduct regular field visits to identify major cereal crop diseases such as leaf spot, leaf blight, anthracnose, Powdery mildew, root rot, rust, yellow mosaic, etc.	-	-	-	-
<b>PC9.</b> determine the stage of pest and disease incidence along with the extent of damage and economic threshold levels (ETL) of the pests	-	-	-	-

### Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC10.</b> co-ordinate with the agricultural extension service agents and diagnostic clinics to determine the causal organism for the disease and its treatment	-	-	-	-
<i>Identify and apply the necessary treatment</i>	<b>12</b>	<b>10</b>	-	<b>8</b>
<b>PC11.</b> identify natural enemies of the cereal pests such as ladybird, ground beetles, hoverfly and adopt them for pest control according to the advice of agricultural extension workers, Krishi Vigyan Kendra (KVK), diagnostic clinics, etc.	-	-	-	-
<b>PC12.</b> apply the recommended treatment as per the prescription to remove pests and disease	-	-	-	-
<b>PC13.</b> follow the recommended safety practices while applying any treatment, such as using the relevant PPE	-	-	-	-
<b>PC14.</b> maintain the record of the use of any pesticides, insecticides and any other treatment	-	-	-	-
<b>NOS Total</b>	<b>30</b>	<b>40</b>	-	<b>30</b>

## Qualification Pack

### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	AGR/N0126
<b>NOS Name</b>	Perform integrated pest and disease management for cereal crop
<b>Sector</b>	Agriculture
<b>Sub-Sector</b>	Agriculture Crop Production
<b>Occupation</b>	Field Crops Cultivation (Food Crops)
<b>NSQF Level</b>	4
<b>Credits</b>	1
<b>Version</b>	1.0
<b>Last Reviewed Date</b>	27/01/2022
<b>Next Review Date</b>	27/01/2025
<b>NSQC Clearance Date</b>	27/01/2022

## Qualification Pack

### AGR/N0111: Perform irrigation management for field crops

#### Description

This OS unit is about performing irrigation management of field crops.

#### Scope

The scope covers the following :

- Prepare for field irrigation
- Irrigate the field
- Manage the water usage

#### Elements and Performance Criteria

##### *Prepare for field irrigation*

To be competent, the user/individual on the job must be able to:

- PC1.** collect a water sample from the source of irrigation and coordinate with an authorised lab to get it tested
- PC2.** follow the measures recommended by the lab to improve the water quality
- PC3.** set up an appropriate irrigation system such as surface irrigation, drip irrigation, sub-surface irrigation system based on the requirement of the specific field crop

##### *Irrigate the field*

To be competent, the user/individual on the job must be able to:

- PC4.** irrigate the field according to the recommended irrigation schedule for the crop, ensuring there is adequate water supply at various stages of crop's growth
- PC5.** maintain the record of field irrigation to ensure irrigation as per the schedule
- PC6.** follow the recommended practices to prevent over and under-irrigation, ensuring there is no waterlogging at any stage of the crop's growth

##### *Manage the water usage*

To be competent, the user/individual on the job must be able to:

- PC7.** follow the recommended practices for effective drainage of excess water from the field
- PC8.** maintain the recommended level of water in the soil to prevent the harmful effects of inappropriate levels of moisture in it
- PC9.** plug water spills and leakages to prevent its wastage

#### Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** the timing and method of irrigation appropriate for a given soil type and climatic conditions
- KU2.** the quantity of water required for different types of crops and its effect on the yield
- KU3.** the importance of sampling and testing irrigation water through an authorised lab to determine its quality

## Qualification Pack

- KU4.** various measures to be followed to improve the water quality
- KU5.** the process of setting up different types of irrigation systems such as surface irrigation, drip irrigation, sub-surface irrigation system, etc.
- KU6.** the advantages and disadvantages of using different types of irrigation systems
- KU7.** the importance of irrigating the field according to the recommended irrigation schedule for the crop and the factors to be considered in scheduling irrigation
- KU8.** the recommended practices to be followed to prevent over and under-irrigation
- KU9.** the recommended practices to be followed for effective drainage of excess water from the field
- KU10.** the importance of maintaining the recommended level of water in the soil to prevent the harmful effects caused by inappropriate levels of moisture
- KU11.** various practices to be followed to optimise the usage of water and prevent its wastage

## Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** write work-related notes
- GS2.** read the relevant guides, manuals and literature to get the latest information about the field of work
- GS3.** communicate politely and professionally
- GS4.** listen attentively to understand the instructions being given
- GS5.** identify solutions to work-related issues
- GS6.** plan and prioritise tasks to ensure timely completion
- GS7.** take quick decisions to deal with any emergencies or accidents
- GS8.** plan effective use of time and resources

## Qualification Pack

### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Prepare for field irrigation</i>	<b>12</b>	<b>16</b>	-	<b>10</b>
<b>PC1.</b> collect a water sample from the source of irrigation and coordinate with an authorised lab to get it tested	-	-	-	-
<b>PC2.</b> follow the measures recommended by the lab to improve the water quality	-	-	-	-
<b>PC3.</b> set up an appropriate irrigation system such as surface irrigation, drip irrigation, sub-surface irrigation system based on the requirement of the specific field crop	-	-	-	-
<i>Irrigate the field</i>	<b>8</b>	<b>12</b>	-	<b>12</b>
<b>PC4.</b> irrigate the field according to the recommended irrigation schedule for the crop, ensuring there is adequate water supply at various stages of crop's growth	-	-	-	-
<b>PC5.</b> maintain the record of field irrigation to ensure irrigation as per the schedule	-	-	-	-
<b>PC6.</b> follow the recommended practices to prevent over and under-irrigation, ensuring there is no waterlogging at any stage of the crop's growth	-	-	-	-
<i>Manage the water usage</i>	<b>10</b>	<b>12</b>	-	<b>8</b>
<b>PC7.</b> follow the recommended practices for effective drainage of excess water from the field	-	-	-	-
<b>PC8.</b> maintain the recommended level of water in the soil to prevent the harmful effects of inappropriate levels of moisture in it	-	-	-	-
<b>PC9.</b> plug water spills and leakages to prevent its wastage	-	-	-	-
<b>NOS Total</b>	<b>30</b>	<b>40</b>	-	<b>30</b>

## Qualification Pack

### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	AGR/N0111
<b>NOS Name</b>	Perform irrigation management for field crops
<b>Sector</b>	Agriculture
<b>Sub-Sector</b>	Agriculture Crop Production
<b>Occupation</b>	Field Crops Cultivation(Food Crops)
<b>NSQF Level</b>	4
<b>Credits</b>	1
<b>Version</b>	2.0
<b>Last Reviewed Date</b>	24/02/2022
<b>Next Review Date</b>	27/01/2025
<b>NSQC Clearance Date</b>	27/01/2022

## Qualification Pack

### AGR/N0127: Carry out harvesting, post-harvest management and marketing of cereals

#### Description

This OS unit is about harvesting, processing and marketing cereal crops.

#### Scope

The scope covers the following :

- Harvest the cereal crop
- Process and pack the cereals
- Manage the inventory and market the produce

#### Elements and Performance Criteria

##### *Harvest the cereal crop*

To be competent, the user/individual on the job must be able to:

- PC1.** check the maturity of the cereal crop to ensure its readiness for being harvested
- PC2.** select the manual or mechanical harvesting method according to the quantity of the crop to be harvested
- PC3.** arrange the necessary tools, equipment and machinery for harvesting cereal crop and prepare them for use
- PC4.** select an appropriate time for harvesting the crop to maintain the required moisture level
- PC5.** harvest the crop, ensuring minimum loss

##### *Process and pack the cereals*

To be competent, the user/individual on the job must be able to:

- PC6.** check the harvested cereals for biological infestation and physical damage, and segregate the infested and damaged cereals
- PC7.** sort the harvested cereals on the applicable parameters such as quality, colour, size and appearance
- PC8.** carry out threshing or winnowing of the harvested cereal crop to loosen the grain seed from the husk or separate grain from the chaff, as applicable
- PC9.** select appropriate packing material for packing the cereals such as jute bags, Polypropylene (PP) pouches, High-Density Polyethylene (HDPE) packaging, etc.
- PC10.** pack the cereals following the relevant packaging standards and label the packs with the necessary information as per the applicable regulatory requirements
- PC11.** weigh the packed cereals to ensure correct weight in the packs and seal them
- PC12.** follow the recommended practices to prevent damage and contamination of the cereal crop
- PC13.** select a dry storage area with the recommended temperature and humidity for storing the cereal packs
- PC14.** apply the recommended treatment in the storage area to remove pests and rodents and store the packed cereals safely

## Qualification Pack

### *Manage the inventory and market the produce*

To be competent, the user/individual on the job must be able to:

- PC15.** track and manage the inventory
- PC16.** select an appropriate time for selling cereals based on the periodical demand of the produce and profitability
- PC17.** identify the appropriate market and buyers for cereals, such as eMandi, procurement agencies, local traders, co-operatives, exporters, etc.
- PC18.** coordinate and negotiate with the buyer to secure a profitable price for the produce
- PC19.** arrange an appropriate mode of transport to deliver cereals to the buyer in a hygienic and safe condition
- PC20.** process the payment using the buyer-preferred e-payment method
- PC21.** calculate the benefit-cost (B:C) ratio
- PC22.** maintain the record of sales and payments manually and/ or electronically using the physical registers and/ or the relevant computer application

### **Knowledge and Understanding (KU)**

The individual on the job needs to know and understand:

- KU1.** the ideal climate and conditions for harvesting cereals
- KU2.** how to assess the maturity of cereals to ensure their readiness for being harvested
- KU3.** the manual and mechanical methods for harvesting cereals and the use of relevant tools and equipment
- KU4.** the importance and ways of maintaining the recommended level of moisture in cereals
- KU5.** the signs of biological infestation in cereals and the importance of segregating the infested and damaged cereals
- KU6.** the relevant parameters to sort out the harvested cereals such as quality, colour, size, appearance, etc.
- KU7.** the process of threshing and winnowing different types of cereals
- KU8.** the appropriate packing material for packing a variety of cereals, such as jute bags, Polypropylene (PP) pouches, High-Density Polyethylene (HDPE) packaging, etc.
- KU9.** the process of packing, labelling and weighing cereals
- KU10.** the importance and ways of protecting the produce from damage and contamination
- KU11.** the appropriate temperature and humidity for storing the cereals
- KU12.** how to apply necessary treatment to remove pests and rodents from the storage area
- KU13.** the basic inventory management practices
- KU14.** the process of identifying and negotiating with potential buyers
- KU15.** the appropriate mode of transport for transporting a variety of cereals
- KU16.** how to use various e-payment methods
- KU17.** how to calculate the benefit-cost (B:C) ratio
- KU18.** how to maintain manual and electronic records using the physical registers and relevant computer application

## Qualification Pack

### Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** prepare work-related notes
- GS2.** read the relevant literature to get the latest updates about the field of work
- GS3.** communicate clearly and politely
- GS4.** perform basic calculations
- GS5.** listen attentively to understand the instructions being given
- GS6.** identify appropriate solutions to work-related issues
- GS7.** plan and prioritise tasks to ensure timely completion
- GS8.** take quick decisions to deal with workplace emergencies/ accidents
- GS9.** plan effective use of time and resources

## Qualification Pack

### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Harvest the cereal crop</i>	<b>8</b>	<b>10</b>	-	<b>6</b>
<b>PC1.</b> check the maturity of the cereal crop to ensure its readiness for being harvested	-	-	-	-
<b>PC2.</b> select the manual or mechanical harvesting method according to the quantity of the crop to be harvested	-	-	-	-
<b>PC3.</b> arrange the necessary tools, equipment and machinery for harvesting cereal crop and prepare them for use	-	-	-	-
<b>PC4.</b> select an appropriate time for harvesting the crop to maintain the required moisture level	-	-	-	-
<b>PC5.</b> harvest the crop, ensuring minimum loss	-	-	-	-
<i>Process and pack the cereals</i>	<b>10</b>	<b>16</b>	-	<b>12</b>
<b>PC6.</b> check the harvested cereals for biological infestation and physical damage, and segregate the infested and damaged cereals	-	-	-	-
<b>PC7.</b> sort the harvested cereals on the applicable parameters such as quality, colour, size and appearance	-	-	-	-
<b>PC8.</b> carry out threshing or winnowing of the harvested cereal crop to loosen the grain seed from the husk or separate grain from the chaff, as applicable	-	-	-	-
<b>PC9.</b> select appropriate packing material for packing the cereals such as jute bags, Polypropylene (PP) pouches, High-Density Polyethylene (HDPE) packaging, etc.	-	-	-	-
<b>PC10.</b> pack the cereals following the relevant packaging standards and label the packs with the necessary information as per the applicable regulatory requirements	-	-	-	-
<b>PC11.</b> weigh the packed cereals to ensure correct weight in the packs and seal them	-	-	-	-

### Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC12.</b> follow the recommended practices to prevent damage and contamination of the cereal crop	-	-	-	-
<b>PC13.</b> select a dry storage area with the recommended temperature and humidity for storing the cereal packs	-	-	-	-
<b>PC14.</b> apply the recommended treatment in the storage area to remove pests and rodents and store the packed cereals safely	-	-	-	-
<i>Manage the inventory and market the produce</i>	<b>12</b>	<b>14</b>	-	<b>12</b>
<b>PC15.</b> track and manage the inventory	-	-	-	-
<b>PC16.</b> select an appropriate time for selling cereals based on the periodical demand of the produce and profitability	-	-	-	-
<b>PC17.</b> identify the appropriate market and buyers for cereals, such as eMandi, procurement agencies, local traders, co-operatives, exporters, etc.	-	-	-	-
<b>PC18.</b> coordinate and negotiate with the buyer to secure a profitable price for the produce	-	-	-	-
<b>PC19.</b> arrange an appropriate mode of transport to deliver cereals to the buyer in a hygienic and safe condition	-	-	-	-
<b>PC20.</b> process the payment using the buyer-preferred e-payment method	-	-	-	-
<b>PC21.</b> calculate the benefit-cost (B:C) ratio	-	-	-	-
<b>PC22.</b> maintain the record of sales and payments manually and/ or electronically using the physical registers and/ or the relevant computer application	-	-	-	-
<b>NOS Total</b>	<b>30</b>	<b>40</b>	-	<b>30</b>

## Qualification Pack

### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	AGR/N0127
<b>NOS Name</b>	Carry out harvesting, post-harvest management and marketing of cereals
<b>Sector</b>	Agriculture
<b>Sub-Sector</b>	Agriculture Crop Production
<b>Occupation</b>	Field Crops Cultivation (Food Crops)
<b>NSQF Level</b>	4
<b>Credits</b>	1
<b>Version</b>	1.0
<b>Last Reviewed Date</b>	27/01/2022
<b>Next Review Date</b>	27/01/2025
<b>NSQC Clearance Date</b>	27/01/2022

## Qualification Pack

### AGR/N9922: Engage in collective farming/activity

#### Description

This OS unit is about working collectively in Producer Groups (PGs), Farmers Interest Groups (FIGs), Self-Help Groups (SHGs) and other similar groups to attain a common objective.

#### Scope

The scope covers the following :

- Create PGs/ FIGs/ SHGs
- Prepare for the PG/ FIG/ SHG operations
- Conduct group meetings and training sessions
- Carry out collective farming/ activities

#### Elements and Performance Criteria

##### *Create PGs/ FIGs/ SHGs*

To be competent, the user/individual on the job must be able to:

- PC1.** identify farmers/ groups with the common interests in the area
- PC2.** create Producer Groups (PGs)/Farmers Interest Groups (FIGs)/ Self-Help Groups (SHGs), following the applicable rules and regulations

##### *Prepare for the PG/ FIG/ SHG operations*

To be competent, the user/individual on the job must be able to:

- PC3.** organise fundraising activities to support the functioning of the group
- PC4.** establish links with the local government at panchayat level to obtain access to the relevant development programmes and funds
- PC5.** induct subject matter experts (SMEs) in the group
- PC6.** assist in arranging the required Information and Communication Technology (ICT) products for the group
- PC7.** plan the commodity convergence with the relevant developmental programmes
- PC8.** plan optimal production to meet the market and household food security needs

##### *Conduct group meetings and training sessions*

To be competent, the user/individual on the job must be able to:

- PC9.** conduct the initial group meetings to introduce the members, discuss the group objectives, group income-generating enterprises/ activities, methods of operation, etc.
- PC10.** assist in exchanging the domain and technical knowledge such as market or price information, latest technology, and resolving common issues or conflicts through the PG/ FIG/ SHG meetings
- PC11.** organise capacity building exercises such as skill development and training programmes

##### *Carry out collective farming/ activities*

To be competent, the user/individual on the job must be able to:

## Qualification Pack

- PC12.** organise field trials to identify and resolve problems encountered by group members in the field operations
- PC13.** procure/hire advanced and expensive farm machineries/tools and equipment using the group fund for collective use of the group members
- PC14.** establish and manage the group-owned bank of quality seeds/ fertilisers/ pesticides/ tools and equipment, etc.
- PC15.** use the group's credit facility as per the applicable terms and conditions
- PC16.** carry out relevant duties as per own role in the PG/FIG/ SHG such as the group leader/ secretary/ book-keeper, etc.
- PC17.** co-ordinate within the group(s) in procuring inputs in bulk/large-scale farming, packing/transportation/marketing of the produce, etc.
- PC18.** assist in forming forward and backward linkages through the PGs/ FIGs/ SHGs
- PC19.** identify and follow the relevant practices to add value to the produce such as processing, packing, upgrading the quality, etc.
- PC20.** arrange for the regular repair and maintenance of the farm machineries/tools, equipment/tube/bore wells/storage/drying platforms/processing units, etc.
- PC21.** connect and partner with other groups to expand the network and address common problems at a large scale

## Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** the process of preparing for the PG/ FIG/ SHG operations such as fundraising, induction of SMEs, investing in ICT products, etc.
- KU2.** how to establish links with the local government at the panchayat level to obtain access to the relevant development programmes and funds
- KU3.** the process of commodity convergence with the relevant developmental programmes
- KU4.** the importance of planning optimal production to meet the market and household food security needs
- KU5.** the importance of setting the group objectives and deciding the group income-generating enterprises/ activities, methods of operation, benefits, etc.
- KU6.** the importance of organising the PG/FIG/ SHG meetings and training sessions to resolve common concerns and get information about the latest developments in the field of work
- KU7.** the benefits of various capacity building exercises such as skill development and training programmes
- KU8.** the importance and process of conducting field trials to identify and resolve problems encountered by farmers in the field operations
- KU9.** the concept of group-owned bank to provide quality seeds, fertilisers, pesticides, tools and equipment to the member farmers
- KU10.** the process of using the group's credit facility
- KU11.** core collective farming activities such as procuring inputs in bulk, large-scale farming, packing, transportation and marketing of the produce, etc.
- KU12.** the concept and benefits of forming forward and backward linkages

## Qualification Pack

**KU13.** relevant value addition practices such as processing, packing, upgrading the quality, etc.

**KU14.** the benefits of connecting with similar groups to address common problems at a large scale

### Generic Skills (GS)

User/individual on the job needs to know how to:

**GS1.** write relevant notes and reports

**GS2.** read the relevant literature to get latest updates about the field of work

**GS3.** communicate politely and professionally

**GS4.** listen attentively to understand the information being shared

**GS5.** plan tasks for effective use of time

**GS6.** identify possible disruptions to work and take appropriate preventive measures

**GS7.** evaluate all possible solutions to a problem to select the best one

## Qualification Pack

### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Create PGs/ FIGs/ SHGs</i>	<b>6</b>	<b>8</b>	-	<b>6</b>
<b>PC1.</b> identify farmers/ groups with the common interests in the area	-	-	-	-
<b>PC2.</b> create Producer Groups (PGs)/Farmers Interest Groups (FIGs)/ Self-Help Groups (SHGs), following the applicable rules and regulations	-	-	-	-
<i>Prepare for the PG/ FIG/ SHG operations</i>	<b>6</b>	<b>10</b>	-	<b>6</b>
<b>PC3.</b> organise fundraising activities to support the functioning of the group	-	-	-	-
<b>PC4.</b> establish links with the local government at panchayat level to obtain access to the relevant development programmes and funds	-	-	-	-
<b>PC5.</b> induct subject matter experts (SMEs) in the group	-	-	-	-
<b>PC6.</b> assist in arranging the required Information and Communication Technology (ICT) products for the group	-	-	-	-
<b>PC7.</b> plan the commodity convergence with the relevant developmental programmes	-	-	-	-
<b>PC8.</b> plan optimal production to meet the market and household food security needs	-	-	-	-
<i>Conduct group meetings and training sessions</i>	<b>8</b>	<b>6</b>	-	<b>8</b>
<b>PC9.</b> conduct the initial group meetings to introduce the members, discuss the group objectives, group income-generating enterprises/ activities, methods of operation, etc.	-	-	-	-
<b>PC10.</b> assist in exchanging the domain and technical knowledge such as market or price information, latest technology, and resolving common issues or conflicts through the PG/ FIG/ SHG meetings	-	-	-	-
<b>PC11.</b> organise capacity building exercises such as skill development and training programmes	-	-	-	-

### Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Carry out collective farming/ activities</i>	<b>10</b>	<b>16</b>	-	<b>10</b>
<b>PC12.</b> organise field trials to identify and resolve problems encountered by group members in the field operations	-	-	-	-
<b>PC13.</b> procure/hire advanced and expensive farm machineries/tools and equipment using the group fund for collective use of the group members	-	-	-	-
<b>PC14.</b> establish and manage the group-owned bank of quality seeds/ fertilisers/ pesticides/ tools and equipment, etc.	-	-	-	-
<b>PC15.</b> use the group's credit facility as per the applicable terms and conditions	-	-	-	-
<b>PC16.</b> carry out relevant duties as per own role in the PG/FIG/ SHG such as the group leader/ secretary/ book-keeper, etc.	-	-	-	-
<b>PC17.</b> co-ordinate within the group(s) in procuring inputs in bulk/large-scale farming, packing/transportation/marketing of the produce, etc.	-	-	-	-
<b>PC18.</b> assist in forming forward and backward linkages through the PGs/ FIGs/ SHGs	-	-	-	-
<b>PC19.</b> identify and follow the relevant practices to add value to the produce such as processing, packing, upgrading the quality, etc.	-	-	-	-
<b>PC20.</b> arrange for the regular repair and maintenance of the farm machineries/tools, equipment/tube/bore wells/storage/drying platforms/processing units, etc.	-	-	-	-
<b>PC21.</b> connect and partner with other groups to expand the network and address common problems at a large scale	-	-	-	-
<b>NOS Total</b>	<b>30</b>	<b>40</b>	-	<b>30</b>

## Qualification Pack

### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	AGR/N9922
<b>NOS Name</b>	Engage in collective farming/activity
<b>Sector</b>	Agriculture
<b>Sub-Sector</b>	Generic
<b>Occupation</b>	Generic
<b>NSQF Level</b>	4
<b>Credits</b>	1
<b>Version</b>	1.0
<b>Last Reviewed Date</b>	24/02/2022
<b>Next Review Date</b>	27/01/2025
<b>NSQC Clearance Date</b>	27/01/2022

## Qualification Pack

### AGR/N9903: Maintain health and safety at the workplace

#### Description

This OS is about maintaining health and safety of self and other co-workers at the workplace

#### Scope

The scope covers the following :

- Maintain personal hygiene
- Maintain clean and safe workplace
- Administer appropriate emergency procedures

#### Elements and Performance Criteria

##### *Maintain personal hygiene*

To be competent, the user/individual on the job must be able to:

- PC1.** wash hands, legs and face with soap/alcohol based sanitizer at reasonable intervals
- PC2.** wash the worn clothes with soap and sun dry before use next time
- PC3.** ensure the face is covered with mask or three layers of cloth-piece
- PC4.** follow the workplace sanitization norms including distancing from sick people

##### *Maintain clean and safe workplace*

To be competent, the user/individual on the job must be able to:

- PC5.** carry out basic safety checks before operation of all tools, implements, and machinery and report identified hazards to the supervisor
- PC6.** wear appropriate Personal Protective Equipment (PPE) while performing work in accordance with the workplace policy
- PC7.** follow the instructions mentioned on the labels of chemicals/pesticides/fumigants etc to avoid hazards
- PC8.** assess risks prior to performing manual handling jobs, and work according to currently recommended safe practices
- PC9.** sanitize equipment, tools and machinery before and after use
- PC10.** use equipment and materials safely and correctly and return the same to designated storage after use
- PC11.** dispose waste safely and correctly in the designated area
- PC12.** recognize risks to bystanders and take required action to reduce the risks
- PC13.** work in a manner which minimizes environmental damage, ensuring all procedures and instructions for controlling risks are followed
- PC14.** report any accidents, incidents or problems without delay to an appropriate person and take necessary immediate action to reduce further danger
- PC15.** follow government / workplace advisories incase of outbreak of any disease/disaster

##### *Administer appropriate emergency procedures*

To be competent, the user/individual on the job must be able to:

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- PC16.** follow procedures for dealing with accidents, fires and emergencies, including communicating location and directions to the location of emergency, as per the workplace requirements
- PC17.** use emergency equipment in accordance with manufacturer's specifications and workplace requirements
- PC18.** provide treatment appropriate to the patient's injuries in accordance with recognized first aid techniques
- PC19.** recover (if practical), clean, inspect/test, refurbish, replace and store the first aid equipment as appropriate
- PC20.** report details of first aid administered in accordance with workplace procedures

## Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** relevant legislation, standards, policies, and procedures at work
- KU2.** relevant health and safety requirements applicable to the work environment
- KU3.** own job role and responsibilities and sources of information pertaining to work
- KU4.** who to approach for support in order to obtain work related information, clarifications and support
- KU5.** importance of following health, hygiene, safety and quality standards and the impact of not following the standards on consumers and the business
- KU6.** personal hygiene and fitness requirement
- KU7.** importance of sanitization of the workplace
- KU8.** types of Personal Protective Equipment (PPE) required at the workplace and their importance
- KU9.** the correct and safe way to use materials and equipment required for the work
- KU10.** the importance of good housekeeping at the workplace
- KU11.** safe waste disposal methods
- KU12.** methods for minimizing environmental damage during work
- KU13.** the risks to health and safety including contagious diseases and the measures to be taken to control those risks in the area of work
- KU14.** workplace procedures and requirements for the prevention and treatment of workplace injuries/illnesses.
- KU15.** basic emergency first aid procedure
- KU16.** local emergency services
- KU17.** why accidents, incidents and problems should be reported and the appropriate actions to be taken

## Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** record the data as per the requirement
- GS2.** report problems to the appropriate personnel in a timely manner

## Qualification Pack

- GS3.** read instruction manual for hand tool and equipments
- GS4.** communicate clearly and effectively with co-workers, and other stakeholders
- GS5.** comprehend information shared by senior people and experts
- GS6.** make decisions pertaining to personal hygiene and safety
- GS7.** schedule daily activities and draw up priorities
- GS8.** manage relationships with co-workers, manager and other stakeholders
- GS9.** assess situation and identify appropriate control measures

## Qualification Pack

### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Maintain personal hygiene</i>	<b>10</b>	<b>5</b>	-	<b>10</b>
<b>PC1.</b> wash hands, legs and face with soap/alcohol based sanitizer at reasonable intervals	-	-	-	-
<b>PC2.</b> wash the worn clothes with soap and sun dry before use next time	-	-	-	-
<b>PC3.</b> ensure the face is covered with mask or three layers of cloth-piece	-	-	-	-
<b>PC4.</b> follow the workplace sanitization norms including distancing from sick people	-	-	-	-
<i>Maintain clean and safe workplace</i>	<b>15</b>	<b>15</b>	-	<b>15</b>
<b>PC5.</b> carry out basic safety checks before operation of all tools, implements, and machinery and report identified hazards to the supervisor	-	-	-	-
<b>PC6.</b> wear appropriate Personal Protective Equipment (PPE) while performing work in accordance with the workplace policy	-	-	-	-
<b>PC7.</b> follow the instructions mentioned on the labels of chemicals/pesticides/fumigants etc to avoid hazards	-	-	-	-
<b>PC8.</b> assess risks prior to performing manual handling jobs, and work according to currently recommended safe practices	-	-	-	-
<b>PC9.</b> sanitize equipment, tools and machinery before and after use	-	-	-	-
<b>PC10.</b> use equipment and materials safely and correctly and return the same to designated storage after use	-	-	-	-
<b>PC11.</b> dispose waste safely and correctly in the designated area	-	-	-	-
<b>PC12.</b> recognize risks to bystanders and take required action to reduce the risks	-	-	-	-

### Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC13.</b> work in a manner which minimizes environmental damage, ensuring all procedures and instructions for controlling risks are followed	-	-	-	-
<b>PC14.</b> report any accidents, incidents or problems without delay to an appropriate person and take necessary immediate action to reduce further danger	-	-	-	-
<b>PC15.</b> follow government / workplace advisories incase of outbreak of any disease/disaster	-	-	-	-
<i>Administer appropriate emergency procedures</i>	<b>15</b>	<b>5</b>	-	<b>10</b>
<b>PC16.</b> follow procedures for dealing with accidents, fires and emergencies, including communicating location and directions to the location of emergency, as per the workplace requirements	-	-	-	-
<b>PC17.</b> use emergency equipment in accordance with manufacturer's specifications and workplace requirements	-	-	-	-
<b>PC18.</b> provide treatment appropriate to the patient's injuries in accordance with recognized first aid techniques	-	-	-	-
<b>PC19.</b> recover (if practical), clean, inspect/test, refurbish, replace and store the first aid equipment as appropriate	-	-	-	-
<b>PC20.</b> report details of first aid administered in accordance with workplace procedures	-	-	-	-
<b>NOS Total</b>	<b>40</b>	<b>25</b>	-	<b>35</b>

## Qualification Pack

### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	AGR/N9903
<b>NOS Name</b>	Maintain health and safety at the workplace
<b>Sector</b>	Agriculture
<b>Sub-Sector</b>	Generic
<b>Occupation</b>	Generic
<b>NSQF Level</b>	4
<b>Credits</b>	1
<b>Version</b>	3.0
<b>Last Reviewed Date</b>	26/05/2022
<b>Next Review Date</b>	27/05/2024
<b>NSQC Clearance Date</b>	27/05/2021

## Qualification Pack

### DGT/VSQ/N0101: Employability Skills (30 Hours)

#### Description

This unit is about employability skills, Constitutional values, becoming a professional in the 21st Century, digital, financial, and legal literacy, diversity and Inclusion, English and communication skills, customer service, entrepreneurship, and apprenticeship, getting ready for jobs and career development.

#### Scope

The scope covers the following :

- Introduction to Employability Skills
- Constitutional values - Citizenship
- Becoming a Professional in the 21st Century
- Basic English Skills
- Communication Skills
- Diversity & Inclusion
- Financial and Legal Literacy
- Essential Digital Skills
- Entrepreneurship
- Customer Service
- Getting ready for Apprenticeship & Jobs

#### Elements and Performance Criteria

##### *Introduction to Employability Skills*

To be competent, the user/individual on the job must be able to:

**PC1.** understand the significance of employability skills in meeting the job requirements

##### *Constitutional values - Citizenship*

To be competent, the user/individual on the job must be able to:

**PC2.** identify constitutional values, civic rights, duties, personal values and ethics and environmentally sustainable practices

##### *Becoming a Professional in the 21st Century*

To be competent, the user/individual on the job must be able to:

**PC3.** explain 21st Century Skills such as Self-Awareness, Behavior Skills, Positive attitude, self-motivation, problem-solving, creative thinking, time management, social and cultural awareness, emotional awareness, continuous learning mindset etc.

##### *Basic English Skills*

To be competent, the user/individual on the job must be able to:

**PC4.** speak with others using some basic English phrases or sentences

##### *Communication Skills*

To be competent, the user/individual on the job must be able to:

**PC5.** follow good manners while communicating with others

**PC6.** work with others in a team

## Qualification Pack

### *Diversity & Inclusion*

To be competent, the user/individual on the job must be able to:

**PC7.** communicate and behave appropriately with all genders and PwD

**PC8.** report any issues related to sexual harassment

### *Financial and Legal Literacy*

To be competent, the user/individual on the job must be able to:

**PC9.** use various financial products and services safely and securely

**PC10.** calculate income, expenses, savings etc.

**PC11.** approach the concerned authorities for any exploitation as per legal rights and laws

### *Essential Digital Skills*

To be competent, the user/individual on the job must be able to:

**PC12.** operate digital devices and use its features and applications securely and safely

**PC13.** use internet and social media platforms securely and safely

### *Entrepreneurship*

To be competent, the user/individual on the job must be able to:

**PC14.** identify and assess opportunities for potential business

**PC15.** identify sources for arranging money and associated financial and legal challenges

### *Customer Service*

To be competent, the user/individual on the job must be able to:

**PC16.** identify different types of customers

**PC17.** identify customer needs and address them appropriately

**PC18.** follow appropriate hygiene and grooming standards

### *Getting ready for apprenticeship & Jobs*

To be competent, the user/individual on the job must be able to:

**PC19.** create a basic biodata

**PC20.** search for suitable jobs and apply

**PC21.** identify and register apprenticeship opportunities as per requirement

## Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

**KU1.** need for employability skills

**KU2.** various constitutional and personal values

**KU3.** different environmentally sustainable practices and their importance

**KU4.** Twenty first (21st) century skills and their importance

**KU5.** how to use basic spoken English language

**KU6.** Do and dont of effective communication

**KU7.** inclusivity and its importance

**KU8.** different types of disabilities and appropriate communication and behaviour towards PwD

**KU9.** different types of financial products and services

## Qualification Pack

- KU10.** how to compute income and expenses
- KU11.** importance of maintaining safety and security in financial transactions
- KU12.** different legal rights and laws
- KU13.** how to operate digital devices and applications safely and securely
- KU14.** ways to identify business opportunities
- KU15.** types of customers and their needs
- KU16.** how to apply for a job and prepare for an interview
- KU17.** apprenticeship scheme and the process of registering on apprenticeship portal

## Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** communicate effectively using appropriate language
- GS2.** behave politely and appropriately with all
- GS3.** perform basic calculations
- GS4.** solve problems effectively
- GS5.** be careful and attentive at work
- GS6.** use time effectively
- GS7.** maintain hygiene and sanitisation to avoid infection

## Qualification Pack

### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Introduction to Employability Skills</i>	<b>1</b>	<b>1</b>	-	-
<b>PC1.</b> understand the significance of employability skills in meeting the job requirements	-	-	-	-
<i>Constitutional values - Citizenship</i>	<b>1</b>	<b>1</b>	-	-
<b>PC2.</b> identify constitutional values, civic rights, duties, personal values and ethics and environmentally sustainable practices	-	-	-	-
<i>Becoming a Professional in the 21st Century</i>	<b>1</b>	<b>3</b>	-	-
<b>PC3.</b> explain 21st Century Skills such as Self-Awareness, Behavior Skills, Positive attitude, self-motivation, problem-solving, creative thinking, time management, social and cultural awareness, emotional awareness, continuous learning mindset etc.	-	-	-	-
<i>Basic English Skills</i>	<b>2</b>	<b>3</b>	-	-
<b>PC4.</b> speak with others using some basic English phrases or sentences	-	-	-	-
<i>Communication Skills</i>	<b>1</b>	<b>1</b>	-	-
<b>PC5.</b> follow good manners while communicating with others	-	-	-	-
<b>PC6.</b> work with others in a team	-	-	-	-
<i>Diversity &amp; Inclusion</i>	<b>1</b>	<b>1</b>	-	-
<b>PC7.</b> communicate and behave appropriately with all genders and PwD	-	-	-	-
<b>PC8.</b> report any issues related to sexual harassment	-	-	-	-
<i>Financial and Legal Literacy</i>	<b>3</b>	<b>4</b>	-	-
<b>PC9.</b> use various financial products and services safely and securely	-	-	-	-

### Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC10.</b> calculate income, expenses, savings etc.	-	-	-	-
<b>PC11.</b> approach the concerned authorities for any exploitation as per legal rights and laws	-	-	-	-
<i>Essential Digital Skills</i>	<b>4</b>	<b>6</b>	-	-
<b>PC12.</b> operate digital devices and use its features and applications securely and safely	-	-	-	-
<b>PC13.</b> use internet and social media platforms securely and safely	-	-	-	-
<i>Entrepreneurship</i>	<b>3</b>	<b>5</b>	-	-
<b>PC14.</b> identify and assess opportunities for potential business	-	-	-	-
<b>PC15.</b> identify sources for arranging money and associated financial and legal challenges	-	-	-	-
<i>Customer Service</i>	<b>2</b>	<b>2</b>	-	-
<b>PC16.</b> identify different types of customers	-	-	-	-
<b>PC17.</b> identify customer needs and address them appropriately	-	-	-	-
<b>PC18.</b> follow appropriate hygiene and grooming standards	-	-	-	-
<i>Getting ready for apprenticeship &amp; Jobs</i>	<b>1</b>	<b>3</b>	-	-
<b>PC19.</b> create a basic biodata	-	-	-	-
<b>PC20.</b> search for suitable jobs and apply	-	-	-	-
<b>PC21.</b> identify and register apprenticeship opportunities as per requirement	-	-	-	-
<b>NOS Total</b>	<b>20</b>	<b>30</b>	-	-

## Qualification Pack

### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	DGT/VSQ/N0101
<b>NOS Name</b>	Employability Skills (30 Hours)
<b>Sector</b>	Cross Sectoral
<b>Sub-Sector</b>	Professional Skills
<b>Occupation</b>	Employability
<b>NSQF Level</b>	2
<b>Credits</b>	1
<b>Version</b>	1.0
<b>Last Reviewed Date</b>	NA
<b>Next Review Date</b>	30/06/2025
<b>NSQC Clearance Date</b>	30/06/2022

## Qualification Pack

### AGR/N0124: Carry out cultivation of wheat

#### Description

This OS unit is about the cultivation of wheat which includes preparing the field; sowing the seeds; maintaining, harvesting and marketing the crop.

#### Scope

The scope covers the following :

- Prepare for wheat cultivation and sow the seeds
- Maintain the wheat crop
- Carry out harvesting, post-harvest management and marketing of wheat crop

#### Elements and Performance Criteria

##### *Prepare for wheat cultivation and sow the seeds*

To be competent, the user/individual on the job must be able to:

- PC1.** select an appropriate variety of wheat to be cultivated depending on the location, time of sowing and resistance to pests and diseases
- PC2.** remove stubble from the field in an environment-friendly manner
- PC3.** prepare the field for sowing and apply basal fertiliser in the recommended dose
- PC4.** select a suitable method for sowing wheat seeds and sow them maintaining the recommended seed rate and planting density

##### *Maintain the wheat crop*

To be competent, the user/individual on the job must be able to:

- PC5.** irrigate the wheat crop with the recommended quantity of water as per the irrigation schedule
- PC6.** apply pre-emergent and post-emergent herbicides to the crop, as required
- PC7.** apply the recommended fertilisers in the prescribed dose during various stages of the crop's growth
- PC8.** identify signs of pest and disease infestation in the wheat crop and apply the recommended treatment

##### *Carry out harvesting, post-harvest management and marketing of wheat crop*

To be competent, the user/individual on the job must be able to:

- PC9.** check the maturity of the wheat crop based on the growth, moisture content and change in its colour
- PC10.** select the manual or mechanical harvesting method, such as manual cutting and threshing or use of combine harvester depending on the field size and availability of resources
- PC11.** harvest and thresh the wheat to obtain grains
- PC12.** pack the wheat grains in jute bags, and store the bags in a dry and pest-free storage area, maintaining the recommended temperature
- PC13.** clear the stubble and use husk for the recommended purpose

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- PC14.** prepare the field for the next crop through solarisation
- PC15.** select an appropriate time for marketing the harvested wheat crop according to market demand
- PC16.** undertake marketing of wheat crop at a profitable price after negotiating with the buyer(s)
- PC17.** arrange for safe and hygienic delivery of wheat crop to the buyer(s)
- PC18.** process the payments using the appropriate e-payment methods
- PC19.** maintain the manual and/ or electronic record of sales and payments using the physical registers and/ or the relevant computer application

## Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** different methods of sowing such as broadcasting and seed drilling
- KU2.** the agro-climatic conditions required for wheat farming
- KU3.** the appropriate soil conditions required for the cultivation of wheat crop
- KU4.** field preparation requirements for wheat cultivation
- KU5.** when and how to use pre and post-emergent herbicides, and the recommended dose for topping up herbicides
- KU6.** disadvantages of stubble burning, and prevalent and new practices to remove wheat stubble from the field
- KU7.** the recommended seed rate for different varieties of wheat
- KU8.** the benefits of crop rotation and different types of crops suitable for rotation with wheat
- KU9.** the nutritional requirements of wheat crop and the process of applying manure and fertilisers in a wheat field
- KU10.** major wheat weeds, pests and diseases and methods to protect the wheat crop from them
- KU11.** the process of removing stubble from the field before planting the wheat crop
- KU12.** the process of applying fertilisers to the field in the recommended dose as per basal fertiliser application technique
- KU13.** the process of sowing wheat seeds and the recommended planting density to be maintained
- KU14.** the water requirement of the wheat crop and the recommended irrigation schedule
- KU15.** the need of applying pre-emergent and post-emergent herbicides to the wheat crop
- KU16.** the importance of applying fertilisers to wheat crop in the recommended dose during various stages of its growth
- KU17.** various signs of pest and diseases infestation in the wheat crop and their appropriate treatment
- KU18.** the indicators of maturity of wheat crop
- KU19.** the manual and mechanical methods of harvesting and threshing wheat crop
- KU20.** how to use combine harvesters
- KU21.** appropriate packing material to be used for packing wheat grains
- KU22.** the appropriate conditions required for storing wheat grains, such as the recommended temperature and humidity
- KU23.** the process of clearing stubble from the field and various uses of husk

## Qualification Pack

- KU24.** the process of solarisation of field soil
- KU25.** transportation requirements for the wheat crop to prevent damage and spoilage
- KU26.** the importance of selecting an appropriate time for marketing agricultural produce according to the market demand
- KU27.** the process of negotiating with buyers and marketing agricultural produce
- KU28.** how to use various e-payment methods
- KU29.** how to maintain manual and electronic records using physical registers and relevant computer application

## Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** maintain work-related notes and records
- GS2.** read the relevant literature to get the latest updates about the field of work
- GS3.** communicate politely and professionally
- GS4.** listen attentively to understand the information/ instructions being given
- GS5.** identify appropriate solutions to work-related issues
- GS6.** plan and prioritise tasks to ensure timely completion
- GS7.** take quick decisions to deal with any emergencies or accidents
- GS8.** plan effective use of time and resources

## Qualification Pack

### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Prepare for wheat cultivation and sow the seeds</i>	<b>8</b>	<b>8</b>	-	<b>6</b>
<b>PC1.</b> select an appropriate variety of wheat to be cultivated depending on the location, time of sowing and resistance to pests and diseases	-	-	-	-
<b>PC2.</b> remove stubble from the field in an environment-friendly manner	-	-	-	-
<b>PC3.</b> prepare the field for sowing and apply basal fertiliser in the recommended dose	-	-	-	-
<b>PC4.</b> select a suitable method for sowing wheat seeds and sow them maintaining the recommended seed rate and planting density	-	-	-	-
<i>Maintain the wheat crop</i>	<b>10</b>	<b>16</b>	-	<b>8</b>
<b>PC5.</b> irrigate the wheat crop with the recommended quantity of water as per the irrigation schedule	-	-	-	-
<b>PC6.</b> apply pre-emergent and post-emergent herbicides to the crop, as required	-	-	-	-
<b>PC7.</b> apply the recommended fertilisers in the prescribed dose during various stages of the crop's growth	-	-	-	-
<b>PC8.</b> identify signs of pest and disease infestation in the wheat crop and apply the recommended treatment	-	-	-	-
<i>Carry out harvesting, post-harvest management and marketing of wheat crop</i>	<b>12</b>	<b>16</b>	-	<b>16</b>
<b>PC9.</b> check the maturity of the wheat crop based on the growth, moisture content and change in its colour	-	-	-	-
<b>PC10.</b> select the manual or mechanical harvesting method, such as manual cutting and threshing or use of combine harvester depending on the field size and availability of resources	-	-	-	-

### Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC11.</b> harvest and thresh the wheat to obtain grains	-	-	-	-
<b>PC12.</b> pack the wheat grains in jute bags, and store the bags in a dry and pest-free storage area, maintaining the recommended temperature	-	-	-	-
<b>PC13.</b> clear the stubble and use husk for the recommended purpose	-	-	-	-
<b>PC14.</b> prepare the field for the next crop through solarisation	-	-	-	-
<b>PC15.</b> select an appropriate time for marketing the harvested wheat crop according to market demand	-	-	-	-
<b>PC16.</b> undertake marketing of wheat crop at a profitable price after negotiating with the buyer(s)	-	-	-	-
<b>PC17.</b> arrange for safe and hygienic delivery of wheat crop to the buyer(s)	-	-	-	-
<b>PC18.</b> process the payments using the appropriate e-payment methods	-	-	-	-
<b>PC19.</b> maintain the manual and/ or electronic record of sales and payments using the physical registers and/ or the relevant computer application	-	-	-	-
<b>NOS Total</b>	<b>30</b>	<b>40</b>	<b>-</b>	<b>30</b>

## Qualification Pack

### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	AGR/N0124
<b>NOS Name</b>	Carry out cultivation of wheat
<b>Sector</b>	Agriculture
<b>Sub-Sector</b>	Agriculture Crop Production
<b>Occupation</b>	Field Crops Cultivation (Food Crops)
<b>NSQF Level</b>	4
<b>Credits</b>	1
<b>Version</b>	1.0
<b>Last Reviewed Date</b>	27/01/2022
<b>Next Review Date</b>	27/01/2025
<b>NSQC Clearance Date</b>	27/01/2022

## Qualification Pack

### AGR/N0123: Carry out cultivation of rice

#### Description

This OS unit is about the cultivation of rice which includes raising seedlings in the nursery; transplanting them in the field; maintaining, harvesting and marketing the rice crop.

#### Scope

The scope covers the following :

- Raise rice seedlings in the nursery
- Prepare the field and transplant the seedlings
- Maintain the rice crop
- Carry out harvesting, post-harvest management and marketing of rice crop

#### Elements and Performance Criteria

##### *Raise rice seedlings in the nursery*

To be competent, the user/individual on the job must be able to:

- PC1.** prepare the nursery bed and apply the recommended manure and fertilisers to it in the recommended quantity
- PC2.** ensure the availability of quality water in the required quantity and create irrigation channels to supply water in the nursery
- PC3.** broadcast seeds/ sprouted seeds as per the seed rate recommended for the selected variety of rice
- PC4.** grow seedlings in trays as per recommended mechanised procedure, such as the use of paddy transplanter
- PC5.** perform weed control in the nursery bed
- PC6.** apply the recommended pesticides and fungicides as per the requirement in the nursery bed to protect the seedlings from pests and diseases
- PC7.** harvest the seedlings at the recommended stage for transplantation in the rice field, ensuring the suitability of the selected rice variety to the field soil

##### *Prepare the field and transplant the seedlings*

To be competent, the user/individual on the job must be able to:

- PC8.** carry out ploughing, harrowing and levelling in the rice field to obtain the required tilth
- PC9.** apply the recommended fertilisers to the field as per the basal fertiliser application technique
- PC10.** puddle the field to stop leeching and destroy weeds
- PC11.** level the field after puddling to use irrigation/ rainwater efficiently
- PC12.** transplant the rice seedlings in the field, maintaining the recommended space between the rows for intercultural operations
- PC13.** follow the practices recommended as per the System of Rice Intensification (SRI) for an improved yield

##### *Maintain the rice crop*

To be competent, the user/individual on the job must be able to:

## Qualification Pack

- PC14.** irrigate the rice crop with the recommended quantity of water according to the stages of its growth
- PC15.** apply pre-emergent and post-emergent herbicides, if applicable
- PC16.** apply the recommended fertilisers in the prescribed dose according to the stages of growth of the rice crop
- PC17.** identify the signs of infestation by various pests and diseases in the rice crop, such as leaf/neck blast, sheath blight, spots, stem borer, leaf folder, etc.
- PC18.** undertake dipping of paddy seedlings as per the recommended procedure for plant protection
- PC19.** apply the recommended treatment such as pesticides and insecticides as per the prescription

### *Carry out harvesting, post-harvest management and marketing of rice crop*

To be competent, the user/individual on the job must be able to:

- PC20.** identify the maturity of the rice crop based on its growth and change in colour, and select an appropriate time to harvest it
- PC21.** select the appropriate harvesting method such as manual cutting and threshing or mechanical method involving the use of a combine harvester depending on the field size and availability of resources
- PC22.** harvest and thresh the paddy
- PC23.** select an appropriate packing material for the rice crop such as jute bags and store the packed rice in a hygienic storage area, maintaining the recommended temperature and humidity
- PC24.** manage stubble according to the recommended stubble management methods to improve the soil fertility
- PC25.** select an appropriate time for marketing the harvested rice crop according to the market demand
- PC26.** undertake marketing of rice crop at a profitable price after negotiating with the buyer(s)
- PC27.** arrange for safe and hygienic delivery of rice crop to the buyer(s)
- PC28.** process the payments using the appropriate e-payment methods
- PC29.** maintain the manual and/ or electronic record of sales and payments using the physical registers and/ or the relevant computer application

## Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** the agro-climatic conditions required for rice farming
- KU2.** different methods of growing rice such as transplantation, Direct Seeded Rice (DSR), System of Rice Intensification (SRI), etc.
- KU3.** how to prepare the nursery bed for raising rice seedlings
- KU4.** the recommended seed rate for broadcasting seeds of different varieties of rice
- KU5.** how to perform weed control in rice fields
- KU6.** the recommended pesticides and fungicides to be used on rice crop and their recommended doses to be applied

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- KU7.** the process of ploughing, harrowing and levelling the rice field to prepare it for transplanting the rice seedlings
- KU8.** the basal fertiliser application technique for applying fertilisers to the field
- KU9.** the process of puddling and levelling the rice field
- KU10.** the process of transplanting rice seedlings in the rice field
- KU11.** the use and benefits of paddy transplanter and paddy harvester
- KU12.** the importance of maintaining the recommended space between the rows in the rice field for intercultural operations
- KU13.** the water requirements of rice crop during various stages of its growth
- KU14.** water requirements of rice crop during various stages of its growth
- KU15.** the need of applying pre-emergent and post-emergent herbicides
- KU16.** the nutritional requirements of the rice crop
- KU17.** the recommended dose of fertilisers for the rice crop and the process of applying them to the soil
- KU18.** the importance of water in weed management in a paddy field
- KU19.** various signs of pest and diseases infestation in the rice crop such as leaf/ neck blast, sheath blight, spots, stem borer, leaf folder, etc.
- KU20.** the recommended pesticides and insecticides to be applied to the rice crop and their recommended dose to be applied
- KU21.** the signs of the maturity of rice crop
- KU22.** the appropriate time for harvesting the rice crop and the criteria for selecting manual or mechanical harvesting method
- KU23.** the process of harvesting and threshing the paddy
- KU24.** the appropriate packing material for the rice crop such as jute bags
- KU25.** the recommended temperature and humidity for storing the packed rice
- KU26.** the applicable transportation requirements to prevent damage and spoilage of rice during transit
- KU27.** relevant stubble management methods for using stubble for improving the soil fertility
- KU28.** the importance of selecting an appropriate time for marketing agricultural produce according to the market demand
- KU29.** the process of negotiating with buyers and marketing agricultural produce
- KU30.** how to use various e-payment methods
- KU31.** how to maintain manual and electronic records using physical registers and relevant computer application

## Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** write work-related notes
- GS2.** read the relevant manuals and literature to get the latest updates about the field of work
- GS3.** communicate clearly and politely
- GS4.** perform basic calculations

## Qualification Pack

- GS5.** listen attentively to understand the instructions being given
- GS6.** identify appropriate solutions to work-related issues
- GS7.** plan and prioritise tasks to ensure timely completion
- GS8.** take quick decision in case of an emergency/ accident
- GS9.** plan effective use of time and resources

## Qualification Pack

### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Raise rice seedlings in the nursery</i>	<b>8</b>	<b>12</b>	-	<b>8</b>
<b>PC1.</b> prepare the nursery bed and apply the recommended manure and fertilisers to it in the recommended quantity	-	-	-	-
<b>PC2.</b> ensure the availability of quality water in the required quantity and create irrigation channels to supply water in the nursery	-	-	-	-
<b>PC3.</b> broadcast seeds/ sprouted seeds as per the seed rate recommended for the selected variety of rice	-	-	-	-
<b>PC4.</b> grow seedlings in trays as per recommended mechanised procedure, such as the use of paddy transplanter	-	-	-	-
<b>PC5.</b> perform weed control in the nursery bed	-	-	-	-
<b>PC6.</b> apply the recommended pesticides and fungicides as per the requirement in the nursery bed to protect the seedlings from pests and diseases	-	-	-	-
<b>PC7.</b> harvest the seedlings at the recommended stage for transplantation in the rice field, ensuring the suitability of the selected rice variety to the field soil	-	-	-	-
<i>Prepare the field and transplant the seedlings</i>	<b>6</b>	<b>8</b>	-	<b>8</b>
<b>PC8.</b> carry out ploughing, harrowing and levelling in the rice field to obtain the required tilth	-	-	-	-
<b>PC9.</b> apply the recommended fertilisers to the field as per the basal fertiliser application technique	-	-	-	-
<b>PC10.</b> puddle the field to stop leeching and destroy weeds	-	-	-	-
<b>PC11.</b> level the field after puddling to use irrigation/ rainwater efficiently	-	-	-	-

### Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC12.</b> transplant the rice seedlings in the field, maintaining the recommended space between the rows for intercultural operations	-	-	-	-
<b>PC13.</b> follow the practices recommended as per the System of Rice Intensification (SRI) for an improved yield	-	-	-	-
<i>Maintain the rice crop</i>	<b>6</b>	<b>8</b>	-	<b>8</b>
<b>PC14.</b> irrigate the rice crop with the recommended quantity of water according to the stages of its growth	-	-	-	-
<b>PC15.</b> apply pre-emergent and post-emergent herbicides, if applicable	-	-	-	-
<b>PC16.</b> apply the recommended fertilisers in the prescribed dose according to the stages of growth of the rice crop	-	-	-	-
<b>PC17.</b> identify the signs of infestation by various pests and diseases in the rice crop, such as leaf/ neck blast, sheath blight, spots, stem borer, leaf folder, etc.	-	-	-	-
<b>PC18.</b> undertake dipping of paddy seedlings as per the recommended procedure for plant protection	-	-	-	-
<b>PC19.</b> apply the recommended treatment such as pesticides and insecticides as per the prescription	-	-	-	-
<i>Carry out harvesting, post-harvest management and marketing of rice crop</i>	<b>10</b>	<b>12</b>	-	<b>6</b>
<b>PC20.</b> identify the maturity of the rice crop based on its growth and change in colour, and select an appropriate time to harvest it	-	-	-	-
<b>PC21.</b> select the appropriate harvesting method such as manual cutting and threshing or mechanical method involving the use of a combine harvester depending on the field size and availability of resources	-	-	-	-
<b>PC22.</b> harvest and thresh the paddy	-	-	-	-

### Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC23.</b> select an appropriate packing material for the rice crop such as jute bags and store the packed rice in a hygienic storage area, maintaining the recommended temperature and humidity	-	-	-	-
<b>PC24.</b> manage stubble according to the recommended stubble management methods to improve the soil fertility	-	-	-	-
<b>PC25.</b> select an appropriate time for marketing the harvested rice crop according to the market demand	-	-	-	-
<b>PC26.</b> undertake marketing of rice crop at a profitable price after negotiating with the buyer(s)	-	-	-	-
<b>PC27.</b> arrange for safe and hygienic delivery of rice crop to the buyer(s)	-	-	-	-
<b>PC28.</b> process the payments using the appropriate e-payment methods	-	-	-	-
<b>PC29.</b> maintain the manual and/ or electronic record of sales and payments using the physical registers and/ or the relevant computer application	-	-	-	-
<b>NOS Total</b>	<b>30</b>	<b>40</b>	<b>-</b>	<b>30</b>

## Qualification Pack

### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	AGR/N0123
<b>NOS Name</b>	Carry out cultivation of rice
<b>Sector</b>	Agriculture
<b>Sub-Sector</b>	Agriculture Crop Production
<b>Occupation</b>	Field Crops Cultivation (Food Crops)
<b>NSQF Level</b>	4
<b>Credits</b>	1
<b>Version</b>	1.0
<b>Last Reviewed Date</b>	27/01/2022
<b>Next Review Date</b>	27/01/2025
<b>NSQC Clearance Date</b>	27/01/2022

## Qualification Pack

### AGR/N0122: Carry out cultivation of maize

#### Description

This OS unit is about the cultivation of maize which includes preparing the field, maintaining and harvesting the crop.

#### Scope

The scope covers the following :

- Prepare for maize cultivation and sow the seeds
- Maintain the maize crop
- Carry out harvesting, post-harvest management and marketing of maize crop

#### Elements and Performance Criteria

##### *Prepare for maize cultivation and sow the seeds*

To be competent, the user/individual on the job must be able to:

- PC1.** select an appropriate variety or hybrid of maize for cultivation depending on the location and time of sowing, ensuring it is pest and disease resistant
- PC2.** prepare raised bed in the field with seed furrows, ensuring no tilling
- PC3.** apply fertilisers as per basal fertiliser application technique along with useful organisms such as Azospirillum spp. in the recommended dose
- PC4.** treat the maize seeds with appropriate insect and disease protection chemicals before sowing
- PC5.** select an appropriate time with the required temperature and moisture levels in the soil and sow the maize seeds following an appropriate method such as mechanised seed drilling

##### *Maintain the maize crop*

To be competent, the user/individual on the job must be able to:

- PC6.** irrigate the maize crop with the recommended quantity of water as per the irrigation schedule and stages of its growth
- PC7.** apply pre-emergent and post-emergent herbicides, if applicable
- PC8.** apply the recommended fertiliser in the prescribed dose as per the stages of the crop's growth
- PC9.** identify the signs of various pests and diseases in the maize crop such as Northern Corn Leaf Blight (NCLB), leaf and sheath blight, stalk rot, downy mildew, termites, stem borer, pink borer, shoot fly, fall armyworm etc.
- PC10.** apply the recommended treatment such as pesticides and insecticides in the recommended dose

##### *Carry out harvesting, post-harvest management and marketing of maize crop*

To be competent, the user/individual on the job must be able to:

- PC11.** identify the maturity of the maize crop based on its growth, appropriate shade on sheath of cobs, along with dryness and hardness of seeds

## Qualification Pack

- PC12.** select an appropriate time and harvesting method such as manual or mechanical cutting and threshing depending on the field size and availability of resources
- PC13.** harvest and de-cobb the maize and store in a cool and dry storage area, ensuring it is free from pests and rodents
- PC14.** remove sheaths using the appropriate equipment, as applicable
- PC15.** use the stalks and dry cobs as a fibre supplement for the domesticated animals
- PC16.** clear stubble from the field and prepare it for solarisation
- PC17.** select an appropriate time for marketing the harvested maize crop according to the market demand
- PC18.** undertake marketing of maize crop at a profitable price after negotiating with the buyer(s)
- PC19.** arrange for safe and hygienic delivery of maize crop to the buyer(s)
- PC20.** process the payments using the appropriate e-payment methods
- PC21.** maintain the manual and/ or electronic record of sales and payments using the physical registers and/ or the relevant computer application

## Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** agro-climatic conditions required for maize cultivation
- KU2.** the recommended seed rate of different varieties or hybrids of maize
- KU3.** the importance of water management of corn crop
- KU4.** the criteria for selecting a variety or hybrid of maize for cultivation
- KU5.** the process of preparing raised bed in the field with seed furrows
- KU6.** how to apply fertilisers as per the basal fertiliser application technique and the use of useful organisms such as Azospirillum spp.
- KU7.** the process of treating the maize seeds with appropriate insect and disease protection chemicals
- KU8.** appropriate temperature and moisture levels required in the soil for sowing maize seeds
- KU9.** the mechanical methods of sowing maize seeds such as mechanised seed drilling
- KU10.** water requirement of varieties of maize and their recommended irrigation schedule
- KU11.** the need of applying pre-emergent and post-emergent herbicides
- KU12.** the nutritional requirement and process of applying fertilisers and the recommended fertilisers for the maize crop
- KU13.** the signs of various pests and diseases in the maize crop such as Northern Corn Leaf Blight (NCLB), leaf and sheath blight, stalk rot, downy mildew, termites, stem borer, pink borer, shoot fly, fall armyworm etc.
- KU14.** the process of applying the recommended treatment such as pesticides and insecticides to the maize crop and their recommended dose
- KU15.** maturity indicators for maize crop and the appropriate time for harvesting it
- KU16.** manual and mechanical methods of harvesting maize crop
- KU17.** storage and transportation requirements for the harvested maize
- KU18.** use of maize stalks and dry cobs as a fibre supplement for the domesticated animals

## Qualification Pack

- KU19.** the process of clearing stubble from the field and preparing it for soil solarisation
- KU20.** the importance of selecting an appropriate time for marketing agricultural produce according to the market demand
- KU21.** the process of negotiating with buyers and marketing agricultural produce
- KU22.** how to use various e-payment methods
- KU23.** how to maintain manual and electronic records using physical registers and relevant computer application

## Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** write work-related notes and maintain the relevant records
- GS2.** communicate politely and professionally
- GS3.** read the relevant literature to learn about the latest developments in the field of work
- GS4.** listen attentively to understand the information/ instructions being shared by the speaker
- GS5.** plan and prioritise tasks to ensure timely completion
- GS6.** co-ordinate with the co-workers to achieve the work objectives
- GS7.** evaluate all possible solutions to a problem to select the best one
- GS8.** identify possible disruptions to work and take appropriate preventive measures
- GS9.** take quick decisions to deal with workplace emergencies/ accidents

## Qualification Pack

### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Prepare for maize cultivation and sow the seeds</i>	<b>12</b>	<b>16</b>	-	<b>14</b>
<b>PC1.</b> select an appropriate variety or hybrid of maize for cultivation depending on the location and time of sowing, ensuring it is pest and disease resistant	-	-	-	-
<b>PC2.</b> prepare raised bed in the field with seed furrows, ensuring no tilling	-	-	-	-
<b>PC3.</b> apply fertilisers as per basal fertiliser application technique along with useful organisms such as Azospirillum spp. in the recommended dose	-	-	-	-
<b>PC4.</b> treat the maize seeds with appropriate insect and disease protection chemicals before sowing	-	-	-	-
<b>PC5.</b> select an appropriate time with the required temperature and moisture levels in the soil and sow the maize seeds following an appropriate method such as mechanised seed drilling	-	-	-	-
<i>Maintain the maize crop</i>	<b>8</b>	<b>12</b>	-	<b>8</b>
<b>PC6.</b> irrigate the maize crop with the recommended quantity of water as per the irrigation schedule and stages of its growth	-	-	-	-
<b>PC7.</b> apply pre-emergent and post-emergent herbicides, if applicable	-	-	-	-
<b>PC8.</b> apply the recommended fertiliser in the prescribed dose as per the stages of the crop's growth	-	-	-	-
<b>PC9.</b> identify the signs of various pests and diseases in the maize crop such as Northern Corn Leaf Blight (NCLB), leaf and sheath blight, stalk rot, downy mildew, termites, stem borer, pink borer, shoot fly, fall armyworm etc.	-	-	-	-
<b>PC10.</b> apply the recommended treatment such as pesticides and insecticides in the recommended dose	-	-	-	-

### Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Carry out harvesting, post-harvest management and marketing of maize crop</i>	<b>10</b>	<b>12</b>	-	<b>8</b>
<b>PC11.</b> identify the maturity of the maize crop based on its growth, appropriate shade on sheath of cobs, along with dryness and hardness of seeds	-	-	-	-
<b>PC12.</b> select an appropriate time and harvesting method such as manual or mechanical cutting and threshing depending on the field size and availability of resources	-	-	-	-
<b>PC13.</b> harvest and de-cobb the maize and store in a cool and dry storage area, ensuring it is free from pests and rodents	-	-	-	-
<b>PC14.</b> remove sheaths using the appropriate equipment, as applicable	-	-	-	-
<b>PC15.</b> use the stalks and dry cobs as a fibre supplement for the domesticated animals	-	-	-	-
<b>PC16.</b> clear stubble from the field and prepare it for solarisation	-	-	-	-
<b>PC17.</b> select an appropriate time for marketing the harvested maize crop according to the market demand	-	-	-	-
<b>PC18.</b> undertake marketing of maize crop at a profitable price after negotiating with the buyer(s)	-	-	-	-
<b>PC19.</b> arrange for safe and hygienic delivery of maize crop to the buyer(s)	-	-	-	-
<b>PC20.</b> process the payments using the appropriate e-payment methods	-	-	-	-
<b>PC21.</b> maintain the manual and/ or electronic record of sales and payments using the physical registers and/ or the relevant computer application	-	-	-	-
<b>NOS Total</b>	<b>30</b>	<b>40</b>	-	<b>30</b>

## Qualification Pack

### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	AGR/N0122
<b>NOS Name</b>	Carry out cultivation of maize
<b>Sector</b>	Agriculture
<b>Sub-Sector</b>	Agriculture Crop Production
<b>Occupation</b>	Field Crops Cultivation (Food Crops)
<b>NSQF Level</b>	4
<b>Credits</b>	1
<b>Version</b>	1.0
<b>Last Reviewed Date</b>	27/01/2022
<b>Next Review Date</b>	27/01/2025
<b>NSQC Clearance Date</b>	27/01/2022

## Qualification Pack

### AGR/N0121: Carry out cultivation of millets

#### Description

This OS unit is about the cultivation of millets which includes preparing the field; sowing the seeds; maintaining, harvesting and marketing the crop.

#### Scope

The scope covers the following :

- Prepare for millet cultivation and sow the seeds
- Maintain the millet crop
- Carry out harvesting, post-harvest management and marketing of millet crop

#### Elements and Performance Criteria

##### *Prepare for millet cultivation and sow the seeds*

To be competent, the user/individual on the job must be able to:

- PC1.** select an appropriate variety or hybrid of millet for cultivation depending on the location and time of sowing, ensuring it is pest and disease resistant
- PC2.** prepare the field for sowing millets, ensuring effective drainage
- PC3.** apply the recommended fertilisers to the field in the prescribed dose, as per the basal fertiliser application technique
- PC4.** treat the millet seeds with the appropriate insect and disease protection chemicals before sowing
- PC5.** select an appropriate time with the required temperature and moisture levels in the soil and sow the millet seeds

##### *Maintain the millet crop*

To be competent, the user/individual on the job must be able to:

- PC6.** irrigate the millet crop with the recommended quantity of water as per the irrigation schedule and stages of its growth
- PC7.** drain out excess water from the field
- PC8.** apply pre-emergent and post-emergent herbicides, if applicable
- PC9.** apply the recommended fertilisers in the prescribed dose as per the stages of the crop's growth
- PC10.** identify the signs of various pests and diseases in the millet crop such as smut, ergot, downy mildew termites, white grub, weevil, stem borer, hairy caterpillar, etc.

- PC11.** apply the recommended treatment such as pesticides and insecticides in the prescribed dose

##### *Carry out harvesting, post-harvest management and marketing of millet crop*

To be competent, the user/individual on the job must be able to:

- PC12.** identify the maturity of the millet crop based on its growth and moisture content, and select an appropriate time for harvesting it
- PC13.** select an appropriate harvesting method such as manual or mechanical cutting and threshing depending on the field size and availability of required resources

## Qualification Pack

- PC14.** harvest the millet crop and store it in a cool and dry storage area, ensuring it is free from pests and rodents
- PC15.** use the stalks and dry cobs as a fibre supplement for the domesticated animals
- PC16.** clear stubble from the field and prepare it for solarisation
- PC17.** select an appropriate time for marketing the harvested millet crop according to the market demand
- PC18.** undertake marketing of millet crop at a profitable price after negotiating with the buyer(s)
- PC19.** arrange for safe and hygienic delivery of millet crop to the buyer(s)
- PC20.** process the payments using the appropriate e-payment methods
- PC21.** calculate the benefit-cost (B:C) ratio
- PC22.** maintain the manual and/ or electronic record of sales and payments using the physical registers and/ or the relevant computer application

## Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** the agro-climatic conditions required for the cultivation of varieties of millets
- KU2.** the recommended seed rate for varieties of millets
- KU3.** the criteria for selecting a variety or hybrid of millet for cultivation
- KU4.** the process of preparing the field for sowing millet seeds and the importance of ensuring effective drainage
- KU5.** how to apply fertilisers to the field as per the basal fertiliser application technique in the prescribed dose
- KU6.** the process of treating the millet seeds with appropriate insect and disease protection chemicals
- KU7.** the appropriate temperature and moisture levels required in the soil for sowing millet seeds
- KU8.** the water requirement of varieties of millets and their recommended irrigation schedule
- KU9.** the need of applying pre-emergent and post-emergent herbicides
- KU10.** the nutritional requirement and process of applying the recommended fertilisers in the prescribed dose as per the stages of the millet crop's growth
- KU11.** the signs of various pests and diseases in the millet crop such as smut, ergot, downy mildew, termites, white grub, weevil, stem borer, hairy caterpillar, etc.
- KU12.** the process of applying the recommended treatment such as pesticides and insecticides to the millet crop and their recommended dose
- KU13.** the importance of water management in millets
- KU14.** the maturity indicators for the millet crop and the appropriate time for harvesting it
- KU15.** the manual and mechanical methods of harvesting millet crop and the criteria for selecting one
- KU16.** the storage and transportation requirements for the harvested millet crop
- KU17.** the use of millet stalks and dry cobs as a fibre supplement for the domesticated animals
- KU18.** the process of clearing stubble from the field and preparing it for soil solarisation

## Qualification Pack

- KU19.** the importance of selecting an appropriate time for marketing agricultural produce according to the market demand
- KU20.** the process of negotiating with buyers and marketing agricultural produce
- KU21.** how to use various e-payment methods
- KU22.** how to calculate the benefit-cost (B:C) ratio
- KU23.** how to maintain manual and electronic records using physical registers and relevant computer application

## Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** maintain work-related notes and records
- GS2.** communicate politely and professionally
- GS3.** read the relevant literature to learn about the latest developments in the field of work
- GS4.** listen attentively to understand the information/ instructions being shared
- GS5.** plan and prioritise tasks to ensure timely completion
- GS6.** co-ordinate with the co-workers to achieve the work objectives
- GS7.** evaluate all possible solutions to a problem to select the best one
- GS8.** identify possible disruptions to work and take appropriate preventive measures
- GS9.** take quick decisions to deal with workplace emergencies/ accidents

## Qualification Pack

### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Prepare for millet cultivation and sow the seeds</i>	<b>10</b>	<b>12</b>	-	<b>10</b>
<b>PC1.</b> select an appropriate variety or hybrid of millet for cultivation depending on the location and time of sowing, ensuring it is pest and disease resistant	-	-	-	-
<b>PC2.</b> prepare the field for sowing millets, ensuring effective drainage	-	-	-	-
<b>PC3.</b> apply the recommended fertilisers to the field in the prescribed dose, as per the basal fertiliser application technique	-	-	-	-
<b>PC4.</b> treat the millet seeds with the appropriate insect and disease protection chemicals before sowing	-	-	-	-
<b>PC5.</b> select an appropriate time with the required temperature and moisture levels in the soil and sow the millet seeds	-	-	-	-
<i>Maintain the millet crop</i>	<b>12</b>	<b>14</b>	-	<b>12</b>
<b>PC6.</b> irrigate the millet crop with the recommended quantity of water as per the irrigation schedule and stages of its growth	-	-	-	-
<b>PC7.</b> drain out excess water from the field	-	-	-	-
<b>PC8.</b> apply pre-emergent and post-emergent herbicides, if applicable	-	-	-	-
<b>PC9.</b> apply the recommended fertilisers in the prescribed dose as per the stages of the crop's growth	-	-	-	-
<b>PC10.</b> identify the signs of various pests and diseases in the millet crop such as smut, ergot, downy mildew termites, white grub, weevil, stem borer, hairy caterpillar, etc.	-	-	-	-
<b>PC11.</b> apply the recommended treatment such as pesticides and insecticides in the prescribed dose	-	-	-	-

### Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Carry out harvesting, post-harvest management and marketing of millet crop</i>	8	14	-	8
<b>PC12.</b> identify the maturity of the millet crop based on its growth and moisture content, and select an appropriate time for harvesting it	-	-	-	-
<b>PC13.</b> select an appropriate harvesting method such as manual or mechanical cutting and threshing depending on the field size and availability of required resources	-	-	-	-
<b>PC14.</b> harvest the millet crop and store it in a cool and dry storage area, ensuring it is free from pests and rodents	-	-	-	-
<b>PC15.</b> use the stalks and dry cobs as a fibre supplement for the domesticated animals	-	-	-	-
<b>PC16.</b> clear stubble from the field and prepare it for solarisation	-	-	-	-
<b>PC17.</b> select an appropriate time for marketing the harvested millet crop according to the market demand	-	-	-	-
<b>PC18.</b> undertake marketing of millet crop at a profitable price after negotiating with the buyer(s)	-	-	-	-
<b>PC19.</b> arrange for safe and hygienic delivery of millet crop to the buyer(s)	-	-	-	-
<b>PC20.</b> process the payments using the appropriate e-payment methods	-	-	-	-
<b>PC21.</b> calculate the benefit-cost (B:C) ratio	-	-	-	-
<b>PC22.</b> maintain the manual and/ or electronic record of sales and payments using the physical registers and/ or the relevant computer application	-	-	-	-
<b>NOS Total</b>	<b>30</b>	<b>40</b>	<b>-</b>	<b>30</b>

## Qualification Pack

### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	AGR/N0121
<b>NOS Name</b>	Carry out cultivation of millets
<b>Sector</b>	Agriculture
<b>Sub-Sector</b>	Agriculture Crop Production
<b>Occupation</b>	Field Crops Cultivation (Food Crops)
<b>NSQF Level</b>	4
<b>Credits</b>	1
<b>Version</b>	1.0
<b>Last Reviewed Date</b>	27/01/2022
<b>Next Review Date</b>	27/01/2025
<b>NSQC Clearance Date</b>	27/01/2022

## Assessment Guidelines and Assessment Weightage

### Assessment Guidelines

- 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 the proportion of marks for Theory and Skills Practical for each PC.
- The assessment for the theory part will be based on the knowledge bank of questions created by the SSC.
- Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/option NOS/set of NOS.
- Individual assessment agencies will create unique question papers for the theory part for each candidate at each examination/training centre (as per assessment criteria below).

## Qualification Pack

5. Individual assessment agencies will create unique evaluations for skill practical for every student at each

examination/ training centre based on these criteria.

6. To pass the Qualification Pack assessment, every trainee should score a minimum of 50% of % aggregate

marks to successfully clear the assessment.

7. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.

### Minimum Aggregate Passing % at QP Level : 50

**(Please note:** Every Trainee should score a minimum aggregate passing percentage as specified above, to successfully clear the Qualification Pack assessment.)

## Assessment Weightage

Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
AGR/N0125.Select and prepare the site and sow the cereal seeds	30	40	-	30	100	10
AGR/N0108.Carry out macro and micronutrient management of field crops	30	40	-	30	100	10
AGR/N0109.Manage weed growth in crop fields	30	40	-	30	100	5
AGR/N0126.Perform integrated pest and disease management for cereal crop	30	40	-	30	100	15
AGR/N0111.Perform irrigation management for field crops	30	40	-	30	100	10
AGR/N0127.Carry out harvesting, post-harvest management and marketing of cereals	30	40	-	30	100	15

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National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
AGR/N9922.Engage in collective farming/activity	30	40	-	30	100	5
AGR/N9903.Maintain health and safety at the workplace	40	25	-	35	100	5
DGT/VSQ/N0101.Employability Skills (30 Hours)	20	30	-	-	50	5
<b>Total</b>	<b>270</b>	<b>335</b>	<b>-</b>	<b>245</b>	<b>850</b>	<b>80</b>

Elective: 1 Wheat

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
AGR/N0124.Carry out cultivation of wheat	30	40	-	30	100	20
<b>Total</b>	<b>30</b>	<b>40</b>	<b>-</b>	<b>30</b>	<b>100</b>	<b>20</b>

Elective: 2 Rice

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
AGR/N0123.Carry out cultivation of rice	30	40	-	30	100	20
<b>Total</b>	<b>30</b>	<b>40</b>	<b>-</b>	<b>30</b>	<b>100</b>	<b>20</b>

Elective: 3 Maize

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
AGR/N0122.Carry out cultivation of maize	30	40	-	30	100	20

### Qualification Pack

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
<b>Total</b>	<b>30</b>	<b>40</b>	<b>-</b>	<b>30</b>	<b>100</b>	<b>20</b>

Elective: 4 Millet

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
AGR/N0121.Carry out cultivation of millets	30	40	-	30	100	20
<b>Total</b>	<b>30</b>	<b>40</b>	<b>-</b>	<b>30</b>	<b>100</b>	<b>20</b>

## Qualification Pack

### Acronyms

<b>NOS</b>	National Occupational Standard(s)
<b>NSQF</b>	National Skills Qualifications Framework
<b>QP</b>	Qualifications Pack
<b>TVET</b>	Technical and Vocational Education and Training

## Qualification Pack

### Glossary

<b>Sector</b>	Sector is a conglomeration of different business operations having similar business and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
<b>Sub-sector</b>	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
<b>Occupation</b>	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
<b>Job role</b>	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
<b>Occupational Standards (OS)</b>	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the Knowledge and Understanding (KU) they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
<b>Performance Criteria (PC)</b>	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
<b>National Occupational Standards (NOS)</b>	NOS are occupational standards which apply uniquely in the Indian context.
<b>Qualifications Pack (QP)</b>	QP comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code.
<b>Unit Code</b>	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
<b>Unit Title</b>	Unit title gives a clear overall statement about what the incumbent should be able to do.
<b>Description</b>	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.
<b>Scope</b>	Scope is a set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on quality of performance required.

## Qualification Pack

<b>Knowledge and Understanding (KU)</b>	Knowledge and Understanding (KU) are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.
<b>Organisational Context</b>	Organisational context includes the way the organisation is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
<b>Technical Knowledge</b>	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
<b>Core Skills/ Generic Skills (GS)</b>	Core skills or Generic Skills (GS) are a group of skills that are the key to learning and working in today's world. These skills are typically needed in any work environment 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 most job roles.
<b>Electives</b>	Electives are NOS/set of NOS that are identified by the sector as contributive to specialization in a job role. There may be multiple electives within a QP for each specialized job role. Trainees must select at least one elective for the successful completion of a QP with Electives.
<b>Options</b>	Options are NOS/set of NOS that are identified by the sector as additional skills. There may be multiple options within a QP. It is not mandatory to select any of the options to complete a QP with Options.