

Qualification Pack



Makhana Grower cum Processor

Options: Makhana Products

QP Code: AGR/Q0306

Version: 2.0

NSQF Level: 4

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AGR/Q0306: Makhana Grower cum Processor

Brief Job Description

A Makhana Grower cum processor is responsible for growing makhana and its processing. During the process, the individual prepares the selected water body or land for makhana cultivation, raises and transplants makhana seedlings or broadcasts makhana seeds in the water body, and maintains the makhana. The person is also responsible for harvesting makhana seeds, its post-harvest management and marketing. The individual may also prepare makhana products.

Personal Attributes

The individual should have attention to detail and problem-solving skills. The person should be physically fit to work for long durations. The individual should have basic reading, writing and verbal communication skills.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. [AGR/N0327: Select site, procure makhana seeds and raise seedlings in the nursery](#)
2. [AGR/N0328: Cultivate makhana in water body and field](#)
3. [AGR/N0329: Harvest and perform post-harvest management of makhana seeds](#)
4. [AGR/N9903: Maintain health and safety at the workplace](#)
5. [DGT/VSQ/N0102: Employability Skills \(60 Hours\)](#)

Options(Not mandatory):

Option : Makhana Products

Specialization in Makhana Products

1. [AGR/N0330: Process makhana seeds and prepare makhana products](#)

Qualification Pack (QP) Parameters

Sector	Agriculture
Sub-Sector	Agriculture Crop Production

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Occupation	Fruit Crops Cultivation
Country	India
NSQF Level	4
Credits	14
Aligned to NCO/ISCO/ISIC Code	NCO-2015/NIL
Minimum Educational Qualification & Experience	12th grade Pass OR 10th grade pass with 2 Years of experience in the relevant field OR 10th grade pass and pursuing continuous schooling OR Previous relevant Qualification of NSQF Level (3) (with minimum education as 8th grade pass) with 3 Years of experience in the relevant field OR Previous relevant Qualification of NSQF Level (3.5) (with 1.5 years of relevant experience)
Minimum Level of Education for Training in School	Not Applicable
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	NA
Next Review Date	29/03/2026
NSQC Approval Date	29/03/2023
Version	2.0
Reference code on NQR	QG-04-AG-00368-2023-V1-ASCI
NQR Version	1

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AGR/N0327: Select site, procure makhana seeds and raise seedlings in the nursery

Description

This OS unit is about selecting the site and procuring makhana seeds for makhana cultivation. It also covers the process of raising makhana seedlings in the nursery.

Scope

The scope covers the following :

- Select the site and procure makhana seeds
- Raise makhana seedlings in the nursery

Elements and Performance Criteria

Select the site and procure makhana seeds

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

- PC1.** select an appropriate site with suitable agro-climatic conditions for makhana cultivation
- PC2.** check the availability of an adequate quantity of water at the site, ensuring it is suitable for makhana cultivation
- PC3.** select makhana varieties for cultivation based on the selected region and its ecosystem, ensuring the varieties are high-yielding, pests and disease resistant with maximum pop recovery
- PC4.** identify the relevant vendors such as government nurseries, agricultural universities, research institutes and government-certified suppliers to procure makhana seeds
- PC5.** determine the quality of seeds available with the vendors and select the vendor with pests and disease-free seeds and high germination potential
- PC6.** procure makhana seeds and other agricultural inputs, such as fertilizers and pesticides, in the required quantity
- PC7.** arrange the required tools, implements and equipment, ensuring they are in usable condition
- PC8.** treat the makhana seeds following the recommended seed treatment method
- PC9.** store the treated seed and other agricultural inputs safely in hygienic storage under the recommended temperature and humidity

Raise makhana seedlings in the nursery

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

- PC10.** prepare the layout of the nursery
- PC11.** remove any debris, weeds and waste materials from the identified land
- PC12.** carry out deep ploughing in the field selected for the nursery using the appropriate machinery to implements
- PC13.** apply and incorporate the recommended organic and inorganic fertilizers thoroughly in the field
- PC14.** puddle the field, filling it with water to the recommended level

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- PC15.** broadcast the appropriate quantity of makhana seeds in the nursery field at the recommended seed rate
- PC16.** maintain the recommended water level in the nursery field throughout the seedling growth period
- PC17.** follow the recommended measures to protect seedlings from pests and diseases
- PC18.** apply the recommended fertilizers in the nursery to ensure optimum growth of seedlings
- PC19.** identify and remove weeds from the nursery
- PC20.** check the maturity of seedlings for transplanting, and harvest them ensuring no damage
- PC21.** maintain the harvested seedlings under the recommended temperature and humidity before transplanting them

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** different types of stagnant perennial water bodies suitable for makhana cultivation, such as ponds, land depressions, oxbow lakes, swamps and ditches
- KU2.** the nutritional and medicinal properties of makhana and its various uses
- KU3.** the duration and yield of different varieties of makhana
- KU4.** the benefits of carrying out field-based production of makhana
- KU5.** the agro-climatic conditions suitable for makhana cultivation
- KU6.** the criteria for selecting a land or water body for makhana cultivation
- KU7.** various inputs required for makhana cultivation
- KU8.** the importance of procuring high-yielding, pests and disease-resistant planting material from reliable sources
- KU9.** the required tools, implements and equipment required for makhana cultivation
- KU10.** the appropriate seed treatment method for treating makhana seeds
- KU11.** the appropriate conditions required for storing makhana seeds before being sown
- KU12.** the process of preparing a field for nursery cultivation of makhana seedlings
- KU13.** the use of appropriate Personal Protective Equipment (PPE) during nursery operations
- KU14.** the recommended organic and inorganic fertilizers to be used during nursery cultivation of makhana seedlings
- KU15.** the process of broadcasting makhana seeds in a puddled field
- KU16.** the recommended measures to be followed to protect makhana seedlings from pests and diseases
- KU17.** the relevant weed management practices
- KU18.** the maturity indices of makhana seedlings for transplanting
- KU19.** the process of harvesting makhana seedlings and storing them under the appropriate conditions

Generic Skills (GS)

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

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- GS1.** maintain work-related notes and records
- GS2.** read the relevant 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 appropriate solutions to work-related problems
- GS6.** plan and prioritize tasks to ensure timely completion
- GS7.** use time and resources efficiently
- GS8.** take quick decisions to deal with any emergencies/ accidents

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Select the site and procure makhana seeds</i>	13	18	-	13
PC1. select an appropriate site with suitable agro-climatic conditions for makhana cultivation	-	-	-	-
PC2. check the availability of an adequate quantity of water at the site, ensuring it is suitable for makhana cultivation	-	-	-	-
PC3. select makhana varieties for cultivation based on the selected region and its ecosystem, ensuring the varieties are high-yielding, pests and disease resistant with maximum pop recovery	-	-	-	-
PC4. identify the relevant vendors such as government nurseries, agricultural universities, research institutes and government-certified suppliers to procure makhana seeds	-	-	-	-
PC5. determine the quality of seeds available with the vendors and select the vendor with pests and disease-free seeds and high germination potential	-	-	-	-
PC6. procure makhana seeds and other agricultural inputs, such as fertilizers and pesticides, in the required quantity	-	-	-	-
PC7. arrange the required tools, implements and equipment, ensuring they are in usable condition	-	-	-	-
PC8. treat the makhana seeds following the recommended seed treatment method	-	-	-	-
PC9. store the treated seed and other agricultural inputs safely in hygienic storage under the recommended temperature and humidity	-	-	-	-
<i>Raise makhana seedlings in the nursery</i>	17	22	-	17
PC10. prepare the layout of the nursery	-	-	-	-
PC11. remove any debris, weeds and waste materials from the identified land	-	-	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. carry out deep ploughing in the field selected for the nursery using the appropriate machinery to implements	-	-	-	-
PC13. apply and incorporate the recommended organic and inorganic fertilizers thoroughly in the field	-	-	-	-
PC14. puddle the field, filling it with water to the recommended level	-	-	-	-
PC15. broadcast the appropriate quantity of makhana seeds in the nursery field at the recommended seed rate	-	-	-	-
PC16. maintain the recommended water level in the nursery field throughout the seedling growth period	-	-	-	-
PC17. follow the recommended measures to protect seedlings from pests and diseases	-	-	-	-
PC18. apply the recommended fertilizers in the nursery to ensure optimum growth of seedlings	-	-	-	-
PC19. identify and remove weeds from the nursery	-	-	-	-
PC20. check the maturity of seedlings for transplanting, and harvest them ensuring no damage	-	-	-	-
PC21. maintain the harvested seedlings under the recommended temperature and humidity before transplanting them	-	-	-	-
NOS Total	30	40	-	30

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National Occupational Standards (NOS) Parameters

NOS Code	AGR/N0327
NOS Name	Select site, procure makhana seeds and raise seedlings in the nursery
Sector	Agriculture
Sub-Sector	Agriculture Crop Production
Occupation	Fruit Crops Cultivation
NSQF Level	4
Credits	3
Version	2.0
Last Reviewed Date	NA
Next Review Date	29/03/2026
NSQC Clearance Date	29/03/2023

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AGR/N0328: Cultivate makhana in water body and field

Description

This OS unit includes preparing the water body or field and broadcasting makhana seeds or transplanting makhana seedlings. It also covers nutrient, pest and disease, irrigation and weed management.

Scope

The scope covers the following :

- Prepare the water body and broadcast makhana seeds
- Prepare the field and transplant makhana seedlings
- Perform nutrient management
- Perform integrated pest and disease management
- Perform irrigation Management
- Perform weed Management

Elements and Performance Criteria

Prepare the water body and broadcast makhana seeds

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

- PC1.** carry out appropriate repair and maintenance in the pond
- PC2.** sweep the floor of the water body already under makhana cultivation, using the appropriate tools and implements and scoop out the sunken seeds
- PC3.** clean the selected water body using the appropriate tools and implements
- PC4.** create piles of the scooped-out seeds in the water body using the relevant tools and implements
- PC5.** maintain the appropriate conditions in the water bodies already under makhana cultivation to allow the leftover seeds to germinate
- PC6.** broadcast the recommended quantity of makhana seeds according to the size of the selected water body when starting makhana cultivation in a new water body
- PC7.** apply the recommended organic and inorganic fertilizers in the water body
- PC8.** check the pH level of the water in the water body using a pH meter and carry out liming to achieve the optimum pH levels

Prepare the field and transplant makhana seedlings

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

- PC9.** carry out deep ploughing in the main field for an appropriate number of times
- PC10.** apply the recommended quantity of organic and inorganic fertilizers in the field in incorporate them thoroughly
- PC11.** carry out levelling in the field using the appropriate tools and implements
- PC12.** puddle the main field with water to the recommended level
- PC13.** create bunds in the field to the recommended suitable height and compact them
- PC14.** transplant seedlings in the field during the recommended months, ensuring no damage to them

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- PC15.** maintain the recommended spacing between the seedlings and their rows to provide adequate space for their healthy growth
- PC16.** monitor the seedlings after transplantation, remove the dead and diseased seedlings and replace them with healthy ones
- PC17.** follow the applicable Good Agricultural Practices (GAP) during makhana cultivation to achieve a good yield of quality makhana

Perform nutrient management

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

- PC18.** select the appropriate organic and inorganic fertilizers, ensuring they contain the required nutrients in recommended quantity
- PC19.** prepare organic fertilizers such as Farmyard Manure (FYM), vermicompost, manure, etc.
- PC20.** apply the organic and inorganic fertilizers in the makhana production water body/ field in an appropriate quantity
- PC21.** regulate the quantity of fertilizer application according to the stages of growth of makhana
- PC22.** carry out intercropping with the appropriate crops, such as paddy and wheat, to maximize the utilization of available nutrients

Perform integrated pest and disease management

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

- PC23.** follow the relevant preventive measures to protect the makhana plants and crop from pest and disease infestation
- PC24.** adopt the natural enemies of makhana plants pests to control and prevent pest infestation
- PC25.** check the makhana crop regularly to identify the symptoms of pest and disease infestation
- PC26.** determine the stage of pest and disease incidence
- PC27.** follow the appropriate Integrated Pest and Disease Management (IPDM) techniques for removing identified pests and diseases such as de-trashing, egg destruction, use of bio-control agents, etc.
- PC28.** identify and remove the diseased and pest-infested parts of makhana plants to prevent the spread of pests and disease to the healthy vines
- PC29.** apply the recommended treatment, such as pesticides and bio-pesticides like neem seed kernel extract as per the prescription to makhana plants to remove pests and diseases
- PC30.** use the appropriate plant protection equipment for applying pesticides
- PC31.** use the recommended combination of biological, mechanical and chemical control methods for effective pest and disease prevention
- PC32.** follow the recommended safety practices while applying any treatment, such as using the relevant PPE
- PC33.** maintain the record of the use of pesticides

Perform irrigation Management

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

- PC34.** maintain the recommended water level in the field/ water body throughout the makhana cultivation period for the optimum growth of makhana
- PC35.** identify the signs of water quality deterioration and apply the appropriate treatment to improve water quality
- PC36.** remove waste material and debris from the water body regularly

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PC37. collect water samples and coordinate with a water-testing laboratory and apply the necessary treatment as per their recommendation

PC38. follow the appropriate measures to avoid water loss through seepage and leaching

Perform weed management

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

PC39. clean the field bunds regularly to prevent the growth of weed seeds

PC40. check the makhana production water body/ field regularly to identify weed growth

PC41. remove weeds using the appropriate tools and implements

PC42. select and prepare the recommended herbicide/ bio-herbicide solution suitable for the makhana crop

PC43. apply herbicides/ bio-herbicides safely in the recommended dose using the appropriate equipment

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. the process of preparing the water body for makhana cultivation

KU2. the recommended seed rate for broadcasting makhana seeds in a water body

KU3. the process of scooping out makhana seeds from the water body and using them for starting a new crop

KU4. the benefits and process of liming a water body

KU5. the process of preparing a field for makhana cultivation, i.e. ploughing, fertilizer application, levelling and puddling the field

KU6. the process of transplanting makhana seedlings

KU7. the recommended spacing requirement between makhana seedlings for their healthy growth

KU8. how to prepare different types of organic fertilizers

KU9. the nutrient requirement of the makhana crop

KU10. the benefits and process of intercropping

KU11. the common pests and diseases that affect the makhana crop

KU12. the signs of pest and disease infestation in the makhana crop

KU13. the integrated pest and disease management practices for the makhana crop

KU14. the use of relevant plant protection equipment

KU15. the importance of maintaining the recommended water levels in the field/ water body throughout the makhana cultivation period

KU16. the signs of water quality deterioration in the makhana cultivation water body and the appropriate treatment to be applied to improve water quality

KU17. how to control weed infestation during makhana cultivation

KU18. the use of herbicides/bio-herbicides and appropriate weeding tools and implements

Generic Skills (GS)

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

Qualification Pack

- GS1.** maintain work-related notes and records
- GS2.** read the relevant literature to get the latest updates about the field of work
- GS3.** listen attentively to understand the instructions being given
- GS4.** communicate politely and professionally
- GS5.** coordinate with the co-workers to achieve the work objectives
- GS6.** plan and prioritize tasks to ensure timely completion
- GS7.** use time and resources efficiently
- GS8.** take quick decisions to deal with any emergencies/ accidents

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Prepare the water body and broadcast makhana seeds</i>	5	7	-	5
PC1. carry out appropriate repair and maintenance in the pond	-	-	-	-
PC2. sweep the floor of the water body already under makhana cultivation, using the appropriate tools and implements and scoop out the sunken seeds	-	-	-	-
PC3. clean the selected water body using the appropriate tools and implements	-	-	-	-
PC4. create piles of the scooped-out seeds in the water body using the relevant tools and implements	-	-	-	-
PC5. maintain the appropriate conditions in the water bodies already under makhana cultivation to allow the leftover seeds to germinate	-	-	-	-
PC6. broadcast the recommended quantity of makhana seeds according to the size of the selected water body when starting makhana cultivation in a new water body	-	-	-	-
PC7. apply the recommended organic and inorganic fertilizers in the water body	-	-	-	-
PC8. check the pH level of the water in the water body using a pH meter and carry out liming to achieve the optimum pH levels	-	-	-	-
<i>Prepare the field and transplant makhana seedlings</i>	6	8	-	6
PC9. carry out deep ploughing in the main field for an appropriate number of times	-	-	-	-
PC10. apply the recommended quantity of organic and inorganic fertilizers in the field in incorporate them thoroughly	-	-	-	-
PC11. carry out levelling in the field using the appropriate tools and implements	-	-	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. puddle the main field with water to the recommended level	-	-	-	-
PC13. create bunds in the field to the recommended suitable height and compact them	-	-	-	-
PC14. transplant seedlings in the field during the recommended months, ensuring no damage to them	-	-	-	-
PC15. maintain the recommended spacing between the seedlings and their rows to provide adequate space for their healthy growth	-	-	-	-
PC16. monitor the seedlings after transplantation, remove the dead and diseased seedlings and replace them with healthy ones	-	-	-	-
PC17. follow the applicable Good Agricultural Practices (GAP) during makhana cultivation to achieve a good yield of quality makhana	-	-	-	-
<i>Perform nutrient management</i>	3	4	-	3
PC18. select the appropriate organic and inorganic fertilizers, ensuring they contain the required nutrients in recommended quantity	-	-	-	-
PC19. prepare organic fertilizers such as Farmyard Manure (FYM), vermicompost, manure, etc.	-	-	-	-
PC20. apply the organic and inorganic fertilizers in the makhana production water body/ field in an appropriate quantity	-	-	-	-
PC21. regulate the quantity of fertilizer application according to the stages of growth of makhana	-	-	-	-
PC22. carry out intercropping with the appropriate crops, such as paddy and wheat, to maximize the utilization of available nutrients	-	-	-	-
<i>Perform integrated pest and disease management</i>	9	11	-	9
PC23. follow the relevant preventive measures to protect the makhana plants and crop from pest and disease infestation	-	-	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC24. adopt the natural enemies of makhana plants pests to control and prevent pest infestation	-	-	-	-
PC25. check the makhana crop regularly to identify the symptoms of pest and disease infestation	-	-	-	-
PC26. determine the stage of pest and disease incidence	-	-	-	-
PC27. follow the appropriate Integrated Pest and Disease Management (IPDM) techniques for removing identified pests and diseases such as de-trashing, egg destruction, use of bio-control agents, etc.	-	-	-	-
PC28. identify and remove the diseased and pest-infested parts of makhana plants to prevent the spread of pests and disease to the healthy vines	-	-	-	-
PC29. apply the recommended treatment, such as pesticides and bio-pesticides like neem seed kernel extract as per the prescription to makhana plants to remove pests and diseases	-	-	-	-
PC30. use the appropriate plant protection equipment for applying pesticides	-	-	-	-
PC31. use the recommended combination of biological, mechanical and chemical control methods for effective pest and disease prevention	-	-	-	-
PC32. follow the recommended safety practices while applying any treatment, such as using the relevant PPE	-	-	-	-
PC33. maintain the record of the use of pesticides	-	-	-	-
<i>Perform irrigation Management</i>	4	5	-	4
PC34. maintain the recommended water level in the field/ water body throughout the makhana cultivation period for the optimum growth of makhana	-	-	-	-
PC35. identify the signs of water quality deterioration and apply the appropriate treatment to improve water quality	-	-	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC36. remove waste material and debris from the water body regularly	-	-	-	-
PC37. collect water samples and coordinate with a water-testing laboratory and apply the necessary treatment as per their recommendation	-	-	-	-
PC38. follow the appropriate measures to avoid water loss through seepage and leaching	-	-	-	-
<i>Perform weed management</i>	3	5	-	3
PC39. clean the field bunds regularly to prevent the growth of weed seeds	-	-	-	-
PC40. check the makhana production water body/ field regularly to identify weed growth	-	-	-	-
PC41. remove weeds using the appropriate tools and implements	-	-	-	-
PC42. select and prepare the recommended herbicide/ bio-herbicide solution suitable for the makhana crop	-	-	-	-
PC43. apply herbicides/ bio-herbicides safely in the recommended dose using the appropriate equipment	-	-	-	-
NOS Total	30	40	-	30

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National Occupational Standards (NOS) Parameters

NOS Code	AGR/N0328
NOS Name	Cultivate makhana in water body and field
Sector	Agriculture
Sub-Sector	Agriculture Crop Production
Occupation	Fruit Crops Cultivation
NSQF Level	4
Credits	3
Version	2.0
Last Reviewed Date	NA
Next Review Date	29/03/2026
NSQC Clearance Date	29/03/2023

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AGR/N0329: Harvest and perform post-harvest management of makhana seeds

Description

This OS unit is about harvesting mature makhana seeds and performing their post-harvest management.

Scope

The scope covers the following :

- Harvest of makhana
- Perform post-harvest management

Elements and Performance Criteria

Harvest makhana seeds

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

- PC1.** identify the maturity indices of makhana seeds
- PC2.** arrange the appropriate tools and implements to harvest makhana seeds
- PC3.** collect mature makhana seeds from the water body or field at an appropriate time of the day
- PC4.** use the diving gear to collect makhana seeds from the bottom of water bodies
- PC5.** use the relevant Personal Protective Equipment (PPE) while collecting makhana to ensure protection from infections and other hazards

Perform post-harvest management

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

- PC6.** clean the harvested makhana crop with clean water and shake them using the appropriate equipment for further cleaning
- PC7.** maintain the cleaned makhana seeds on mats under direct sunlight for the recommended duration for uniform drying
- PC8.** pack dry makhana in the appropriate packing material
- PC9.** store makhana seeds in hygienic storage under the recommended temperature and humidity
- PC10.** grade makhana seeds on the applicable parameters using different types of sieves

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** the maturity indices of makhana seeds
- KU2.** the process of harvesting makhana seeds from a water body/field and the use of relevant tools and implements
- KU3.** the appropriate safety precautions to be taken while collecting makhana seeds from a water body
- KU4.** the process of cleaning and drying the harvested makhana seeds

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- KU5.** the appropriate conditions for storing dry makhana seeds
- KU6.** the parameters applicable to grading makhana seeds and the use of different types of sieves for the purpose

Generic Skills (GS)

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

- GS1.** communicate politely and professionally
- GS2.** maintain work-related notes and records
- GS3.** read the relevant literature to get the latest updates about the field of work
- GS4.** listen attentively to understand the instructions being given
- GS5.** plan and prioritize tasks to ensure timely completion
- GS6.** coordinate with the co-workers to achieve the work objectives
- GS7.** take quick decisions to deal with any emergencies/ accidents

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Harvest makhana seeds</i>	15	20	-	15
PC1. identify the maturity indices of makhana seeds	-	-	-	-
PC2. arrange the appropriate tools and implements to harvest makhana seeds	-	-	-	-
PC3. collect mature makhana seeds from the water body or field at an appropriate time of the day	-	-	-	-
PC4. use the diving gear to collect makhana seeds from the bottom of water bodies	-	-	-	-
PC5. use the relevant Personal Protective Equipment (PPE) while collecting makhana to ensure protection from infections and other hazards	-	-	-	-
<i>Perform post-harvest management</i>	15	20	-	15
PC6. clean the harvested makhana crop with clean water and shake them using the appropriate equipment for further cleaning	-	-	-	-
PC7. maintain the cleaned makhana seeds on mats under direct sunlight for the recommended duration for uniform drying	-	-	-	-
PC8. pack dry makhana in the appropriate packing material	-	-	-	-
PC9. store makhana seeds in hygienic storage under the recommended temperature and humidity	-	-	-	-
PC10. grade makhana seeds on the applicable parameters using different types of sieves	-	-	-	-
NOS Total	30	40	-	30

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National Occupational Standards (NOS) Parameters

NOS Code	AGR/N0329
NOS Name	Harvest and perform post-harvest management of makhana seeds
Sector	Agriculture
Sub-Sector	Agriculture Crop Production
Occupation	Fruit Crops Cultivation
NSQF Level	4
Credits	3
Version	2.0
Last Reviewed Date	NA
Next Review Date	29/03/2026
NSQC Clearance Date	29/03/2023

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

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- 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>	10	5	-	10
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	-	-	-	-
<i>Maintain clean and safe workplace</i>	15	15	-	15
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	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
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	-	-	-	-
<i>Administer appropriate emergency procedures</i>	15	5	-	10
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	-	-	-	-
NOS Total	40	25	-	35

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	AGR/N9903
NOS Name	Maintain health and safety at the workplace
Sector	Agriculture
Sub-Sector	Generic
Occupation	Generic
NSQF Level	4
Credits	1
Version	4.0
Last Reviewed Date	22/10/2024
Next Review Date	22/10/2027
NSQC Clearance Date	22/10/2024

Qualification Pack

DGT/VSQ/N0102: Employability Skills (60 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
- Career Development & Goal Setting
- 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.** identify employability skills required for jobs in various industries
- PC2.** identify and explore learning and employability portals

Constitutional values – Citizenship

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

- PC3.** recognize the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc.
- PC4.** follow environmentally sustainable practices

Becoming a Professional in the 21st Century

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

- PC5.** recognize the significance of 21st Century Skills for employment
- PC6.** practice the 21st Century Skills such as Self-Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn for continuous learning etc. in personal and professional life

Basic English Skills

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

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- PC7.** use basic English for everyday conversation in different contexts, in person and over the telephone
- PC8.** read and understand routine information, notes, instructions, mails, letters etc. written in English
- PC9.** write short messages, notes, letters, e-mails etc. in English

Career Development & Goal Setting

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

- PC10.** understand the difference between job and career
- PC11.** prepare a career development plan with short- and long-term goals, based on aptitude

Communication Skills

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

- PC12.** follow verbal and non-verbal communication etiquette and active listening techniques in various settings
- PC13.** work collaboratively with others in a team

Diversity & Inclusion

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

- PC14.** communicate and behave appropriately with all genders and PwD
- PC15.** escalate any issues related to sexual harassment at workplace according to POSH Act

Financial and Legal Literacy

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

- PC16.** select financial institutions, products and services as per requirement
- PC17.** carry out offline and online financial transactions, safely and securely
- PC18.** identify common components of salary and compute income, expenses, taxes, investments etc
- PC19.** identify relevant rights and laws and use legal aids to fight against legal exploitation

Essential Digital Skills

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

- PC20.** operate digital devices and carry out basic internet operations securely and safely
- PC21.** use e-mail and social media platforms and virtual collaboration tools to work effectively
- PC22.** use basic features of word processor, spreadsheets, and presentations

Entrepreneurship

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

- PC23.** identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research
- PC24.** develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion
- PC25.** identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity

Customer Service

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

- PC26.** identify different types of customers
- PC27.** identify and respond to customer requests and needs in a professional manner.

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PC28. follow appropriate hygiene and grooming standards

Getting ready for apprenticeship & Jobs

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

PC29. create a professional Curriculum vitae (Résumé)

PC30. search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively

PC31. apply to identified job openings using offline /online methods as per requirement

PC32. answer questions politely, with clarity and confidence, during recruitment and selection

PC33. identify apprenticeship opportunities and register for it as per guidelines and requirements

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. need for employability skills and different learning and employability related portals

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 English language for effective verbal (face to face and telephonic) and written communication in formal and informal set up

KU6. importance of career development and setting long- and short-term goals

KU7. about effective communication

KU8. POSH Act

KU9. Gender sensitivity and inclusivity

KU10. different types of financial institutes, products, and services

KU11. how to compute income and expenditure

KU12. importance of maintaining safety and security in offline and online financial transactions

KU13. different legal rights and laws

KU14. different types of digital devices and the procedure to operate them safely and securely

KU15. how to create and operate an e- mail account and use applications such as word processors, spreadsheets etc.

KU16. how to identify business opportunities

KU17. types and needs of customers

KU18. how to apply for a job and prepare for an interview

KU19. apprenticeship scheme and the process of registering on apprenticeship portal

Generic Skills (GS)

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

GS1. read and write different types of documents/instructions/correspondence

GS2. communicate effectively using appropriate language in formal and informal settings

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- GS3.** behave politely and appropriately with all
- GS4.** how to work in a virtual mode
- GS5.** perform calculations efficiently
- GS6.** solve problems effectively
- GS7.** pay attention to details
- GS8.** manage time efficiently
- GS9.** maintain hygiene and sanitization 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>	1	1	-	-
PC1. identify employability skills required for jobs in various industries	-	-	-	-
PC2. identify and explore learning and employability portals	-	-	-	-
<i>Constitutional values – Citizenship</i>	1	1	-	-
PC3. recognize the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc.	-	-	-	-
PC4. follow environmentally sustainable practices	-	-	-	-
<i>Becoming a Professional in the 21st Century</i>	2	4	-	-
PC5. recognize the significance of 21st Century Skills for employment	-	-	-	-
PC6. practice the 21st Century Skills such as Self-Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn for continuous learning etc. in personal and professional life	-	-	-	-
<i>Basic English Skills</i>	2	3	-	-
PC7. use basic English for everyday conversation in different contexts, in person and over the telephone	-	-	-	-
PC8. read and understand routine information, notes, instructions, mails, letters etc. written in English	-	-	-	-
PC9. write short messages, notes, letters, e-mails etc. in English	-	-	-	-
<i>Career Development & Goal Setting</i>	1	2	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10. understand the difference between job and career	-	-	-	-
PC11. prepare a career development plan with short- and long-term goals, based on aptitude	-	-	-	-
<i>Communication Skills</i>	2	2	-	-
PC12. follow verbal and non-verbal communication etiquette and active listening techniques in various settings	-	-	-	-
PC13. work collaboratively with others in a team	-	-	-	-
<i>Diversity & Inclusion</i>	1	2	-	-
PC14. communicate and behave appropriately with all genders and PwD	-	-	-	-
PC15. escalate any issues related to sexual harassment at workplace according to POSH Act	-	-	-	-
<i>Financial and Legal Literacy</i>	2	3	-	-
PC16. select financial institutions, products and services as per requirement	-	-	-	-
PC17. carry out offline and online financial transactions, safely and securely	-	-	-	-
PC18. identify common components of salary and compute income, expenses, taxes, investments etc	-	-	-	-
PC19. identify relevant rights and laws and use legal aids to fight against legal exploitation	-	-	-	-
<i>Essential Digital Skills</i>	3	4	-	-
PC20. operate digital devices and carry out basic internet operations securely and safely	-	-	-	-
PC21. use e- mail and social media platforms and virtual collaboration tools to work effectively	-	-	-	-
PC22. use basic features of word processor, spreadsheets, and presentations	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Entrepreneurship</i>	2	3	-	-
PC23. identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research	-	-	-	-
PC24. develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion	-	-	-	-
PC25. identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity	-	-	-	-
<i>Customer Service</i>	1	2	-	-
PC26. identify different types of customers	-	-	-	-
PC27. identify and respond to customer requests and needs in a professional manner.	-	-	-	-
PC28. follow appropriate hygiene and grooming standards	-	-	-	-
<i>Getting ready for apprenticeship & Jobs</i>	2	3	-	-
PC29. create a professional Curriculum vitae (Résumé)	-	-	-	-
PC30. search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively	-	-	-	-
PC31. apply to identified job openings using offline /online methods as per requirement	-	-	-	-
PC32. answer questions politely, with clarity and confidence, during recruitment and selection	-	-	-	-
PC33. identify apprenticeship opportunities and register for it as per guidelines and requirements	-	-	-	-
NOS Total	20	30	-	-

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	DGT/VSQ/N0102
NOS Name	Employability Skills (60 Hours)
Sector	Cross Sectoral
Sub-Sector	Professional Skills
Occupation	Employability
NSQF Level	4
Credits	2
Version	1.0
Last Reviewed Date	18/02/2025
Next Review Date	18/02/2028
NSQC Clearance Date	18/02/2025

Qualification Pack

AGR/N0330: Process makhana seeds and prepare makhana products

Description

The OS unit is about the processing of makhana seeds and preparing makhana products in the makhana processing unit. It also covers the marketing of makhana products.

Scope

The scope covers the following :

- Process makhana seeds
- Prepare makhana products
- Perform post-processing activities
- Market makhana products

Elements and Performance Criteria

Process makhana seeds

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

- PC1.** pre-heat the sun-dried makhana nuts in cast iron pans or earthen pitchers over the fire at the recommended temperature, stirring them continuously
- PC2.** maintain the heated seeds in appropriate conditions for the recommended duration for seed tempering, allowing loosening of kernels within the hard seed coat
- PC3.** roast makhana seeds after being dried in cast iron pans at an appropriate temperature, ensuring continuous stirring
- PC4.** clean the makhana seeds after roasting and hammer them using an appropriate tool to allow white puff to pop out of the black makhana seeds
- PC5.** ensure no residue of the black seed is left on the popped white puff to maintain its quality
- PC6.** carry out polishing of processed makhana seeds following the appropriate method to smoothen their surface and achieve more whiteness
- PC7.** use the appropriate packing material such as polythene or gunny bags to pack the fully processed makhana seeds

Prepare makhana products

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

- PC8.** ensure that the work area is safe and hygienic for the preparation of makhana products
- PC9.** prepare the relevant tools and equipment for preparing makhana products
- PC10.** select the appropriate ingredients and raw materials and arrange them in the required quantity for preparing the desired makhana products
- PC11.** prepare various makhana products, such as makhana flakes, instant makhana kheer mix, flavoured makhana pops, roasted makhana pops, etc.
- PC12.** use the relevant tools, equipment and machineries for preparing makhana products, following the manufacturers' instructions to ensure personal safety
- PC13.** pack the processed makhana products using appropriate packing materials

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- PC14.** follow the applicable food standards, such as Hazard Analysis Critical Control Point (HACCP) and Food Safety and Standards Authority of India (FSSAI) regulations

Perform post-processing activities

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

- PC15.** carry out regular repair and maintenance of the relevant tools, equipment and machineries and coordinate with the manufacturer to resolve complex issues
- PC16.** store the tools and implements in safe storage to avoid potential injuries
- PC17.** clean the work area after preparing makhana products to ensure hygiene

Market makhana products

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

- PC18.** identify the buyers of makhana products such as eMandi, procurement agencies, traders, etc.
- PC19.** coordinate and negotiate with the buyer to secure a profitable price for the makhana products
- PC20.** arrange an appropriate mode of transport to deliver makhana products to the buyer
- PC21.** follow the recommended measures to protect the makhana products from damage and contamination while handling and transporting them
- PC22.** process the payments using the buyer-preferred e-payment method
- PC23.** calculate the benefit-cost (B:C) ratio
- PC24.** 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 types of makhana products prepared after processing of makhana seeds
- KU2.** different grades of makhana
- KU3.** different value-added makhana products
- KU4.** different types of raw materials required for the preparation of different makhana products
- KU5.** post-harvest processing steps followed for makhana processing
- KU6.** the use of relevant tools, equipment and machineries for processing of makhana seeds and preparation of makhana seeds
- KU7.** how to process makhana seeds and the activities involved, e.g. pre-heating, roasting, cleaning, hammering and polishing
- KU8.** the methods of preparation of different value-added makhana products
- KU9.** the appropriate packing material to pack processed makhana products
- KU10.** the importance of ensuring hygiene in food processing units and the applicable regulations, e.g. FSSAI regulations
- KU11.** the importance of carrying out regular maintenance of tools, equipment and machineries
- KU12.** how to carry out regular repair and maintenance of the tools, equipment and machineries used in food processing units

Qualification Pack

- KU13.** the relevant safety precautions to be taken while carrying out repair and maintenance of relevant tools, equipment and machineries
- KU14.** the relevant post-processing activities
- KU15.** the storage, safe handling and transporting procedures for makhana
- KU16.** the applicable Good Manufacturing Practices (GMP) and Sanitation Standard Operating Procedures (SSOP) norms
- KU17.** the concept of Hazard Analysis Critical Control Point (HACCP)
- KU18.** the use of relevant tools and equipment for preparing different makhana products
- KU19.** different types of buyers of makhana products
- KU20.** the process of negotiating with buyers
- KU21.** the appropriate packing material and mode of transport for makhana products
- KU22.** the recommended measures to be followed to protect makhana products from damage and contamination while handling and transporting them
- KU23.** the use of different e-payments methods
- KU24.** how to calculate the benefit-cost (B:C) ratio
- KU25.** the importance of maintaining records of sales and payments
- KU26.** how to maintain manual and electronic records using the physical registers and the relevant computer application

Generic Skills (GS)

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

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

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Process makhana seeds</i>	10	13	-	10
PC1. pre-heat the sun-dried makhana nuts in cast iron pans or earthen pitchers over the fire at the recommended temperature, stirring them continuously	-	-	-	-
PC2. maintain the heated seeds in appropriate conditions for the recommended duration for seed tempering, allowing loosening of kernels within the hard seed coat	-	-	-	-
PC3. roast makhana seeds after being dried in cast iron pans at an appropriate temperature, ensuring continuous stirring	-	-	-	-
PC4. clean the makhana seeds after roasting and hammer them using an appropriate tool to allow white puff to pop out of the black makhana seeds	-	-	-	-
PC5. ensure no residue of the black seed is left on the popped white puff to maintain its quality	-	-	-	-
PC6. carry out polishing of processed makhana seeds following the appropriate method to smoothen their surface and achieve more whiteness	-	-	-	-
PC7. use the appropriate packing material such as polythene or gunny bags to pack the fully processed makhana seeds	-	-	-	-
<i>Prepare makhana products</i>	9	12	-	9
PC8. ensure that the work area is safe and hygienic for the preparation of makhana products	-	-	-	-
PC9. prepare the relevant tools and equipment for preparing makhana products	-	-	-	-
PC10. select the appropriate ingredients and raw materials and arrange them in the required quantity for preparing the desired makhana products	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC11. prepare various makhana products, such as makhana flakes, instant makhana kheer mix, flavoured makhana pops, roasted makhana pops, etc.	-	-	-	-
PC12. use the relevant tools, equipment and machineries for preparing makhana products, following the manufacturers' instructions to ensure personal safety	-	-	-	-
PC13. pack the processed makhana products using appropriate packing materials	-	-	-	-
PC14. follow the applicable food standards, such as Hazard Analysis Critical Control Point (HACCP) and Food Safety and Standards Authority of India (FSSAI) regulations	-	-	-	-
<i>Perform post-processing activities</i>	3	4	-	3
PC15. carry out regular repair and maintenance of the relevant tools, equipment and machineries and coordinate with the manufacturer to resolve complex issues	-	-	-	-
PC16. store the tools and implements in safe storage to avoid potential injuries	-	-	-	-
PC17. clean the work area after preparing makhana products to ensure hygiene	-	-	-	-
<i>Market makhana products</i>	8	11	-	8
PC18. identify the buyers of makhana products such as eMandi, procurement agencies, traders, etc.	-	-	-	-
PC19. coordinate and negotiate with the buyer to secure a profitable price for the makhana products	-	-	-	-
PC20. arrange an appropriate mode of transport to deliver makhana products to the buyer	-	-	-	-
PC21. follow the recommended measures to protect the makhana products from damage and contamination while handling and transporting them	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC22. process the payments using the buyer-preferred e-payment method	-	-	-	-
PC23. calculate the benefit-cost (B:C) ratio	-	-	-	-
PC24. maintain the manual and/or electronic record of sales and payments using the physical registers and/or the relevant computer application	-	-	-	-
NOS Total	30	40	-	30

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	AGR/N0330
NOS Name	Process makhana seeds and prepare makhana products
Sector	Agriculture
Sub-Sector	Agriculture Crop Production
Occupation	Fruit Crops Cultivation
NSQF Level	4
Credits	1
Version	2.0
Last Reviewed Date	NA
Next Review Date	29/03/2026
NSQC Clearance Date	29/03/2023

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

- 1.Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.
- 2.The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
- 3.Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below).
- 4.Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/ training center based on these criteria.
- 5.In case of successfully passing only certain number of NOSs, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack.
- 6.In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack

Qualification Pack

Minimum Aggregate Passing % at QP Level : 70

(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/N0327.Select site, procure makhana seeds and raise seedlings in the nursery	30	40	0	30	100	30
AGR/N0328.Cultivate makhana in water body and field	30	40	0	30	100	30
AGR/N0329.Harvest and perform post-harvest management of makhana seeds	30	40	0	30	100	20
AGR/N9903.Maintain health and safety at the workplace	40	25	-	35	100	10
DGT/VSQ/N0102.Employability Skills (60 Hours)	20	30	-	-	50	10
Total	150	175	-	125	450	100

Optional: 1 Makhana Products

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
AGR/N0330.Process makhana seeds and prepare makhana products	30	40	0	30	100	20
Total	30	40	-	30	100	20

Qualification Pack

Acronyms

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

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Glossary

Sector	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.
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
Occupation	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
Occupational Standards (OS)	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the Knowledge and Understanding (KU) they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria (PC)	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
National Occupational Standards (NOS)	NOS are occupational standards which apply uniquely in the Indian context.
Qualifications Pack (QP)	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.
Unit Code	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
Unit Title	Unit title gives a clear overall statement about what the incumbent should be able to do.
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
Scope	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.

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Knowledge and Understanding (KU)	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.
Organisational Context	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.
Technical Knowledge	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills/ Generic Skills (GS)	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.
Electives	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.
Options	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.