

National Occupational Standards

Seed Bank Management

Unit Code: AGR/N7835

Version: 1.0

NSQF Level: 4

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Description

This OS unit is about managing the seed by planning, implementing the seed collection and maintaining the seed bank

Scope

The scope covers the following :

- Plan seed collection for a seed bank
- Implement seed collection program
- Maintain a seed collection

Elements and Performance Criteria

Plan seed collection for a seed bank

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

- PC1.** Identify purpose and scope of seed bank
- PC2.** Investigate and interpret seed characteristics for method of collecting
- PC3.** Identify opportunities for seed collection from field observation and liaison with stakeholders in this field
- PC4.** Identify site, site conditions and plants for seed collection
- PC5.** Identify site specific hazards, assess risk and develop control procedures according to workplace health and safety policies
- PC6.** Identify governing authority for site and contact stakeholder
- PC7.** Obtain permits and approvals required for seed collection site according to regulations and tenure
- PC8.** Select method of seed collection according to seed type and site conditions
- PC9.** Determine and document quantity of seed to be collected from each provenance
- PC10.** Enlist the characteristics of the plants from which seeds to be collected

Implement seed collection program

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

- PC11.** Coordinate and schedule work team
- PC12.** Coordinate and schedule work team
- PC13.** Confirm and provide access to permits and approvals according to regulatory requirements
- PC14.** Instruct work team on health and safety procedures
- PC15.** Oversee seed collection activities according to seed collection plan and health and safety procedures
- PC16.** Oversee seed cleaning activities according to workplace procedures
- PC17.** Maintain seed collection labels and records according to regulations and workplace procedures

Maintain a seed collection

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

- PC18.** Check quantity, quality origin of collected seed

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- PC19.** Monitor viability and health of seed collected
- PC20.** Implement pest and disease control procedures
- PC21.** Maintain optimum seed storage conditions
- PC22.** Dispose of non-viable seeds according to workplace environmental procedures
- PC23.** Package, label and distribute seed according to quality standards and workplace procedures
- PC24.** Maintain record of stored seed

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** flowering biology of the target species
- KU2.** biological signs that indicate seed crop maturity
- KU3.**
 - types of seed banks and their purpose, including:
 - a. community seed banks and networks
 - b. private and commercial seed collections
 - c. commercial seed distribution
 - d. organic food production enterprises
 - e. heritage and non-hybrid seed collections
- KU4.**
 - methods of seed collection, including:
 - a. hand-picking seeds and fruits
 - b. harvesting plants or plant parts
 - c. collecting and ripening fruit
 - d. shaking
- KU5.** extraction of seed from chaff and waste
- KU6.** handling of the seed crop after picking
- KU7.**
 - storage of seed, including:
 - a. storage containers, including bags, paper envelopes, plastic or glass containers, foil
 - b. environmental conditions for storage, including cool, dry, dehumidifying agents (silica gel, wood ash), oxygen exclusion techniques and freezer/refrigerator
 - c. pest deterrent mechanisms
 - d. light exclusion mechanisms
- KU8.**
 - documentation of the extracted seed, including:
 - a. information on provenance
 - b. botanical name: family, genus, species, variety and/or cultivar
 - c. common names
 - d. brief plant description
 - e. identity of collector
 - f. date collected or use-by date
 - g. quantity (by weight or number of seeds)
 - h. viability test results
 - i. organic certification of grower
 - j. growing instructions such as recommended season and spacing
- KU9.**
 - provenance of seed, including:
 - a. location and growing conditions of parent plant
 - b. sub-catchment identification of seed from endemic native plant populations
 - c. species and/or varieties adapted to local conditions

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- KU10.** • collecting ethics, protocols and legislative parameters, including:
- a. limits on quantity allowed for collection
 - b. limits on time period for collection
 - c. particular use or destination for seed
 - d. indigenous plant regulatory conditions
 - e. permits and authorities for site tenure
- KU11.** safe work practices when harvesting seed, including working at heights

Generic Skills (GS)

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

- GS1.** Prepare applications and documentation clearly and accurately using appropriate industry terminology to convey regulatory information required for statutory approvals
- GS2.** Maintain accurate records of seed source, species, provenance and other relevant characteristics using biological naming conventions and terminology

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Assessment Criteria

| Assessment Criteria for Outcomes | Theory Marks | Practical Marks | Project Marks | Viva Marks |
|--|--------------|-----------------|---------------|------------|
| <i>Plan seed collection for a seed bank</i> | 10 | 5 | - | 10 |
| PC1. Identify purpose and scope of seed bank | - | - | - | - |
| PC2. Investigate and interpret seed characteristics for method of collecting | - | - | - | - |
| PC3. Identify opportunities for seed collection from field observation and liaison with stakeholders in this field | - | - | - | - |
| PC4. Identify site, site conditions and plants for seed collection | - | - | - | - |
| PC5. Identify site specific hazards, assess risk and develop control procedures according to workplace health and safety policies | - | - | - | - |
| PC6. Identify governing authority for site and contact stakeholder | - | - | - | - |
| PC7. Obtain permits and approvals required for seed collection site according to regulations and tenure | - | - | - | - |
| PC8. Select method of seed collection according to seed type and site conditions | - | - | - | - |
| PC9. Determine and document quantity of seed to be collected from each provenance | - | - | - | - |
| PC10. Enlist the characteristics of the plants from which seeds to be collected | - | - | - | - |
| <i>Implement seed collection program</i> | 10 | 10 | - | 15 |
| PC11. Coordinate and schedule work team | - | - | - | - |
| PC12. Coordinate and schedule work team | - | - | - | - |
| PC13. Confirm and provide access to permits and approvals according to regulatory requirements | - | - | - | - |
| PC14. Instruct work team on health and safety procedures | - | - | - | - |

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| Assessment Criteria for Outcomes | Theory Marks | Practical Marks | Project Marks | Viva Marks |
|--|--------------|-----------------|---------------|------------|
| PC15. Oversee seed collection activities according to seed collection plan and health and safety procedures | - | - | - | - |
| PC16. Oversee seed cleaning activities according to workplace procedures | - | - | - | - |
| PC17. Maintain seed collection labels and records according to regulations and workplace procedures | - | - | - | - |
| <i>Maintain a seed collection</i> | 15 | 15 | - | 10 |
| PC18. Check quantity, quality origin of collected seed | - | - | - | - |
| PC19. Monitor viability and health of seed collected | - | - | - | - |
| PC20. Implement pest and disease control procedures | - | - | - | - |
| PC21. Maintain optimum seed storage conditions | - | - | - | - |
| PC22. Dispose of non-viable seeds according to workplace environmental procedures | - | - | - | - |
| PC23. Package, label and distribute seed according to quality standards and workplace procedures | - | - | - | - |
| PC24. Maintain record of stored seed | - | - | - | - |
| NOS Total | 35 | 30 | - | 35 |

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National Occupational Standards (NOS) Parameters

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| NOS Code | AGR/N7835 |
| NOS Name | Seed Bank Management |
| Sector | Agriculture |
| Sub-Sector | |
| Occupation | Agri-Entrepreneurship and Rural Enterprises |
| NSQF Level | 4 |
| Credits | 1.25 |
| Minimum Job Entry Age | NA |
| Minimum Educational Qualification & Experience | <p>12th grade Pass (Science or equivalent) OR Completed 2nd year of the 3-year diploma after 10 (in Agriculture/Horticulture/Forestry/Agri culture Engineering/Veterinary Sciences/Animal Husbandry/Diary Technology) OR 10th grade pass and pursuing continuous schooling (for 2-year program) OR 11th grade pass OR 10th grade pass with 3 Years of experience Agriculture and allied sectors OR Previous relevant Qualification of NSQF Level (3.5) OR Previous relevant Qualification of NSQF Level (3) with 3 Years of experience Agriculture and allied sectors</p> |
| Version | 1.0 |
| Last Reviewed Date | 30/04/2024 |
| Next Review Date | 30/04/2027 |
| NSQC Clearance Date | 30/04/2024 |
| Reference code on NQR | NG-04-AG-02546-2024-V1-ASCI |
| NQR Version | 1.0 |

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| CCN Category | 2 |
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