

Domain

HORTICULTURE

Title:

Establish vegetable crops in sustainable,
ecological and organic agriculture

Level: 2

Credits: 4

Purpose

This unit standard specifies the competencies required to establish vegetable crops. It is intended for those who work in sustainable, ecological and organic agriculture as well as people in other occupations that work with plants. It includes:

- Prepare the site for planting
- Prepare for crop planting
- Carry out planting operations
- Care for young plants.

Special Notes

1. Entry information:

Prerequisite:

- *Unit 1307 - Apply soil sampling techniques and soil fertility and conditioning amendments and practices*
- *Unit 1311 - Demonstrate understanding of sustainable, ecological and organic agriculture*
- *Unit 1379 - Operate simple farm machinery*

2. This unit standard is to be delivered and assessed in the context of agricultural operations and can be assessed in conjunction with other relevant technical unit standards.

3. The evidence required to demonstrate competency in this unit must be relevant to workplace operations.

4. Assessment evidence may be collected from a real workplace or an appropriate simulated environment in which agricultural operations are carried out.

5. All inspection, operation and maintenance procedures associated with the use of tools and equipment shall comply with manufacturers' guidelines and instructions.

6. All practices, amendments and materials employed must be permissible under the regulations guiding sustainable, ecological and organic agriculture.

7. Demonstration of competence, at a minimum, requires evidence in the establishment of at least three vegetable crops, one from each of three different categories listed in '*Vegetable crops*' of Section 8 below.

8. Glossary of terms

- '*Vegetable crops*' may include, but are not limited to, vegetable crops in the following categories: root, stem, bud, leafy, fruit, indigenous or other vegetables and herbs; grown or with potential to be grown in Namibia.

- 'Simple equipment' signifies tractor or other drawn equipment without engines and other moving parts.
- 'Safety requirements' may include, but are not limited to, safe systems and procedures for safe use of machinery, tools and equipment, hazard and risk control, manual handling, handling, application and storage of hazardous substances, outdoor work and the use of personal protective equipment.
- 'Workplace procedures' may include, but are not limited to, work notes, plans, product labels, manufacturer's specifications, operator's manuals, safety plans, fire control, waste disposal, recycling, re-use guidelines and supervisors oral or written instructions.

9. Regulations and legislation relevant to this unit standard include the following:

- *Labour Act, No. 11, 2007*
- Regulations relating to the Health and Safety of employees at work, 1997
- *National Agricultural Policy, 1995*
- Namibian Organic Association Organic Standards and other international standards as relevant
- *Fertilisers, farm feeds and agriculture and stock remedies Act, No. 46, 1998*
- *Biosafety Act, No. 7, 2006*
- *Water Resources Management Act, No. 24, 2004*
- *Environmental Management Act, No. 7, 2007*
- *Pollution Control and Waste Management Bill, 2003 3rd draft*
- *National Policy on Human and Wildlife Conflict Management, 2009*
- *Agronomic Industry Act, 20, 1992*
- Standards Act, 2005, Standards Regulations: Standards Act, 2005 and relevant Namibian Standards as established

and all subsequent amendments to any of the above

- All current sets of *Good Agricultural Practices* to which Namibia subscribes and that regulate agricultural products entering a country to which Namibian producers may export.

Quality Assurance Requirements

This unit standard and others within this subfield may be awarded by institutions which meet the accreditation requirements set by the Namibia Qualifications Authority and the Namibia Training Authority and which comply with the national assessment and moderation requirements. Details of specific accreditation requirements and the national assessment arrangements are available from the Namibia Qualifications Authority on www.namqa.org and the Namibia Training Authority on www.nta.com.na.

Elements and Performance Criteria

Element 1. Prepare the site for planting

Range

Crop and other waste materials may include but is not limited to disinfestation, ploughing organic waste into the soil, mulching, composting, removal of seed heads and disposing of noxious or poisonous material.

Soil treatments/amendments may include but are not limited to lime, gypsum, organic matter, artificial fertilisers or the planting of a temporary or permanent cover crop.

Crop protection may include but not limited to wind protection, permanent shelter belts or temporary plantings of cereals; trellises, stakes, mulch, plastic or cover crop.

Performance Criteria

- 1.1 Old crop and other waste materials are removed and disposed of as appropriate to sustainable, ecological and organic agriculture and in consideration of environmental implications.
- 1.2 Growing media is prepared according to workplace procedures.
- 1.3 Where soil is the growing medium, water and soil treatment/amendments are applied according to soil and crop needs and supervisor's instructions.
- 1.4 Crop protection is implemented according to workplace procedures.
- 1.5 The planting pattern is marked out according to workplace procedures.
- 1.6 Machinery, equipment and tools are operated according to workplace procedures.

Element 2. Prepare for crop planting

Range

Hazards may include, but are not limited to, noise, fumes, hazardous substances, solar radiation, dusts, adverse weather conditions, moving machinery and machinery parts.

Environmental implications may include, but are not limited to, the contamination of ground water or soils, chemical use, land disturbance and spread of weeds.

Personal Protective Equipment (PPE) may include, but are not limited to, boots, hat, overalls, gloves, eye and hearing protection, respirator or face mask, high visibility clothing and sun protection.

Performance Criteria

- 2.1 Instructions for planting and establishing the crop are confirmed.
- 2.2 Safety requirements are followed in accordance with safety plans and policies.
- 2.3 Machinery, equipment and tools are selected and prepared for the task being undertaken.
- 2.4 Hazards are identified, risk assessed and suitable controls implemented.
- 2.5 The environmental implications of the crop establishment program are identified and discussed with the supervisor.
- 2.6 Suitable personal protective equipment is selected, used, maintained and stored according to workplace procedures.

Element 3. Carry out planting operations

Range

Planting material may include but is not limited to seeds, seedlings, runners, cuttings, tubers or bare rooted plants.

Pre-plant treatments may include but are not limited to fungicide and insecticide dips and dusts for seeds, root trimming and shoot trimming.

Maintaining plants may include but are not limited to keeping seeds and tubers dry and cool, keeping plants and plantlets cool and moist to prevent dehydration.

Organic and inorganic fertility amendments include those amendments that are permissible under the regulations guiding sustainable, ecological and organic agriculture.

Performance Criteria

- 3.1 Planting material is selected according to the type of crop and workplace quality standards.
- 3.2 Planting material is pre-treated according to the crop and workplace procedures.
- 3.3 Planting material, waiting to be planted is maintained under conditions that will ensure maximum viability.
- 3.4 Planting material is handled and transported to the site with no signs of transport damage.
- 3.5 Planting is carried out according to workplace procedures.
- 3.6 Organic and inorganic fertility amendments are applied according to workplace procedures.
- 3.7 Labels are applied according to workplace procedures.

Element 4. Care for young plants

Range

Treatments may include but are not limited to pest and disease prevention and control, weed prevention and control, frost prevention, and fertility and organic amendments and mulch. All such treatments must be permissible under the regulations guiding sustainable, ecological and organic agriculture.

Irrigation may include but is not limited to drip, sprinkler, overhead, micro-jet, furrow and flood methods

Training may include but are not limited to pruning (e.g. staked or greenhouse tomatoes and peppers) thinning, trimming, tying, staking or trellising.

Work details recorded may include but are not limited to oral or written reports to the supervisor.

Performance Criteria

- 4.1 Early crop growth is monitored and anomalies reported to the supervisor.
- 4.2 Safety requirements are followed in accordance with safety plans and policies.
- 4.3 Thinning, re-planting and re-seeding are conducted in accordance with workplace procedures.

- 4.4 Treatments are applied to plantings according to workplace procedures.
- 4.5 Water is applied to plantings according to the irrigation schedule and established sustainable agricultural practices.
- 4.6 Plantings are trained according to workplace procedures.
- 4.7 Work is completed in accordance with workplace procedures.
- 4.8 Work details are recorded in accordance with workplace procedures.
- 4.9 Machinery, equipment and tools are cleaned and stored according to workplace procedures.

Registration Data

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