	Unit ID: 1307
Domain	**PLANT HUSBANDRY**
Title:	**Apply soil sampling techniques and soil fertility and conditioning amendments and practices**
Level: 2	**Credits: 2**

Purpose

This unit standard specifies the competencies required to apply soil sampling techniques including soil fertility and conditioning amendments and practices. It is intended for those who work in agriculture as well as people in other occupations that work with plants. It includes:

- Measure water content of soils
- Conduct soil sampling (for laboratory fertility analysis) and simple field methods of soil nutrient testing
- Apply soil fertility and conditioning amendments and practices.

Special Notes

1. Entry information:

   Prerequisite: none

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. Demonstration of competence, at a minimum, requires evidence in the application of the elements in this unit standard to one soil water content measuring method, one physical soil sampling method, one simple field method of soil nutrient testing, and five soil conditioning amendments and practices.

7. Glossary of terms

   - '*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.

8. 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

- Fertilisers, farm feeds and agriculture and stock remedies Act, No. 46, 1998
- 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 Climate Change for Namibia, 2011
- National Drought Policy, 1997
- United Nations Convention to Combat Desertification, 1994
- United Nations Framework Convention on Climate Change, 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. Measure water content of soils

Range

Methods of measuring water content of soils may include, but are not limited to, 'feel', tensiometer and electrical resistance blocks and probes

Tools may include soil augers and tubes, spades and soil profile spades

Performance Criteria

1.1 Methods of measuring water content of soils are listed.

1.2 Instructions for measuring water content of soils are confirmed.

1.3 Safety requirements are followed in accordance with safety plans and policies.

1.4 Tools are selected and prepared for the method being used.

1.5 Water content measurements are taken according to tool manufacturer's and supervisor's instructions.

1.6 Tools are cleaned and stored according to instructions.

1.7 Water content reports are made.

Element 2. Conduct soil sampling (for later laboratory fertility analysis) and simple field methods of soil nutrient testing

Range

Tools may include, but are not limited to, soil augers and tubes, spades and simple and more complex soil test kits.

Performance Criteria

2.1 Instructions for sampling or testing of soils are confirmed.

2.2 Safety requirements are followed in accordance with safety plans and policies.

2.3 Tools are selected and prepared for the task being undertaken.

2.4 Samples and tests are taken according to tool manufacturer's and supervisor's instructions.

2.5 Tools are cleaned and stored according to instructions.

2.6 Samples are prepared for transport or further processing.

2.7 Reports of simple nutrient tests are made.

Element 3. Apply soil fertility and conditioning amendments and practices

Range

Soil fertility and conditioning amendments and practices may include, but are not limited to, lime, gypsum, rock phosphate, livestock grazing and impact, temporary in-field kraals, compost, manure tea, use of nitrogen fixing plants, manure, organic matter, crop residues, mulches, chemical fertilisers (compound, simple, liquid and soluble), organic fertilisers, cover crops, intercrops, crop rotation and fallow.

Tools and *e*quipment may include, but are not limited to, hand operated spreaders and applicators, draft animal mounted seeder/fertiliser implements, wheelbarrows, spades, hoes and rakes.

Methods of fertiliser application and other amendments may include, but are not limited to, top-dressing, side-dressing, banding and broadcasting.

Performance Criteria

3.1 Instructions for applications of amendments and practices are confirmed.

3.2 Safety requirements are followed in accordance with safety plans and policies.

3.3 Tools and equipment are selected and prepared for the task being undertaken.

3.4 Soil fertility and conditioning amendments and practices are applied according to method chosen, instructions and good agronomic practices.

3.5 Tools are cleaned and stored according to instructions.

3.6 Work done is reported.

Registration Data

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