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|  | **Unit ID:** | | **ID ORG3** |
| **Domain** | **PLANT HUSBANDRY** |  | |
| **Title:** | **Produce organic plant protection products** |  | |
| **Level: 2** |  | | **Credits:2** |

Purpose

This unit standard specifies the competencies required to produce natural derived pesticides and herbicides to control pests, diseases, disorders, and weeds in crops. It is intended for those who work in agriculture as well as people in other occupations that work with plants. It includes:

* Formulate organic plant protection products
* Label and store product
* Housekeeping and cleaning up.

**Special Notes**

1. Entry information:

Prerequisite:

* *Unit ORG1 - Demonstrate understanding of organic agriculture*

1. This unit standard is to be delivered and assessed in the context of agricultural operation and can be assessed in conjunction with other relevant technical unit standards.
2. The evidence required to demonstrate competency in this unit must be relevant to workplace operations.
3. Assessment evidence may be collected from a real workplace in which agricultural operations are carried out. Practical assessment evidence can be based on a Portfolio of evidence in conjunction with the quality check of the final product.
4. All inspection, operation and maintenance procedures associated with the use of tools and equipment shall comply with workplace guidelines and instructions.
5. Demonstration of competence, at a minimum, required to produce at least one of each of the following organic plant protection products: repellent, one attractant, one trap and one growth or metabolism inhibitor.
6. Glossary of Terms
   * *‘Organic plant protection products’* refers to natural remedies that are used as herbicides and pesticides to control pests, diseases, weeds, and disorders in crops that are not poisonous and toxic to the agroecosystem. PPPs refers to plant protection products.
   * *Substances'* may include, but are not limited to, insecticides, fungicides, herbicides, nematicides, rodenticides and growth promoters and regulators that are commercially available or preparations made on the production unit from plants or other natural organic and mineral sources and acceptable to sustainable, ecological and organic agriculture. The latter would include botanical pesticides and natural mineral preparations.
   * *‘Herbicides’* refers to a broad class of chemical substances (pesticides) that are used to remove nuisance plants, such as grasses and weeds which may compromise the growth and yield of desired crops that are in proximity.
   * *‘Pesticides’* refers to chemical substances that are used to control pests. Pesticides may include, but are not limited to, herbicides, insecticides (which may include insect growth regulators, termiticides, etc.) nematicides, molluscicides, piscicides, avicides, rodenticides, bactericides, insect repellents, animal repellents, antimicrobials, and fungicides.
   * *‘Ingredients’* refers to the active and inactive substances that make up pesticides. The active ingredient may include, but is not limited to, any chemical, plant extract, pheromone or micro-organism that affects the pest or organism needing to be controlled. The ‘inactive’ or inert ingredient is the chemical that allows the active ingredient to ‘stick’ to the plant or animal (e.g., solvents, emulsifiers, detergents).
7. 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
* Standards Act 18, 2005, Standards Regulations: Standards Act, 2005 and relevant Namibian Standards as established
* All current sets of *Good Agricultural Practices (GAP)* to which Namibia subscribes and Global GAP that regulate agricultural products entering a country to which Namibian producers may export.
* Global Organic Standards: European Union (EC 2018/848), United States of America (NOP), Namibia (IFOAM Norms)

and all subsequent amendments to any of the above.

**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**

1. Formulate organic plant protection products

**Range**

Organic plant protection products may include, but are not limited to, garlic spray, hot pepper, rhubarb spray, black-jack spray, herb spray, meths, mild soap mixture, sugar spray, wood ash, vinegar, and salt.

Types of organic plant protective categories may include, but are not limited to, repellents, attractants, growth inhibitors and trap products that can be applied to reduce intensity of pests, diseases, weeds and disorders in crops.

Repellent products may include, but are not limited to, strong aromatic and taste plant substances.

Attractants products may include, but not are limited to, substances that attract biological enemies(insects) that feed on pests.

Traps products may include, but are not limited to, sticky bright/reflector colours (yellow), paraffin sugar water and beer/alcohol trays.

Growth and metabolism inhibitors may include, but are not limited to, products neem substance, habitat interventions product and hot water treatments.

**Performance criteria**

* 1. Safety requirements are followed and personal protective equipment is applied.
  2. Ingredients are selected and measured.
  3. Ingredients are mixed in accordance with task requirements.
  4. PPPs are formulated.

1. Package and store PPPs

**Range**

Product labelling may include, but is not limited to, producers name, date of production, expiry dates, precautions and instructions on how to use the product.

**Performance criteria**

* 1. Precautionary measures are adhered to.
  2. Tools, equipment and materials are selected.
  3. Product Information, precautions and instructions of use are recorded.
  4. Product is labelled and packaged according to industry standards.
  5. PPPs are stored as per GAP standards.

1. Housekeeping and cleaning up

**Performance Criteria**

* 1. Waste material is sorted for recycling, reused and disposed.
  2. Working area is cleaned.
  3. Tools and equipment are cleaned and stored.

Registration Data

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| **Subfield:** | **Organic Farming** |
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| **Date first registered:** | **June 2022** |
| **Date this version registered:** | **June 2022** |
| **Anticipated review:** |  |
|  | |
| **Body responsible for review:** | **Namibia Training Authority** |