SOUTH AFRICAN QUALIFICATIONS AUTHORITY

REGISTERED UNIT STANDARD:

Apply effective and responsible integrated pest, disease and weed control

SAQA US ID	UNIT STANDARD TITLE			
116301	Apply effective and responsible integrated pest, disease and weed control			
ORIGINATOR		**ORIGINATING PROVIDER**		
SGB Primary Agriculture				
QUALITY ASSURING BODY				
-				
FIELD			**SUBFIELD**	
Field 01 - Agriculture and Nature Conservation			Primary Agriculture	
ABET BAND	**UNIT STANDARD TYPE**	**OLD NQF LEVEL**	**NEW NQF LEVEL**	**CREDITS**
Undefined	Regular	Level 4	NQF Level 04	3
REGISTRATION STATUS		**REGISTRATION START DATE**	**REGISTRATION END DATE**	**SAQA DECISION NUMBER**
Reregistered		2009-07-01	2012-06-30	SAQA 0480/09
LAST DATE FOR ENROLMENT		**LAST DATE FOR ACHIEVEMENT**		
2013-06-30		2016-06-30		

In all of the tables in this document, both the old and the new NQF Levels are shown. In the text (purpose statements, qualification rules, etc), any reference to NQF Levels are to the old levels unless specifically stated otherwise.

This unit standard does not replace any other unit standard and is not replaced by any other unit standard.

PURPOSE OF THE UNIT STANDARD

A learner achieving this unit standard will understand the basic principles of an integrated pest management system with basic control measures as per agricultural enterprise. Furthermore, the learner will be able to recognise and differentiate between economical damageable pests and diseases and make use and interpret sources for application or product management.

Learners will gain an understanding of sustainable agricultural practices as applied in the animal-, plant and mixed farming sub fields. This unit standard focuses on the application of pest identification in primary agriculture.

They will be able to participate in, undertake and plan farming practices with knowledge of their environment. This unit standard will instil a culture of maintenance and care for both the environment

as well as towards farming infrastructure and operations.

LEARNING ASSUMED TO BE IN PLACE AND RECOGNITION OF PRIOR LEARNING

It is assumed that a learner attempting this unit standard will show competence against the following unit standards or equivalent:

- NQF 3: Monitor pests, diseases and weeds on crops.
- NQF 2: Apply crop protection and animal health products effectively and responsibly.

UNIT STANDARD RANGE

Whilst range statements have been defined generically to include as wide a set of alternatives as possible, all range statements should be interpreted within the specific context of application.

Range statements are neither comprehensive nor necessarily appropriate to all contexts. Alternatives must however be comparable in scope and complexity. These are only as a general guide to scope and complexity of what is required.

Specific Outcomes and Assessment Criteria:

SPECIFIC OUTCOME 1

Demonstrate a basic understanding of the principles of integrated pest management.

OUTCOME RANGE

Principles of integrated pest management include but are not limited to the regular monitoring or scouting for pests, diseases and weeds.

ASSESSMENT CRITERIA

ASSESSMENT CRITERION 1

The fact that integrated pest management is the integration of a number of different methods of pest control is explained.

ASSESSMENT CRITERION 2

The importance of monitoring at regular intervals is discussed.

ASSESSMENT CRITERION 3

The influence of the ratios between pests and predators on the decision on which control method to use is described.

ASSESSMENT CRITERION 4

The importance of replacing the pheromones, clearing the traps regularly and the collecting and assessing of information is explained.

ASSESSMENT CRITERION 5

The importance of recording the data correctly is explained.

ASSESSMENT CRITERION 6

Data is recorded by applying the basic principles.

SPECIFIC OUTCOME 2

Identify and differentiate between economically damageable pests, sporadic pests, diseases and symptoms using guides or resource material.

ASSESSMENT CRITERIA

ASSESSMENT CRITERION 1

Pests and beneficials on specific crops (all crops) are recognized, identified, counted and recorded and the impact or findings is assessed.

ASSESSMENT CRITERION 2

The damage and the cause of the damage is observed, categorically explained and identified.

ASSESSMENT CRITERION 3

Access to guides/publications and other resources and the use thereof is demonstrated.

ASSESSMENT CRITERION 4

Selection of method of identification is motivated.

ASSESSMENT CRITERION RANGE

Method of identification includes but is not limited to macroscopic and microscopic, and chemical.

ASSESSMENT CRITERION 5

Symptoms are observed and identified.

ASSESSMENT CRITERION 6

Scouting activities are performed regularly and thoroughly.

ASSESSMENT CRITERION 7

Weather patterns are observed and the effect thereof interpreted.

SPECIFIC OUTCOME 3

Understand the different types of control measures that can be applied in integrated pest management programme for pests, diseases and weeds.

OUTCOME RANGE

Control measures include but are not limited to chemical control, biological control, mechanical control etc.

ASSESSMENT CRITERIA

ASSESSMENT CRITERION 1

The different control measures that can be applied within an integrated management is explained.

ASSESSMENT CRITERION 2

The concept of biological control is explained.

ASSESSMENT CRITERION 3

The concept of cultural control is explained.

ASSESSMENT CRITERION 4

The concept of mating disruption its use is described.

ASSESSMENT CRITERION 5

The sterile insect technique its application is explained.

ASSESSMENT CRITERION 6

Other methods that can be integrated into the control management programme is explained.

ASSESSMENT CRITERION 7

The application of some of these concepts in disease and weed control is explained.

ASSESSMENT CRITERION 8

The most appropriate control measures, taking onto consideration integrated pest management and the environmental impact is selected.

ASSESSMENT CRITERION 9

Access to guides/publications and the use thereof is demonstrated.

ASSESSMENT CRITERION 10

Environmental considerations that should be considered are explained.

ASSESSMENT CRITERION 11

Resistance and mode of action re rotation is determined.

ASSESSMENT CRITERION 12

Institutes to contact for advice are identified.

ASSESSMENT CRITERION 13

Legal and market requirements are adhered to.

SPECIFIC OUTCOME 4

Assist in developing a plan to assist the decision making process on the type of control to apply.

OUTCOME RANGE

Decision-making includes but is not limited to, assisting with deciding whether a problem exists or what type of control to apply.

ASSESSMENT CRITERIA

ASSESSMENT CRITERION 1

Monitoring data is collected and used.

ASSESSMENT CRITERION 2

Data is incorporated into a management plan.

ASSESSMENT CRITERION 3

The process followed to assist in the decision making process is described.

ASSESSMENT CRITERION 4

The type of control is decided on, selected and implemented.

ASSESSMENT CRITERION 5

Application instruction per etiquette is followed.

ASSESSMENT CRITERION 6

Weather, growth stage and type of product are considered.

ASSESSMENT CRITERION 7

Type of production system is considered.

ASSESSMENT CRITERION 8

Appropriate application method is decided on.

ASSESSMENT CRITERION RANGE

Appropriate application includes but is not limited to hand, mechanical, aerial, fogging.

ASSESSMENT CRITERION 9

Safety measures are selected and managed.

ASSESSMENT CRITERION 10

Calibration and mechanical integrity of the equipment is determined.

ASSESSMENT CRITERION 11

Quality and availability of water is according to requirements.

SPECIFIC OUTCOME 5

Execute post-application monitoring.

ASSESSMENT CRITERIA

ASSESSMENT CRITERION 1

Efficacy of product is determined.

ASSESSMENT CRITERION 2

Follow-up generation is identified.

ASSESSMENT CRITERION 3

Side effects and/or damage are determined.

ASSESSMENT CRITERION 4

Equipment is cleaned and serviced.

SPECIFIC OUTCOME 6

Apply environmental and community considerations.

ASSESSMENT CRITERIA

ASSESSMENT CRITERION 1

Poisoning of wildlife and beneficials is avoided.

ASSESSMENT CRITERION 2

Soil and water contamination is avoided.

ASSESSMENT CRITERION 3

Drift onto non-targeted area is avoided.

ASSESSMENT CRITERION 4

Empty containers are appropriately disposed of.

ASSESSMENT CRITERION 5

Rinse water is properly managed.

ASSESSMENT CRITERION 6

Aerial application warnings are performed.

SPECIFIC OUTCOME 7

Oversee the management of an agrochemical storage facility effectively and responsibly.

ASSESSMENT CRITERIA

ASSESSMENT CRITERION 1

The storage facility adheres to minimum requirements.

ASSESSMENT CRITERION RANGE

Minimum requirements include but are not limited to safety signs, equipment, safety equipment, protective gear, drainage, ventilation and lighting.

ASSESSMENT CRITERION 2

Products are categorised and segregated.

ASSESSMENT CRITERION 3

Record of incoming and outgoing products is current and complete.

ASSESSMENT CRITERION 4

Proper stacking methods are applied.

ASSESSMENT CRITERION 5

Emergency and safety plan is in place.

ASSESSMENT CRITERION 6

Access control and security is according to requirements.

UNIT STANDARD ACCREDITATION AND MODERATION OPTIONS

The assessment of qualifying learners against this standard should meet the requirements of established assessment principles.

It will be necessary to develop assessment activities and tools, which are appropriate to the contexts in which the qualifying learners are working. These activities and tools may include an appropriate combination of self-assessment and peer assessment, formative and summative assessment, portfolios and observations etc.

The assessment should ensure that all the specific outcomes, critical cross-field outcomes and essential embedded knowledge are assessed.

The specific outcomes must be assessed through observation of performance. Supporting evidence should be used to prove competence of specific outcomes only when they are not clearly seen in the actual performance.

Essential embedded knowledge must be assessed in its own right, through oral or written evidence and cannot be assessed only by being observed.

The specific outcomes and essential embedded knowledge must be assessed in relation to each other. If a qualifying learner is able to explain the essential embedded knowledge but is unable to perform the specific outcomes, they should not be assessed as competent. Similarly, if a qualifying learner is able to perform the specific outcomes but is unable to explain or justify their performance in terms of the essential embedded knowledge, then thy should not be assessed as competent.

Evidence of the specified critical cross-field outcomes should be found both in performance and in the essential embedded knowledge.

Performance of specific outcomes must actively affirm target groups of qualifying learners, not unfairly discriminate against them. Qualifying learners should be able to justify their performance in terms of these values.

- Anyone assessing a learner against this unit standard must be registered as an assessor with the relevant ETQA.

- Any institution offering learning that will enable achievement of this unit standard or assessing this unit standard must be accredited as a provider with the relevant ETQA.

- Moderation of assessment will be overseen by the relevant ETQA according to the moderation guidelines in the relevant qualification and the agreed ETQA procedures.

UNIT STANDARD ESSENTIAL EMBEDDED KNOWLEDGE

The person is able to demonstrate a basic knowledge of:

- Life cycle of an insect.
- Natural enemies.
- Ways of spreading.
- Contamination.
- Implication of contamination on the quality and marketability of the product.
- Importance of hygiene.
- Scouting procedures.
- Record keeping.
- Hygiene.
- Spreading of pests and diseases.
- Pest levels that cause economic loss.
- Safety rules and principles
- Descriptions of pests and damage.
- Sources of information.
- Procedures.
- Interpretation of pictograms, colour coding and symbols.
- Legal implications of misuse / abuse i.e. off-label use.
- Potential hazards associated with agrochemicals.
- Cleaning and maintenance of equipment.
- General symptoms of poisoning.
- Impact of product on the environment, humans and other organisms.
- Basic storage principles and requirements.
- Principles and methods of mixing.
- Empty container and waste disposal.
- Emergency procedures.
- Legislation and Codes of Practice.
- First aid.
- Hygiene.
- Contamination.
- Product spectrum.
- Principles of product categorisation and segregations.
- Resistance and management thereof.
- Information resources.

- Terminology.
- Principles of:
- Weed control.
- Plant disease control.
- Insect control.
- Nematode control.
- Agrochemical application.
- Effective use of standard reference materials and other resources.
- Reading and understanding labels.
- Calibration.
- Principles and procedures of responsible application.
- Correct use of equipment.
- Health and safety.
- Principles of integrated pest management.
- Environmental knowledge.

UNIT STANDARD DEVELOPMENTAL OUTCOME

N/A

UNIT STANDARD LINKAGES

N/A

Critical Cross-field Outcomes (CCFO):

UNIT STANDARD CCFO IDENTIFYING

Problem solving relates to all specific outcomes.

UNIT STANDARD CCFO ORGANISING

Self-organisation and management relates to all specific outcomes.

UNIT STANDARD CCFO COLLECTING

Information evaluation relates to all specific outcomes.

UNIT STANDARD CCFO COMMUNICATING

Communication relates to all specific outcomes.

QUALIFICATIONS UTILISING THIS UNIT STANDARD:

	ID	QUALIFICATION TITLE	OLD LEVEL	NEW LEVEL	STATUS	END DATE	QUALITY ASSURING BODY
Core	49009	National Certificate: Plant Production	Level 4	New Level Assignment Pend.	Reregistered	2012-06-30	AgriSETA

PROVIDERS CURRENTLY ACCREDITED TO OFFER THIS UNIT STANDARD:

This information shows the current accreditations (i.e. those not past their accreditation end dates), and is the most complete record available to SAQA as of today. Some Quality Assuring Bodies have a lag in their recording systems for provider accreditation, in turn leading to a lag in notifying SAQA of all the providers that they have accredited to offer qualifications and unit standards, as well as any extensions to accreditation end dates. The relevant Quality Assuring Body should be notified if a record appears to be missing from here.

NONE