



NQF Level: 3 US No: 116275

Learner Guide

Primary Agriculture

Routine maintenance and servicing plans



My name:

Company:

Commodity: Date:

Before we start...

Dear Learner - This Learner Guide contains all the information to acquire all the knowledge and skills leading to the unit standard:

Title: Apply routine maintenance and servicing plans and procedures
US No: 116275 NQF Level: 3 Credits: 3

The full unit standard will be handed to you by your facilitator. Please read the unit standard at your own time. Whilst reading the unit standard, make a note of your questions and aspects that you do not understand, and discuss it with your facilitator.

This unit standard is one of the building blocks in the qualifications listed below. Please mark the qualification you are currently doing:

Title	ID Number	NQF Level	Credits	Mark
National Certificate in Animal Production	49048	3	120	ρ
National Certificate in Plant Production	49052	3	120	ρ

Please mark the learning program you are enrolled in:

Your facilitator should explain the above concepts to you.

Are you enrolled in a:	Y	N
Learnership?	ρ	ρ
Skills Program?	ρ	ρ
Short Course?	ρ	ρ

This Learner Guide contains all the information, and more, as well as the activities that you will be expected to do during the course of your study. Please keep the activities that you have completed and include it in your **Portfolio of Evidence**. Your PoE will be required during your final assessment.

What is assessment all about?

You will be assessed during the course of your study. This is called *formative assessment*. You will also be assessed on completion of this unit standard. This is called *summative assessment*. Before your assessment, your assessor will discuss the unit standard with you.

Assessment takes place at different intervals of the learning process and includes various activities. Some activities will be done before the commencement of the program whilst others will be done during programme delivery and other after completion of the program.

The assessment experience should be user friendly, transparent and fair. Should you feel that you have been treated unfairly, you have the right to appeal. Please ask your facilitator about the appeals process and make your own notes.

Your activities must be handed in from time to time on request of the facilitator for the following purposes:

- ♥ The activities that follow are designed to help you gain the skills, knowledge and attitudes that you need in order to become competent in this learning module.
- ♥ It is important that you complete all the activities, as directed in the learner guide and at the time indicated by the facilitator.
- ♥ It is important that you ask questions and participate as much as possible in order to play an active roll in reaching competence.
- ♥ When you have completed all the activities hand this in to the assessor who will mark it and guide you in areas where additional learning might be required.
- ♥ You should not move on to the next step in the assessment process until this step is completed, marked and you have received feedback from the assessor.
- ♥ Sources of information to complete these activities should be identified by your facilitator.
- ♥ **Please note** that all completed activities, tasks and other items on which you were assessed must be kept in good order as it becomes part of your **Portfolio of Evidence** for final assessment.

Enjoy this learning experience!

How to use this guide ...

Throughout this guide, you will come across certain re-occurring “boxes”. These boxes each represent a certain aspect of the learning process, containing information, which would help you with the identification and understanding of these aspects. The following is a list of these boxes and what they represent:



What does it mean? Each learning field is characterized by unique terms and **definitions** – it is important to know and use these terms and definitions correctly. These terms and definitions are highlighted throughout the guide in this manner.



You will be requested to complete **activities**, which could be group activities, or individual activities. Please remember to complete the activities, as the facilitator will assess it and these will become part of your portfolio of evidence. Activities, whether group or individual activities, will be described in this box.



Examples of certain concepts or principles to help you contextualise them easier, will be shown in this box.



The following box indicates a **summary** of concepts that we have covered, and offers you an opportunity to ask questions to your facilitator if you are still feeling unsure of the concepts listed.

My Notes ...

You can use this box to jot down questions you might have, words that you do not understand, instructions given by the facilitator or explanations given by the facilitator or any other remarks that will help you to understand the work better.

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What are we going to learn?

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What will I be able to do?

When you have achieved this unit standard, you will be able to:

- ♥ Apply a routine maintenance and routine servicing plan procedures to ensure the ongoing efficient working order of equipment, technology, infrastructure and implements. S/he will also be able to operate in a safe and responsible manner.
- ♥ Be fully conversant with agricultural regulations and aspects of safety as to provide the environment for the application of quality practices and thus strengthen agricultural practices in general.
- ♥ Gain an understanding of sustainable agricultural practices as applied in the animal, plant and mixed farming sub fields.
- ♥ Participate in, undertake and plan farming practices with knowledge of their environment.

Learning Outcomes

At the end of this learning module, you must be able to demonstrate a basic knowledge and understanding of:

- ♥ The purpose of planning and scheduling maintenance tasks.
- ♥ How the relevant equipment, tools, implements and machines work.
- ♥ The contents of the National Occupation and Safety Act.
- ♥ The safe handling of tools and equipment.
- ♥ The principles of safety precautions.
- ♥ Teamwork and communication.
- ♥ Work program development.
- ♥ Identification and resolving problems related to a work program.
- ♥ The benefits of a well-prepared work plan.
- ♥ Elementary leadership and supervisory techniques.

What do I need to know?

It is expected of the learner attempting this unit standard to demonstrate competence against the unit standard:

- ♥ NQF 2: Utilise and perform minor repair and maintenance tasks on implements; equipment and infrastructure.

Session



Maintenance scheduling and planning

After completing this session, you should be able to:

SO 1: Understand and schedule the implementation of a routine maintenance plan.

SO 2: Implement a service maintenance plan.

In this session we explore the following concepts:

- ♥ The implementation of a routine maintenance plan

1.1 The importance of an effective maintenance plan

A modern farm must function as a business unit with a intergrated plan for maintenance and servicing of all tools, equipment, machinery and implements nessscary for the operation. this plan needs to be established as part of the total management plan and intergrated from top level management down to the operator level.

Planning and control is vital if an effective maintenance plan is to be implemented. The management must, in conjunction with the person who will be responsible for the maintenance procedure, establish from the outset a plan that is practical and functional (It is important that this person be in a senior management position). This plan must allow for unforeseen deviations, but only under extreme conditions.

At this point it is important to establish a plan for the storage of tools, equipment, machinery and implements. This storage will determine the value that management places on the maintenance level of the tools, equipment, machinery and implements. It must include a demarcated area that is specific to the cleaning of tools, equipment, machinery and implements. This area must conform to the farm's conservation and environmental policy and plan that would take into account the use of harmful chemicals that will be detrimental to the environment.

At this point a plan must be made to deal with the waste water from the cleaning operation. This could be a set of sink traps that catch and allow the chemicals to separate before the water is recycled.

Water from this operation may be extremely toxic.



1.2 The planning process

Once the five-year production plan for the farm is established, then planning for maintenance of tools, equipment, machinery and implements and machinery within the production plan can begin.

v Routine planning

The routine maintenance and scheduling plan needs to be broken into two major sections.

- ♥ Detailing the pre-planned times that coincide with non production peaks for major maintenance and;
- ♥ The frequent inspections, daily / weekly / monthly checks that are carried out on the tools, equipment, machinery and implements.

v Maintenance budget

A farm maintenance budget needs to be practical and consists of two sections:

- ♥ Frequent routine maintenance costs- these costs are budgeted for in general but not planned for. For example a tractor might get a puncture and this would come out of this cost center.
- ♥ Major maintenance work- in the plan it would be budgeted that after one year the tractor would require a major service and after five years the engine would require a total overhaul.

v Inspections

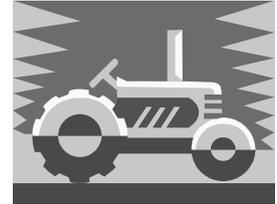
Frequent inspections would identify the need to replace or repair faulty items.

v Maintenance plan and process

Major maintenance work involves complete rework of equipment, machinery and implements or an engine that has had considerable service time. This sort of maintenance is planned and budgeted for and would be scheduled to occur during a non productive period on the farm.

In the planning stage the managers would have to decide if they are going to have the infrastructure available to do major maintenance work on equipment, machinery and implements, or are they going to outsource this work. If they decide to keep the work in-house they must plan to have all the tools and equipment available to carry out major repair work.

The costs involved in the maintenance of a tractor are substantial and if it is not checked and repaired regularly, it will result in a major breakdown which will cost considerably more to repair.



Often all major maintenance is carried out by specialists as some machinery and equipment are too specialized to be serviced by untrained persons.

The farm store would normally have a list of the suppliers of all tools, equipment, machinery and implements operating on the farm and if a new part is required to carry out work identified during a frequent inspection then the stores can order the part if they do not carry it as a stock item.

Part of the planning process would be to identify how much capital would be invested in stock items for maintenance and what would be acceptable down time if the maintenance team has to wait for the supplier to deliver. A balance needs to be planned for, as it is very costly to keep stock in the store and it can be costly to production not to have it immediately available.

1.3 Training of staff

A vital part of the maintenance plan is the training of staff that is responsible for given machines and tools, equipment, machinery and implements. The manager concerned with implementing the maintenance programme needs to establish a team that will assist to work out the finer details in the planning for implementation.

♥ Training team:

- Shop steward or union representative.
- Maintenance manager.
- Person responsible for training.
- Industry specialist.



It is vital that the people responsible for maintenance of specific machinery and tools are trained to maintain and repair them. The industry specialist will often conduct the operational and field maintenance training. After training the specialist will issue a certificate of competency to the trainee. This will ensure that the operators are confident of their ability to operate and run the necessary maintenance checks on the tools, equipment, machinery and implements.

For example if the operator has been trained on a new chemical sprayer then they will understand that they are allowed to clean the air filter and the spark plug on a daily basis but they are not allowed to take the engine apart.

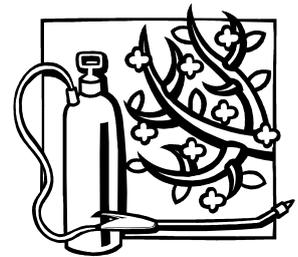
1.4 Maintenance scheduling

A maintenance schedule would involve the operator cleaning the air filter and spark plug and the outside of the machine for physical dirt on a daily basis. If the operator notices that there is an oil leak on the engine then the operator must report it to their supervisor who will authorize the operator to book the machine in at the workshop.

The operator conducts a daily routine service at the end of the day and on a monthly basis takes the machine in to the workshop for service.

During down time when there is no need for spraying, the machine will be booked in for a major overhaul. In the case of brush cutters this often involves the replacing of guards and engine parts

The workshop must be flexible and cater for tools, equipment, machinery and implements being brought in for minor essential repairs out of the set schedule, a sprayer that has an oil leak needs immediate attention as the lack of oil would cause major damage to the machine with further use.



Part of the plan for maintenance needs to be the availability of a replacement machine that can allow the operator to continue with operating while the broken machine is being fixed. There needs to be an agreed upon time for faulty tools, equipment, machinery and implements to be taken to the workshop, machines must be booked in and a job card issued for the work that needs to be conducted.

For every type of equipment, machinery and implement operating on the farm there must be the necessary specific or generic tools available to carry out maintenance. Most machinery and implements come with a set of spanners that is specific to it. It is best for the workshop to have a set and for the operator to have a set to take into the field.

1.4 Maintain tools and equipment

The operators also need to know the correct way to use the tools.

No machine must be operated on unless the correct equipment is available. Using improvised tools on specific equipment, machinery and implements can be costly and dangerous in the long run. Example: A chain saw, brush cutter and sprayer usually have a specific sparkplug spanner and it is important to use the correct one.

On a farm the tools, equipment, machinery and implements are designed for hard and rugged use but it is important that on a daily basis that they be cleaned and stored appropriately.

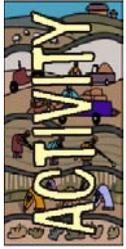
During this cleaning process it is important for the operator to check for stress fractures. Dirt often conceals these fractures and damage occurs before the fracture is identified if daily maintenance is not carried out on the machine.

On a monthly basis the equipment, machinery and implements needs to go into the workshop to be serviced and minor repairs made.

Agricultural equipment such as tractors and implements are very expensive items.

It is cost effective to plan and build sheds and storage places to house tractors, machinery, implements and tools for the following reasons:

- ♥ The tools, equipment, machinery and implements are kept together and can be accounted for.
- ♥ The condition of the tools, equipment, machinery and implements can be checked and compared
- ♥ Tools, equipment, machinery and implements are accessible for inspection.
- ♥ Protected from the environment and theft.
- ♥ A policy of total quality management requires that all tools, equipment, machinery and implements is maintained and stored in a manner that complements this management strategy.



Please complete Activity 1:

Individual assignment

Read through the above passages on maintenance and use the information that you extract to guide you in completing the activity.

- Design a routine maintenance schedule by using five types of tools, equipment, machinery and implements.
- Use the given table to document the required information.



Concept (SO 1 & 2)	I understand this concept	Questions that I still would like to ask
A routine maintenance schedule is interpreted and plotted against a calendar to set tasks on specific days.		
The scheduling of tasks to prevent disruption of work is demonstrated.		
Adequate and appropriate materials and tools are on hand.		
The tasks listed on the service maintenance plan are executed according to the scheduled dates.		
Tasks that are not performed due to unforeseen reasons are rescheduled appropriately.		
Support and guidance are provided to other workers engaged in the maintenance tasks.		

Session

2 Maintenance and service procedures

After completing this session, you should be able to:

SO 3: Apply maintenance and service procedures according to specified policies.

SO 4: Ensure the application of appropriate safety measures in the use of agricultural equipment and implements.

In this session we explore the following concepts:

- ♥ Apply maintenance and service procedures according to existing policies

2.1 Policies and service procedures

A policy is a written document that has been put in place so that it can be referred to as a guiding standard when performing any operation or procedure at a place of work. A policy will vary from work place to work place, but if there is no written policy in place there is no grounds for management to question the actions of its workers and visa versa. The workers have no way of knowing what the correct procedure is to follow, to do satisfactory work. At the place of work there should be a policy to cover the standard operating procedures involved on running farm work.

A policy will provide the following advantages:

- ♥ It allows management a guideline on expected performance and adherence to regulations.
- ♥ It allows a consistency in performance towards maintenance and service.
- ♥ It gives direction to all parties concerned.
- ♥ It sets a recognized standard that leads to quality management.



A farm should have a policy in place that sets out the standards for dealing with tools, equipment, machinery and implements and infrastructure at the place of work. This policy will cover the maintenance and servicing of tools, equipment, machinery and implements and infrastructure.

For this policy to function it will have to relate to and include other essential policies that exist at the place of work. These other policies should be some of the following:

- ♥ **Environmental policy** - to govern the impact that maintenance actions can have on the environment, such as harsh cleaning chemicals.
- ♥ **Training policy** - to govern the development of staff so that they are competent to carry out the maintenance and service functions expected of them.
- ♥ **Safety policy** - to govern the maintenance procedures within a set of safety procedures.
- ♥ **Health and safety policy** - govern the tools, equipment, machinery and implements and clothing to be worn by staff when carrying out the maintenance procedures.
- ♥ The policy on maintenance and service will need to cover the following procedures:
 - Procedure for reporting faulty or damaged tools, equipment, machinery and implements.
 - Procedure for transferring responsibility of tools, equipment, machinery and implements.
 - Procedure for following up on the transferred tools, equipment, machinery and implements.
 - Procedure for ensuring that maintenance schedules are adhered to.
 - Procedure to ensure that rescheduling occurs if a task is not completed according to schedule.
 - Procedure for the cleaning and storage of tools, equipment, machinery and implements and implements.





Please complete Activity 2.

- Read through the above passages on maintenance and service procedures as related to existing policy then complete the following two tables filling in information gathered from your place of work into the specific table.
- Choose **five** items and describe the procedure for cleaning and storing of each item. Select a wide range of items for example ranging from a tractor to pH meter.

Cleaning	List Item
Type of equipment, machinery and implement	
Schedule for cleaning daily, weekly or after use	
Chemicals required for cleaning	
Describe the area required for cleaning i.e. concrete cleaning bays with facility for treatment of wastewater.	
Equipment, required for cleaning i.e. high pressure hoses	
Protective clothing required for cleaning process	
Protective equipment, such as safety goggles	
Describe what to look for as in maintenance when cleaning tools, equipment, machinery and implements i.e. cracked welding in plough tools, equipment, machinery and implements.	
Storage	List Item
Type of tools, equipment, machinery and implements or implement	
Security from theft or vandalism	
Space required for access	
Demarcation marking for safety and accountability	
Need to be locked away for limited access	
Need for protective covering, i.e. roof over shed for tractors	
Need for specific storage position i.e. brush cutters must be stored in racks that hold the head above the drive shaft.	
Ventilation as regards health and safety procedures	
Limited access to certain authorized personal	



Please complete Activity 3.

Use the information that you gathered from the above activity and answer the following questions.

1. Explain why is there a need to maintain, clean and store agricultural tools, equipment, machinery and implements and implements.
2. Explain your specific work safety policy and describe in detail the safety regulations regarding the handling and use of tools, equipment, machinery, implements, fuel and agrochemicals.



Please complete Activity 4.

Use the same five items of agricultural tools, equipment, machinery and implements or implements describe in the table above.

- What are the five main points in the safe operation of that piece of equipment. There may be more than five, but list the most important.

Type of tools, equipment, machinery and implements	Safe operating procedure 1	Safe operating procedure 2	Safe operating procedure 3	Safe operating procedure 4	Safe operating procedure 5
1					
2					
3					
4					
5					



Concept (SO 3 & 4)	I understand this concept	Questions that I still would like to ask
Plans and procedures for cleaning and storage of equipment and implements are prepared.		
The reasons for proper maintenance and storage of agricultural equipment are explained.		
Equipment not functioning efficiently is repaired.		
The work safety policy of the workplace is explained.		
Safety regulations applicable to the use and handling of fuel, equipment and agro-chemicals are explained.		
The safe operation of equipment and implements is explained.		
Appropriate protective clothing required for the safe use of equipment is used.		

Am I ready for my test?

- ♥ Check your plan carefully to make sure that you **prepare in good time**.
- ♥ You have to be found **competent** by a qualified **assessor** to be declared competent.
- ♥ Inform the assessor if you have any **special needs** or requirements **before** the agreed date for the test to be completed. You might, for example, require an interpreter to translate the questions to your mother tongue, or you might need to take this test orally.
- ♥ Use this worksheet to help you prepare for the test. These are **examples** of **possible questions** that might appear in the test. All the information you need was taught in the classroom and can be found in the learner guide that you received.

1. *I am sure of this and understand it well*
2. *I am unsure of this and need to ask the Facilitator or Assessor to explain what it means*

Questions	1. I am sure	2. I am unsure
1. Using five types of equipment design a routine maintenance schedule. <ul style="list-style-type: none"> • Use the given table to document the required information. • Use two different colours of pens to transcribe this information into the yearly planner provided below this table. • Use the red pens to indicate the major service and blue pens to indicate the frequent service. 		
2. Choose five items to describe the procedure for cleaning and storing of each item try and select items that cover the range from tractor to ph meter.		
3. Explain why is there a need to maintain, clean and store agricultural equipment and implements.		
4. Explain your specific work safety policy and describe in detail the safety regulations regarding the handling and use of fuel, equipment and agrochemicals?		

Checklist for practical assessment ...

Use the **checklist** below to help you prepare for the part of the practical assessment when you are observed on the **attitudes** and **attributes** that you need to have to be found competent for this learning module.

Observations	Answer Yes or No	Motivate your Answer (Give examples, reasons, etc.)
Can you identify problems and deficiencies correctly?		
Are you able to work well in a team?		
Do you work in an organised and systematic way while performing all tasks and tests?		
Are you able to collect the correct and appropriate information and / or samples as per the instructions and procedures that you were taught?		
Are you able to communicate your knowledge orally and in writing, in such a way that you show what knowledge you have gained?		
Can you base your tasks and answers on scientific knowledge that you have learnt?		
Are you able to show and perform the tasks required correctly?		
Are you able to link the knowledge, skills and attitudes that you have learnt in this module of learning to specific duties in your job or in the community where you live?		

- ♥ The assessor will complete a checklist that gives details of the points that are checked and assessed by the assessor.
- ♥ The assessor will write commentary and feedback on that checklist. They will discuss all commentary and feedback with you.
- ♥ You will be asked to give your own feedback and to sign this document.
- ♥ **It will be placed together with this completed guide in a file as part of you portfolio of evidence.**
- ♥ The assessor will give you feedback on the test and guide you if there are areas in which you still need further development.

Paperwork to be done ...

Please assist the assessor by filling in this form and then sign as instructed.

Learner Information Form			
Unit Standard	116275		
Program Date(s)			
Assessment Date(s)			
Surname			
First Name			
Learner ID / SETA Registration Number			
Job / Role Title			
Home Language			
Gender:	Male:	Female:	
Race:	African:	Coloured:	Indian/Asian: White:
Employment:	Permanent:	Non-permanent:	
Disabled	Yes:	No:	
Date of Birth			
ID Number			
Contact Telephone Numbers			
Email Address			
Postal Address			Signature:

Terms & Conditions

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No user is allowed to sell this material whatsoever.

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**SOUTH AFRICAN QUALIFICATIONS AUTHORITY
REGISTERED UNIT STANDARD:**

Apply routine maintenance and servicing plans and procedures

SAQA US ID	UNIT STANDARD TITLE		
116275	Apply routine maintenance and servicing plans and procedures		
SGB NAME	NSB	PROVIDER NAME	
SGB Primary Agriculture	NSB 01-Agriculture and Nature Conservation		
FIELD		SUBFIELD	
Agriculture and Nature Conservation		Primary Agriculture	
ABET BAND	UNIT STANDARD TYPE	NOF LEVEL	CREDITS
Undefined	Regular	Level 3	3
REGISTRATION STATUS	REGISTRATION START DATE	REGISTRATION END DATE	SAQA DECISION NUMBER
Registered	2004-10-13	2007-10-13	SAQA 0156/04

PURPOSE OF THE UNIT STANDARD

A learner achieving this unit standard will be able to apply a routine maintenance and routine servicing plan procedures to ensure the ongoing efficient working order of equipment, technology, infrastructure and implements. S/he will also be able to operate in a safe and responsible manner.

In addition, learners will be well positioned to extend their learning and practice into other areas of agriculture and to strive towards professional standards and practices at higher levels.

Competent learners will be fully conversant with agricultural regulations and aspects of safety as to provide the environment for the application of quality practices and thus strengthen agricultural practices in general.

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 equipment, technology, implements and infrastructure 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:

- NOF 2: Utilise and perform minor repair and maintenance tasks on implements; equipment and infrastructure.

UNIT STANDARD RANGE

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.

UNIT STANDARD OUTCOME HEADER

N/A

Specific Outcomes and Assessment Criteria:

SPECIFIC OUTCOME 1

Understand and schedule the implementation of a routine maintenance plan.

OUTCOME RANGE

A routine maintenance schedule refers to a list of tasks that are performed on a regular, specified and on-going basis in order to ensure that tools, equipment, machinery and implements are kept in good working order. These tasks may include the servicing of vehicles, implements and machinery as well as the examination of tools and implements for quality checks.

ASSESSMENT CRITERIA

ASSESSMENT CRITERION 1

A routine maintenance schedule is interpreted and plotted against a calendar to set tasks on specific days.

ASSESSMENT CRITERION 2

The scheduling of tasks to prevent disruption of work is demonstrated.

ASSESSMENT CRITERION 3

Adequate and appropriate materials and tools are on hand.

SPECIFIC OUTCOME 2

Implement a service maintenance plan.

ASSESSMENT CRITERIA

ASSESSMENT CRITERION 1

The tasks listed on the service maintenance plan are executed according to the scheduled dates.

ASSESSMENT CRITERION 2

Tasks that are not performed due to unforeseen reasons are rescheduled appropriately.

ASSESSMENT CRITERION 3

Support and guidance are provided to other workers engaged in the maintenance tasks.

SPECIFIC OUTCOME 3

Apply maintenance and service procedures according to specified policies.

OUTCOME RANGE

Equipment refers to any of those that are used in the agricultural sector to perform functions that include, but are not limited to, fertiliser distribution, shearing, water distribution, sprayers, vehicles, and tractors.

ASSESSMENT CRITERIA

ASSESSMENT CRITERION 1

Plans and procedures for cleaning and storage of equipment and implements are prepared.

ASSESSMENT CRITERION 2

The reasons for proper maintenance and storage of agricultural equipment are explained.

ASSESSMENT CRITERION 3

Equipment not functioning efficiently is repaired.

SPECIFIC OUTCOME 4

Ensure the application of appropriate safety measures in the use of agricultural equipment and implements.

OUTCOME RANGE

Equipment may include, but are not limited to, hand tools, power tools, fuel pumps, etc. to hand operated machinery, tractors, and graders.

ASSESSMENT CRITERIA

ASSESSMENT CRITERION 1

The work safety policy of the workplace is explained.

ASSESSMENT CRITERION 2

Safety regulations applicable to the use and handling of fuel, equipment and agro-chemicals are explained.

ASSESSMENT CRITERION 3

The safe operation of equipment and implements is explained.

ASSESSMENT CRITERION 4

Appropriate protective clothing required for the safe use of equipment is used.

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 they 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:

- The purpose of planning and scheduling maintenance tasks.
- How the relevant equipment, tools, implements and machines work.
- The contents of the National Occupation and Safety Act.
- The safe handling of tools and equipment.
- The principles of safety precautions.
- Teamwork and communication.
- Work program development.
- Identification and resolving problems related to a work program.
- The benefits of a well-prepared work plan.
- Elementary leadership and supervisory techniques.

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 WORKING

Teamwork relates to specific outcomes:

- Implement a service maintenance plan.
- Apply maintenance service procedures according to specified policies.

UNIT STANDARD CCFO ORGANIZING

Self-organisation and management relates to specific outcomes:

- Understand and schedule a routine maintenance plan.
- Adjust and maintain the good working order of tools, equipment and machinery.

UNIT STANDARD CCFO COLLECTING

Information evaluation relates to specific outcomes:

- Understand and schedule a routine maintenance plan.
- Implement a service maintenance plan.
- Adjust and maintain the good working order of tools, equipment and machinery.

UNIT STANDARD CCFO COMMUNICATING

Communication relates to specific outcomes:

- Implement a service maintenance plan.
- Apply maintenance service procedures according to specified policies.
- Adjust and maintain the good working order of tools, equipment and machinery.

UNIT STANDARD CCFO SCIENCE

Use science and technology relates to all specific outcomes.

UNIT STANDARD CCFO DEMONSTRATING

Inter-relatedness of systems relates to specific outcomes:

- Apply maintenance service procedures according to specified policies.
- Adjust and maintain the good working order of tools, equipment and machinery.

UNIT STANDARD ASSESSOR CRITERIA

N/A

UNIT STANDARD NOTES

N/A

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