

ASSESSMENT GUIDE FOR ASSESSORS & FACILITATORS

Plant Nutrition & Soil Management

Level 4

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Title:		Implement Soil Fertility and Plant Nutrition Practices					
Applied Title:		Implement Soil Fertility and Plant Nutrition Practices					
Field:		Agriculture and Nature Conservation					
Sub-Field:		Primary Agriculture					
SETA (SGB):		AgriSETA					
Skills Area:		Plant Nutrition and Soil Management					
Context:		Citrus Production					
US No:	116311	Level:	4	Credits:	3	Notional Hours:	30
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Based on the Production Guidelines of:



Supported by:



Unit standard alignment and assessment tool development:

Cabeton Training and Development

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Directions

Please Note: There is a separate assessment guide for the learner. The learner must use this guide to prepare himself / herself for the assessment.

This assessment guide contains all necessary activities and instructions that will enable the assessor and learner to gather evidence of the learner's competence as required by the unit standard. This guide was designed to be used by a trained and accredited assessor whom is registered to assess this specific unit standard as per the requirements of the AgriSETA ETQA.

Prior to the delivery of the program the facilitator and assessor must familiarise themselves with content of this guide, as well as the content of the assessment guide for learners.

The assessor, facilitator and learner must plan the assessment process together, in order to offer the learner the maximum support, and the opportunity to reflect competence.

The policies and procedures that are applicable during the execution of this assessment are available on the website of the Citrus Academy, contained in a document named Policies and Procedures for Assessment, and must be strictly adhered to. The assessor must familiarise himself with this document before proceeding.

This guide provides step-by-step instructions for the assessment process of:

US No:	116311	Level:	4	Credits:	3
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The step-by-step instructions agree and are conducted in concert with the steps described in the learner assessment guide. The steps are as follows:

Step	Description	Timeframe
1	Pre-Assessment Briefing and Checklist	Before delivery of program
2	Learner Declaration of Authenticity	Before delivery of program
3	Diagnostic Assessment of Learning Assumed to be in Place	Before delivery of program
4	Assessment Plan for Gathering of Evidence	Before delivery of program
5	Learner Formative Assessment Activities	During delivery of program, assessment after delivery of program
6	Program Interpretation	After delivery of program
7	Integrated Summative Assessment Tool	After delivery of program
8	Re-assessment Procedures	After completion of assessment
9	Documentation	After completion of assessment
10	Administration and Completion of Portfolio of Evidence	After completion of assessment

Step 1

Pre-Assessment Briefing and Checklist

A pre-assessment briefing for learners is held before the delivery of the program. Use the checklist below to ensure that all these points are addressed and discussed with the learners.

Pre-Assessment Briefing Checklist		
	√	X
Organise resources – people, equipment, venue, etc.		
Explain the purpose of the assessment		
Discuss the standards or criteria to be used		
Discuss assessment roles and accountabilities		
Decide on assessment venues		
Negotiate evidence required, and where or how this evidence may be gathered		
Explain the methods of assessment that will be used during the gathering and summing up of evidence		
Negotiate the date of submission for the activity workbook and the date for the summative assessment		
Discuss resources required for the assessment e.g. equipment, materials, etc.		
Explain the procedure if the learner is found to be not yet competent		
Explain the appeal and review procedures		
Identify any potential learning barriers and negotiate strategies to overcome these		
Complete and sign the assessment plan with the learner		

The learner and assessor must sign the **Learner Contract** in the learner assessment guide.

Step 2

Learner Declaration of Authenticity

The learner is requested to complete and sign the Declaration of Authenticity in the learner assessment guide. This should be checked and co-signed by the assessor.

The format is as reflected in the learner assessment guide.



Step 3

Diagnostic Assessment of Learning Assumed to Be in Place

In the learner assessment guide, the learner is asked to indicate whether they have completed the learning assumed to be in place as prescribed by the unit standard.

The assessor must guide the learners through this step, explaining in detail the content of the mentioned learning areas, because names of learning programs do not always agree with the names of the unit standards, and learners might indicate the incorrect information.

If learners indicate that they have not yet completed the mentioned unit standards, the assessor should prescribe an action plan to allow the learner to obtain the skills required by recommending additional training, competence portfolios, or the relevant RPL assessment for the given unit standards.

The format is as reflected in the assessment guide for learners. Please read it and familiarise yourself with its content.



Step 4

Assessment Plan for Gathering of Evidence

A pro-forma assessment plan for this unit standard has been drafted in the learner assessment guide. Explained the plan to the learner and complete the dates and signatures as indicated.

The format for the assessment plan is as reflected in the assessment guide for learners. Please read it and familiarise yourself with its content. Make a note of the dates agreed upon in the table provided below.

Learner and Assessor Assessment Plan		
Unit Standard	Implement Soil Fertility and Plant Nutrition Practices	
Registration Number	116311	
<i>Step</i>	<i>Description</i>	<i>Completion / Submission Date</i>
Step 5	Learner Formative Assessment Activities	
Step 6	Program Interpretation	
Step 7	Integrated Summative Assessment Tool	
Step 8	Re-Assessment Procedures	
Step 9	Documentation	
Step 10	Administration and Completion of Portfolio of Evidence	

Step 5

Learner Formative Assessment Activities

The Learner Assessment Guide contains comprehensive activities and worksheets that the learner must complete during the delivery of the learning program. It is imperative that these activities be completed as part of the learning process in order to give the learner the opportunity to develop the skills, knowledge and attitudes that are required for competence.

Learners must complete all the activities in the workbook.

Learners must be encouraged to take control of their learning by indicating areas in the workbook where they experience difficulty.

Learners hand in the Learner Assessment Guide to the assessor or the facilitator, only if the facilitator is a subject matter expert, for the assessment of the formative assessment activities. The assessment of these activities must be done according to the prescribed benchmarks and according to the marking matrix that follows.

The learner must not move on to the next step before this step has been completed and learners show sufficient capacity and readiness for summative assessment. If problems areas are identified, the learner should be guided with a developmental action plan, which is documented separately and signed by the learner, the facilitator and the assessor.

Model answers are provided below.

Activity 1 – Group Brainstorm
In your group, brainstorm the questions below and write down the conclusions that you reach.
Who do you think would be important people to include in the ordering process for fertilisers and application equipment?
Financial manager, general manager, procurement manager, store clerk, admin personnel
What considerations would you keep in mind when thinking about fertiliser transportation and storage?
Store different fertilisers in different sections clearly marked with the complete label easily visual. Do not store chemicals that can react with each other too close together. Store liquids in sections that will contain the entire volume if the containers are damaged accidentally.
How would you make sure that your fertiliser stock levels are correct, meaning how would you ensure that you do not buy too much or too little of one type of fertiliser for your needs?
Calculate the total requirement per month and place the order for delivery one week before the first application date. Allow for a small % extra on nitrogen (based on previous experience) to ensure that the nitrogen will be applied on time. For the other elements (P, K etc) the short supply can be applied somewhat later and no need to order extra.
Do you think that it is important to control the fertiliser stock during storage? Explain how.
Yes, it is sound management to know what and how much is available. Keep records of all purchases, returns from the orchards and withdrawals and the rest should be in stock.

Activity 2 – Worksheet
Use the information supplied below to complete the questionnaire in your own words.

FERTILISATION PROGRAM – CITRUS			
Orchard:	Orchard 10	Size:	3.0ha
Cultivar/Variety:	Delta Valencias	Trees per ha:	100
<i>Fertiliser</i>		<i>Quantity</i>	<i>Time of Application</i>
Soil Applications		g per tree	
Limestone Ammonium Nitrate (LAN)		500g	July
LAN		250g	August
LAN		100g	September
Potassium Chloride (KCL)		500g	September
Potassium Chloride (KCL)		250g	October
Dolomitic Lime		4000g	October
Foliar Sprays		g per 100l water	
Low Biuret Urea		1000g	July
Manganese Sulphate		200g	October
Zinc Nitrate (5%)		150ml	October
Solubor®		150g	October
Remarks:			
1. Manganese, Zinc nitrate and Solubor® are compatible. 2. Spread the lime over the entire area allocated per tree. 3. Apply 10 litres of the spraying solution per tree.			

Develop a soil and foliar application program for orchard 10.

FERTILISATION PROGRAM FOR SOIL APPLICATIONS FOR ORCHARD 10 (GRAMS PER TREE)							
<i>Fertiliser</i>	<i>Jul</i>	<i>Aug</i>	<i>Sep</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Total</i>
LAN	500	250	100				
KCI			500	250			
Dolomitic lime				4000			

FERTILISATION PROGRAM FOR FOLIAR SPRAYS FOR ORCHARD 10 (GRAMS OR MILLILITRE PER 100 LITRES WATER)							
<i>Chemical</i>	<i>Jul</i>	<i>Aug</i>	<i>Sep</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Total</i>
Low biuret urea	1000g						
Zinc nitrate (5%)				150ml			
Manganese sulphate				200g			
Solubor				150g			

What is the total mass LAN required in July for orchard 10? Show your calculation.

500g + 250g + 100g x 3ha x 100 trees per ha = 255 000g = 255kg

What is the total mass of potassium chloride required for the orchard? Show your calculation.

500g + 250g x 3ha x 100 trees per ha = 25 500g = 25,50kg

How many litres of zinc nitrate must be ordered for orchard 10? Show your calculation.

150ml x 2500liter water required per ha ÷ 100 (the application rate is 150ml/100 litres) x 3ha = 11 250ml = 11,25litres.

If the only zinc nitrate available contains 10% Zn, what will the application rate be? Show your calculation.

150 x 5% (the concentration of the recommended source) ÷ 10% (the concentration of the substitute) = 75ml per 100 litres water

Activity 3 – Worksheet

Complete the questionnaire in your own words.

Name four soil properties that will determine the suitability of a soil for citrus. Note the reasons why these properties are important.

<i>Properties</i>	<i>Reasons</i>
Slope	Commercial citrus production requires the use of fairly heavy machinery, such as spray- carts and picking trailers. During soil preparation, the tractors and implements used to prepare the soil must also be able to drive safely. The slope must therefore not be so severe that workers and equipment are put in danger. A flat surface with a slope of less than two degrees is however also not suitable, as surface drainage of rain water will be too slow. Slope is also important for row orientation, surface drainage and erosion. Planting on contours is no longer done and if the slope poses any potential problems with surface drainage and / or erosion, orchard layout should be adapted accordingly.
Depth	Citrus requires a minimum soil depth of 30cm to 40cm where micro-jet irrigation is used, and 40cm to 50cm where drip irrigation is used, provided the material below this potential root-zone will not restrict drainage.
Soil texture	The optimum soil clay content for citrus production is between 5% and 20% for micro-jet irrigation and between 5% and 35% for drip irrigation. The clay content of soil influences its water holding capacity, the volume of easily available water, its cation exchange capacity, and its aeration. These are all factors that will influence the final product.
Stratification	Stratification restricts water movement and root development, resulting in soil volumes with few roots.
Salinity	While accumulated salts also include nutrients, it usually contains high concentrations of sodium, calcium, chlorides, sulphates and carbonates. The chemical conditions in the layers where the salts accumulated restrict root development and function.

Discuss the term "stratification" as used in describing the soil profile.

Stratification refers to layering, meaning layers of soil with different properties. Stratification is observed when profile pits are dug, and analyses must be taken of the soil in the various layers.

During soil preparation, all forms of stratification, or layering, must be removed, meaning that layers in the soil are broken up and mixed with the help of machinery. The type and depth of the layers determine the implements required. The less layers present in a soil, the lower the preparation cost, as soil with little or no stratification can merely be loosened. Stratification restricts water movement and root development, resulting in soil volumes with few roots. These volumes become water logged and create pockets in the soil where root-rot starts. These unoccupied volumes also contain water and nutrients that are unavailable to the plant due to a lack of roots. During soil preparation, all forms of layering must be eliminated.

Activity 4 – Worksheet

Complete the questionnaire in your own words.

Name two reasons why citrus trees will drop leaves before the lifecycle of the leaves are completed.

Hidden nitrogen deficiency (available nitrogen is relocated to younger leaves) and hidden magnesium deficiency. Drought and soil salinity are also possible reasons that are not discussed in this learner guide.

When looking at a citrus tree, how will you know that the tree is lacking nitrogen?

- **The entire tree is a slightly lighter green than normal**
- **The oldest leaves turn deep yellow colour and drop**
- **Twigs have leaves at the tips and few or none at the middle or base**
- **The tree is sparsely foliated with only one or two generations of leaves**
- **Excessive leaf drop occur a week before and during a vegetative flush**

Why can leaf analysis not always indicate the exact magnesium status of a citrus orchard or tree?

Magnesium is mobile in the plant and will move between old and young leaves. When a sub-optimal magnesium supply is experienced, Mg is moved from the older leaves to the younger ones. The leaves with an elevated Mg content will be sampled (7-9 months old) giving the impression that the Mg level in the complete tree is acceptable, but in reality less leaves than is required for a optimal foliage is still on the trees. The Mg content is concentrated in fewer leaves.

Describe the preferred method to correct an iron deficiency.

Soil applications of a pH stable chelate during August at a rate of 30g m⁻¹ for microjets.

Give two reasons why leaf sampling of citrus during July to January has limited value.

The concentration of nutrient elements can change rapidly when fertilisers are applied during July to January. No reference values are available for leaves sampled at any other time than February to May.

Activity 5 – Worksheet

Complete the questionnaire in your own words.

Name the three considerations when deciding on the soil preparation.

Preparation methods for soils are dictated by the profile properties, being stratification, texture, pH and salinity. Before soil preparation can be done effectively, a soil survey or at least field inspection of previously surveyed soil areas is therefore required.

Define and describe ridging.

When the depth of suitable soil is limited, the soil from the inter-row spaces can be moved to the area where the trees will be planted, thus excavating the vehicle paths and filling the planting area with more suitable soil. This creates ridges of suitable soil.

Why is soil mixing done?

This method is used to prepare soils that require mixing to eliminate stratification or when it is necessary to mix lime, gypsum, phosphates or other fertilisers into the would-be root-zone.

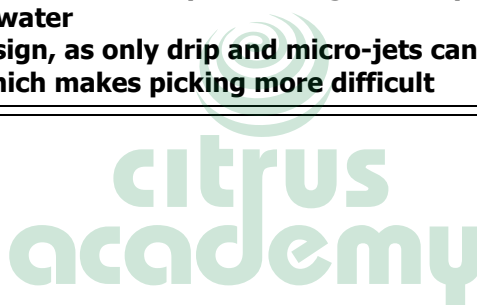
Name three advantages and two disadvantages of ridging.

The purpose and advantages of ridging are:

- **Improvement in surface drainage**
- **Increase in soil temperature**
- **Increase in the depth of suitable soil**
- **Savings in fertiliser and energy cost**
- **Facilitation of the mixing of fertilisers**
- **Control of vehicle movement in the orchard, as ridges clearly indicate the inter-row paths and re-compaction of the soil is limited**

The disadvantages of ridging are:

- **Higher soil temperature, which can be up to 5°C higher compared to a flat soil surface**
- **Increased evaporation of water**
- **Limitation in irrigation design, as only drip and micro-jets can be used**
- **The undulating surface which makes picking more difficult**



Marking Matrix and Assessor Report for Formative Assessment Activities
Formative Evidence Collection Summary for Unit Standard 116311 – Level 4

	<i>Action Required from Learner to Develop Competence</i>	<i>Competence Assessments</i>	<i>Standard for Activity</i>	<i>Allocation of Marks</i>	<i>Feedback to Learner and Comments on Evidence</i>
Specific Outcome 1: Interpret recommendations and set up nutritional program based on recommendations <i>Range:</i> Recommendations may be from an analytical laboratory, and nutritional programs may include application of agrochemicals, organic material, lime, etc.	Attend classroom lesson, participate and ask questions	Activities in learner activity book were completed correctly	Activity answers must be at least 85% correct	As per model answer sheet	
Specific Outcome 2: Implement soil utilisation plan for specified crops <i>Range:</i> Soil depth, drainage, infiltration rate, pH, water holding capacity, field capacity, soil horizons, soil aeration, erosion risks, organic content, texture, clay content, structure, biological content, compaction	Attend classroom lesson, participate and ask questions	Activities in learner activity book were completed correctly	Activity answers must be at least 85% correct	As per model answer sheet	
Specific Outcome 3: Identify and interpret symptoms of nutritional deficiencies and make full recommendations <i>Range:</i> Macronutrients may include, among others, nitrogen phosphorous, potassium, calcium, magnesium and sulphur. Micronutrients may include, among others, boron, zinc, iron, molybdenum and manganese	Attend classroom lesson, participate and ask questions	Activities in learner activity book were completed correctly	Activity answers must be at least 85% correct	As per model answer sheet	

Marking Matrix and Assessor Report for Formative Assessment Activities
Formative Evidence Collection Summary for Unit Standard 116311 – Level 4

	<i>Action Required from Learner to Develop Competence</i>	<i>Competence Assessments</i>	<i>Standard for Activity</i>	<i>Allocation of Marks</i>	<i>Feedback to Learner and Comments on Evidence</i>
Specific Outcome 4: Manage soil improvement according to soil properties <i>Range:</i> Soil improvement methods may include tillage operations, mechanical, non-mechanical, organic, minimum and zero tillage.	Attend classroom lesson, participate and ask questions	Activities in learner activity book were completed correctly	Activity answers must be at least 85% correct	As per model answer sheet	
Embedded Knowledge: The learner is able to demonstrate a basic knowledge of: 1. Sampling procedures 2. Chemical, properties of soil – pH, nutrient status and degradation 3. Physical properties of soil – texture, structure, soil profiles, crust formation, erosion types, compaction, and degradation 4. Biological properties of soil and processes 5. Soil ecology e.g. soil organisms, food webs, role of water and oxygen in soil 6. Soil health and conservation 7. Role of living organisms 8. Conservation practices – runoff control, contours 9. Tillage operations – mechanical, non-mechanical, organic, minimum and	Attend classroom lesson, participate and ask questions	Activities in learner activity book were completed correctly	Activity answers must be at least 85% correct	As per model answer sheet	

Marking Matrix and Assessor Report for Formative Assessment Activities
Formative Evidence Collection Summary for Unit Standard 116311 – Level 4

	<i>Action Required from Learner to Develop Competence</i>	<i>Competence Assessments</i>	<i>Standard for Activity</i>	<i>Allocation of Marks</i>	<i>Feedback to Learner and Comments on Evidence</i>
zero tillage and application of nutrients (liquid and solid) 10. Primary and secondary soil preparation methods 11. Soil preparation and fertiliser/ compost application equipment 12. Nutrients – mixtures, limes, calcite and dolomite lime, single nutrients and compost, liquids, etc. 13. Calibration of equipment 14. Chemical, physical and biological properties, degradation and rehabilitation 15. Characteristics of the nutrients 16. Role of nutrients in the plant 17. Rules and regulations for storage and handling of agro-chemicals transport 18. Crop requirements					
US CCFO: Identifying	Attends all lessons, activities, practical and completes activities and workbook as per instructions	Attendance register and facilitator report	Learner must at least be present and no negative commentary about the learner should be made in the facilitator report.	N/a	
US CCFO: Working					
US CCFO: Organising					
US CCFO: Communicating					
US CCFO: Science					
US CCFO: Demonstrating					
US CCFO: Contributing					
US CCFO: Collecting					

Assessment Feedback Form – Activity Workbook			
		Comments / Remarks	
Feedback to learner on assessment			
Feedback from learner to assessor			
Learner's Signature		Date:	
Assessor's Signature		Date:	



Step 6

Interpreting a Fertilisation Program

Before the project is undertaken, the learner must be reminded of what is expected from him / her in terms of summative and reflexive competence. Read and explain to the learner, the ***Preparation for Your Final Assessment*** section in the learner assessment guide. Learners and assessor should sign off this section to acknowledge that this step was completed.

- Use the planning and questioning format below to help you collect evidence for foundational and embedded knowledge as prescribed by the outcomes of the unit standards.
- Provide the questions as listed to the learners as a guide.
- Ensure that you apply the exact same methodology for each learner in order to ensure that VACS principles are adhered to.
- The benchmark for learner competence is an 85% overall questionnaire score.
- Only a suitably qualified and registered assessor who is ALSO a subject matter expert in this specific field can mark this assessment tool for learner assessment.
- If no such a person can be found to assess the learner, then it is advised that a qualified assessor consults with the appropriate subject matter expert prior to the assessment in order to establish key points for competence and / or uses model answers as supplied by a subject matter expert to allocate marks. The subject matter expert should be consulted for any answers that the assessor might have queries on.
- Use a header in the following format for each questionnaire paper:

Unit Standard:	116311	NQF Level:	4
Learner Name			

- The assessor should copy and paste as required and hand out questionnaire to learners.
- Marks and scores should be allocated as follows:

What does the fertilisation program recommend? Look at exact and specific recommendations.	15%
Is the fertilisation program specific for the crop that is grown on the farm where you work?	5%
Does the fertilisation program take soil type into consideration?	5%
Does the fertilisation program allow for soil improvement actions? Name them.	5%

What information is gained from: • Soil depth • Drainage • Infiltration rate • pH • Water holding capacity • Soil horizons • Soil aeration • Erosion risks • Organic content • Texture • Clay content • Structure • Biological content • Compaction	15%
How will the soil in its current state affect the crop?	5%
How will soil improvement from interpretation of a fertilisation program affect the crop?	5%
Is the soil the correct soil for the crop?	5%
What stocks do you have to order to fertilise the soil according to the fertilisation program? Look at exact amounts and specifications.	5%
At what time of year will the fertilisation program be executed?	10%
Who will perform what actions?	2%
Are there any health and safety rules to be kept in mind?	3%
Are there things that can go wrong?	5%
How will the soil be prepared?	5%
How will fertilisers be applied?	10%



Step 7

Integrated Summative Assessment Tool

Two assessment tools are provided in this step, being:

1. Practical Assessment Tool
2. Attitudes and Attributes Assessment Tool

These assessment tools have been drafted in its entirety and follows below. It must be copied and completed for every learner in the same manner and according to the same procedure.

Learners must not be given these tools in preparation for summative assessment. This corresponding step in the learner assessment guide is a direct reflection of these tools and is drafted in a format that is appropriate to the learner's level of language competence.

1. Practical Assessment Tool

- All the sections of this document must be completed and signed where appropriate by the learner and the assessor.
- The learner must be given appropriate feedback and told whether they were declared competent or not yet competent. The assessor must record the appropriate commentary and guide the learner with detailed action plans for areas where the learner is found not yet competent.
- In line with the policies and procedures, the assessor must offer learners an opportunity for feedback on the assessment as well as an opportunity to appeal against the declaration.
- Should learners be found not yet competent, a detailed action plan with specific commentary on development must be drafted together with the learner and the facilitator in order to develop the necessary competence. A date for re-assessment must be agreed upon with the learner.
- All the evidence must be signed and copied, if necessary, to be placed in the learner's portfolio of evidence.
- Use this checklist to help collect evidence of practical competence as prescribed by the specific outcomes of the unit standards.
- Ask the questions as listed in order to test foundational and reflexive competence relevant to the specific task.
- Ensure that the exact same methodology is applies for each learner in order to ensure that VACS principles are adhered to.
- The benchmark for learner competence in this tool is 85% in EVERY task.
- This assessment tool can only be used for learner assessment by a suitably qualified and registered assessor who is ALSO a subject matter expert in this specific field.
- If no such a person can be found to assess the learner, then it is advised that a qualified assessor consults with the appropriate subject matter expert prior to the physical assessment in order to establish key points for observation. The subject matter expert should attend the assessment in order to judge competence of the learner.

2. Attitudes and Attributes Assessment Tool

- Use this rating scale to judge the learner's CCFO competence according to the unit standard.
- The learner's entire performance and all the stages of learning, as well as all gathered evidence must be considered for this section.
- It is advised that the assessor consult with facilitators, mentors, coaches and supervisors in order to ensure that an objective rating is allocated.
- A rating between 1 and 5 should be given, as follows:

Rating	Description
1	No evidence can be found
2	The evidence found is weak and this is still a major development area for the learner
3	The evidence found meets the average expectation for a learner on this level
4	The evidence found is of a high quality and exceeds the average standard expected
5	The evidence found is outstanding and the learner attitudes and traits are very well developed

- Learner must be given constructive feedback on each rating.
- Ensure that you apply the exact same methodology for each learner in order to ensure that VACS principles are adhered to.
- The benchmark for learner competence in this tool is 3:5 in EVERY CCFO.

At the end of this step, an assessment feedback form is provided which must be completed and signed by the assessor, learner and moderator, where applicable.



Practical Assessment Tool				
Unit Standard:	116311	NQF Level:	4	
Learner Name				
<i>Tasks and Question</i>	<i>Criteria Checked For / Key Concepts Observed</i> (to be completed as per the real contexts and examples used whilst in the field)	<i>Learner Competent</i>	<i>Learner Not Yet competent and Recommended Revision</i>	<i>Assessor Comments</i>
Task 1: Keep stock records and order stocks accordingly to implement soil fertility and plant nutrition practices				
1.1. What is required for soil fertilisation in the next: • Week • Month • Quarter • Six months • Year				
1.2. Can all the stock required be ordered on short notice?				
1.3. Which of the stock has a short shelf-life and has to be ordered accordingly?				
1.4. Can all the stocks be stored together?				
1.5. Who must stocks be ordered from?				
1.6. How long does it take to receive the stock?				
Task 2: Identify nutrient deficiencies in a specific crop				
2.1. What are the symptoms of macronutrient deficiencies in the crop?				

2.2. Are all these symptoms visible?				
2.3. What are the symptoms of micronutrient deficiencies in the crop?				
2.4. Are all these symptoms visible?				
2.5. What must you do if you see nutrient deficiency symptoms?				
Task 3: Perform correct soil preparation methods				
3.1. What are the commonly-used soil preparation methods?				
3.2. What is the purpose of soil preparation?				
3.3. To which soil types or soil conditions do specific soil preparation methods apply?				
3.4. When can soil preparation methods be performed?				
3.5. What can go wrong during soil preparation?				

Attitudes and Attributes Assessment Tool

Use the following rating table in this assessment:

Rating	Description
1	No evidence can be found
2	The evidence found is weak and this is still a major development area for the learner
3	The evidence found meets the average expectation for a learner on this level
4	The evidence found is of a high quality and exceeds the average standard expected
5	The evidence found is outstanding and the learner attitudes and traits are very well developed

CCFO Criteria	Rating
Identifying – The learner can identify problems and deficiencies correctly.	
Working in a Team – The learner is able to work well as member of a team.	
Organising – The learner works in an organised and systematic way whilst performing all tasks and tests.	
Communicating – The learner is able to communicate his or her knowledge orally and in writing, in a way that shows what knowledge he or she has gained.	
Demonstrating – The learner is able to show and perform the tasks required correctly.	
Contributing – The learner is able to link the knowledge, skills and attitudes that he or she has acquired in this module of learning to specific duties in their job or in the community where he or she lives.	
Science – Learner is able to utilise and use science and technology effectively	
Collecting – Learner can effectively gather information	



Assessment Feedback Form			
		Comments / Remarks	
Feedback to learner on assessment and / or overall recommendations and action plan for competence			
Feedback from learner to assessor			
Assessment Judgement	You have been found: ☐ Competent ☐ Not yet competent in this unit standard	Actions to follow: ☐ Assessor report to ETQA ☐ Learner results and attendance certification issued	
Learner's Signature		Date:	
Assessor's Signature		Date:	
Moderator's Signature		Date:	

Step 8

Re-Assessment Procedures

- Note that only outcomes on which the learner was found not yet competent must be re-assessed.
- The same procedures in steps 6 and 7 are repeated.
- The tool must be adapted at discretion of the assessor. Best practice is not to present the exact same format and questions if possible.
- Use your expertise and judgement to ensure that the method of re-assessment remains integrated and relevant to the expected outcomes.



Step 9

Documentation

The following documentation is addressed in this step:

1. Learner and assessor information reports;
2. Assessor report and summative evidence collection summary;
3. Learner assessment re-actionnaire;
4. Assessor's assessment review and improvement document;
5. Assessment appeal form

1. Learner and Assessor Information Forms

The learner information form is in the assessment guide for learners. The assessor information form follows. These forms must be completed for each individual learner and placed in the learner's portfolio of evidence.

2. Assessor Report and Summative Evidence Collection Summary

This report follows after the information report. Use it to summarise the findings during assessment. Please complete the copy of this report that is in the learner assessment guide.

3. Learner Assessment Re-Actionnaire

A pro-forma for the learner assessment re-actionnaire is included in the learner assessment guide. Ask the learner to complete this form and sign it.

4. Assessor's Assessment Review and Improvement Document

The assessor is expected to complete the assessor review of the assessment process, using the pro-forma document of which an example follows. Please complete the copy of the document in the learner assessment guide. This document must be discussed with the learner and any learner commentary should be recorded.

5. Assessment Appeal Form

The assessment appeal form is also provided in the learner assessment guide. Assist the learner to complete the document if necessary.

The learner must be requested to sign-off all reports and documents before they are placed in the portfolio of evidence.

Assessor Information Form			
Unit Standard			
Program Date(s)			
Surname			
First Name			
Company Name			
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			

Assessor Report and Formative and Summative Evidence Collection Summary for Unit Standard 116311 – Level 4					
Description	Evidence Gathered		Benchmark	Competent / Not yet Competent	Feedback and Comments
	Foundational and Embedded Knowledge	Practical Skills, Underpinning Knowledge and Reflexive Competence			
Specific Outcome 1: Interpret recommendations and set up nutritional program based on recommendations <i>Range:</i> Recommendations may be from an analytical laboratory, and nutritional programs may include application of agrochemicals, organic material, lime, etc.	Formative workbook activities Practical Questionnaire Summative Project	Formative workbook activities Practical Questionnaire Summative Project	85% competence in all areas		
Specific Outcome 2: Implement soil utilisation plan for specified crops <i>Range:</i> Soil depth, drainage, infiltration rate, pH, water holding capacity, field capacity, soil horizons, soil aeration, erosion risks, organic content, texture, clay content, structure, biological content, compaction	Formative workbook activities Practical Questionnaire Summative Project	Formative workbook activities Practical Questionnaire Summative Project	85% competence in all areas		
Specific Outcome 3: Identify and interpret symptoms of nutritional deficiencies and make full recommendations <i>Range:</i> Macronutrients may include, among others, nitrogen phosphorous, potassium, calcium, magnesium and sulphur. Micronutrients may include, among others, boron, zinc, iron, molybdenum and manganese	Formative workbook activities Practical Questionnaire Summative Project	Formative workbook activities Practical Questionnaire Summative Project	85% competence in all areas		

Assessor Report and Formative and Summative Evidence Collection Summary for Unit Standard 116311 – Level 4					
Description	Evidence Gathered		Benchmark	Competent / Not yet Competent	Feedback and Comments
	Foundational and Embedded Knowledge	Practical Skills, Underpinning Knowledge and Reflexive Competence			
Specific Outcome 4: Manage soil improvement according to soil properties <i>Range:</i> Soil improvement methods may include tillage operations, mechanical, non-mechanical, organic, minimum and zero tillage.	Formative workbook activities Practical Questionnaire Summative Project	Formative workbook activities Practical Questionnaire Summative Project	85% competence in all areas		
Unit Standard CCFOs: • Identifying • Working in a Team • Organising • Collecting • Communication • Science • Demonstrating • Contributing	N/a	Rating Scale	Minimum rating of 3:5 in each criteria or overall average of 3:5		

Assessor's Assessment Review and Improvement Document	
<i>Issues</i>	<i>Comments</i>
Did the assessment go according to plan?	
Did anything unexpected happen?	
Were you pleased with the assessment decision; i.e. was it what you expected?	
How could the process have been carried out more efficiently?	
How could the process of assessing the knowledge be improved?	
How could the Performance Observation checklist be improved?	
Was the evidence you gathered sufficient to make a judgment of competence?	
Was the way you obtained feedback from the learner effective?	
Were you pleased with the way you communicated your decision to the learner? If not, how could this have been improved?	
How would you improve the assessment process?	

Any learner has the right of appeal against any not-yet-competent decision by the assessor. If the learner wishes to appeal, please assist him / her to complete the form below.

Appeal Form			
I hereby appeal against the outcome of my assessment.			
Date:			
Learner's Name:			
Assessors Name:			
Organisation:			
Assessment Details: Criteria, role, standards Used, etc.			
Issue to be Reviewed:			
Learner's Signature		Date:	
Assessor's Signature		Date:	

Step 10

Administration and Completion of Portfolio of Evidence

All the documents or copies thereof, as prescribed previously, must be kept on file as part of the learner portfolio of evidence.

Learner's portfolio of evidence must be readily available for internal and external moderation and verification by the appropriate practitioners, until after the verification process has taken place. The portfolio of evidence may then be kept or returned to the learner according to the service provider's policy.

The prescribed learner results form should be submitted to the ETQA or the National Learner Database as per the SETA procedure.

