Assessment Guide for Assessors & Facilitators

Plant Propagation

Level 3

P.O. Box 461, Hillcrest, 3650
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Title:		**Explain the Propagation of Plants**					
Applied Title:		**Explain the Propagation of Citrus Plants**					
Field:		Agriculture and Nature Conservation					
Sub-Field:		Primary Agriculture					
SETA (SGB):		AgriSETA					
Skills Area:		Propagation					
Context:		Citrus Production					
US No:	116220	**Level:**	3	**Credits:**	4	**Notional Hours:**	40
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Based on the Production Guidelines of:

Supported by:

Unit standard alignment and assessment tool development:
Cabeton Training and Development

Project coordinator:
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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 who 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:	116220	**Level:**	3	**Credits:**	4

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	Learner Assessment Contract	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	Report Writing	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 assessors 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. Explain 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	Explain the Propagation of Plants	
Registration Number	116220	
Step	***Description***	***Completion / Submission Date***
Step 5	Learner Formative Assessment Activities	
Step 6	Report Writing	
Step 7	Integrated Summative Assessment	
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.

The learner hands 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 following marking matrix.

The learner should 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 Discussion
Hold a brief group discussion about what is required to propagate citrus successfully and about the problems that one might encounter. Write key notes for yourself.

Successful propagation:

- **Environmental conditions impact on the growth rate of plants, by mostly impacting on two metabolic processes, being photosynthesis and respiration, or transpiration.**
- **During photosynthesis, the plant absorbs CO_2 and water, and uses heat to manufacture sugars (carbohydrates), oxygen, and water molecules.**
- **During respiration O_2 from the air is used to break down carbohydrates in the plant into energy that is used by the plant, CO_2 that is released into the air, and water molecules that are dispersed from the surface of the leaf.**
- **When the moisture in the surrounding air increases, plant transpiration decreases and light intensity influences transpiration through leaf surface temperature.**
- **Three classes of environmental conditions impact on plant growth, being atmospheric conditions, biotic conditions and edaphic conditions.**
- **Atmospheric conditions refer to light, humidity, temperature, water and aeration.**
- **Seed germination is activated by increased light intensity and light impacts on the rate of photosynthesis and respiration. Fluorescent lights are used in germination rooms to promote seed germination, and natural light is used in tunnels and shade houses.**
- **Relative humidity impacts on the transpiration rate of plants.**
- **Temperature impacts on photosynthesis and respiration rates. Germination requires relatively high temperatures, with a range of between 27°C and 32°C, with an average of 29°C being considered optimal.**
- **Water plays a role in keeping the plant cells turgid, as a catalyst in biochemical reactions in the plant, and in the translocation of manufactured compounds.**
- **Aeration in the leaf and root areas allows gaseous exchange that ensures that growth and**

development take place normally.

- **Biotic conditions refer to bacteria, fungi and viruses in the rhizosphere, insects and weeds.**
- **Certain types of bacteria, fungi and viruses in the root-zone are beneficial and have a positive impact on the growth of the plant, while others are non-beneficial and have a negative impact.**
- **Insects are also classified as beneficial and non-beneficial. Examples of beneficial insects are Aphytis lingnanensis, Chilocorus nigritus, and Cryptolaemas montrouzieri, while non-benefical insects include red mites, red scale, mealybugs, aphids, leafminer, and thrips.**
- **Weeds negatively impact on the growth of seedlings because they compete for water and nutrients.**
- **Edaphic conditions refer to physical and chemical properties of the growth medium in the root-zone, and the properties of the contained in which the plant is grown.**
- **Soilless media that are also used in nurseries include pine-bark, sawdust, peanut shell, river sand, composted organic material, and ash.**
- **In terms of propagation, physical growth medium properties refer to the texture, structure and aeration of the soil. Soil depth and stratification are controlled in the nursery environment.**
- **Chemical growth medium properties are those characteristics that cannot be seen or felt, but influence reactions that take place in it and include the pH, salinity, and potential gas exchange reactions.**
- **Container properties are determined by the material used for the containers in which plants are grown.**

Problems that might occur:

- **Temperature issues during propagation**
- **Incorrect time of year for propagation**
- **Humidity problems in propagation environment**
- **Fungal diseases breaking out in propagation environment**
- **Wax applications at grafting too hot (plants killed off)**
- **Unsuccessful graft unions due to plant material not being of equal thickness/no cambial contact during grafting/graft unions drying our**
- **Seeds not viable**
- **Seedlings that die off**
- **Seedlings not of desired quality**

Activity 2 – Worksheet

What are the benefits of propagating citrus in protected structures?
Protected environments allow for better control
Is citrus ever propagated in open field environments? Motivate your answer.
Yes, some raising of grafted rootstocks on scions occur open field
Why is temperature controlled during citrus propagation?
To ensure optimum propagation conditions; to prevent dehydration of plants
What is the ideal temperature at which citrus is propagated?
27-32°C
Why is humidity controlled during citrus propagation?
To ensure plants stay hydrated, but to prevent the outbreak of fungal diseases
What is the ideal relative humidity for citrus propagation?
80-90%
What are the ideal light conditions for citrus propagation?
690-720nm

How can insects interfere with successful propagation?
Might spread disease; might damage plants
How can a propagator avoid interference from insects?
Propagation in enclosed structures/controlled environments; use of propagation material which is free from diseases; application of insecticides in propagation environment; use of such techniques as HWT
How can weeds interfere with successful propagation?
Compete with plants for water and nutrients
How can a propagator avoid interference from weeds?
Frequent weeding; use of sterile growth mediums
How can micro-organisms interfere with successful propagation?
Could cause diseases; compete with plant for nutrients in soil
How can a propagator avoid interference from micro-organisms?
Choose disease-free propagation material; apply HWT; control the humidity levels in enclosed structures
What are the typical properties of growth mediums used in citrus propagation?
In terms of propagation, physical growth medium properties refer to the texture, structure and aeration of the soil. **Water and air are components of the growth medium that are kept in a specific balance to allow optimum plant growth. The balance comes into play in relation with the solid particles of the medium. In a container, the mix should have enough air to supply the roots, enough water for physiological and metabolic processes to take place, and solid particles to anchor the roots.** **The texture and particle size of the medium greatly influence root development. Pine-bark presents a coarser texture with irregular surface and structure, which determines the direction in which the roots will grow and the ease with which they will spread into the container. Because of its coarseness, and other chemical properties that will be discussed later, pine-bark is known to be less effective in holding water for a long time, which has to be taken into account in irrigation management.** **A complementary property in this regard is the size of particles making up the growth medium. A growth medium with small particles tends to compact easily, making the soil less permeable and therefore impeding the movement of roots and water. Growth medium with small particles could also have excessive water holding capacity, which has the potential to promote disease development, such as root rot, and starve the plants of air and nutrients. Larger particles on the other hand have a reduced water holding capacity. The bigger the particles, the less water can be held for uptake by plants.** **The ideal growth medium for citrus propagation has in the region of between 14% and 20% air-filled porosity, with a particle sizes ranging between 10mm (about 25% portion) and 14mm (about 30% portion) in the case of pine bark. Different propagators select different combinations that are more suited to their environment.** **Chemical properties are defined as those characteristics of the growth medium that cannot be seen or felt, but that influence reactions that take place in it. These include the pH, salinity (expressed as electrical conductivity), and potential gas exchange reactions.** **Reactions between certain minerals produce by-products that have a secondary impact on root development. Some of these by-products can accumulate causing high salinity, while others can lead to medium acidification or render the rhizosphere alkaline.** **Growth medium pH is essential since it affects the availability of nutrients for uptake by plant roots. Remember that a pH of 7 is neutral, while a lower value indicates acidity and a higher value alkalinity.**
What are the typical properties of containers used to propagate citrus in?

Container properties are determined by the material used for the containers in which plants are grown. Different materials can be used as containers for citrus propagation, with the choice ranging from polyethylene bags through pots to sisal sacs.
Heat retention and diffusion from the media in the container is a very important aspect of propagation, since the temperature in the root-zone affects the development of the plant. High temperatures of about 27°C and up will lead to increased water evaporation from the medium, which can have severe consequences and may even result in roots dying.
Lower temperatures also affect root growth. At temperatures in the region of 12°C and below, most the metabolic processes of subtropical plants, including citrus, slow down.
Black coloured polyethylene bags are the most commonly used containers in the South African citrus nurseries. Their properties to absorb and distribute heat in the medium are satisfactory, especially during the colder periods of the year.
In addition to root growth stimulation, the bag requires much less storage space, costs less, and is more degradable. These are the major considerations that have made the plastic bag a better option compared to for example plastic pots.

Activity 3 – Research and Discover

Visit a citrus nursery and find answers to the following questions.

No model answers supplied. Contextualise per nursery.

Describe how the plant is propagated.	
Describe the environment in which the plant is propagated.	Describe how the environment is monitored and controlled and adjusted
Structure:	Structure:
Temperature:	Temperature:
Humidity:	Humidity:
Water:	Water:
Aeration:	Aeration:
Light conditions:	Light conditions:
Explain what tools, equipment and materials are required for the propagation.	
At what time of year is the propagation occurring? Why does it take place at this time?	
What parts of the plant are being used? For what are the plant parts used?	
What do they do to ensure that they have a high success rate?	

What hygiene and sanitation rules are there in the propagation environment? Why?

Activity 4 – Group Discussion
Hold a group discussion about the following issues and write key notes for yourself.
Is citrus ever propagated with seed? Motivate your answer.
Yes, rootstocks often propagated from seeds
If plants have to be propagated from seed, what criteria must the seed meet?
Viable; contains desired properties; free from viruses
If plants are propagated from seed, how are the seeds handled and treated before sowing?
Exposure of seed to required conditions – if applicable **Preparation of propagation medium** **Placement of seed in required propagation medium** **Watering of seeds**
If plants are propagated from seed, how are they sown?
Usually single seed at specified depth in a container with required growth medium
If plants are propagated from seed, how are the seeds treated and handled after sowing?
The best seedlings are transplanted into trays with individual cells filled with bark mixed with a slow release fertiliser. These seedlings are raised to become rootstocks for budding. The seedlings trays are normally kept in tunnels where the environment can be regulated.
What is "vegetative" propagation?
Reproducing a plant via asexual methods, e.g. grafting. The new plant is an exact replica of the parent plant
When are plants propagated using vegetative propagation techniques?
When plants are required to be true-to-type; if plants grow too slowly from seed
Name the vegetative propagation techniques used in citrus propagation.
Grafting (Budding)

Activity 5 – Flow Diagram			
Draw a flow diagram showing how citrus propagation takes place. Indicate where temperature and humidity is controlled and point out how the propagation material is handled and damage to the plants is avoided.			
Seeds sourced from mother block			
↓			
Seeds germinated in germination room	**Temperature: 27°-32° (use lights / heaters)** **Humidity: 80%-100% rh (watering / temp control)** **Monitor with hygrothermograph**	**Seeds treated before sowing** **Sowed 1-2cm deep**	**Avoid compaction** **Keep water supply to field capacity**
↓			

Seedlings (or cuttings) for rootstock kept in tunnels	**Temperature: 27°-32° (use lights / heaters, or fans / cooling pads) Humidity: above 80%rh (increase through watering / temp control / fogging for cuttings) Monitor with hygrothermograph**	**Planted in medium (pine bark) Attach identification tags Apply water and fertiliser / fertigation**	**Scout for pests and diseases, apply treatments when needed Keep water and growth medium pathogen free**
↓			
Budding	**Ensure hygienic, pathogen free environment**	**Use prescribed T-cut budding method**	**Use only certified scions from Foundation Block Guard against infection (sterile environ-ment / equipment)**
↓			
Budded plants kept in shade houses until field ready	**Temperature, light and humidity controlled by using 40% shade-net Humidity kept close to ambient and increased when necessary by wetting ground**	**Fertigation and pest and disease control Weed control Identification tags**	**Scout for pests and diseases and apply control measures Keep plants above ground to prevent pathological contamination**

Activity 6 – Worksheet
Complete the worksheet below in your own words.
What would a nursery keep records of?
Possibly: • **Germination dates** • **Budding dates** • **Batches** • **Cultivars** • **Rootstocks** • **Watering regimes** • **Incidents/accidents** • **Stocks** • **Sales orders and deliveries**
Why does a nursery keep records?
To track progress, assign responsibility and keep track of success rates
What are the consequences if records are not kept correctly?
Chaotic propagation; sanitation control problems; non-compliance to legal aspects might lead to material not being certified

Activity 7 – Worksheet
Complete the worksheet below in your own words.
What are the best tools for propagating citrus?

- **Seed trays**
- **Seedling trays**
- **Watering cans**
- **Knapsacks**
- **Soil augers**
- **Jugs**
- **Spades**
- **Planting containers**
- **Mesh panels**
- **Hose pipes**
- **Stakes or cleats**
- **Collection bags**
- **Wheelbarrows**
- **Tying machines (tapeners)**
- **Sweeping rakes**
- **Leather gloves**

Why are these tools used?

- **Seed trays: germinate seeds**
- **Seedling trays: nurse and grow seedlings**
- **Watering cans: when water is needed and for drenching**
- **Knapsacks: foliar feeding, pesticides sprays and herbicide sprays**
- **Soil augers: taking samples of the growth media**
- **Jugs: measure substances**
- **Spades: handling bark**
- **Planting containers: growing the seedlings and budded plants**
- **Mesh panels: lift the plants from the ground to avoid direct contact with the soil**
- **Hose pipes: watering plants in containers**
- **Stakes or cleats: train budded trees**
- **Collection bags: dispose of weeds**
- **Wheelbarrows: efficient method of transporting plants**
- **Tying machines (tapeners): training the plant to grow straight**
- **Sweeping rakes: cleaning in and around the nursery or shade-house**
- **Leather gloves: certain operations such as staking to prevent injury**

Can the tools spread disease? Explain your answer.

Yes. Tools touch plant parts, plant sap and are handled by people who can spread contamination to the tools. Infected tools that touch other plants serve as a vector for diseases.

Can the tools injure people working with it? Explain your answer.

Yes. Many tools are sharp or heavy and can thus injure those working with it. Tools used incorrectly or for the incorrect job pose a danger to the user.

How will you personally prevent that tools spread disease in the propagation environment?

Frequent sanitising of tools between areas or actions

How will you personally prevent damage to the plant material by the tool?

Maintenance of tool and correct use of correct tool

How will you personally prevent damage to yourself while using the tool?

Adhere to health and safety rules, wear protective clothing, use correct tools for correct purpose

Marking Matrix and Assessor Report for Formative Assessment Activities Formative Evidence Collection Summary for Unit Standard 116220 – Level 3					
	Action Required from Learner to Develop Competence	***Competence Assessments***	***Standard for Activity***	***Allocation of Marks***	***Feedback to Learner and Comments on Evidence***
Specific Outcome 1: **Demonstrate an understanding of the function of environmental requirements for propagation within a specific agricultural production context** *Range:* The propagation environment includes, but is not limited to, open field and protective structures related to the environmental needs of humidity, ventilation, temperature, light intensity and moisture	Attend classroom lesson, participate and ask questions	Activities in learner activity book were completed correctly	Activity answers must be at least 85% correct A signature + commentary from the supervisor / coach / mentor or facilitator in learner Workbook	As per model answer sheet	
Specific Outcome 2: **Demonstrate an understanding of the general propagation procedures and select appropriate procedures within a specific agricultural production context** *Range:* Propagation procedures include, but are not limited to, direct sowing, seedling tray, seedbed, vegetative cuttings of rhizomes, corns, tubes, scaling of bulbs and tissue culture	Attend classroom lesson, participate and ask questions	Activities in learner activity book were completed correctly	Activity answers must be at least 85% correct A signature + commentary from the supervisor / coach / mentor or facilitator in learner Workbook	As per model answer sheet	
Specific Outcome 3: **Monitor environmental conditions in the propagation area within a specific agricultural production context**	Attend classroom lesson, participate and ask questions	Activities in learner activity book were completed correctly	Activity answers must be at least 85% correct A signature + commentary from the	As per model answer sheet	

Marking Matrix and Assessor Report for Formative Assessment Activities Formative Evidence Collection Summary for Unit Standard 116220 – Level 3					
	Action Required from Learner to Develop Competence	***Competence Assessments***	***Standard for Activity***	***Allocation of Marks***	***Feedback to Learner and Comments on Evidence***
Range: The environmental conditions may include but are not limited to humidity, ventilation, temperature, light intensity, moisture, etc.			supervisor / coach / mentor or facilitator in learner Workbook		
Specific Outcome 4: **Choose and apply the necessary tools for the propagation within a specific agricultural production context** *Range:* Tools include but are not limited to pruning shears, budding knives, scalpels, gas flames, laminar flow bench, etc. Hygiene requirements include but are not limited to sterilisation, radiation, alcohol washes, etc. Safety requirements include but are not limited to using eye protection, hand protection, clothes etc.					
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: Identifying					

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

Report Writing

Before the summative task 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 this section in the learner assessment guide. The learner and assessor must sign off this section to acknowledge that this step was completed.

The learner is required to write a report after a visit to a citrus nursery.

- 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 test 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 test paper:

Unit Standard:	116220	**NQF Level:**	3
Learner Name			

- The assessor should use the questions below as a marking matrix and to gather evidence and to check for completeness.

Identify the role of the different staff members.	5%
Identify who reports to whom about what.	10%
Describe the environment in which the plants are propagated.	10%
Describe how the environment is monitored and kept at the right conditions.	10%
List the parts of the plants used in propagation and explain why they are used.	5%
Describe the tools used in the propagation environment.	10%
Describe the equipment used in the propagation environment.	10%
Describe the health and hygiene rules in the propagation environment for: • Staff • Tools • Equipment	10%

Describe the health and safety rules in the propagation environment for staff using propagation tools and equipment.	10%
Explain how the propagation facility ensures a high success percentage.	10%
Explain what instruments are used to monitor the environmental conditions in the propagation environment.	10%

Step 7

Integrated Summative Assessment Tool

One assessment tool is provided in this step, being:

1. Attitudes and Attributes Assessment Tool

This assessment tool has 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. 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.

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	116220			
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 Summative Evidence Collection Summary for Unit Standard 116220 – Level 3					
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: **Demonstrate an understanding of the function of environmental requirements for propagation within a specific agricultural production context** *Range:* The propagation environment includes, but is not limited to, open field and protective structures related to the environmental needs of humidity, ventilation, temperature, light intensity and moisture	Report	CCFO Rating Scale	85% competence in all areas		
Specific Outcome 2: **Demonstrate an understanding of the general propagation procedures and select appropriate procedures within a specific agricultural production context** *Range:* Propagation procedures include, but are not limited to, direct sowing, seedling tray, seedbed, vegetative cuttings of rhizomes, corns, tubes, scaling of bulbs and tissue culture	Report	CCFO Rating Scale	85% competence in all areas		

Assessor Report and Summative Evidence Collection Summary for Unit Standard 116220 – Level 3					
Description	***Evidence Gathered***		***Benchmark***	***Competent / Not yet Competent***	***Feedback and Comments***
	Foundational and Embedded Knowledge	**Practical Skills, Underpinning Knowledge and Reflexive Competence**			
Specific Outcome 3: **Monitor environmental conditions in the propagation area within a specific agricultural production context** *Range:* The environmental conditions may include but are not limited to humidity, ventilation, temperature, light intensity, moisture, etc.	Report	CCFO Rating Scale	85% competence in all areas		
Specific Outcome 4: **Choose and apply the necessary tools for the propagation within a specific agricultural production context** *Range:* Tools include but are not limited to pruning shears, budding knives, scalpels, gas flames, laminar flow bench, etc. Hygiene requirements include but are not limited to sterilisation, radiation, alcohol washes, etc. Safety requirements include but are not limited to using eye protection, hand protection, clothes etc.	Report	CCFO Rating Scale	85% competence in all areas		

Assessor Report and Summative Evidence Collection Summary for Unit Standard 116220 – Level 3					
Description	***Evidence Gathered***		***Benchmark***	***Competent / Not yet Competent***	***Feedback and Comments***
	Foundational and Embedded Knowledge	**Practical Skills, Underpinning Knowledge and Reflexive Competence**			
Embedded Knowledge: The learner is able to demonstrate basic knowledge of: 1. Basic safety requirements related to the propagation environment, tools and procedures. 2. Basic hygiene requirements for the propagation environments. 3. Growing media – wet and dry. 4. Weeds, pest and diseases. 5. The safe handling of hormone and chemicals preparations (rooting powders and plant protection substances)			Overall minimum test score of 85%		
Unit Standard CCFOs: • Identifying • Working in a Team • Organising • Communication • Demonstrating • Contributing • Science • Collecting	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	
Issues	**Comments**
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.