ASSESSMENT GUIDE FOR LEARNERS BEARNER MORKBOOK

Plant Propagation

Level 4



P.O. Box 461, Hillcrest, 3650 (031) 313-3364

Title:		Propagate	Propagate Plants in a Variety of Situations						
Applied Title:		Propagate	Propagate Citrus Plants						
Field:		Agriculture a	and Natur	e Conservation					
Sub-Field:		Primary Agr	Primary Agriculture						
SETA (SGB):		AgriSETA	AgriSETA						
Skills Area:		Propagation	Propagation						
Context:		Citrus Produ	Citrus Production						
US No:	116316	Level:	4	Credits:	3	Notional Hours:	30		
Author:		N. Munduku	N. Munduku						

Based on the Production Guidelines of:





Level: 4

Unit Standard: 116316



Unit standard alignment and assessment tool development:

Cabeton Training and Development

Project coordinator: Jacomien de Klerk

Disclaimer

By accepting this document and reading its contents you agree to be bound by the terms of this disclaimer.

The use of the contents of this document is at your own risk. Neither the Citrus Academy nor the CRI or the CGA warrant that the content of this document is suitable for your intended use or that it is free of inaccuracies or omissions. The opinions and advice expressed in this document are not necessarily those of the Citrus Academy, the CRI or the CGA. The Citrus Academy, the CRI and the CGA, their directors, officers, employees, agents and contractors shall not be liable for any loss or damage of any nature suffered by any person as a direct or indirect result of the use of, or inability to use any advice, opinion or information contained in this document, or any misrepresentation, misstatement or omission, whether negligent or otherwise, contained in this document.

You indemnify the Citrus Academy, the CRI and the CGA against any claim by any third party against the Citrus Academy, the CRI or the CGA, their directors, officers, employees, agents or contractors arising from, or in connection with, the use of, or reliance on, the contents of this document. It is your responsibility to determine suitability of the contents of this document for your intended use.



Unit Standard: 116316



Table of Contents

Directions	4
Step 1	5
Step 2	7
Directions Step 1 Step 2 Step 3 Step 4 Step 5 Step 6 Step 7 Step 8 Step 9	8
Step 4	9
Step 5	11
Step 6	20
Step 7	21
Step 8	22
Step 9	23
Stop 10	20







Unit Standard: 116316



Directions

This material is aimed at learners wishing to complete this unit standard. The 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 is designed to be used by the learner with guidance from a facilitator and a trained assessor to develop competence in all knowledge, skills and attitudes required by this unit standard.

This guide contains step-by-step instructions for the assessment process. These 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	Learning Assumed to Be in Place	Before delivery of program
4	Learner Assessment Plan for Gathering of Evidence	Before delivery of program
5	Assessment Activity Workbook	During delivery of program, assessment after delivery of program
6	Research Report	After delivery of program
7	Attitudes and Attributes Assessment	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



Unit Standard: 116316



Step 1

Learner Assessment Contract

The assessor and / or the facilitator holds a pre-assessment briefing with you before the learning program starts in order to guide you and assist you to make sure that you understand exactly what is expected from you in order to become competent in this learning module.

As part of the pre-assessment briefing, the learner assessment contract must be signed. The assessor will assist you and explain the agreement to you in detail.

	Learner Assessment Contract
Learner's Name:	
Assessor's Name:	
Unit Standard:	116316

Your rights as a learner are:

- **1. You have a right to appeal** against any judgment given as a result of any assessment. You must have valid reasons for doing this.
- **2. You have the right to an interpreter** if you need one. However, if one of the learning assumptions for the unit standard is that you are competent within the language of assessment, you may not have an interpreter.
- **3. You can ask that an impartial observer attend any assessment.** This observer may not take any part in the assessment.
- **4.** If you do not agree with the assessment, **you have the right to have your assessment internally moderated**. If you still do not agree with the result of the assessment you can ask that the ETQA to perform an **external moderation** on the assessment. If any verification upholds the assessment findings, you will be held liable for all the costs of the verification. If any verification rules that you have been aggrieved as a result of the assessment, your assessor will be held liable for all cost of verification.
- **5.** If during the assessment you are found not yet competent, your assessor **will encourage you to master the areas where you have not reached competency**. This will be recorded **on a development plan**. You are required to arrange with the assessor for a new assessment schedule. The assessor can only permit three such re-assessments. If a learner has not reached mastery after three additional attempts, the assessor reserves the right to remove you from the program.

Qualification

This standard leads to the award of credits for unit standard 116316. Once the assessment is complete application will be made to register and certify you for that standard with the AgriSETA. You may contact the assessor or facilitator at any time for information to assist you with further studies.

Confidentiality

Each assessment application, the outcomes, results and reviews will be treated as a confidential matter by you, the learner, the facilitator(s), assessor(s), and moderator(s). No references will be made to anyone or any organisation outside the SETA about the status of an application during the assessment process.



Level: 4

Unit Standard: 116316



~	_		_	_		_
	0			0		т
_	u	п	3	c	n	

I, the learner, hereby state that I have read the above and understood the contents thereof. I was given the opportunity to clarify any issues relating to the assessment process and my assessment plan. I have requested this assessment of my own free will and without duress.

Learner's Signature	Date:	
Assessor's Signature	Date:	







Unit Standard: 116316



Step 2

Learner Declaration of Authenticity

It is important that we make sure that each learner supplies original evidence completed by himself / herself and according to the level of knowledge and skill that he / she has acquired from the learning process.

Please sign the following declaration:

	following documentary evidence is my ove e on the copyright of any individual or or		
Learner's Signature		Date:	
Assessor's Signature		Date:	





Unit Standard: 116316



Step 3

Learning Assumed to Be in Place

Do you have all the knowledge and skills necessary to begin this learning process?

This is a level 4 module of learning, and we have to make sure that you have already learnt all the skills, knowledge and attitudes that you will need to use in this module. It will help you to understand and learn more easily in this module, and it is important that we know whether you are ready to move on.

Please look at the list of unit standards below of modules that you should have completed before undertaking this one. Tell us whether you have completed each of the unit standards or modules, and if you did, tell us when you learnt this.

If you need help in understanding this list, please ask the facilitator or assessor.

NQF Level	Unit Standard Number	Learning Module Name	No, I Have Not Completed It	Yes. I Have Completed It	If Yes, When Did You Complete It?
NQF3		Literacy and Numeracy			
3	116220	Explain the propagation of plants	JS		
3	116218	Explain the planning and scheduling of tasks in a production environment	3my		
3	116214	Interpret factors influencing agricultural enterprises and plan accordingly	V		
4	116295	Demonstrate a basic understanding of the physiological processes in plant growth and development	V V		
Learner's Sig	nature		Date:		
Assessor's Sig	gnature		Date:		



Unit Standard: 116316



Step 4

Learner Assessment Plan for Gathering of Evidence

As the assessor has explained to you, the aim of an assessment is not to catch you out, but rather to help you develop all the skills, knowledge and attitudes that you need to move forward. It is important that you know what is expected from you and that you play an active role every step of the way.

Let us plan for the assessment together. Below are the steps that you have to work through in order to show that you are competent in this module. Check them carefully and discuss each step with the assessor. Agree with the assessor on the dates on which each step has to be completed or documents handed in. Write the dates in the right-hand column as a reminder.

	Lear	ner Assessment Plan	
Module /	Unit Standard Name:	Propagate plants in a variety of situations	
Module / Number:	Unit Standard Registration	116316	
Step Number	Step Descri	iption and Learner's Tasks	Completion / Submission Date
5	 Assessment Activity Workb In this step, you complete of the interest of the interest		
6	 propagation in order to be f so that you can do your job You have to submit a Resea knowledge. There is a detailed list of th examples of the types of qu Please prepare yourself wel 	 with you. Research Report There are many important things that you need to remember about plant propagation in order to be found competent in this learning module, and so that you can do your job well. You have to submit a Research Report to check if you have gained all this knowledge. There is a detailed list of things that you need to know in this guide and examples of the types of questions that you could be asked. 	





7	 to be able module an Going out attitudes, i competent You will ha attitudes d There is a and explain Please pre 	ressment o develop very specific charactory to do very specific tasks to be d good in this job. Into the field, and showing and is the most appropriate way for in the skills and attitudes that we an opportunity to practice uring your practical learning in list of all the things that you we in this guide. Our pare yourself well and rememble of explain anything that you do	d explaining or you to shot are needed these tasks nodule. would have the to ask the to	in this lead contains sow that you do and deve to be able the facilitate.	kills and bu are lop these to show	
8	 What if the that you st The assess become co You and the and you me your comp Remember 	e assessor and / or facilitator, ay be granted a second or eventence. You have the right to appeal is unfair. There is a copy of the	ve your com at you need , develop an en a third op against the	to do or la action place portunity assessor's	learn to an together, to prove s decision, if	
9	 process yo The assess fill in and s You will als might have Once the a will be ask the learnin 	have met the standard that is explained for each step of the so you will be found competent in this unit standard. sessor will discuss everything with you in detail and will ask you to not sign forms throughout the process. It also be given an opportunity to write down any comments you have on the assessment process. The assessor has given you the final declaration of competence, you asked to give some feedback in order to help everyone to improve rning and assessment process. Think carefully. It might really help other learners in the future.				
Administration and Completion of Portfolio of Evidence • All the documents, or copies of them, must be kept on file as part of your portfolio of evidence.						
competeIt is also Discuss forwardAlso rem	essor will discust ence. important to rewith the assess in your career nember that the or, coach, and /	emember that you learnt this sor, facilitator, mentor, and / owith this level of competence. I learning process never stops or mentor what you need to	module for or coach how s. Plan toget learn next.	a specific w you can	reason. move	
Assessor's	Signature			Date:		



Unit Standard: 116316



Step 5

Assessment Activity Workbook

- 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 and worksheets, 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 role in reaching competence.
- When you have completed all the activities and worksheets, hand this workbook 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.

Choose two commercial crops that are propagated asexually. Describe these propagation techniques in detail.	Activity 1 – Research Project	
academy — — — — — — — — — — — — — — — — — — —	Choose two commercial crops that are propagated asexually. Describe these propagation techniques in detail.	
	academu	
		_
		_
		_
		_
		_
		_
		_
		_
		_
]
		$\frac{1}{2}$



Level: 4

Unit Standard: 116316



Compare these asexual propagation techniques to the asexual techniques used in citrus propagation, describing the similarities and differences between the techniques. Motivate why the different techniques are appropriate or inappropriate for citrus propagation.	;
	_
ococlemu	

Activity 2 – Research and Discover

Contact or visit a citrus nursery and find out which of the following plant hormones are used in the propagation of citrus. Describe the purpose of each hormone that is used.

Hormone	Used?	Purpose
Abscicic acid		





Auxins	-	
Cytokinins		
Ethylene		
Gibberellins		
Salicylic acid		
Jasmonates		
Oligosaccharins		
Brassinolides		
Small extra cellular signalling peptides		citrus
Activity 3 – Worksh How is citrus propaga and asexual propagat	ated for the	farm where you are completing your practical work? Describe all the sexual ues as well as the structures and facilities that are used.





Activity 4 – Site Visit and Report
Visit a commercial nursery in your area of any kind other than a citrus nursery. Compare the propagation techniques and facilities to those used in citrus propagation as you described in activity 3. For each of the methods of propagation, find an example of a plant that is propagated in this way and explain whether this technique is applicable to citrus or not.
CITTUS
OCOC C MII
CICCIOOTITY





Activity 5 – Report Writing
Based on your conclusions in activity 4, make suggestions of improvements that can be made to the propagation structures and facilities at the nursery. Give reasons for your suggestions and explain what the results of these improvements will be.
- citrus
<u> </u>





Activity 6 – Worksheet
Make a list of the environmental factors that impact on the success of citrus propagation.
Astivity 7 December and Discover
Activity 7 – Research and Discover
Do research to discover the answers to the questions below.
What artificial propagation media is available in South Africa?
CILIUS
OCOC CMII
CICCIOOTITY
What is this artificial propagation media used for?
Is artificial propagation media used in citrus propagation? Explain your answer.
a a anisa propagation meata acca in citate propagation. Explain year anentan





Activity 8 – Site Visit
Visiting any local nursery that performs plant propagation and answer the questions below.
What growing media does the nursery use?
What are the different growing media used for?
What are the problems commonly encountered in the propagation environment?
How are these problems overcome? What can contribute to the success or failure of propagation?
How is it determined whether propagation was successful or not?
What happens to the plants if propagation was unsuccessful?



Level: 4

Unit Standard: 116316



Activity 9 – Flow Diagram

Select a citrus nursery in your area and conduct research on the post-propagation activities that take place. Draw a detailed flow diagram and indicate timeframes at each stage up to readiness for sale. Also indicate on the flow diagram the vulnerable stages in terms of attack from pests and diseases.



Activity 10 –Research and Present

Interrogate the Citrus Improvement Program and other available resources about the hygiene procedures that must be followed in the propagation environment. Design a presentation aimed at low-level, literate workers in a citrus nursery to explain these procedures. Attach your presentation to your workbook. **TIP:** A good place to start is the website of Citrus Research International on www.cri.co.za.



Level: 4



Assessment Feedback Form — Activity Workbook								
	C	mmei	nts / F	Remarks	5			
Feedback to learner on ass	essment							
Feedback from learner to a	ssessor							
Learner's Signature	I					Date:		
Assessor's Signature						Date:		







Unit Standard: 116316



Step 6

Research Report

You are now ready for step six of the assessment process, the compilation of a research report on the **considerations for a commercial citrus farmer when choosing the best propagation nursery as a supplier of citrus trees**. Check your plan carefully to make sure that you prepare in good time.

You have to score an overall mark of at least 85% in this task in order to be found competent.

Inform the assessor if you have any special needs or requirements **before** the agreed date for the handing in of the assessment task. You might, for example, require an interpreter to translate the questions to your mother tongue, or you might need mother tongue translation. Please write your request down in your activity workbook on the front page and explain why you have made this request. Ask the assessor to sign next to your request to prove that they are aware of your special request.

Use this checklist to help you plan and prepare for your research task. These are examples of possible questions that will help you to organise and plan your task. All the information you need was taught in the classroom and can be found in the learner guide that you received. The training session should be no more than four hours long, should be practical in orientation and should address the following:

	Example Questions LIVES Company Company	I Have Revised This and Understand It Well	I Am Unsure of This and Will Ask the Facilitator to Explain It Again
Co	onsider the following to formulate the report:		
•	What are the ideal propagation methods for the specific citrus varieties needed by the farmer?		
•	What propagation techniques does the nursery have to perform?		
•	What are the requirements for the propagation environment and facilities?		
•	How does the nursery ensure the success of propagation?		
•	What are the hygiene regimes of the nursery to ensure the quality of the propagated trees?		
•	What is the process flow of the nursery from receiving the propagation material to propagation to delivery to the farmer?		
•	How does the nursery control pests and diseases?		

The assessor or facilitator has explained this step to me and I have revised these questions.				
Learner's Signature		Date:		
Assessor's Signature		Date:		

The assessor will give you feedback on the test and guide you if there are areas in which you still need further development.



Unit Standard: 116316



Step 7

Attitudes and Attributes Assessment

You are now ready for steps seven of the assessment process, the Attitude and Attribute assessment. Check your plan carefully to make sure that you prepare in good time.

Inform the assessor if you have any special needs or requirements before the agreed date for the assessment test. You might, for example, require an interpreter to translate the questions to your mother tongue, or you might need to take this test orally. Please write your request down in your activity workbook on the front page and explain why you have made this request. Ask the assessor to sign next to your request to prove that they are aware of your special request.

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	I Am Sure of This and Understand It Well	I Am Unsure of This and Need to Ask the Facilitator or Assessor to Explain What It Means
Can you identify problems and deficiencies correctly?	US .	
Are you able to work well in a team?	2 60 11	
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?	V	
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.



Unit Standard: 116316



Step 8

Re-Assessment Procedure

The assessor will discuss in detail with you what to do in case you require a re-assessment, and when the re-assessment will take place.







Unit Standard: 116316



Step 9

Paperwork

Please assist the assessor by filling in these forms and signing then as instructed.

Learner Information Form							
Unit Standard	116316						
Program Date(s)							
Assessment Date(s)							
Surname							
First Name							
Learner ID / SETA Registration Number	citrus						
Job / Role Title	academ	U					
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 116316 - Level 4							
Description	Evidence	Benchmark	Competent	Feedback and Comments			
	Foundational and Embedded Knowledge	Practical Skills, Underpinning Knowledge and Reflexive Competence		/ Not yet Competent			
Specific Outcome 1: Recognise and use propagation structures, facilities and materials under supervision and do independent problem solving in relation to processes Range: The propagation structures include but are not limited to sexual and asexual parts of the plant. Facilities include but are not limited to controlled protected or open field environments	Attend all lectures Complete workbook as per instruction	Summative assessment. Observation checklist of attitudes and attributes.	85% competence in all areas				
Specific Outcome 2: Propagate a variety of plant types using different asexual methods or processes Range: Asexual propagation methods include but are not limited to plant cuttings, budding and grafting	Attend all lectures Complete workbook as per instruction	Summative assessment. Observation checklist of attitudes and attributes.	85% competence in all areas				
Specific Outcome 3: Experiment with different types of propagation media and environment Range: Propagation media includes but is not limited to artificial media, soil, peat moss, heated and humidified seed boxes etc. Environment includes but is not limited to controlled atmosphere, open fields, etc.	Attend all lectures Complete workbook as per instruction	Summative assessment. Observation checklist of attitudes and attributes.	85% competence in all areas				





Assessor Report and Summative Evidence Collection Summary for Unit Standard 116316 - Level 4					
Description	Evidence Gathered		Benchmark	Competent	Feedback and Comments
	Foundational and Embedded Knowledge	Practical Skills, Underpinning Knowledge and Reflexive Competence		/ Not yet Competent	
Specific Outcome 4: Establish a process for the post propagation activities Range: Post propagation activities include but are not limited to pest and disease control, fertilisation, irrigation, hardening off, and transferring of propagated material to different environments	Attend all lectures Complete workbook as per instruction	Summative assessment. Observation checklist of attitudes and attributes.	85% competence in all areas		
 Embedded Knowledge: The learner is able to demonstrate a 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 use and handling of a variety of chemicals and hormonal and other organic preparations 	Attend all lectures Complete workbook as per instruction	N/a Cemu	Overall minimum test score of 85%		





Assessor Report and Summative Evidence Collection Summary for Unit Standard 116316 - Level 4					
Description	Evidence Gathered		Benchmark	Competent	Feedback and Comments
	Foundational and Embedded Knowledge	Practical Skills, Underpinning Knowledge and Reflexive Competence		/ Not yet Competent	
 Unit Standard CCFOs: Problem solving relates to all specific outcomes Teamwork relates to all specific outcomes Self-organisation and management relates to all specific outcomes Information evaluation relates to all specific outcomes Communication relates to all specific outcomes Use science and technology relates to all specific outcomes Inter-relatedness of systems relates to all specific outcomes Self-development relates to all specific outcomes 	N/a	Rating Scale Itrus Itrus RAM RAM RAM RAM RAM RAM RAM RA	Minimum rating of 3:5 in each criteria or overall average of 3:5		





I	earner Assessme	nt Re-Action	naire		
Question		Response			
How did the assessor encourage you to be involved in the assessment process?					
Did the assessor take your special needs into account? If so, how?					
Did the assessor agree on the assessment procedures with you?					
Was feedback relevant to your needs?					
Were you always aware of the outcome of the assessment?					
Did the assessor help you to e becoming competent wheneve NYC?					
Did the assessor allow you to	ask questions?	rus			
Did you always agree with ass	sessment decisions?	Jem	Y		
Was all appropriate document signed and did you receive co		D\A/			
Did the assessor assist or prev when gathering evidence so a authenticity?		X Y Y			
All the evidence submitted in authentic work, which was no unethical means.					
Learner's Signature			Date:		
Assessor's Signature			Date:		
Moderator's Signature			Date:		





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?	rus conti			
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?				



Level: 4

Unit Standard: 116316



Assessment Appeal Form

Any candidate has the right of appeal against any not-yet-competent decision by the assessor. If you wish to appeal, please complete the form below.

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



Unit Standard: 116316



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.





