




NQF Level: 1 **US No: 116203**

Facilitator Guide

Primary Agriculture

Manipulate Plants



My name:

Company:

Commodity: Date:

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Department:
Agriculture
REPUBLIC OF SOUTH AFRICA

Before you get started...

Dear Facilitator,

This Facilitator Guide (together with the relevant Learner Guide) is aimed at facilitators who will be assisting learners wishing to complete the following unit standard:

Title:	Manipulate Plants		
US No:	116203	NQF Level:	1
		Credits:	5

This guide contains all necessary facilitation instructions to ensure that learners will attain the expected competencies required by the above-mentioned unit standard. This guide is designed to be used during the presentation of a learning session based on this unit standard. The full unit standard is attached at the end of this guide as well as at the end of the relevant Learner Guide. Learners are advised to read the unit standard at their time. Please discuss the unit standard with the learners to ensure that they understand what is expected from them to achieve the outcomes of the unit standard.

This unit standard is one of the building blocks in the qualifications listed below. Please mark the qualification you are currently facilitating, because that will be determined by the context of application:

Title	ID Number	NQF Level	Credits	Mark
National Certificate in Animal Production	48970	1	120	<input type="checkbox"/>
National Certificate in Mixed Farming Systems	48971	1	120	<input type="checkbox"/>
National Certificate in Plant Production	48972	1	120	<input type="checkbox"/>

Please mark the learning program the learners are enrolled in:

Are you facilitating a:	Y	N
Learnership?	<input type="checkbox"/>	<input type="checkbox"/>
Skills Program?	<input type="checkbox"/>	<input type="checkbox"/>
Short Course?	<input type="checkbox"/>	<input type="checkbox"/>

Note to Facilitator:

If you are presenting this module as part of a full qualification or learnership, please ensure that you have familiarised yourself with the content of the qualification.

Please explain the above concepts to the learner.

There are four guides, namely the Learner Guide, the Learner Workbook, the Assessor Guide and the Facilitator Guide. These guides have been developed to address specific aspects of the learning experience. You therefore need to use these guides additional each other.

Make this an enjoyable learning experience!

Context of Application ...

Primary Agriculture is a diverse sector and a wide range of commodities is being produced for both national and international market. Each commodity has its own production requirements and practices. You will be facilitating the learning process within a specific context where a specific agricultural commodity is being produced. The learning material has been written in a **generic** manner, as it is aimed to be available on national level and should be suitable to be applied within a variety of commodities. It is therefore inclusive of all agricultural commodities and crop in this field. Therefore, the examples that are being used in the materials may not always be applicable to your specific community, commodity, environment or region.

This presents you, the facilitator, with the challenge to **contextualise** the learning material. It is imperative that you, the Facilitator and Assessor interpret and present activities, case studies and projects related to the material in such a way that learners can easily identify and apply their knowledge within their own context. This will require from you to add examples of crop, which are applicable to the community or farm. Learners must be guided with examples from their own communities, commodities, environment or regions. This should be done supplementary to the learning material:

- Examples relevant to the commodity,
- Including commodity specific requirements,
- Including operating procedures of the farm,
- Including agricultural practice specific requirements,
- Agricultural markets,
- Guiding learners to write these specifics down in the learning guide,
- Etc.

The contextualisation of the learning material is a very important step in preparing for and facilitating the learning experience and enough time and effort should be put into this exercise.

According to the qualifications mentioned on page 2, this module could be contextualised to fit the following groups of commodities:

Plant Production	Animal Production	
<ul style="list-style-type: none"> • Organic production, • Hydroponic production, • Perma-culture production, • Agronomy, • Horticulture, Natural resources harvesting. 	<ul style="list-style-type: none"> • Small stock production, • Large stock production, • Dairy production, • Pig production, • Poultry production, • Game, • Aqua / mari culture, • Commercial insects • Animal fibres harvesting, • Bee keeping. 	<ul style="list-style-type: none"> • Natural resources harvesting • Organic production, • Perma-culture production, • Eco/Agri Tourism, • Agro Chemicals, • Horse Breeding, etc.

How to use this guide ...

Throughout the guide information is given specifically aimed at you, the facilitator, to **assist** in the actual presentation of the learning material and/or facilitation of the learning process. Although this guide contains all the information required for attaining competency in this unit standard, references to additional resources, both printed and electronic, are provided for additional reference by the facilitator and further study by the learner.

Please note that the purpose of this information is merely to **guide** you, the facilitator, and is provided as a suggestion of possibilities. It remains the responsibility of every facilitator to re-assess the learner/s in each learning situation throughout the learning process in order to stay in touch with their specific learning needs. This should be the determining factor in the choice of the learning approach to follow.

Use the different boxes listed below for identification purposes:



Instructions regarding **activities**, whether group or individual activities will be described in this box.



Facilitators' Tip ...

My Notes ...

You can use this box for your own notes/comments.

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What & How will you be Facilitating?

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My Notes ...

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The Learning Experience...

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

- ◆ A learner achieving this unit standard will be able to assist with the propagating of plants
- ◆ Learners will gain specific knowledge and skills in plant propagation and will be able to operate in a plant production environment implementing sustainable and economically viable production principles.
- ◆ They will be capacitated to gain access to the mainstream agricultural sector, in plant production, impacting directly on the sustainability of the sub-sector. The improvement in production technology will also have a direct impact on the improvement of agricultural productivity of the sector.

Learners will also gain basic knowledge of:

- ◆ Names and functions of tools and materials used in plant manipulation.
- ◆ The use of elementary trellising methods.
- ◆ The use of elementary fruit and flower manipulation methods.
- ◆ The purpose of developing knowledge in the field of plant manipulation.
- ◆ The principles of pruning.
- ◆ The elementary guidelines applied in plant manipulation.
- ◆ Safe handling procedures of tools and material.
- ◆ The Occupational, Health and Safety Act.
- ◆ Maintaining hygienic procedures of tools and material as to prevent spreading of diseases.

Learning assumed to be in place:

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

- ◆ NQF 1: Select, use and care for hand tools and basic equipment and infrastructure.
- ◆ NQF 1: Demonstrate a basic understanding of the structure and function of a plant in relation to its environment.
- ◆ NQF 1: Demonstrate an understanding of the basic concept of sustainable farming systems.

Learning Program Time Frames

	Total time allocated (hours)	Theoretical learning time allocated (hours)	Practical learning time allocated (hours)	Activities to be completed
Complete Program (including summative assessment)	50 hours	15 hours	35 hours	11
Learner Orientation and "Ice Breaker"	30 minutes	15 minutes	15 minutes	N/A
Purpose, Introduction and Learner Directions	30 minutes	15 minutes	15 minutes	N/A
Session 1	7 hours 30 minutes	3 hours 30 minutes	4 hours	1-3
Session 2	10 hours 30 minutes	3 hours 30 minutes	7 hours	4-7
Session 3	10 hours 30 minutes	3 hours 30 minutes	7 hours	8-9
Session 4	17 hours 30 minutes	3 hours 30 minutes	7 hours for Activities 7 hours for pruning, canopy management work on farm	10-11
Preparation for Assessment & revision	3 hours	30 minutes	2 hours 30 minutes	N/A

Tips for level of learning



Remember the following before you get started:

This unit standard is aimed at level 1 learners.

A typical level 1 learner might be exposed to the world of work through this learning program for the first time.

- Explain concepts and define words in a simple, clear and concise method throughout the learning program.
- Take special care to facilitate for ALL learners. Allow them opportunities to share experiences, prior knowledge, translate into their mother tongue for each other and enjoy the learning process.
- The examples given in this resource guide might be for a different geographical area or commodity to what the learner is exposed to – please adapt your examples accordingly.
- There should always be good communication between facilitators and mentors to ensure effective learning experience.
- During practical activities facilitators should be present at all times. Should that not be possible, the mentor should be available for attendance.

Facilitator's Checklist & Training Aids

Learner support strategies
<p>Learners are supplied with all resources and aids as required by the programme – including:</p> <ul style="list-style-type: none"> • Objects & devices such as equipment, protective clothing, safety gear, etc. • Learner Guides and Learner Workbook • Visual aids, etc.

Use this checklist below during your preparation to ensure that you have all the equipment, documents and training aids for a successful session.

Preparation	Yes	No
Content Knowledge – I have sufficient knowledge of the content to enable me to facilitate with ease		
Application knowledge – I understand the programme matrix & have prepared for programme delivery accordingly		
Ability to respond to learners background & experience – I have studied the learner demographics, age group, experience & circumstances & prepared for programme delivery accordingly		
Enthusiasm & Commitment – I am passionate about my subject & have prepared my programme delivery to create a motivating environment with real commitment to success		
Enterprise knowledge – I know & understand the values, ethics, vision & mission of Cabeton Consulting & have prepared my programme delivery, reporting & administrative tasks accordingly.		
Equipment check:		
Learner guides x 1 per learner		
Assessment guides x 1 per learner		
Writing materials & stationary (facilitator & learner)		
White board & pens		
Flip chart paper		
Proxima projector & screen		
Laptop & programme disk		
Plant manipulation material, equipment and tools		
Farm/Plant manipulation environment		
Safety gear as prescribed by unit standard		

Documentation checklist:		
Attendance Register		
Course Evaluation		
Learner Course Evaluation		
Portfolios of evidence		

Contextualisation of Content!

Go through this module and indicate what specific **information / activities / examples** should be included in this module.

Contextualisation	
What specific information / activities / examples should I include in this module?	
<ul style="list-style-type: none"> Commodity specific? 	
<ul style="list-style-type: none"> Operating procedures of the farm? 	
<ul style="list-style-type: none"> Agricultural practices? 	
<ul style="list-style-type: none"> Agricultural markets? 	

An Introduction

Growers often neglect the annual training and pruning of fruit trees. Without training and pruning, however, fruit trees will not develop proper shape and form. Properly trained and pruned trees will yield high quality fruit much earlier in their lives and live significantly longer.

A primary objective of training and pruning is to develop a strong tree framework that will support fruit production. Improperly trained fruit trees generally have very upright branch angles, which result in serious limb breakage under a heavy fruit load. This significantly reduces the productivity of the tree and may greatly reduce tree life. Another goal of annual training and pruning is to remove dead, diseased, or broken limbs.

Proper tree training also opens up the tree canopy to maximize light penetration. Light penetration is essential for flower bud development and optimal fruit set, flavour, and quality. Although a mature tree may be growing in full sun, a very dense canopy may not allow enough light to reach 12 to 18 inches inside the canopy. Opening the tree canopy also permits adequate air movement through the tree, which promotes rapid drying to minimize disease infection and allows thorough pesticide penetration. Additionally, a well-shaped fruit tree is aesthetically pleasing, whether in a landscaped yard, garden, or commercial orchard.

My Notes ...

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Session

1 Using the right tools

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Guide:
Page 7**

After completing this session, the learner should be able to:
SO 1: Use tools and / or equipment for a pre-determined manipulation method in the correct way.

Concept (SO 1)	Time frame	Activities related to the concept
Use tools and / or equipment for a pre-determined manipulation method in the correct way.	7 hours 30 minutes	Activity 1 - 3
The correct tools for the manipulation method are selected.		
Equipment is used safely and in such a way to prevent damage to tools and the plant material.		
Tools or material are used appropriately to pre-determined manipulation method.		



Please allow learners to complete Activity 1 and 2 in their workbooks

Type of activity	Resources	Instructions to give to the learners	Conclusions
1 & 2. Group search and discover and class discussion	Assessment Workbook Stationary	As per learner workbook	Tools & Equipment required for plant manipulations and their safe handling, storage and maintenance
Walk about and discover and class discussion	Assessment Workbook, Stationary, Plant manipulation environment/expert	As per learner workbook	Other materials required for plant manipulations and their purpose

Session

2 Developing frameworks as part of plant manipulation

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Guide:
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After completing this session, the learner should be able to:
SO 2: Develop frameworks as part of plant manipulation methods.

Concept (SO 2)	Time frame	Activities related to the concept
The correct manipulation method is identified.	10 hours 30 minutes	Activity 4 - 7
The correct stage of plant growth for the crop and the selected manipulation method is identified.		
The manipulation method is executed correctly.		
Trellising methods may include, but are not limited to, Central leader system, Tatura system, two-wire system, slanted cap, factory-cap, and/or Façade system.		
The trellis is applied by taking into account the height of the stem, the spacing of bearers, shoots and spindles.		
The plant framework is developed appropriate for the identified trellising system.		
The growing points and bearing unites are manipulated according to the identified trellising method		
The plant is shaped to determine the position of bearing units according to the identified cultivation practice		

Session

3 Understand the flower and fruit management principles

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After completing this session, the learner should be able to:

SO 3: Understand flower and fruit manipulation principles.

Concept (SO 3)	Time frame	Activities related to the concept
Understand flower and fruit manipulation principles.	10 hours 30 minutes	Activity 8- 9
Fruit and flower manipulation principles are listed.		
The correct spray chemicals for flower/fruit manipulation are identified.		
Physical manipulation on the fruit and flowers of an identified crop is carried out correctly.		

Please allow learners to complete Activity 8 and 9 in their workbooks



Type of activity	Resources	Instructions to give to the learners	Conclusions
8. Practical flower/fruit manipulation & canopy management & draw conclusions	Assessment Workbook Stationary Plant manipulation environment	Participate in flower, fruit and canopy management for your crop Write down what you did, how you did it and what the effect of your actions would be.	Manipulation methods, reasons for choice of methods, effect of manipulation techniques on plant.
9. Group discussion and question answering.	Assessment Workbook Stationary	Have a group discussion about canopy management. You must be able to answer the questions that follow after your group discussion.	General concepts and choices of canopy management, choice of techniques and correct execution of techniques.

Session

4 Apply simple, correct pruning principles appropriate to the crop

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Guide:
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After completing this session, the learner should be able to:

SO 4: Apply correct simple pruning principles appropriate to the crop.

Concept (SO 4)	Time frame	Activities related to the concept
Elementary pruning principles are explained.	17 hours 30 minutes	Activity 10 -11
The appropriate pruning method for a specified crop is identified.		
Unwanted growth is removed according to the pre-determined manipulation method.		
Unwanted growth includes, but is not limited to shoots, branches, stems, etc.		
Pruning actions are executed correctly.		



Please allow learners to complete Activity 10 and 11 in their workbooks

Type of activity	Resources	Instructions to give to the learners	Conclusions
10. Group discussion and question answering	Assessment Workbook Stationary	Participate in pruning of your crop. Write down what method of pruning you applied, and what you removed during pruning	General concepts and choices of pruning, choice of techniques and correct execution of techniques
11. Group discussion and question answering	Assessment Workbook Stationary	Have a group discussion about pruning. You must be able to answer the questions that follow after your group discussion	General concepts and choices of pruning, choice of techniques and correct execution of techniques

What will I do differently next time?

Take some time to **reflect** on your own activities as facilitator of this Unit Standard. Then write down five of the most important lessons you have learnt and include a motivation:

What will I do differently next time?	Motivate how or why (Give examples, reasons, etc.)
1.	
2.	
3.	
4.	
5.	

As facilitator, you have hands on experience in the application of the unit standard. And you might experience difficulties with the unit standard that the developers did not anticipate. Also, the unit standard will be revised at the end of the registration period. Your comments below can be an important contribution in the revision process and should be brought to the attention of either the AgriSETA ETQA manager or the SGB chairperson.

Please take some time to reflect on your experience and list a few of the difficulties you had to address.

Difficulties I had with the Unit Standard	Recommended Changes to Address the Difficulty
6.	
7.	
8.	
9.	
10.	