

443/3

AGRICULTURE PROJECT

Jan. - July 2025

(Declaration form)

THE KENYA NATIONAL EXAMINATIONS COUNCIL



Kenya Certificate of Secondary Education

443/3 AGRICULTURE PROJECT REPORT

DECLARATION BY CANDIDATE

This is to certify that this is a true project report of my Agriculture Project and that it contains the details of the operations.

Name of the Candidate	Index No.	Signature
Sharon Klapjiru Kiarie	11241001179	

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Enter the score awarded in the box below.

Agriculture Teacher

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Project Report

Project Title:

Grafting of Avocado

Swit Trees (Persea Americana)

Name: Sharon Wanjira
Kari

Index: 11241001179 Group 3

TITLE: GRAFTING AVOCADO TREES (*Persea americana*)

1. Introduction

Grafting is the process of uniting two woody stems. Usually one of the two parts provides the base and has a rooting system whereas the other part is obtained from another plant. The root-stock is at the base while the scion is at the upper part of the plant. The scion has buds which develop into the future plant. The ability of the scion and the rootstock to form a successful union is termed as compatibility.

Grafting helps in the following ways:

- i) It facilitates changing of the top of the tree from being undesirable to desirable.
- ii) Grafting helps to shorten the maturity rate.
- iii) Grafting helps to repair damaged trees.
- iv) Plants with desirable root characteristics, such as disease resistance, vigorous root system, resistance to nematode attack but with undesirable products may be utilized to produce desirable products.

2. Problems and Project Identification

From the observation and research within my local community, I came to notice that:

- a) There was a shortage of fruit supply mainly avocados in the markets due to their long maturity rate.
- b) Wind erosion due to lack of trees which hold the soil particles together preventing soil erosion.
- c) The few avocado trees within the local community had undesirable characteristics such as diseases.

Grafting *Persea americana* with hard avocado trees will help in reducing their maturity rate hence leading to increased supply of avocados in the market.

Grafting will also facilitate the changing of the undesirable characteristics in avocado trees such as diseases to desirable characteristics such as disease resistance.

3. Objectives:

By the end of the project I should be able:

- a) To acquire knowledge on the methods of grafting.
- b) To learn the importance of grafting and how it assists the community at large.
- c) To identify some of the materials used in grafting.
- d) To solve the problem of shortage of fruits.

4. Description:

There are various methods used in grafting which include:

- i) Whip/tongue/splice grafting
- ii) Side grafting
- iii) Cleft grafting.

My group and I decided to use whip grafting because the rootstock and the scion were of the same diameter.

The group members are as follows:

Name	Index Number
1 Margaret Abigail Izanjiku	11241001147
2 Jecinta Nyambura Ngigi	11241001153
3 Hildah Simaloi Nackel	11241001156
4 Sharon Izanjiru Kiarre	11241001179
5 Karanja Agnes Ngendo	11241001184

For grafting to be successful, we required the following:

- i) A trainer who would train us on grafting
- ii) A shade net to cover the seedlings.
- iii) A scalpel for cutting the scion and the rootstock.
- iv) A rootstock and a scion
- v) A steriliser to sterilise the scalpel
- vi) A rake
- vii) Grafting tape for attaching the scion to the rootstock.
- viii) Watering can to water the seedlings.

5. Budget

No.	Item	Quantity	Unit cost	Total cost
1.	Scapel	5	10	50
2.	Klatering can	1	400	400
3.	Grafting tape	20	200	400
4.	Root stock	20	100	2000
5.	Scion	20	10	200
6.	Steriliser	10ml	150	150
7.	Shade net	5m x 10m	3000	3000
8.	Bake	2	250	500
9.	Trainer.	1	1500	1500
			Total	sh 8200

6. Project Implementation, Plan and Timeline

MONTHS	Jan	Feb	Mar	Apr	May	June	July
ACTIVITY							
Instructions issued							
Identifying issues							
Individual preventing reports							
Fortnight report on project							
Selecting a suitable site							
Receiving avocado seedlings							
Klatering and inspection							
Training session							
Grafting							
Pruning							
Report writing							

7 Project Implementation and Procedure.

Training session - This was done by a grafting expert sourced by the school from an agricultural research centre.

Assembling tools - necessary tools for grafting were sourced from reliable sources to prevent diseases.

Selection of location for planting - We established units within the nursery bed measuring $1m \times 1m$. The area was a gently sloping land near a water source. A shade was erected.

Performing grafts - We did the grafting of the avocado fruit trees in groups. Each member grafted three avocado trees having guidance from the farmer and the teachers.

Monitoring growth progress - We conducted daily inspections as group members. We formed a schedule whereby each group member had their specific day to monitor the seedlings.

Caring for plants - 95% of the avocado trees managed to survive. This was because of continued watering to provide the seedlings with best conditions for growth.

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8 Evaluation

Our project was successful since 95% of the grafted avocado seedlings had sprouted. One of the defective seedlings had suffered from leaf blight which we suspected was because we had watered on the leaves.

During grafting in our first milestone, few trees had died up while a few sprouted successfully.

During our second milestone, we ensured that we took care of the grafted trees by watering regularly.

9 Conclusion

We were able to carry out grafting successfully.

It was concluded that grafting will help to increase supply of fruits in the market within a short period of time due to quick maturity.

The grafted avocado trees showed desirable characteristics such as disease resistance.

10 Recommendation

I recommend that the local community should practice grafting since it meets our objectives such as shortening the maturity rate.

I also recommend that the local community should be educated on the importance of grafting.

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