

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
Muiruri Roseabigail Waceke	11241001023	

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Enter the score awarded in the box below.

Agriculture Teacher



PROJECT

2025

MUIRURI

ROSE ABIGAIL

11241001023

GRAFTING

OF AVOCADOS

HASS TREES

Persea Americana.

GROUP 1

INTRODUCTION.

Grafting is the practice of uniting two separate 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 part with the rooting system is known as rootstock, and the part which is grafted into the root stock is known as scion.

The scion has buds which develop into the future plant. The ability of scion and root stock to form a successful union is termed as compatibility.

Only structures which are botanically closely related are compatible.

One importance of grafting is that it shortens the maturing age for example grafted mango trees may take $3\frac{1}{2}$ years to mature while non-grafted may take upto 7 years to mature.

OBJECTIVES.

By the end of the project we should be able to;

- i) To be able to graft our own fruit trees on our own.
- ii) Produce successful grafted trees.
- ii) Learn various precaution required to carry out grafting.
- iii) Learn different techniques of grafting.

Of

IDENTIFICATION OF PROBLEM.

- i) Scarcity of fruits → I noticed that in our school community we only take fruits two times a week. Grafting would reduce maturity age therefore allow us to take fruits daily.
- ii) Soil erosion. I identified that our school compound had a lot of soil erosion taking place and dust was affecting many people and grafting would help control this by binding soil particles together.

PROJECT DESCRIPTION

My group and I selected a suitable site measuring 1mx1m. We then cleared it and set up a shade for the trees. The following are group 1 members

- | | |
|---------------------|------------------------|
| 1. Natasha Muthama. | 4. Muiruri Roseabigail |
| 2. Grace Wambui | 5. Njoroge Shannon |
| 3. Angel Sammy | |

As we guided by our trainer, we carefully cut the top part of the root stock ensuring the root stock and scion were of the same diameter. We carried out whip grafting on the 17th of May, having a favourable climate. The rootstock and scion had to be pure to avoid transmission of undesirable characteristics to emerge to the plant. Scion and rootstock of same diameter ensured compatibility of the plant to adapt to change in weather conditions.

BUDGET

The budget plan was as follows:

Material	Quantity	Unit Cost	Total Cost.
Scapel	5	10	50
Watering can	1	400	400
Grafting tape	1 20	20	400
Root stock	20	100	2000
Scion	20	10	200
Steriliser	10ml	150	150
Shade net	5Mx10M	3000	3000
Rake	1	350	350
Trainer	1	1500	1500
Total			8800/=

PROJECT IMPLEMENTATION, PLAN AND TIME

Activity.	Jan	Feb	March	April	May	June	July
Giving of Project instructions							
Identification of issues.							
Individual presentation of project.							
Preparation of budget plan							
Group presentation of project							
Site selection							
Arrival of avocado fruit tree seedling							
Preparation of tree nursery plots							
Training session with extension officer.							
Fortnightly report on project							
Evaluation of the project.							
Watering and inspection.							
Report writing							

PROJECT IMPLEMENTATION AND PROCEDURE

Assembling of tools -> Tools and equipments needed were purchased from various reliable places and stores and were taken to the store for proper storage and those that were to be on the farm were set there.

Training sessions.

The extension training officer came on May 17th and guided us on how to undertake grafting and various methods of grafting. He helped us put our knowledge to practical skills by demonstrations.

Site selection

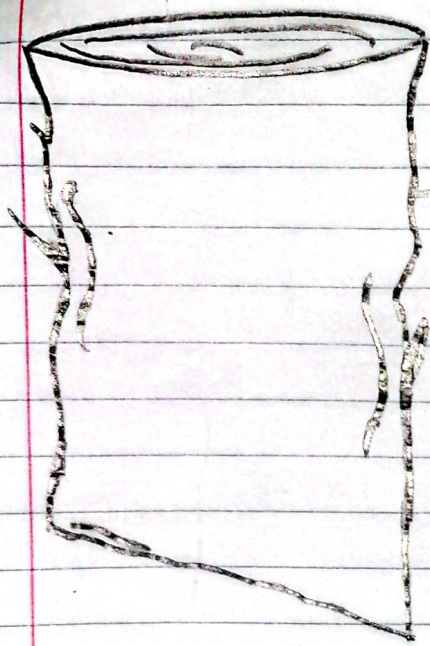
The site selected was mxlm which was on a gently sloping land. It was near the water source and the soil was well drained, deep and fertile. The land was ~~as~~ well secured and well sheltered to prevent harsh environmental conditions.

Grafting practice.

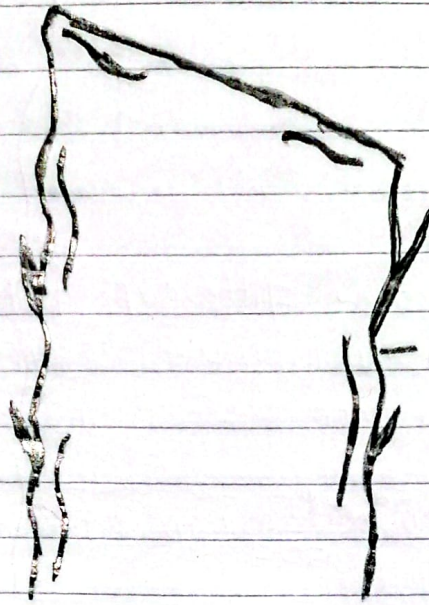
- i) The rootstock was cut at a pencil thick diameter to ensure it had the same diameter as the scion.
- 24/2 ii) A slanting cut is made with a sterilised scapel on the scion and on top of the root stock.
- iii) The two separate parts are fitted together and wrapped by a grafting tape, to make the union form.

Monitoring growth process.

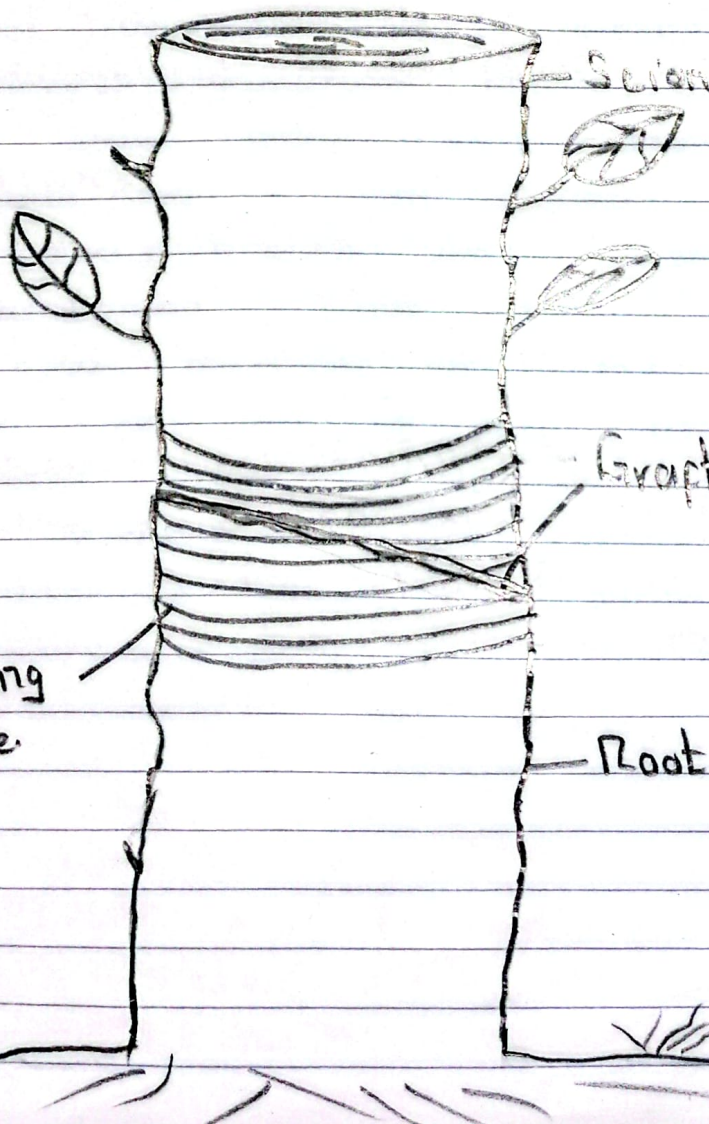
My group members and I made a routine of watering everyday to ensure the seedlings ^{grew} ~~matu~~ well. We noticed that the seedlings which were not shaded died and therefore proper shading was done.



Scion



Root stock



Scion

Grafting union

grafting
tape

Root stock

POST OPERATION PRACTICES

Mulching. After nursery establishment, my group and I applied a light mulch on the trees to prevent excessive water loss and moderate soil temperature.

Weeding. We practised regular weeding as soon as they emerged to reduce competition between the trees and the weeds.

EVALUATION

After close assessment we came to a realisation of the following:

Out of the trees we grafted three of them had died as ~~they~~ ^{we} had not form a union but the rest were sprouting emerging at least two or three buds.

We then replaced the dead plants to ensure 100% transition.

CONCLUSION

The project 2025 created awareness to the ^{school} ~~scas~~ community that grafting of fruit trees can be a suitable method to solve various problems in the school community.

CONCLUSION RECOMMENDATION

In relation to our KCSE project 2025, I recommend all fruit tree farmers to carry out grafting as it not only shortens the maturity age but also improves the quality of fruits.

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