

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

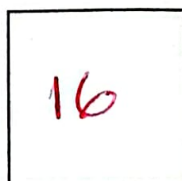
This is to certify that this is a true project report of my Agriculture Project and that it contains the details of the operations.

Name of the Candidate	Index No.	Signature
MWAGAHU JECIHTA WATHERA	11241001107	

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Enter the score awarded in the box below.

Agriculture Teacher



PROJECT REPORT

JECINTA

MWAGANU

GRAFTING OF OVACADO FRUIT TREES

Persia
americana

11241001107

GROUP 2

INTRODUCTION.

What do we mean by Grafting?

Grafting is the practice of uniting two separate woody stems where the part bearing the root is referred to as the rootstock while the one bearing the shoot is referred to as the scion.

The scion has buds which develop into the future plant.

Why do we carry out grafting of trees?

It facilitates the changing of the top of the tree from being undesirable to desirable

It helps shorten the maturity period of trees.

It helps ^{to} repair damaged trees

Grafting of fruit trees also makes it possible to grow more than one type of fruit on the same plant.

IDENTIFICATION OF THE ISSUE

I chose to carry out grafting of avocado fruit trees. This was after identifying that the avocado fruits ~~been~~ produced in my community at large are of low quality and quantity. Thus I opted to graft the ~~harss~~ avocado fruit trees which are of desirable traits.

The low quality of fruits is solved through grafting where the farmer gets to choose a high-yielding cultivar of high quality that is the scion and combines it to a robust rootstock which leads to trees that produce high quantities of higher quality fruits. The ~~harss~~ fruits produced are also of high exportation rate due to their good quality.

PROJECT OBJECTIVES.

By the end of the grafting project I objected to:

- i) Have learned how grafting of trees is done.
- ii) Know the tools used in the grafting process.
- iii) Know the precautions observed during grafting.
- iv) Know the advantages of grafted trees over the ungrafted ones.

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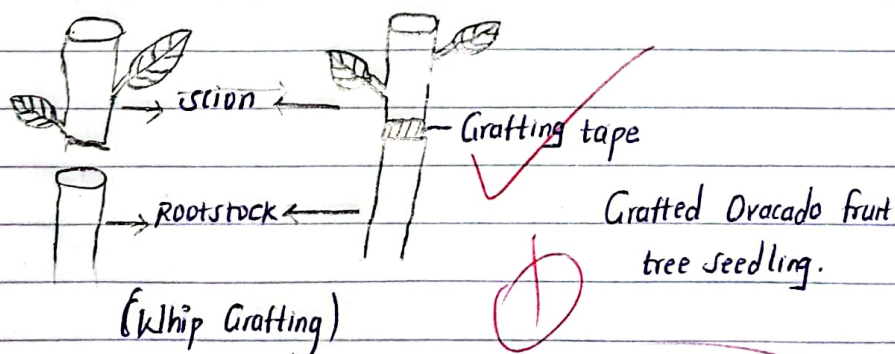
PROJECT DESCRIPTION

We started by selecting a suitable site where to conduct our project. We chose the school farm. We decided to carry out whip grafting since it was the easiest and involved less risks compared to other methods of grafting.

Onto the selection of the scion and the rootstock which had to have a similar pencil thick diameter for compatibility. The rootstock was expected to have no deformities or any signs of pest and disease attack, to ensure successful grafting. The scion was expected to be healthy from the Persea americana, the hass species. (1)

The materials required for the grafting were a sterilised scarpel, rootstock, scion, secateurs, disinfectants, watering cans and a shade net. Each group were allocated their rootstocks and scions and also a piece of land measuring about 1m by 1m.

As a group we grafted 2 Oracado fruit trees by making a vertical cut on the rootstock and fitting a wedge shaped scion on the cut made. Then to ensure compatibility, we used a grafting tape which we tied round the articulating parts. We ensured that the knot tied was tight in order to prevent moisture and secondary infection in the graft.



BUDGET

The project budget prepared was as follows:

Materials	Quantity	Unit Cost	Total Cost
Scapel	5	10	50
Watering Can	1	400	400
Grafting tape	20	20	400
Root stock	20	100	2000
Scion	20	10	200
Steriliser	10ml	100 150	150
Shed net	5m x 10m	3000	3000
Rake	1	350	350
Trainer	1	1000 1500	1500
TOTAL COST			8050

PROJECT IMPLEMENTATION PLAN AND TIMELINE

ACTIVITY	January	February	March	April	May	Jun	July
INSTRUCTIONS OF THE PROJECT							
IDENTIFICATION OF THE ISSUE							
INDIVIDUAL PRESENTATION OF THE PROJECT							
PREPARATION OF THE BUDGET PLAN							
GROUP PRESENTATION OF THE PROJECT							
SITE SELECTION							
ARRIVAL OF AVOCADO FIRST TREE SEEDLINGS.							
PREPARATION OF NURSERY PLOTS							
TRAINING SESSION WITH GRAFTING EXPERT							
FORTNIGHT REPORT							
EVALUATION OF THE PROJECT							
WATERING AND INSPECTION							
REPORT WRITING							

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PROJECT IMPLEMENTATION PROCEDURES.

On 8th May 2025, an external trainer was invited to our school to guide us on the procedure of carrying out whip grafting.

Selection of the Planting Site.

We first selected a site where we would plant our grafted avocado fruit trees. We ensured that the site selected was near a source of water for easy watering.

- ii) It was on a gentle slope to prevent flooding and erosion through surface run-off
- iii) It was in a secure place to prevent theft and destruction by animals
- iv) It was well sheltered to prevent excessive evaporation from the direct sun or destruction by the heavy rains.

Assembling of tools

We now assembled tools that had been purchased by the school to aid us in the grafting of the avocado fruit trees. The tools were: Secateurs, scarpels and the grafting tape.

We then carried out the following procedure with the guidance of the trainer.

Performing of the Grafts.

- i) We chose a scion compatible to the rootstock
- ii) Cut off the stem of the already established avocado fruit tree to about 16 inch using the secateurs.
- iii) Onto the rootstock, we made a vertical cut of about 1 inch using a scarpel
- iv) We then formed a wedge shape onto the compatible scion
- v) Fixed the scion onto the vertical cut made on the rootstock
- vi) Then for us to ensure compatibility of the rootstock and the scion we tied the plant firmly using a grafting tape.

On that day I grafted only two fruit trees and thus as a group of five people, we grafted a total of ten fruit trees. We helped each other in the tying of the grafting tape to the scion and the rootstock although it was still a bit challenging for us.

On 10th of May 2025, we grafted four trees per person, thus as a group we planted a total of twenty trees. This time it was much simpler and the grafting proved to be a success.

Monitoring Progress and Caring for the Plants.

On 12th of May we grafted our last four trees per person, thus a total of twenty trees. Everyone of us having grafted ten trees. We then watered the grafted avocado fruit trees adequately and took care of them by monitoring their progress everyday. We ensured all the conditions, light, shade and adequate water were available through out.

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EVALUATION

After a careful evaluation, we identified that our project was successful since about 95% of the grafted Ovacado fruit trees had sprouted. One of the trees had suffered from leaf blight which we suspected was because we ~~used~~ had overwatered it. We also sold some of the grafted fruit trees to our teacher who appreciated our good work and looked forward to our good results.

CONCLUSION

Grafting as an agricultural technique is used to solve problems such as scarcity of fruits and low quantity and quality fruits.

Through carrying out of this project we have gained skills on grafting of trees and have also learnt how to use our knowledge to curb our day to day issues in the society.

RECOMMENDATIONS

Some of the recommendations passed by the group members were:

- i) Construction, Preparation of more nursery plant plots to prevent overcrowding as it would lead to competition for resources such as nutrients and light.
- ii) Use of drip method when irrigating rather than overhead irrigation so as to prevent disease attack.

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