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
Sanya Bella Blessing	112410012S7	

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Enter the score awarded in the box below.

Agriculture Teacher | 17

24 JUL 2025
ACADEMICS
P.O. Box 23090-00604, LOWER-KABETE.

PROJECT REPORT

PROJECT TITLE

GRAFTING OF AVOCADO FRUIT TREES

Persea americana

NAME: Sanya Bella Blessing

INDEX NO: 1124100257

GROUP NO: 6

Introduction:

Grafting is the practise of uniting two woody stems. One of the two parts provides the base and is the rootstock while the part grafted onto it is the scion. The significance of grafting include: It helps to grow trees with desirable characteristics, shortens the maturity period of trees and helps to repair damaged trees.

Problem identification:

After carrying out a research on my surrounding community, I narrowed down to one major issue which is inadequate intake of fruits. In our school, fruits are only included in our diet twice a week when we could be taking them daily. I selected grafting of avocado trees (Persea americana) as a suitable way to solve the issue. Grafting will not only ensure growth of avocado trees, but also shorten the maturity period.

Objectives:

By the end of this project:

I should be able to carry out grafting

I should know the precautions to be taken while grafting.

I should be able to determine compatibility between the rootstock and scion.

Project Description:

On the project, we decided to carry out whip grafting, where the rootstock and scion are of the same diameter.

Items required:

Scalpel

Rootstock

Scion

Grafting tape

Scion

Watering can

Project Description: Process:

My group members and I decided to do whip grafting with the guidance of the trainer. We took the scion that was of the same diameter as the rootstock. The scion and the rootstock had to be of remarkable compatibility. We used a scapel to make an inch-deep cut into the rootstock. The cut was to create a wedge shape cutting into the scion, an inch long on both the upper and lower sides. We then inverted the scion into the cut made on the rootstock to accurate fitness. We finally wrapped around the middle at the point of union. Around the point of union then again at the middle. We then made a knot with the grafting tape, Each group member grafted four trees.

GROUP 6

Group Members:	Index numbers:
Bella Blessing	11241001257
Happiness Pendo	11241001248
Ivy Wanjiku	11241001249
Kate Kemachi	11241001255
Faith Njoki	11241001256
Purity Hamisi	11241001251

Budget:

In order to carry out whip grafting, we were in need of suitable equipment. We purchased the items from a reliable source and the budget was calculated per group. The budget was as follows:

Item	Quantity	Unit cost	Total cost
Scalpel	5	sh 10	sh ~~250~~ 50
Watering can	1	sh 400	sh 400
Grafting tape	20	sh 20	sh 400
Rootstocks	20	sh 100	sh 2000
Scion	20	sh 10	sh 200
Steriliser	10ml	sh 150	sh 150
Shade net	5m x 10m	sh 3000	sh 3000
Rake	1	sh 500	sh 500
Trainer	1	sh 1500	sh 1500

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The cummulative total per group amounted to sh 8200.

Project implementation plan and Timeline.

Activity	J	F	M	A	M	J	J
Issuing and instructions of project							
Identification of issue							
Individual presentation of project							
Preparation of a budget plan							
Group presentation							
Site selection							
Arrival of avocado tree seedlings							
Preparation of the nursery plots							
Training session with a grafting expert							
Fortnite report on the project progress							
Evaluation of the project							
Watering and inspection							
Report writing							

Date
M T W T F S S

Project implementation and procedure.

Training session - A professional trainer was brought to us by our teacher. He showed and trained us how to go about each step of grafting.

Assembling of tools - The equipment for grafting was purchased from a reliable source following the allocated budget and needed requirements per group.

Site selection - A suitable site in the school compound was selected, where we raised a nursery which was divided into plots measuring 1m by 1m. Each group had their own plot where we were able to carry out management practices such as watering. Each group member was allocated their own day to water and weed the trees.

Grafting process - After the training session, we attempted grafting on our own while our agriculture teacher shot some short videos of each member grafting her own tree.

Monitoring growth - Each member was allocated their own day to water and weed the seedlings every morning and evening. We monitored the grafted trees to ensure compatibility and growth of the rootstock and scion. This ensured successful union and growth.

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Caring for the plants - Each day, one of the group members ensured that the trees were well attended to. We met each weekend to evaluate the progress of our project.

Evaluation:

Out of the twenty seedlings on the avocado grafted fruit tree seedlings only sixteen sprouted. The remaining four were attacked by pest thus were unable to sprout. We carried out a research on the cause of the attack and concluded that they did not have desirable root characteristics such as resistance to nematode attack. They were, therefore, vulnerable to nematode attack. From the above experience, we were able to learn that we should not use plants with undesirable root characteristics since they are prone to pest attack.

We separated the attacked seedlings from the rest to avoid spread of diseases to the other seedlings. On doing so, we were able to maintain the rest of the seedlings in good condition.

KARTASI

We were able to sell some of our grafted trees to the community. This inspired them to do grafting of fruit trees by acquiring the skills through training.

Conclusion:

The project was complete by the end of the seventh month, as was our aim. This project was beneficial to me as an individual in that, I am now well equipped with practical skills to add onto my theoritical knowledge on grafting. This practice will ensure intake of a balanced diet in the school community in the long run.

Recommendations:

i) I recommend using plants with desirable root characteristics to curb pest and disease attacks.

ii) Using proper irrigation method to avoid wilting and pest attacks.

iii) To select proper and most suitable methods of grafting.