

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
MARION VALENTINE WAINUKU	112410D1198	

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Agriculture Teacher

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Project report

Project title: Grafting of avocado fruit
trees.
(Persea Americana)

Name: Marion Valentino Wainuku.

Index no: 11241001198

Group: 4 Member.

i. Introduction.

- a. Grafting is the practise of joining two separate woody stems, that is a scion the part at the top and a rootstock the bottom part, so that they grow as one plant.
- b. The reason why we choose grafting is because:
 - i. Plants raised through grafting or budding mature earlier by shortening the maturity rate.
 - ii. Damaged plants parts can be prepared through budding.
 - iii. Plants are able to maintain the desirable parental characteristics.
- iv. Lastly the farmer is able to get more than one varieties of fruits in one plant.

ii. Identification of Issues.

According to my research on the most current issue around the school and the community is that fruits take a long time to mature hence leading to inadequate supply of nutrients, hence leading to nutritional diseases such as anaemia, bone diseases and birth defects. I found out that this problem can be solved by grafting/budding fruit trees therefore leading to early maturity of fruits. Since the ungrafted fruit tree can take around seven and a half years that is on an avacado fruit tree which we can shorten the maturity rate through grafting.

iii. Project objectives.

- Grafting of avacado fruits matures earlier than those propagated from seeds.
- i. By the end of this project I will be able to do grafting of fruit trees.
- ii. By the end of this project I will be able to know the precautions that have taken place.

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iii When the seedlings are ready for planting we will sell to the community in order to have an income.

iv Project description.

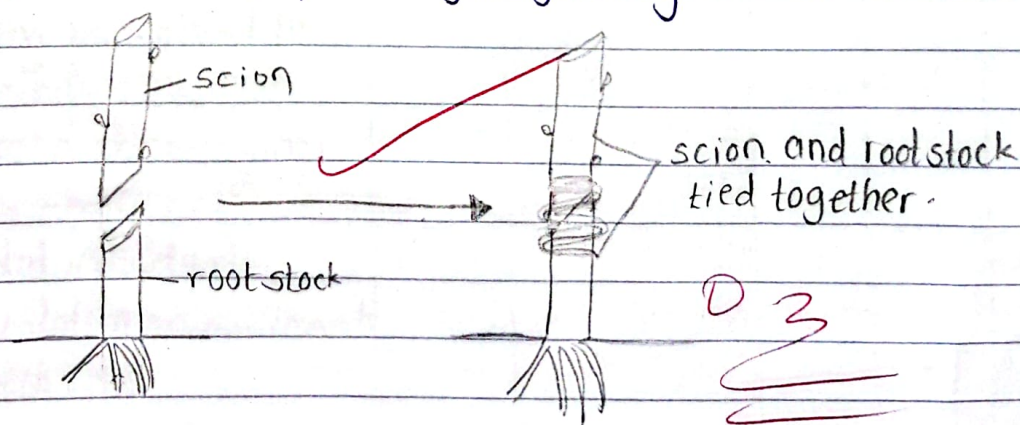
We carried out our project through ~~whip~~ or tongue grafting where the rootstock and the ~~scion~~ should be of the same diameter. We used the materials that were sterilised which included;

- i Secateurs
- ii Grafting tape.
- iii Scapels.
- iv A jembe.
- v Watering can.
- vi A rootstock.
- vii A scion.
- viii A shade net.
- ix Steriliser.

We carried out our project as a group of five people that is

1. Marion Valentine Wainuku.
2. Rimui Cynthia Njeri.
3. Nyakonyu Caroline Nyambura.
4. Njunguna Joan Wairimu.
5. Mung'one Tracy Mideva.

whip or tongue grafting.



✓ Budget.

According to our project we were able to use an amount of;

AGRICULTURE PROJECT BUDGET PER GROUP 2025.

Item	Quantity	Unit cost	Total cost
Scapel	5	10	50
Watering can	1	400	400
Grafting tape	20	20	400
Rootstock	20	100	2000
Scion	20	10	200
Steriliser	10mL	150	150
Shade net	5m x 10m	3000	3000
Rake	1	500	500
Trainer	1	1500	1500
Jembe	2	500	1000

TOTAL = 9,200

v) Project implementation plan and Timelines:

ACTIVITIES.	MONTHS.						
	January	February	March	April	May	June	July.
a. Instructions were given by our teacher on 12 th							
b. I did a research on the most pressing issue around the community							
c. Arrival of the seedlings in our school on 13 th							
d. We did individual presentation on our research and took videos							

	January	February	March	April	May	June	July
e. Registering of group members on 19 th							
f. Watering and inspection of the seedlings							
g. Fortnight report on the project.							
h. A training expert from the community was invited on 6 th							
i. We did our grafting on 6 th							
j. Group discussions							
k. Writing our individual report on grafting/ budding of fruit trees							
l. Writing a group report on grafting/ budding of fruit trees							
m. Report writing							

vii Project Implementation and procedure.

- Selection location for planting - a well shaded and secured places was selected. The shade was erected using a net which was 5m x 10m. The seedling bed for each and every group was 1m x 1m.
- Assembling tools - ~~Tools~~ like scapel and watering can were brought on time. The materials that we used all were sourced from a reliable source to prevent transmission of diseases to the rootstock and the scion.
- Training session and performing grafts and buds - The training was done once by an external trainer from the community. We did the actual grafting of the ovacado seedlings as guided

by the trainer and the help of our teacher as one of us was taking a video.

We chopped off the stem of the mango tree seedling using the secateurs. We then made a vertical cut on the rootstock using the sharp scapel of about one inch. We also made a wedge shaped scion and fitted it into the vertical cut in the rootstock. In order to ensure compatibility we tied together through tight tying with the grafting tape. We then took back the grafted fruit trees seedlings back to the nursery plot where we watered them and kept them under the shade for proper growth.

d. Monitoring growth progress post operation - monitoring was done everyday by group members making sure that the scion sprout and always the seedlings was in a shade to prevent dehydration. Watering was done everyday in the morning and evening.

e. Routine. A table of activities was made by group members and each member was given a responsibility such as once every week of watering and weeding.

Doing that 90% of our seedlings survived.

viii Evaluation.

Before the training I had practised to do grafting on my own using three tree fruits and out of the three only one survived. However I did not give up I did for the second time with two fruits tree only one survived. After the technical expert in the community was invited and I was able to graft five fruit trees and all of them survived and they were able to sprout.

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ix Conclusion.

As an individual I have greatly learned how to graft fruit trees, also I decided to do grafting at our home, so that our people around the community can learn also the knowledgeable technique. For now I have grafted three fruit trees at our home.

x Recommendation.

Grafting / budding of fruit trees has enable me to become more knowledgeable hence training other people to do grafting as well. The grafted fruit trees we have decided to sell them to the society to earn an income. I would like also to request the minister for Agriculture to organize training section for each and every community. In order to to discourage fruit shortage in the societies through grafting / budding.

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