

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
AGIGI JECINTA NYAMBURA	11241001153	

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Agriculture Teacher

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925074

PROJECT REPORT

PROJECT TITLE:

Grafting of Avocado fruit
TREES

(Persea Americana)

NAME: Jessica Ngumbura
Njigi

Group: 3

Index number: 11241001153

Introduction

Grafting is the practice of uniting 2 separate woody stems. Grafting has benefits of different plants for continuous growth as one plant and the scion together with the rootstock encouraging them to form one plant.

The rootstock forms the base having a rootingsystem while the scion is the upper part of the seedlings.

The scion and the rootstock should be from the same species for compatibility.

Grafting is of importance because it repairs damaged trees, facilitates changing of the top of the tree from being undesirable to desirable, help propagate those that cannot be propagated in any other way and many others.

Identification of Issue

The issues were able to identify through analysis within the community was that avocado fruit trees (*Persea Americana*) takes a long time to reach maturity.

Through grafting we identified that there would be an increased maturity rate of avocado fruit trees. When this problem is solved, the issue of inadequacy of avocado fruit is reduced in the community.

The avocado fruit trees also act as wind breakers in the farm. They are beneficial for they prevent erosion of soil thus improving the structure of the soil.

Project Objectives

The objectives of this project are:

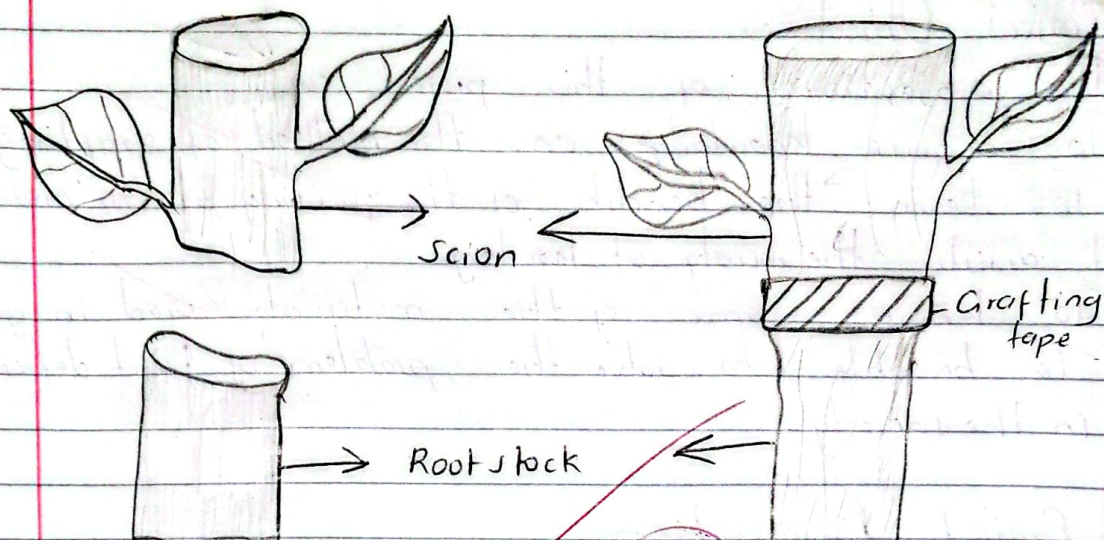
1. To acquire knowledge on the method of grafting.
2. To learn the benefits of the grafting process and how it assists the society at large.
3. To know some of the materials used in grafting.
4. To be able to solve the problem of fruit deficiency in the society.

Project Description

The grafting procedure begins by selecting suitable to conduct the process. We choose the school farm area for it had a suitable environment to perform the process. There were different methods of grafting but we selected whip / tongue grafting. We selected the butt of the scions and rootstock which we had to have a similar pencil-thick diameter for compatibility.

We assembled the tools that were required such as the sterilised scalpel, rootstock, scion, a watering can and a grafting tape. Each group was given 20 pairs of rootstocks and scions according to the number of trees to be grafted. The nursery bed was 1m by 1m. Each member was to graft 3 trees. We made a vertical cut on the rootstock and fitting a wedge-shaped scions on the cut made. To ensure compatibility, we used grafting tape with which we tied round to articulating parts. We ensured that the tape was tight to avoid moisture and secondary infection the graft.

Budget
Material
Scape!



Grafting avocado fruit tree seedling (whip grafting)

Bad.

Budget

Material	Quantity	unit cost	Total cost
Scapel	5	10	50
Watering can	1	400	400
Crafting tape	20	20	400
Root blocks	20	100	2000
Scion	20	10	200
Skaliser	10ml	150	150
Shed net	5m x 10m	3000	3000
Rake	1	350	500
Trame	1	1500	1500
Total = 8200/-			

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Project Implementation Plans and Timeline.

The project implementation is analysed by the table below

Activity	J	F	M	A	M	J	J
Instructions of the Project							
Issuance of the Issue							
Identification of the Issue							
Individual presentation of the project							
Preparation of A budget plan							
Group Presentation of the project							
Site selection							
Arrival of avocado fruit trees seedling							
Preparation of Nursery plots							
Training session with grafting expert							
Fortnight report on the project							
Evaluation of the project							
Watering and inspection							
Report Writing							

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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 that were required for grafting were sourced from the available source.

Selection of location for planting
The area to carry out grafting was to be shaded and gently sloped and well secured. The area had to be near a water source that was easily accessed.

Performing grafts - We did the actual grafting of the avocado fruit trees in groups. Each member grafted three avocado fruit trees having guidance from the trainer and the teachers. Videos of the groups were taken during the grafting session.

Monitoring growth progress - We conducted daily inspection as group members. We formed a schedule that every member of the group had their day to monitor the seedlings everyday.

Caring for plants - 93% of the avocado trees managed to survive. This was because of the continued watering and weeding that was done to provide the seedlings with best conditions for growth.

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Evaluation

After careful evaluation, we identified that our project was successful since 95% of the grafted avocado fruit trees seedlings had sprouted. One of the two defective ones had suffered from leaf blight which we deeper suspected was because we had used over water method of irrigation from this, we learnt to take the precautionary measures more seriously. However, we were able to sell three grafted embrace our project. She acknowledged our good efforts and looked forward to the good results.

Conclusion

Grafting as an effective cultural technique is used to solve many problems such as the ones stated earlier and also many more.

As a project it has greatly helped us to expand our theoretical knowledge by allowing us to implement it practically in the farm eg watering and weeding. Through grafting, we have also been taught how to use our knowledge not only is excellent in exams, but also solving many day today issues in the society.

Recommendations

Some of the recommendations passed by the group members were construction of more nursery plants plots to prevent crowding in one nursery plot, which could lead to competition for resources eg light.

Use of drip method of irrigation instead of overhead.

irrigation to prevent disease attack
Proper observation of grafting precautions:-