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
STACIE WANJIRA WAMBUGU	11241001270	

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Enter the score awarded in the box below.

Agriculture Teacher | 18

MARY LEAKEY GIRLS' SCHOOL
DEPUTY PRINCIPAL
24 JUL 2025
ACADEMICS
P. O. Box 23080-00604, LOWER KABETE

925074

PROJECT

TITLE: GRAFTING OF AVOCADO FRUIT TREES

Persea americana

NAME: STACIE WANJIRA WAMBUGU

INDEX:

112410070

GROUP 7

Introduction

Grafting is the practice or technique of uniting two woody separate parts of different plants allowing a continuous growth as one plant. The upper part of plant which is used for uniting is known as the scion whereas the lower part which is needed to complete grafting is known as the rootstock. Both should be from the same species so as to be compatible. Through grafting, it is possible to develop fruit trees which are resistant to pest and disease attack and also harsh weather.

Identification of issues

My group and I gathered information from the school community and we came to a conclusion that there is a pressing issue of scarcity of fruits. This is especially avocado fruits (Persea Americana). Research has shown us that grafting of avocado fruit trees is the best solution since when avocado fruit trees are not grafted, they take seven years to mature whereas when they are grafted, they take three and a half years to mature.

Our school diet has fruits included but students only take two fruits per week. This might have led some students suffering from malnutrition. My group and I also discovered that the areas around the school which do not have trees tend to experience a lot of soil erosion. The causes of this soil erosion is either soil being carried away by wind causing a lot of dust in the air or soil being carried away by water from rain through surface run off. This problem can be solved by planting grafted trees in those bare areas.

03

Project Objectives

1. To identify techniques of grafting
2. To learn how to graft
3. To identify different types of grafting
4. To identify which grafting method is needed
5. To produce healthy avocado fruit tree seedlings
6. To learn precautions when grafting
7. To know the various practices and routine management practices observed and practised during and after grafting

Project Description

We were placed into various groups in order to carry out the project. Our group (group 7) had the following members:

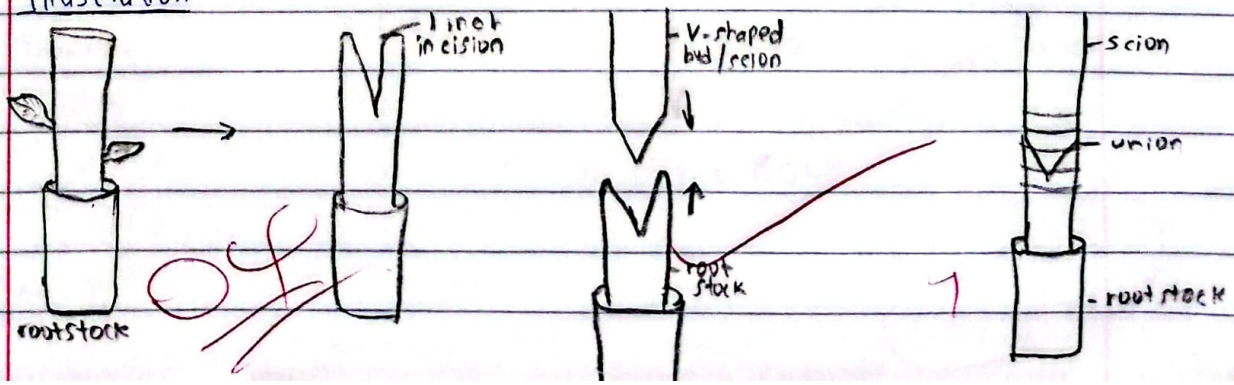
Stacie Wanjira Wambugu
Shammah Vuyanzi Vigedi
Stella Pelis Wanjira
Melanie Esther Nyokabi Kamau
Muturi Ivyone Wacera
Brenda Nkatha Mwiti

We selected a suitable site which measured 1m by 1m. We then cleared the site by uprooting weeds and collecting trash.

We decided to carry out whip grafting after selecting a compatible rootstock and scion.

On May 17th, we carried out grafting using various materials: a sterilized scapel, a rootstock, a scion, grafting tape, secateurs and a watering can. Each group was given 20 rootstocks and scions. We also used a shadenet to cover the nursery bed. We grafted using avocado hass specie

Illustration



Budget

Material	Quantity	unit cost	Total cost
Scapel	6	10	60
Watering can	1	400	400
Root Stock	20	100	2000
Grafting tape	20	20	400
Scion	20	10	200
Sterliser	10ml	150	150
shadenet	1m x 10	3000	3000
Rake	1	350	350
Trainer	1	1500	1500

Total cost = 8060 /=

PROJECT IMPLEMENTATION PLAN AND TIMELINE

Activity	J	F	M	A	M	J	J
Instructions of the project given							
Identification of the issue							
Individual presentation of the project							
Preparation of a budget plan							
Group presentation of the project							
site selection							
Arrival of the avocado fruit tree seedlings							
Preparation of tree nursery plots							
Training session with extension officer							
Fortnight report on the project							
Evaluation of the Project							
Watering and inspection							
Report writing							

Project Implementation and Procedure

Assembling of tools - Our Agriculture Teacher bought for us the tools we required in order to perform grafting. We took good care of the tools bought

Training session - We got a trainer who come and taught us how to graft. He taught us on the various precautions that may arise during grafting. We did grafting practically in our groups.

Site selection - My group and I selected a site where we would keep our grafted fruit trees. The selected site was cleared and all the trash was removed to create a suitable ground for a healthy growth of the seedlings. The soil was fertile and a shade was erected over the nursery bed to prevent exposure of the seedling to direct sun rays hence preventing dehydration of the tree seedlings.

Grafting practice - We finally carried out grafting. We followed the right procedure.

1. Cut the rootstock at a 'pencil' thick diameter
2. The scion is cut at the same diameter as the root stock in a v-shape
3. The root stock and scion are united to form one union
4. The union is firmly held by a grafting tape

Monitoring growth progress - Monitoring was done each day by every group member. We ensured that watering was done so as for the seedlings to sprout successfully.

Caring for plant - Watering was done regularly and removal of weeds through uprooting was done by every group member.

Evaluation

The project was successful. My group members and I had a reflection on the project and we identified achievements we had after analysing our objectives. Many of the fruit trees had began sprouting having 2 - 3 buds each. Some fruit trees began to dry up due to irregular watering routine and uneven unions. During our second milestone, we ensured we carried out regular watering. The tree seedlings are now healthy.

Conclusion

In summary, we were able to achieve our objectives since grafting of the avocado fruit trees was successful. In three years to come, we will have solved the issue of scarcity of fruits in not only the school community but also the entire areas where grafting of fruits trees was done. I have also learnt to graft on my own and I will help my home community to graft trees. I can now be able to teach others grafting of fruit trees.

Recommendations

My group members came up with the following recommendations:

1. We recommend this project to local and international farmers who have tree seedlings to carry out grafting.
2. We recommend this project to various Agricultural committees and Boards for them to encourage and inform people on the importance of grafting.
3. We recommend this project to other schools having the same problem of scarcity of fruits.