

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
HAPPINESS PENDO KYALO	11241001248	

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Enter the score awarded in the box below.

Agriculture Teacher



GROUP 7 ONLY
OF AVOCA DO

TRIPS (Pena Americana)

HAPPINESS

PENDO

KYLO

1124100124\$

GROUP 6

Introduction.

Grafting is the practice of uniting two separate woody stems. One of the two parts provides the base and has a rooting system whereas the other part is obtained from another plant. The part with the rooting system is the rootstock while the part which is grafted onto the rootstock is known as scion. The significance of grafting are several including; helps to repair damaged trees, helps to shorten the maturing age, helps to propagate clones that cannot be propagated in any other way and it also makes it possible to grow more than one type of fruit or flower on the same plant thus improving the quality of fruits. The botanical name for Avocado is *Persea Americana*.

Identification of the issue.

The main problem that we were able to identify within the school community after a long research was scarcity of fruits. We noticed that in the school fruits are taken only twice in a week due to the long maturity of the fruits. We took an example of a mango tree which takes 7½ years to grow while a grafted one takes 3½ years to grow there. For the solution for the problem would grafting of the fruit trees so as to produce more fruits for the students.

The large availability of fruits within the community will help people around to secure some nutritional value which benefits the body in several ways.

Project objectives:

1. To observe the precautions carried out in grafting.
2. To know the different types of grafting.
3. To learn how grafting is done.
4. To learn and understand the benefits of grafting.

Project Description.

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

Materials required for grafting.

1. Grafting knife.
2. Rootstock.
3. Grafting tape.
4. Scion.
5. Watering can.

Whip grafting is also referred to as splice grafting which is normally carried out when the diameter of the rootstock and the scion are a pencil thick.

On the project, we took a scion of a mango species and the rootstock of the avocado fruit species. During the grafting process on which we decided to carry out whip grafting or splice grafting we were given ^{the tools to use} ~~two secret tools~~ for the process. We cut the rootstock of the avocado tree vertically of about one inch and placed a wedge-shaped cut scion of the mango species on the rootstock. We later used a grafting tape to ensure compatibility for the fruit tree to grow. Each member of the group grafted four avocado fruit trees.

GROUP 6	
GROUP MEMBERS	INDEX NUMBER
Happiness Pendo	11241001248
Iry Wangiku	11241001249
Kate Kemachia	11241001255
Faith Nyoki	11241001256
Bella Blessing	11241001257
Purity Hamisi	11241001251

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Budget

Project budget for group 6-2025

Item	Quantity	Unit cost	Total cost
Scalpel	5	10	50 ₺
Watering can	1	400	400 ₺
Grafting tape	20	20	400 ₺
Rootstock	20	100	2000 ₺
Scion	20	10	200 ₺
Stemmer	10ml	150	150 ₺
Shadenet	5 x 10m	3000	3000 ₺
Rake	1	350	500 ₺
Trainer		1500	1500 ₺

Total = 9650 ₺

PROJECT IMPLEMENTATION PLAN AND TIMELINE

ACTIVITY	J	F	M	A	M	J	J
INSTRUCTIONS OF THE PROJECT GUARANTEE							
IDENTIFICATION OF THE ISSUE							
INDIVIDUAL PRESENTATION OF THE PROJECT							
PREPARATION OF A BUDGET PLAN							
GROUP PRESENTATION							
SITE SELECTION							

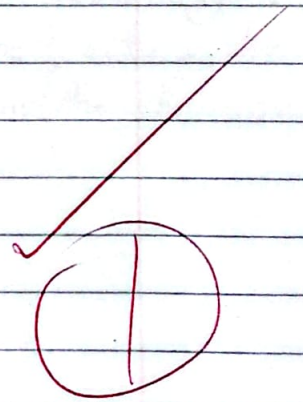
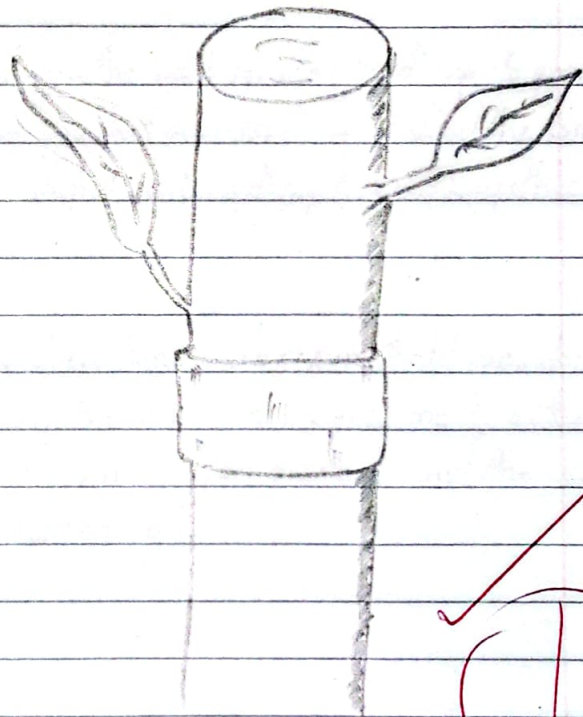
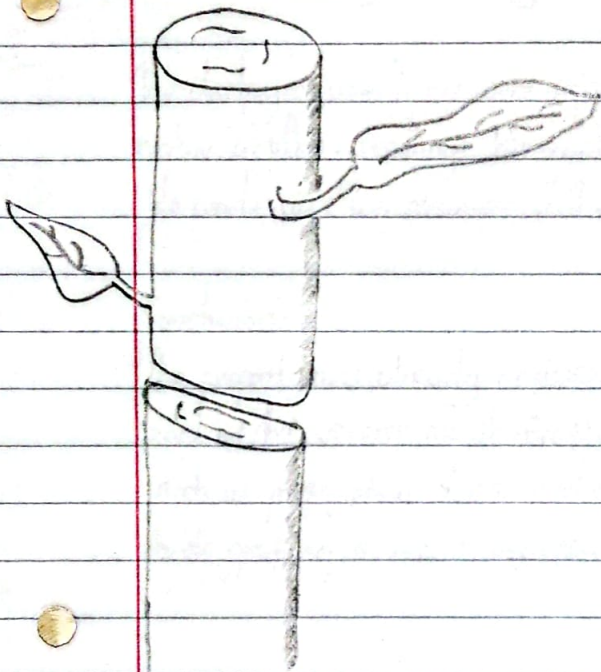
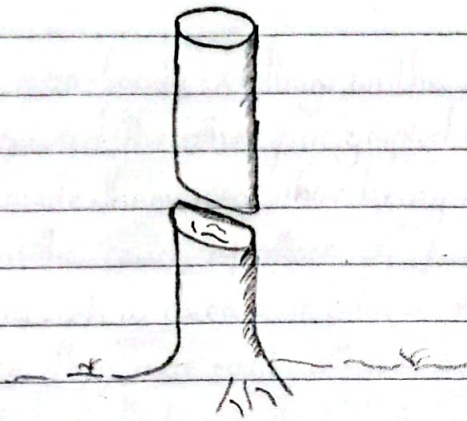
	J	F	M	A	M	J	J
ARRIVAL OF THE AVOCADO							
FRUIT TREE SEEDLINGS							
PREPARATION OF THE NUR							
SERY PLOTS							
TRAINING SESSION WITH A							
GRAFTING EXPERT							
FORTNIGHTLY REPORT ON							
THE PROJECT.							
EVALUATION OF THE							
PROJECT							
WATERING AND INSPECTION							
REPORT WRITING							

Implementation procedure:

On February 12th 2025, our agricultural teacher gave us the outline of the agricultural project. We had two options; constructing a beehive or grafting of fruit trees. We opted to carry out grafting of avocado and mango fruit trees.

- i) Selecting the location of the planting materials → Each group was allocated a nursery 1m by 1m. The place was well secure and shaded to protect the seedlings.
- ii) Training session → An external officer was invited to help in the grafting process through the help of our agriculture teacher.
- iii) Assembling of tools → The tools used were from a reliable source to prevent the spread of diseases during the grafting process.
- iv) Performing grafts → We were able to perform the grafting process by the help of our trainer on the avocado seedlings and also our agricultural teacher took part by taking the videos as we undertook the process.
- v) Monitoring growth → We did this on daily basis by group members as we took turns and also ensuring the seedling was in a shade to prevent dehydration.
- vi) Caring for the plants → We took care of the plants by watering ^{them} everyday and removing the weeds which was around the plant. Each member of the group was given a responsibility of watering and weeding every two days.

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Whip

Grafting

Evaluation.

Out of the given twenty seedlings on the avocado grafted fruit tree seedlings only 16 of them sprouted. The other four grafted fruit tree seedlings were attacked by crop pest which made them weak thus being unable to sprout. When we thoroughly researched on the cause of attack we found out that they did not have desirable characteristics such as disease resistance, vigorous root system, resistance to nematode attack hence they were easily attacked by nematodes. From the above experience we were able to learn that we should not use plants with undesirable root characteristics because they might be easily attacked by crop pests.

The destroyed seedlings were separated from the good sprouted seedlings to prevent contamination of other seedlings. We sold some grafted fruit seedlings around the community. We made sure we maintained the other grafted fruit seedlings to avoid any other attack.

Conclusion.

The project was already implemented and our aim was to ensure that it was done by the end of the current month. Grafting is also beneficial since it solves many of the problems such as propagating clones and others. We encouraged people around the school community to do grafting since it is beneficial on many further.

Recommendation.

The recommendations were;

- i) Using plants with desirable root characteristics to prevent disease attack
- ii) Using a proper irrigation method to prevent disease attack.
- iii) Following properly the grafting methods.