

KOLA

SECONDARY

SCHOOL

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INDEX NO: 18307307015

SUBJECT: AGRICULTURE

PAPER 3 (REPORT)

# GRAFTING.

Grafting - It is the practice of uniting two separate woody stems.

The rooting system is known as root stock and the part which is grafted onto the root stock is known as scion.

## Methods of Grafting

### i) Whip or Tongue Grafting.

It is used for materials in which the section and the root stock are of the same diameter.

### ii) Side Grafting.

It is practiced when the stock has a large diameter than the scion.

The scion is inserted into the side of the stock.

### iii) Approach grafting

### iv) Bark grafting

### v) Notch grafting

## Importance of Budding and Grafting.

- i) They help to shorten the maturing age.
- ii) They facilitate the changing of the top of the tree from being undesirable to desirable.
- iii) They help to propagate clones that cannot be propagated in any other way.
- iv) They make it possible to grow more than one type of fruit or flower on the same plant.
- v) Grafting helps to repair damaged trees.

The following are the conditions necessary for the grafting to be successful;

Compatibility where both the scion and rootstock must be of the same species to enhance compatibility.

Temperature is required to cool the process, species of plant to easily form a union, Relative humidity should be high and maintained, physiological maturity of plants that is the scion and rootstock. Should neither be very young nor too mature.

As an agriculture students we chose to use Avocado fruit tree for grafting because it can be sold at a higher price and earn more and a lot of income to solve the following problems in the society as the society has major problems:

High Birth Rate

Mulnubrition Of The Children And Hygiene.

High Death Rates.

Low Living Standards

Deforestation

Poor Roads

Lack Of Employment.

Idleness

High Rates Of School Dropout.

Scarcity Of Water.

Soil Conservation.

Early Marriages.

Crime Such As Thefts.

Sexual Immorality.

Laws Agriculture Produce

Poor Health Generally.

## HIGH BIRTH RATE

High birth rate is also evident in the surrounding society. This is caused by high rate of school dropout, which lead to early marriage that encourages poverty. For example lack of food, shelter, cloth's and money to pay school fee.

When we visited the surrounding society we found that young girls are engaged in early marriage so that they can get the basic need they want. When girls involved in early marriage they get pregnant and increase high birth rate in the society.

But through the knowledge of grafting fruit trees parents can generate income through selling of grafting seedlings and the produced fruits. The generated income is used to pay the school fee and also to produce those basic need for their children.

When the children have the basic needs so you find that high birth rate decrease in the society because their parents have the money to buy them what they want and their are also been taken to school to have knowledge.

Thus minimising the number of school dropout and to control the birth rate to the society.

## MULNUTRITION OF THE CHILDREN AND HYGIENE.

When we visited different home from the surrounding society, we discovered that children were suffering from malnutrition. This is condition whereby children lack a balance diet. ✓

If the parents or the people of the society have knowledge of grafting fruit trees, they would be able to generate income through selling the grafting seedling and fruit from the fruit tree. The generate income would be used to provide a balance diet more so to children and their families.

On poor hygiene, we visited the nearby hospital and after conducting oral interviews on the doctors about the health records of the people in the society, we discovered that most of the people suffer from stomach related illnesses.

This is because in their homes they do not maintain proper hygiene. Even we had to visit some of the near by schools and discovered that their hygiene was not pleasing at all some of the students their.

## HIGH DEATH RATES.

We also noted that the death rate in the surrounding society is very high. This is caused by lack of finances to take their sick people to better hospitals or buy drugs for them and supplement their diets.

High death rates can be brought due to poor living standards, that is the environment can be dirty hence leading to uncurable diseases which can lead to rapid death rates. There also the people around the school society are poor that is they lack finances to take their sick people to hospital or to buy medicine for their sick ones hence this will increase death rates.

This has led to reduced human labour and increase number of orphans because some of people die are old people when they eat which they are sold dirty place or they forget to wash them because of lack of water in their homes.

But through the knowledge of grafting the members of the society will be able to generate income through selling of the grafted seedlings and the produced fruits. The generated income is therefore used to take care of the health of their beloved ones and also to buy water or looking for other place to sell their fruit.

Through that it will decrease high death rates in our society.

## LOW LIVING STANDARDS.

low living standards can be brought up by lack of food, clothing, basic diets and houses. After touring the society around our schools we discovered that many people have low living standards which it has led to depression and isolation.

Depression is the state where one is stressed beyond control. Isolation is the state where one likes living alone without interacting with others.

People they have stress because they don't have money to buy food or basic diets for their childrens some don't have even money to pay school fee so you find that these childrens are been sent a way to bring money and the parents don't have the money. The parent may have the stress.

Through our project on grafting we found out our problem can be solved. If the people had been educated about grafting, they are able to sell seedling fruits and the produced fruits can generate income or after planting the seed trees they can sell the fruit and generates income as well.

The income generated can be used to improve their living standards for example buying food, clothings, constructing good housing and balanced diet and also they can decrease stress in people parent can also get money to pay school fees for their childrens.

That how the problem of low living standards is solved.

## DEFORESTATION.

As we know that deforestation is cutting down of trees which is very much pronounced in the surrounding society around our school due to cutting down of trees for domestic use such as burning of firewood and burning of charcoal.

The burning of charcoal has effects on the land that it makes the land unproductive as the micro-organisms which decomposes to form nutrients for the crops are burned. So the farmers are not able to sell the crops and get income.

Burning of charcoal produces smoke can also interfere with the ozone layer hence leading to low rainfall standards. When the people cut down trees can causes soil erosion because the land doesn't have trees to hold the soil.

If the people in the society are educated about grafting of fruit trees they will be able to plant fruit trees which will provide land cover hence replacing the tree that has been cut in the previous years and also to control soil erosion.

After planting the fruit trees they will be able to generate income through selling of grafted seedlings and fruits from the fruit trees thus minimising deforestation. Then the income generated can be used in other activities such as paying school fees for the youths in the community hence making them committed to academic works.

## Poor Roads.

We also observed that feeder roads in our society are very poor. It has lead to poor transport more during rainy seasons. During rainy season, perishable fruits like mangoes do not due to delation cause by the roads.

Also during rainy season some of the road are not good and they have holes which many goes car's not to move or to transport fruit to the market. Even in murram roads prone to accident because they are slippery and this many cause death of drivers or damage of the fruits.

During dry seasons, roads are dusty the dust leads to make the driver sick of which the time he takes to heal he could have used it to transport more fruits to the market it creates high demands of the fruits in the market.

To solve this problem people are educated on grafting of fruit trees, because they need to use those roads when transporting those grafted fruits and seedlings. So from the generate income they get after selling those grafted seedling and fruits.

The income is used to make roads more passable for all weather thus making easy to transporting fruit from the farm to the market and making the farmers to have more income. The problem of poor roads are solved.

## LACK OF EMPLOYMENT.

Unemployment is the most harmful thing that has been increased in the society. Most of the people in the surrounding of a society are unemployed. This is because of illiteracy and high rate of school drop out that has lead to increase in crime and low living standards to the people.

This has lead to more suffering in the community. If the knowledge of grafting fruit tree is introduced to them they will be occupied by a constructive activity that will make people to get money by selling the grafted fruit trees.

After selling the grafted seedlings and fruits, the people will get income to sustain their families in their daily living life, using this method of grafting fruit tree is introduced to them by advising them to plant more fruit trees in their farms by maintaining everything required like digging them unwanted weed from the farm.

Applying fertiliser, irrigating the plants, grafting the plants and harvesting a good grafted fruits, that will make people in the market to buy the fruits and the farmer they will get income to buy many fruits or seedlings.

By doing this it will reduce poverty and the number people who are wandering around in rural and urban areas searching for a job.

## IDLENESS

A lot of people are idle in the community surrounding our schools; this is affecting mostly the youths, for example; when we visited the market place during the day we found many groups of young boys and girls doing nothing.

Idleness can also lead to committing crimes such as stealing where they can sit down and plan on how they can break into banks, markets or even supermarkets to take some items so that they can fulfil their needs and if they are caught Stealing can be stoned by mob justices to death hence leading to poor population of youths in the society.

Idleness has also led to drug abuse which has resulted to drugs addiction, for example at the market place there were many young boys, who looked like mad people but in their real sense it is just the effect of the drugs they take.

So we have decided that, by educating the youths about grafting of fruits trees they will have something to do and their parents they will have money to take their children's to school.

So occupied during the day thus the number of idleness in the market places and at home will reduce.

## HIGH RATES OF SCHOOL DROPOUT.

One of the things that are pulling back the growth of the surrounding society is the school dropouts. This is where by young boys and girls stop going to school before completing the primary, secondary and even tertiary education.

This is caused by poor living standards which limit the parents from paying school fees for their sons and daughters because of lack of money thus unable to sustain them in school. This has led to generational poverty in the surrounding society to be high.

Through the knowledge of grafting fruit seedlings, the people in the society will be able to sell grafted seedlings and produced fruits. The generated income can be used to pay school fees for their children thus sustaining them in school.

Again the parents will be able to provide all the basic needs required by their children thus minimising the number of school dropouts in the society surrounding our school.

## SCARCITY OF WATER:

We also noted that people in the surrounding society are forced to walk for long distance search for water. Due to minimal chances of rainfall, climat condition of the community is poor because people they cut down trees and they forget to plant other trees so you find that there is no rain.

This has led to a lot of pain and suffering to the people. for example during the hot season its when we found that their is a big challenge of water even you may found animal are die because of lack of water. The environment it doesn't have trees which can attract rain and people to storage the water. Even the plant dry up because of lack of water.

Also in the community we found that they don't have boreholes were they can store water for future because they don't have money to dug them. Through the knowledge of grafting fruit trees and generate income through selling the grafted seedlings, and the produced fruits.

The generate income can help the community if they come together, they will have money to dug boreholes which can supply water in whole community then they we buy trees and plant where they have cut before so that the trees can attract rain so that the planted water scarcity will be solved.

## SOIL CONSERVATION.

As we moved around the surrounding society we discovered that soil erosion is highly pronounced. This is because deforestation is practiced majority in the society and lack of land to cover generally some of the common types of soil erosions in the society. The splash erosion where the impact of water drops are directly on soil particles or on thin water surfaces.

It strikes on bare soil hence it disperses the soil particles by detaching and the splashes and leaving the land crusted. When the land is crusted it leads to low agricultural produce where people can suffer from starvation as the community has no good and fertile soil to plant or do farming to produce crops.

If the people in the surrounding society are educated about grafting of fruit trees they will be able to plant trees which will provide land cover as a result of conserving. The fruit trees planted whose root will help to hold the soil particles together thus minimising soil erosion.

Also the remains of the fruit trees like leaves decompose thus adding fertility to the soil and conserving the soil which will increases the growth of agricultural produce.

## EARLY MARRIAGES.

Early marriages is another problem that is affecting the society around our school. This has led to generation of poverty that is highly affecting the society at large through the knowledge of grafting. Parents can generate income through selling the grafted income can be used to pay school fees, for their children thus containing them in school and minimising the early marriages.

Early marriages are also encouraged by lack of basic needs for the girls. This make them to see marriage as a solution for their problems. This makes them to be married at a very young age and this also increase the birth rate in the community at large number.

If the parents are educated about grafting of fruit trees this will enable them to sell fruits and seedlings from fruit trees thus making them generate income which will be used to paying school fees, satisfy everything thus making all the youths be continued in school hence reducing early marriages and also reducing high birth rate in the community.

## CRIME SUCH AS THEFTS.

After touring the society around our school, we also discovered that the surrounding society crime ratio is very high. This has been caused by insecurity in the society. The people living around their society they have no knowledge about grafting fruit trees most of the planted they grow without grafted where by they take long to grow.

And through our project on grafting, we find that their problems can be solved easily. If people around the society could be educated more about grafting fruit trees, they could stop fruit thefts and increase the fruit produce.

After grafting the fruits they produce from the fruit trees they will much be able to sell them and generate income. Income generated they can use to improve their living standards in buying clothings, buying food, lowering thefts around their societies and educating their children.

### SEXUAL IMMORALITY.

Through the oral interview conducted it was also made known to us that the issue of sexual immorality is common in the society. This has been caused by high rate of school dropout and low living standard. This has led to high death rate when people suffer from sexual transmitted disease such as gonorrhea, Syphilis, HIV and AIDS.

Through the knowledge of grafting fruit trees the people in the society will learn to generate income through legal means. This is by selling grafted seedlings and produced fruits. The generated income will allow the people in the society to get their basic needs without engaging in sexual immorality.

## Local Agricultural Produce.

When we visited the community around our school, we conducted some oral interviews. We discovered that the Agricultural produce in the society is very low. This has led to food shortage of the community.

We also found out that if the people are educated about fruit trees, they would be able to sell the grafted seedlings and produce fruits by fruit trees. The income generated can be used to buy food and sustain their families.

## Poor Health Generally.

Generally, people in the surrounding society suffer from poor health. This is because of poor living standards such that most of them do not afford a balanced diet. This has led to reduced or low human labour.

Through the knowledge of grafting fruit trees, the society can generate income through seedlings of the grafted seedling and grafted fruits. People will be able to keep hygiene and eat balanced diet and buy medicines for the sick people.

Group discussion and presentation and presentation was done in group of four.

### Group Number 2.

Rael	Mwikali	Kioko	18307307009
Phedelma	Mueni	Mwendwa	18307307015
Peresia	Kanza	Mutuku	18307307005
Stacy	Mthenya	Muanda	18307307024

Low living Standards

Low agricultural produce

Malnutrition of the children and hygiene.

Lack of Employment.

Poor health Generally

Poor roads.

High death rate.

High birth rate.

Deforestation

Scarcity of water

Idleness

Early marriages

High rates of school dropouts

Crimes such as thefts

Soil conservation

Sexual immorality

After discussing on our project of grafting avocados, some of the problems we encountered are listed above which I have discussed in the previous pages.

We choose Avocado (*Persea americana*)

## Group project identification.

We identified our project in a group of four as illustrated below.

GROUP 2.		PROJECT	
No:	MEMBERS.	Index.	
1.	Rael Mwikali Kioko	18307307009	Project 1
2.	Phedelma Mueni Mwendwa	18307307015	Project 2
3.	Teresia Kanza Mutuku	18307307005	Project 3
4.	Stacy Nthenya Muendo	18307307024	Project 4

## PROJECT IMPLEMENTATION.

Grafting is a technique of uniting two woody parts of different plants for continued growth as one plant.

The plant is cut into two pieces where one part provide the base and has a rooting system whereas the other part is obtained from another plant.

The part with the rooting system is root stock and the part which is grafted into the root stock is known as scion.

The scion has buds which develop into the future plant.

A successful union between the scion and the root stock is known as compatibility.

There was an older man who was invited by the school to show us on how to graft. Then we grafted on our own individually.

We used two methods of grafting to graft the plant which were; whip or Tongue grafting where we used the scion and the root stock of the same diameter.

A slanting cut is made using a sterilised scalpel on the scion and top of the stock.

The two separate parts were fitted together and wrapped with a grafting polythene strip.

### Side grafting

Where the stock had a large diameter than the scion, I ke cut the stock using a sterilised scalpel. I ke inserted into the side of the stock. I ke wrapped the fitted parts using a polythene strip.

problem and project identification - 30 mks

group discussion and presentation - 32 mks

Group project poster = 4 mks.

Project implementation - 14 mks

Reporting progress - 19

Project report - 18.