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FACULTY OF PLANTATION AND AGRO-TECHNOLOGY

AGR232 : PLANT PROPAGATION

PRACTICAL REPORT

PART 3

TITLE

BUDDING AND GRAFTING

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INTRODUCTION

Grafting and budding are horticultural techniques used to join parts from two or more plants so that they appear to grow as a single plant. In grafting, the upper part (scion) of one plant grows on the root system (rootstock) of another plant. In the budding process, a bud is taken from one plant and grown on another.

Although budding is considered a modern art and science, grafting is not new. The practice of grafting can be traced back 4,000 years to ancient China and Mesopotamia. As early as 2000 years ago, people recognized the incompatibility problems that may occur when grafting olives and other fruiting trees.

Since grafting and budding are asexual or vegetative methods of propagation, the new plant that grows from the scion or bud will be exactly like the plant it came from. These methods of plant reproduction are usually chosen because cutting from the desired plant root poorly. Also, these methods give the plant a certain characteristic of the rootstock, for examples, hardiness, drought tolerance, or disease resistance. Since both methods require extensive knowledge of nursery crop species and their compatibility, grafting and budding are two techniques that are usually practiced only by more experienced nursery operators.

OBJECTIVE

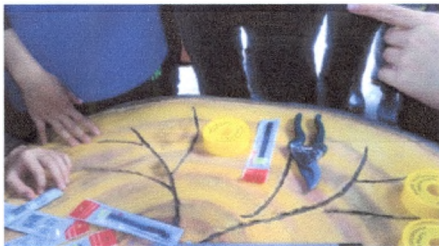
1. To change varieties or cultivars.
2. Optimize cross-pollination and pollination.
3. Produce certain plant forms
4. To repair damaged plants
5. Increase the growth rate of seedling.

MATERIAL

Scateurs, cutter, rootstock, scion and PVC tape.

PROCEDURE OF GRAFTING

1. In this grafting, we were use BungaKertas (*Voburgenvilla*) trees to combine another flower that was same species but different colour to produce are new variety colour of flower.
2. Firstly, we were cleavedthe rootstock. By using a sharp knife, we were cut to go down from the diameter on top of the rootstock about one inches.
3. Then, we were make a long wedge at scion's base. This wedge is long and tapering to a point, about one inches long total. The two faces of the wedge should not be parallel to each other, but rather on a slight angle to create a fatter non-face side and a thinner non-face side. This will better fit into the cleft.
4. Next, we were insert the scions the full depth of their wedge bottom. We were insert the scion where the cleft intersects with the ring of cambium. This ring is located just inside the bark of the rootstock and scion.
5. Lastly, we were wrapping the join part tightly by using a PVC tape to let it attach together.



The material was prepared.



Split the stub into 2 with 1 cm depth



Insert the scion into the rootstock.



Wrap the plant with the PVC tape.

PROCEDURE OF BUDDING

1. In this budding method, we also use the same flower which are BungaKertas(*Voburgenvilla*)trees.
2. Firstly ,we were prepared the scion by creating about 1 inches long wedge at the budstick's bottom. By using a sharp knife, we were making the straight faces of the wedge.
3. Next, we were creating a cleft in the rootstock by using the sharp knife, driving it in one inch deep at a 20-30 degree angle from the trunk or brunch. Then, we were removed the bark from the rootstock.
4. After that, we were inserted the scion. We were inserting the wedge of the scion all the way into the cleft, matching the flat sides for maximal contact between rootstock and scion.
5. Lastly, we werewrapped the join part by using PVC tape with tightly close that part.



The bark was removed from the below part of scion.



Remove the bark at the rootstock.



Insert the scion into the rootstock.



Wrap the plant with PVC tape

RESULT



After 21 days, the budding method also shows the same results with grafting method where the plants is died.

DISCUSSION

Based on the results, both of this method of propagation was not successful. This may cause by the mistaken during this method process. Not only that, the plant tissue of scion maybe left too long and it will cause the plant tissue become infected. Besides, the wrapping tape that has been used to combine the scion and rootstock is not suitable. Because the wrap that we use to combine the plant is PVC tape. In addition, in grafting method the part of the scion must be covering with transparent plastic to prevent any water-losses.

To prevent this problem from happening, we should ensure that the plant tissue are not infected with germs which means do not left the plant tissue exposed too long. Besides, use a right technique to do budding and grafting method. Next, use a *Nescofilm* wrap because it is a suitable one to combine the plant tissue and it was transparent. It makes it easier for us to know whether the propagation method is successful or not.