



**FACULTY OF PLANTATION AND AGROTECHNOLOGY**

**DIPLOMA IN PLANTING INDUSTRY MANAGEMENT**

**SUBJECT CODE: PLANT PROPAGATION (AGR 232)**

**PROJECT REPORT: GRAFTING (CLEFT GRAFTING)**

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## **INTRODUCTION:**

Grafting describes any of a number of techniques in which a section of a stem with leaf buds is inserted into the stock of a tree. Grafting is useful however, for more than reproduction of an original cultivar. It is also used to repair injured fruit trees or for topworking an established tree to one or more different cultivars. Nurseries often use the budding method to produce fruit trees . Asphalt grafting compound is applied to a completed whip graft to prevent wood tissues from drying out.

Young, vigorous trees up to 5 years old are best for topworking. 3 vigor and their strong, well-placed branches, are very good understocks. Young trees should have 1 to 2 feet of branch between the trunk and the graft. Otherwise the good crotch formation of the understock will be lost by the trunk expanding past the union. Trees up to 5 years old can be grafted at one time. On older trees about half – the upper and center part only – should be worked at one time. The remainder should be worked a year later.

The scion is essentially creating the tree you want to produce . This selection is often based mainly on the aesthetics of the tree . This is a small branch taken from a desirable parent tree , which has the qualities you seek to replicate. This is taken the day of the grafting , collected from the dormant parent. Put these cuttings in a labeled plastic bag and in the cooler. The scions should be tied securely, carefully labeled and placed in moist (not wet) sawdust or moss or wrapped in plastic material. They should be kept in a cool, moist place where they will remain fresh.

## OBJECTIVES:

- i. To impart disease resistance or hardiness , contributed by the rootstock .
- ii. To shorten the time taken to first production of flower by the scion.
- iii. To combine two or more colour of flower on one plant (rootstock) .

## TOOLS:

Cutter knife , secateur , white tape (plumber's tape)



## MATERIALS:

*Bougainvillea glabra* , *Bougainvillea spectabilis* and bougainvillea 'Pink and White Surprise' .



## PROCEDURES:

1. An established, healthy pink bougainvillea plant was selected for the rootstock and a young stem of white bougainvillea plant chosen as the budstick.
2. Leaves and flowers were removed from the shoots stem. The bottom part of the shoots was sharpened like a screwdriver using a sharp cutter knife so that the two flat surfaces of the shoots came in contact with cut surface of the stock plant.
3. For the stock plant, the upper portion of the branch was cut off using secateur and leaves on that area were removed.
4. Then, a clean and straight cut about 1 inch was made at the center of the stock branch and the shoots stem was inserted carefully into the cleft of the stock .
5. The cut area was wrapped tightly from the center to the either end using white tape (plumber's tape) to protect it from desiccation.



Cleft grafting

## **CONCLUSION:**

The cleft grafting was one of the easiest grafting method and its success rate was high. However, to make a successful grafting, proper care must be done. Immediately after the grafting operation is completed, all cut surfaces must be protected from desiccation using grafting tape. Proper techniques should be applied during the grafting process. For example, knife that used for grafting must be sharp.

## **REFERENCES:**

- i. <https://content.ces.ncsu.edu/grafting-and-budding-nursery-crop-plants>
- ii. <https://www.maximumyield.com/definition/58/grafting>
- iii. <https://www.purdue.edu/vegetablegrafting>