Epicotyl/ Stone Grafting In Mango

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INTRODUCTION

Grafting is the process of joining two separate plant parts so that they will unite and continue to grow as a single plant. Epicotyl grafting is a special type of grafting mostly practiced in mango propagation. It is also called stone grafting because mango stones are used as propagation material to produce rootstocks. By this method mango seedlings can be grown quickly and cheaply at home producing good quality fruit than the other propagation techniques.

Fig: Epicotyl grafted mango plant

REQUIREMENTS

- Stone grafting can be done in the early summer, at the time when wild mangoes are ripe and the tips of the branches have new red shoots.
- Stone grafting nursery can be made at home on a small plot to grow just a few plants, or on a big plot with 2-300 plants.
- One square meter of nursery bed can contain about 100 plants.
- For this a well shaded spot is needed, protected from livestock, and easy to visit for care and maintenance.
- If possible, there should be good fruiting mango trees nearby from which to take scion for grafting.
- Materials needed to do stone grafting
 - ✓ Good fruiting variety of mango (mother tree)
 - ✓ Large polythene (4 inch diameter).
 - ✓ Cutting tool
 - ✓ Razor blade or grafting knife
 - ✓ Local wild mango seeds.
 - ✓ Thin plastic sheet to wrap the graftage.
 - ✓ Secateurs.

Cutting tool

Razor Blade

Secateurs

Plastic sheet

Fig: Different tools used for the Stone grafting

METHOD OF GRAFTING

1. Planting the seed
 - Fill the poly-pot with fertile soil
 - Collect ripe seed from healthy, disease free wild local mango trees.
 - Sow the seed in the poly-pot and cover with the soil.

Fig: Seed sowing in poly-pots

2. Preparing the Scion
 - Go to the mother tree and select branches for scions. If the branch has red sprouting tips, then it is suitable to use as a scion.
 - Now trim off the leaves around the tip for a length of about 6 inches, but don't trim the tip itself.

Fig: Selection of Mother stock plant

3. Cutting the Scion
 - After 7 days return to the mother tree to collect the scion.
 - Using secateurs or a sharp tool, cut the branch 6 inches from the red tip. As soon as it has been cut, put the scion in a glass of water. This is because it is very soft and will otherwise dry out quickly.

Fig: Cutting of Scion from mother plant

4. Grafting the scion to the rootstock
 - By this time, the seedlings growing from the local, wild mango seed should be 12-14 days old. Their leaves and stem should be soft and red, like the scion on the mother tree.

Fig: Selection and Preparation of Rootstock

Fig: Grafting and Wrapping of graft union with thin plastic

Fig: Keeping Grafts on Poly tunnel for maintaining temperature

Care for the seedling after stone grafting

- The seedling should not be touched or moved.
- The seedling needs lots of water. However, water cannot be given from above because the falling water will shake the seedling and the graft can break. Therefore, water should be given from the bottom by pouring it into the trench where the poly-pots are placed.
- The seedlings need to be kept in a moist environment.
- So cover the nursery with plastic and bury the edges, like in the hot bed nursery, so no air can get in. Only open when watering.

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REFERENCES

The Farmers' Handbook - "Near The House 2", Booklet 14 - Stone Grafting