EPICOTYL GRAFTING IN CASHEW

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In epicotyl grafting, also known as stone grafting or bench grafting, the epicotyl of the very tender seedling is used as root stock for grafting. This method has been successfully used to propagate superior mango varieties on a commercial scale, particularly in the Konkan region of the West Coast of India during monsoon when the high precipitation combined with high humidity prevail.

Epicotyl grafting on cashew has been carried out at Central Plantation Crops Research Institute, Santhigodu gram in Dakshina Kannada, Karnataka to propagate high yielding cashew trees with encouraging result.

Cashew seednuts are sown in plastic containers to obtain root stocks for grafting. It would be necessary to sow seeds at weekly intervals in order to get continuous supply of root stocks for grafting. The seeds usually commence sprouting within 15-20 days. They make an elongation of growth of 8-10 cm within 10-15 days after germination. These mini root stocks are used for epicotyl grafting.

Epicotyl grafting is done by adopting two methods. In the first method, the tender shoot is sliced off in a slanting manner, 4-5 cm away from the cotylidons and a corresponding cut is made on the scion to match the cambial layers of both the stock and the scion, for union to take place. The joint is wrapped with a plastic ribbon and kept in shade for further healing. This method is akin to simple whip grafting.

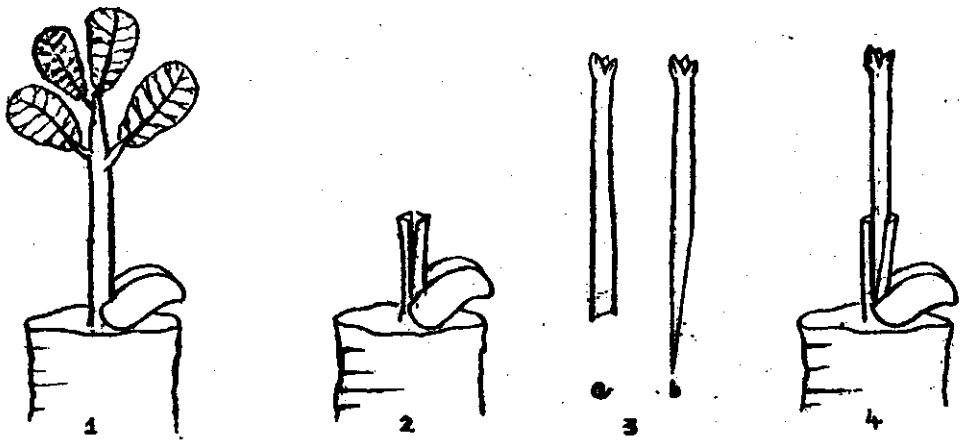
In the second method, a transverse cut is given 4-5 cm above the cotylidons and a cleft is made in the middle of the root stock with a sharp knife. The scion is trimmed to a wedge shape giving slanting cuts on either side and carefully driven into the cleft. On matching the cambial layers of both the stock and the scion, the joint is wrapped with a plastic ribbon for union to take place.

In either case of grafting, dormant terminal shoots of previous season's growth are chosen as scion material. Two scion shoots selected for grafting are procured about a week before grafting by cutting off the leaf blades leaving behind the stubs of petiole.

The successful grafts are to be resort in polybags of size 30×20 cm filled with two parts of compost and one part each of soil and sand for further nourishment.

In the initial trials, a maximum success of 30 per cent was obtained in July in both the methods.

A modification in the technique of grafting has given success upto 60 per cent from June to November months. The modification adopted is to protect the scion from desiccation by capping the scion with a narrow polythene bag and securing it at the base with a rubber band.



1. *Stock plant (10-15 days after germination of seed)*
2. *Transverse cut and split given to stock. plant.*
3. *(a) Scion with dormant terminal shoot*
   (b) Scion bottom trimmed to a wedg shape
4. *Scion inserted into stock.S*

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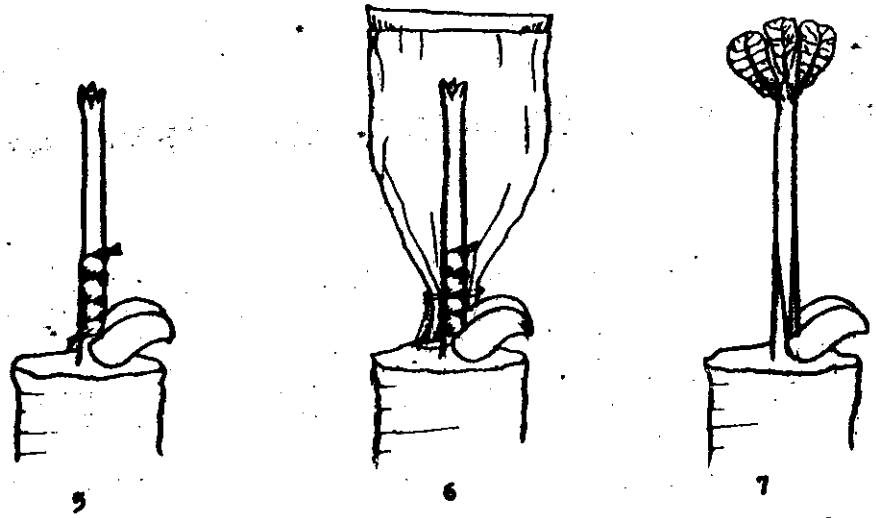

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5. Bandaged

6. Polythene bag slipped over joint to avoid desiccation

7. Epicotyl grafted cashew plant

A trial planting of epicotyl grafts done in November gave cent per cent stand in the field. The two year old grafts started flowering in the current season (October, 1981) and no incompatibility between the stocks and the scion has been observed so far.

The technique of juvenile grafting % tried with jack, yet another species not easily aminable for vegetative propagation gave 80 per cent success.

The advantages of epicotyl grafting are: (1) it ensures quick multiplication in a given time within an unit area of space. Unlike in any other method of grafting/budding where the time lag would be anywhere from 6-8 months to produce a graft of a planting size, (2) epicotyl grafting can be practised indoors during heavy rainy season, (3) it works out economical for large scale multiplication, and (4) the cleft method of grafting is found easier for large scale multiplication of cashew by vegetative means.