MULTIPLICATION OF APRICOT

Horticulture Division

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Propagation techniques in Apricot

Apricot, the major fruit crop of Ladakh, is being grown in the region since ages. It has excellent capability to tolerate ultra low temperatures (-25°C) in winter and grows successfully even in sandy and rocky soils where limited irrigation is available. Besides its use for table purpose, apricot is consumed after drying. It can also be used in processing industry for production of jam, jelly, leather, squash, juices, etc. sweet kernel is used as dry fruit and bitter varieties are used for extraction of oil.

Availability of genuine planting material is a major problem for the expansion of apricot cultivation in Ladakh. The State Department of Horticulture imports only apple plants from Himachal Pradesh and Srinagar which are airlifted to Ladakh since transport by road is restricted in winter months. The time gap between procurement (Jan-Feb) and planting (Mar - Apr) affects survival of plants (25-30 %) which hinders success of this enterprise. The only viable solution to overcome such problems is propagation of fruit plants locally. This will not only reduce the cost of plants but also improve their establishment in the field. Keeping in view the above, the institute has developed various methods of vegetative propagation of apricot for the region which is being discussed in brief.

Raising of rootstock:
Rootstock is the lower portion of a grafted/bedded plant which provide root system to the tree. In many fruit crops rootstock is effectively being used for vigour control, tolerance of biotic stress, fruit quality control, etc. However, such investigation has not been done for apricot. Apricot is generally grafted and budded on seedling rootstocks, raised by sowing apricot seeds. One Kg apricot seeds contain approximately 700-800 No. seeds. Freshly harvested seeds are collected and soaked in water for 8-10 days in the end of February so that the hard seed coat becomes soft. Thereafter, seeds are stratified by putting them between layers of sand in a box / container which is kept in shade and water is applied regularly to keep it sufficiently moist. 25-30 days after stratification the seed
breaks its dormancy and starts sprouting. These should be lifted from the box and sown in well prepared nursery beds at a distance of 30 X 15 cm. In Ladakh first fortnight of April is ideal for sowing of stratified apricot seeds for raising rootstock. The nursery bed should be given light irrigation to keep soil moist till germination of seedlings. After germination normal cultural practices are adopted for raising of healthy rootstocks. In a properly managed nursery approximately 70-80 % stratified seeds germinate and 55-60 % attains the graftable diameter of pencil thickness by the month of November of the same year. These rootstocks can be used for budding or grafting for commercial propagation of apricot.

**Grafting:**
Apricot can be propagated successfully in Ladakh by adopting tongue/cleft method of grafting in the month of February which may result in 90 % success under open field conditions. However, due to acute shortage of graftable scions sticks, this method cannot be practiced on a commercial scale in the region.

**Budding:**
Budding as a method of propagation has an advantage over grafting for the Ladakh region since it requires a single bud per plant. Also this can be performed during summer as well as winter months. In summer shield method of budding has been found to be suitable. When performed in the month of July, it gives about 85 % success. However, due to availability of short growing periods for buds (70-80 days) and summer being the main working season for farmers in the region, this method has limited scope for commercial multiplication.

Studies conducted at DIHAR revealed that chip budding in apricot can be performed under Ladakh conditions. The budding operation can be done in the month of mid February to mid March which results in 85.5% success.
The free winter months can be utilized by the farmers for budding operation and a longer growing period of 5-6 months is available resulting in superior growth.

**Top working:**
A large number of mature apricot seedling trees are already available in the region which has a well established root system. However, they produce very poor quality, small sized non-edible fruits. Such established healthy trees can be converted to productive ones by top working with promising cultivars. For this, old plants are headed back during March leaving 50 cm stub of side branches from where new shoots can arise. Ten shoots on each tree projecting from the outer periphery should be thinned out. After the shoots attain proper thickness desirable apricot cultivars can be budded in mid June or early July by adopting shield budding. This generally results in 90-94 % success. Provision of orchard on a tree can also be made by budding different cultivars on different shoots of the same tree. This is the ideal technology for converting mature unproductive plants into productive ones.

**Precautions:**
Only 1-2 year old pencil thick smooth sticks should be selected for scion. Budding /grafting should be done only on rootstock having proper thickness. Thin or over mature /old rootstock should not be used. Budding /grafting operation should be done at least 15-20 cm above the ground level. Sharp knife/ secateurs should be used for budding/grafting operation. Scion material should be properly fixed with rootstock. Scion should be tightly tied with polythene strip with rootstock and space should be kept for sprouting of buds. No sprout should be allowed to grow from the rootstock other than the scion bud. Polythene strip should be cut with sharp blade, only after development of proper scion union. Plants should be uprooted at least 6-8 months after budding/grafting.

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