

# Apple

## Propagation

### Grafting

Apples are propagated by several methods viz.; whip, tongue, cleft and roots grafting. Tongue and cleft grafting at 10-15 cm above the collar during February-March gives the best results. Usually grafting is done at the end of winter.

### Budding

Apples are mostly propagated by shield budding, which gives a high percentage of success. In shield budding a single bud along with a shield piece of stem is cut along with the scion and inserted beneath the rind of the rootstock through a 'T' shaped incision during active growth period. Budding is done when the buds are fully formed during summer. The optimum time of budding is September in Kashmir Valley, Kumaon hills of Uttaranchal, high hills of Himachal Pradesh and June in mid hills of Himachal Pradesh.

### Rootstocks

Most of the apple plants are grafted or budded on seedling of wild crab apple. The seedling rootstocks obtained from the seeds of diploid cultivars like Golden Delicious, Yellow Newton, Wealthy, Macintosh and Granny Smith also can be used. High density planting is done using dwarfing rootstocks (M9, M4, M7 and M106).