

PICTORIAL GUIDE TO TOP-GRAFTING AN ORCHARD

Top-grafting is the process of changing a tree from one cultivar to another by means of grafting. It is done in the spring, shortly before new growth starts. The exact time depends upon the method to be used. For example, the cleft graft is performed before the bark is slipping; the bark graft is done when the bark is slipping, but before the buds of the stock begin to grow. There are a number of advantages to top-grafting an established orchard compared to pulling out the trees and planting a new orchard at the same site with young, nursery trees. These include a shorter time for trees to come into bearing, avoidance of replant problems, and the advantage of an already established root system. However, the trees that are selected to be top-grafted need to be 'healthy' and in a site that has no problems such as poor drainage. Also, please remember that any cultivar which is patented requires propagation agreements.

The following are the steps that were taken to top-graft an 18 year-old apple orchard (using a cleft graft) at the University of Vermont Horticultural Research Center, South Burlington, VT. This orchard is part of a USDA Integrated Organic Program project and will be managed using organically-accepted methods. Please note that there are other options or other techniques that can be used to top-graft an orchard. This publication is solely intended to be a pictorial presentation of some of the techniques available to you.

Orchard Preparation

- "Topping" with a Chainsaw



Trees Ready For Grafting

- Tree cut to ~30 inches
- Cut above good nurse limb
- Nurse limb(s) retained



Stock Preparation

- Making the Split
- Clean 'cleft' made with axe and hammer



- Opening the cleft
- Cleft opened with Clark grafting tool



Scion Preparation

- Sample Scions
- Clean, one-year wood
- About pencil thickness



- Scion Trimming
- Wedge-shaped cut
- Tapered in two dimensions
- Pie-slice



Making the Graft

- Scion Insertion
- Line Up Cambium
- Tapped in with mallet for good contact



- Finished, before waxing
- Tight fit
- Cambium lined up
- First bud on scion lined up with edge of graft



- Waxing
- Pliable, easy-working wax (Gashell's Grafting Wax)
- Complete coverage of cut surface and cleft with wax



- Seal tips of scions with balls of wax

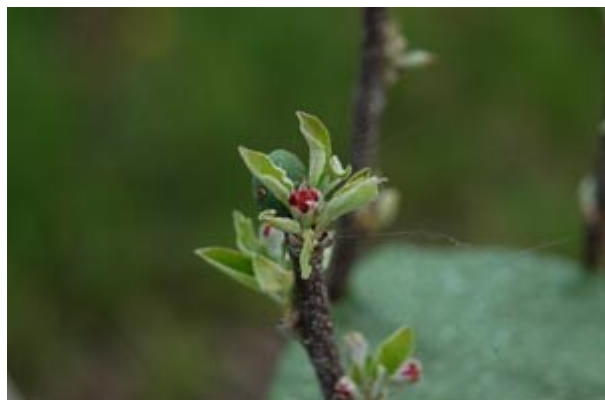


The Final Graft



Grafting Care

- Bud opening
- The opening of the buds on the grafted scions may take awhile - PATIENCE is required.
- Pinch off any developing flowers in any blossom clusters that may develop on the grafted scions, being careful not to damage the bud so that a vegetative shoot (bourse shoot) will develop. [Do not want any fruit to develop on the grafted scions during the first growing season.]



- Summer Pruning
 - Nurse limb trimmed back
 - Shoots below graft on trunk removed



- Shoot Support
- Vigorously growing shoots tied to existing support pole



Leaf Analysis

- It is important to continue to do both leaf analysis (collecting leaves pictured here) and soil analysis



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