

## Grafting Workshop Handout - basic and essential principles & information

### Why graft?

1. A way to quickly increase the number of fruit trees of a given variety
2. Topworking is a way to change the variety of an older tree
3. Used also to grow a cultivar on roots that are more adapted to the region

### Supplies:

- 1) A very **sharp knife** - a utility knife (new blade) and a very sharp pocket knife will work.
- 2) Cut resistant **gloves** to protect your fingers & hand. Gloves should not be too rigid. Not absolutely essential – just a good safety measure!
- 3) **Grafting sealer** - Traditional wax or 'Treekote' grafting emulsion. Wax is heated and painted on, but don't get it too hot. The emulsion paints on cold. I will just discuss the emulsion method.
- 4) 'Parafilm' **Grafting and budding tape**. A 1/2" wide stretchy polyethylene wrap to bind the two pieces together. When the union enlarges, the tape breaks apart.
- 5) **First aid kit** - This is essential since there is some risk involved with the sharp knife
- 6) **Chisel, hammer & large slot head screwdriver** - for splitting a small stump to make a cleft graft
- 7) **Label making** material - a) permanent 'Sharpie' pen - this will last for a few months, best for writing on plastic storage bags, not in the yard. b) Aluminum or copper tags that can be bought or made yourself. Etch or indent the metal with the name.
- 8) **Aluminum foil** - to reflect the sunlight, not always required.
- 9) **Plastic bags** for scion storage. Use Ziplock or the cheap one gallon 'Bread & Food' plastic bags.

### Basic and very Important Principles:

- 1) Always practice **safe knife handling**. The most hazardous part of this activity is making the 'tongue cut on the 'whip and tongue' grafts. Cut away from yourself, consider where the knife will go if and when it slips - Think ahead.
- 2) **Scion collection time** - Gather scion wood in late February or early March. This can actually be done after dormancy from November through early March.
- 3) **Scion size** - Gather scion pieces that are close in size to the rootstock. Size should be in the range of 3/16 to 3/8" and 5 to 8 inches long.
- 4) Properly **label the scion** wood. Keep varieties separated in different plastic bags and mark with a Sharpie. Keep scion oriented in the same direction.
- 5) **Scion storage** - Store in a closed plastic bag. A slightly damp strip of newspaper will help keep them from drying out. Too much moisture will cause mold and rot. Store in the refrigerator, do not freeze.
- 6) **Time to graft** - Graft in mid-April when sap starts flowing. Don't do it much earlier than early April and not much latter than mid April. Graft persimmon in late April or early May
- 7) Making **straight and clean cuts** is essential. The angle of the cut needs to be close to the same on both pieces. The two parts must match well. Take time to practice the cuts -
- 8) Keep both the **scion wood moist** before cutting and after cutting - in a small cup of water. Also keep the freshly cut rootstock moist with a small damp cloth until the pieces are united, especially on warm sunny days.
- 9) Another absolutely essential item is the accurate **matching** of parts. Not only are the two pieces supposed to be the same size & angle, you need to match the cambium layers. This is your key to success. If the two pieces don't match in size or it is not cut right - start over or your time will have been wasted.
- 10) Another essential element is **compatibility** of the scion and rootstock. The best rule is to graft like species. There are mixed species combinations that will work, but I will not address them.
- 11) **Orientation** - Don't forget which way is up on your scion wood - it won't work if it is upside down.
- 12) **Sealing the union** - Once the pieces are matched, wrap snugly with the 'parafilm' tape. Then seal the entire area with wax or the emulsion.
- 13) **Label** your newly grafted trees and draw a yard map for your files.
- 14) Larger grafts may benefit from being wrapped with **aluminum foil** to reflect the heat that might dry

out the scion and union. Remove it in a month.

15) You will likely notice some growth in about 4 weeks, give or take. Within two months you will likely notice that the wrapping and wax/emulsion will start to break way. This is normal and should actually be pulled away.

### **Planning ahead for your project:**

- 1) This process happens once a year, so plan ahead by gathering supplies, determining your purpose, etc.
- 2) You can order seedling rootstock and if it is big enough material, you can graft it that first spring or wait a year and graft. The whip and tongue graft works well.
- 3) You can do top or tip grafting - changing part or all of a larger tree using whip and tongue or other methods such as cleft grafting.
- 4) You can also graft onto a freshly cut stump. If you discovered that your seedling persimmons were males or inedible females after 5 years, cut the top off and do a cleft graft on the stump.
- 5) Make sure you collect scion wood when it is dormant
- 6) You can plan way in advance and plant your own seedling stock. It might take 2 to three years before you can graft depending on the variety.
- 7) Identify trees or ask folks about good and available trees for scion collection.

### **Grafting types discussed-**

- 1) cleft
- 2) whip and tongue
- 3) There are a large variety of grafts that are suited for different purposes. The two discussed above will take care of most of your fruit tree needs.

**Grafting resources** - (there is a lot of information available online - these are just a few of the many)

Missouri Extension - Grafting (excellent) <http://extension.missouri.edu/xplor/agguides/hort/g06971.htm>

CRFG elements of Grafting - <http://www.kalron.com/kalstor/pub/crfg/grafting-basics.htm>

Notes on Ancient Grafting by Arthur Stanley Pease (interesting ancient history) - [http://penelope.uchicago.edu/Thayer/E/Roman/Texts/secondary/journals/TAPA/64/Ancient\\_Grafting\\*.html](http://penelope.uchicago.edu/Thayer/E/Roman/Texts/secondary/journals/TAPA/64/Ancient_Grafting*.html)

Home Orchard Society by Todd Kennedy (basic info and compatibility chart) - <http://www.homeorchardsociety.org/article/41/>

Mr Citrus - Whip and Tongue graft (good pictures) <http://members.fortunecity.com/pjsauber/WhipTongue.htm>

Cass County Extension (good basic information) - <http://www.ext.nodak.edu/county/cass/horticulture/fruit/graft.htm>

**Material Sources** – (There are many sources – these are just a few)

Fedco - <http://www.fedcoseeds.com/>

Wilson Orchard and Vineyard Supply - [http://www.wilsonirr.com/catalog\\_c161254.html](http://www.wilsonirr.com/catalog_c161254.html)

Raintree – [www.raintreenursery.com](http://www.raintreenursery.com)

Red Rock Nursery - <http://www.redrocknursery.com/rootingsupplies.htm>

Parafilm Grafting Tape - <http://www.2spi.com/catalog/supp/parafilm-grafting.shtml>