


GRAFT NG

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Getting Started...Tools



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Before we start we need sharp shears, sharpening stone, sharp grafting knife and grafting tape. In case we do not have grafting tape available, electrical tape is suitable alternative.



Material for Grafting



Scion-wood = one-year-old wood / water sprouts are good scion-wood material




Scion-wood prepared for storage and/or shipping

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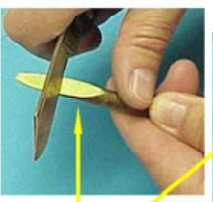
One-year-old wood 1/4" to 3/8" in diameter is collected during dormant season...during winter pruning from December-January through March or before the bud break. Water sprouts work well...they have good vigor, good length and are straight. Leave them a bit longer since we will have to cut off about 2" from either side in order to eliminate potentially dried ends before cutting desirable length for grafting. Wood need to be wrapped into moist (but not soggy) paper towels or burlap and placed into perforated plastic bag (perforations are there to allow for air exchange and prevent molding). Prepared "package" is placed in the fridge and/or cooler at the temperatures above freezing @ 34-36^o F to be kept until use in May. If you are keeping the scion-wood in the refrigerator make sure you do not have fruit or vegetables that would emit ethylene...ethylene will induce bud break.



The same cut should be made on scion-wood and on the rootstock. Position knife at @ 30⁰ angle to the shoot and make a smooth cut in one motion. The cut should be 1-2" long.




Whip and Tongue Grafting ...continuing



“Scion-wood”





“Stock” – could be a rootstock
or another variety grafted over –
“top-worked”

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About 1/3 to 1/2 from the end of the cut, make a cut forming a “tongue” on the scion-wood and on the rootstock. “Tongue” will help two pieces of wood to latch to each other and insure good cambium overlay and nice and strong union.



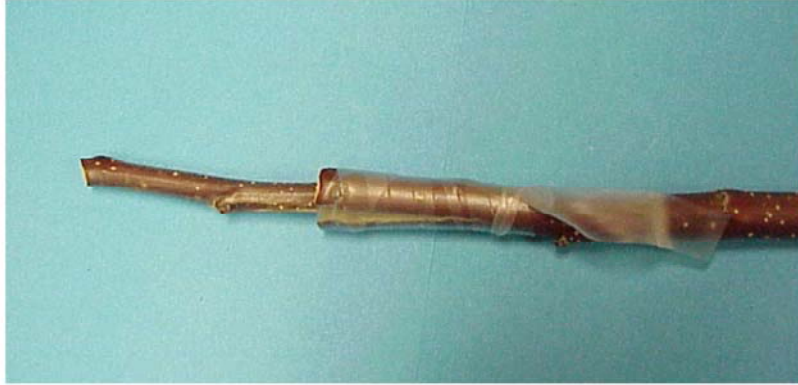
This type of grafting is used when the scion-wood is smaller diameter than the stock...either rootstock or the lateral branch.

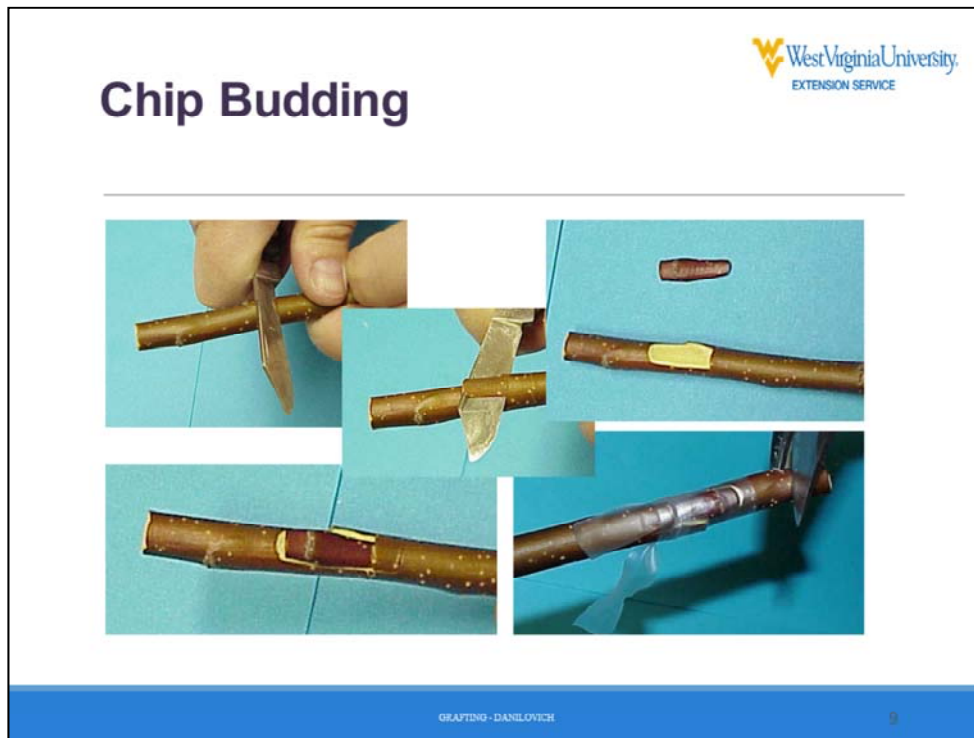
Make a cut into the “stock” that would have “V” profile on a cross-sectional cut. The cut should be about 2” long. Make beveled cuts on the scion-wood to fit the profile on the “stock”. Cambium must be perfectly aligned to insure healing and strong union. Wrap the graft with grafting tape or with electrical tape and cover with grafting compound. As the graft heals (“take”) it will start growing and expanding breaking the tape.



This is one of the most popular cleft types of grafting. “Stock” is from 3/8” to 3” in diameter. Make a cut through the center of the “stock”...if the diameter is larger it might be necessary to use mallet to drive the knife through to the depth of 1-2”. Make beveled cut on scion-wood and align the cambium...wrap the union tightly and cover with grafting compound to prevent cambium from drying out. Leave 2-3 buds on the stick. Make a cut just above the bud and away from the bud to prevent “choking” the bud with the oozing sap.

Finished Cleft Graft





This type of grafting is done in summer. Cut a chip from the scion-wood carrying a bud about $\frac{1}{2}$ to $\frac{3}{4}$ " long. Make a matching cut on the "stock" extending the cut at the bottom to create a "pocket" that will act as a "holder" and a "break" for the "chip" once is placed on the stock. Wrap the tape very firm just above and below the bud going "looser" over the bud. Tape will create "green house" effect and help healing. It takes about five weeks for it to heal. After the fifth week cut the tape (very carefully) on the opposite side of the bud and gently peel it away. Bud will stay there until next spring when it will "break" and develop a shoot.



T – Budding



July-August



Following spring

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T-budding is similar to chip budding. Difference being that you pool just the bud and very minute piece of wood with it. “Stock” is prepared by making a “T” cut on it and pooling bark flaps aside. Bud is inserted in the pocket and flaps are pooled back covering the bark on either side of the bud. Use grafting tape to fasten the sides and keep bud in place. Make sure you do not go over the bud with a firm and too tight cover so you do not injure or break off the bud. Tape should stay there for 4-5 weeks. During that time bud should heal completely and create a strong bond with the stock. Come back after 5 weeks and make a cut on the back side/opposite to the bud with razor and gently remove the tape. Bud will not “move” until next spring when it will break and start developing new shoot.

200-year old pear scion donor for a graft



Grafting

Hawthorn-Plovdiv, Bulgaria



Plums-Hart, MI



Graft union

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Bridge Grafting



Mira Danilovich

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This type of grafting is used to save the trees that came out of the winter with severe rodent damage. If the trees are girdled they will die. Bridge grafting is a process to reestablish the interrupted sap flow. The injured section needs to be cleaned and rough edges “evened out”. Sometimes the injury goes below the soil line. If that is the case, a few days before the grafting procedure soil should be removed from around the base of the tree to allow for that part of the tree to warm up and speed up the sap flow thus insure better graft union. Scion-wood is placed every 3-4” around the trunk. Slits 2” or so are cut into the bark and the flaps are peeled away to accommodate scion wood placement. Scion-wood is wedge-shaped and 1-2” long. Once the scion-wood is inserted, the flaps are peeled over, fastened with tack nails and covered with grafting compound. In a few weeks the graft will heal re-establishing the normal sap flow. In time these bridges will grow and close the gap between them.