Ampol Orrungroj Teaches Grafting

A combined volume containing Plumeria and Fruit Tree Grafting

Photography and text by Dawn Sullivan

Ampol Orrungroj Teaches Plumeria Grafting

An Illustrated Lesson with the Grafting Master

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SUPPLIES **4**

WHEN TO GRAFT **4**

PREPARING THE ROOTSTOCK **5**

PREPARING THE CUTTING **10**

SHAPING THE ROOTSTOCK **12**

SHAPING THE CUTTING **21**

ASSEMBLING THE GRAFT **26**

WRAPPING IT UP **34**

WAIT FOR IT **36**

Supplies

- ½ inch black electrical tape
    - Get “the cheap stuff” since it has the right amount of tension and adhesion
    - Available at Home Depot or Harbor Freight
- 2 mil clear plastic bags
    - 18x24 for smaller cuttings
    - Available from Uline
- Grafting knife
    - “Tina” brand is best
- Rubbing alcohol
- Cotton balls
- Twist ties
- Ball head straight pins
- Sharpie pen
- Cutting
- Rootstock
- 2 bamboo stakes
- Metal name tag
- Scissors
- 1 paper towel
- Sharpening stone

When to graft

Grafting should be done after the nighttime temperature is consistently above 50 degrees Fahrenheit.

Preparing the rootstock

Insert a bamboo stake near the base of the rootstock.

Cut the stake to be approximately 5 inches below the graft site.

Tape the stake to the rootstock for stability.

Make sure your pruning knife is sharp. Use rubbing alcohol on a cotton ball to sterilize the knife blade.

Use your pruning knife to cut the rootstock using a flat horizontal cut. Make additional slices as needed to straighten and smooth the cut.

Preparing the cutting

Horizontally slice the cutting at the point where you want the tip of the graft to be.

Measure the cutting against the rootstock to get the best possible fit. Shorten the cutting's length if needed to match size.

Shaping the rootstock

Starting between the cambium and the bark, slowly and deliberately slice one side to the V in the rootstock. Use a single stroke and wiggle the knife down. Do not make multiple cuts.

The side will open up slightly as you cut.

Curve in to shape the V.

One side completed.

Turn the rootstock 180 degrees and make the matching cut on the opposite side. This really helps keep the cuts even.

Remove the rootstock plug.

Completed V in the rootstock.

Shaping the cutting

Shape the cutting using slow and deliberate continuous thin slices. The motion is similar to peeling the skin off a cucumber.

Make paper-thin slices using long continuous strokes. The surface should be straight and smooth. Jagged sides are a no-no.

Making smooth sides takes lots of patience and practice. Try practicing on carrots until you are comfortable with the motion.

Rotate the cutting 180 degrees and do the same on this side. Check frequently against the V in the rootstock.

If you've cut the cutting too thin, slice off a small horizontal section from the bottom and re-cut the sides.

Assembling the graft

Insert the cutting into the rootstock. There should be a 100% fit on both sides of the cutting. Use a Sharpie to mark where the rootstock ends on the cutting. Trim off any excess rootstock that extends beyond the exposed cutting surface.

Select 2 pins and pin the graft in place.

Carefully trim any excess on the sides.

The graft is now ready to be taped using the black electrical tape.

Starting below the V, wind the tape up around the graft. The tape should hold firmly but be stretched out to compress the graft together.

Avoid taping the pins. You will remove them once you've taped over the graft.

Remove the pins and tape over the pinholes.

Fold over the end of the tape, leaving a small handle for removal in 30 days.

Wrapping it up

Insert a bamboo stake in the pot next to the grafted plant.
Use a ballpoint pen to mark the metal tag with the cultivar name and grafting date. Attach the tag to the plant.

Cut an air hole in the plastic bag.
Place the plastic bag over the plant. The bamboo stake will hold the bag open.
Fold the paper towel into an approximately 2x4 rectangle. Wet the paper towel so that it's damp but not soaking.
Place the paper towel inside the bag at the bottom. Make sure it's lying on the plastic and not against the plant.
Gather the plastic bag around the bottom of the plant and tie shut with twist ties.

Wait for it

Keep the plant in a warm location with filtered light. If you need to keep it in direct sun, cover the plastic with a brown paper bag.
Remove the plastic bag in 15 days.
Remove the black electrical tape in 30 days.
Do not water until new growth appears.

A fully healed graft is shown above.

An inverted V graft is an advanced option, usually used when the cutting is larger in diameter than the rootstock.

Ampol Orrungroj
Teaches
Fruit Tree (Hardwood) Grafting

An Illustrated Lesson with the Grafting Master

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Table of Contents

MATCHING ROOTSTOCK AND SCION 3

SUPPLIES 4

WHEN TO GRAFT 6

SHARPENING THE GRAFTING KNIFE 6

PREPARING THE SCION TO BE GRAFTED 7

SHAPING THE SCION 8

WRAPPING THE SCION 17

PREPARING THE ROOTSTOCK 19

WRAPPING IT UP 29

Matching rootstock and scion

Rootstock and scion must be the same species.

Species Prunus

- Apricot
  - Low chill requirement makes it suitable to Southern California
- Cherry
  - There are two low chill cherry varieties (Minnie Royal and Royal Lee) that will fruit in Southern California. Both are needed for successful pollination.
- Peach
- Pluot
- Plum
  - A recommended combination is Green Gage + Santa Rosa

Species Malus

- Apples
  - Low chill varieties are needed in Southern California. Grafting 2-3 varieties onto a single rootstock improves pollination. Be sure to check for compatible blooming cycles in the varieties. Some varieties which do well in Southern California include:
    - Anna
    - Beverly Hill
    - Fuji
    - Queen Cox Pippin (self fertile)
    - Winter Banana

Species Citrus

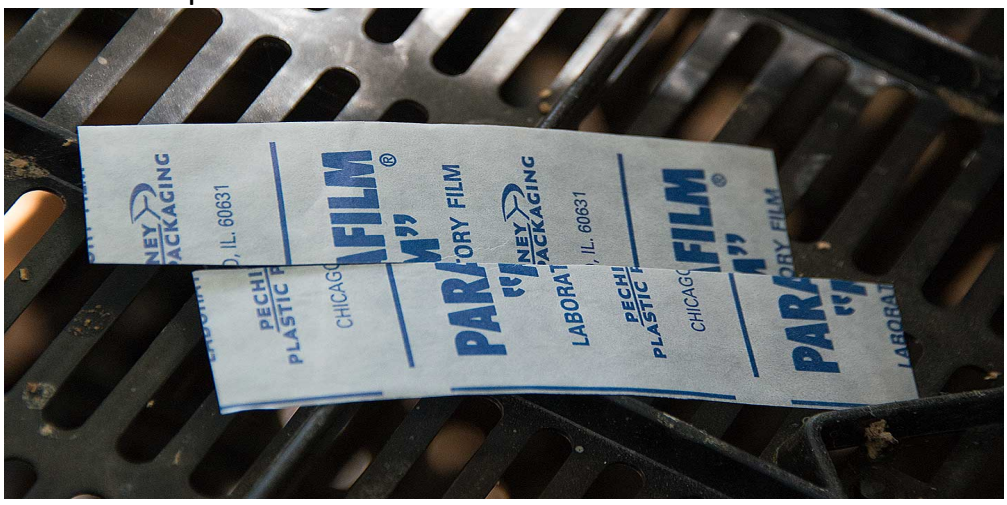
- Citron
  - Citron does not tolerate cold or freeze. Move it to a protected area in winter.
- Kefir Lime
- Kumquat
- Lemon
- Lime

- Limequat
- Mandarin
- Mandarinquat

Supplies

- Ballpoint pen
- Cotton balls (not cosmetic puffs)
- Freshly sharpened grafting knife

  - “Tina” brand is best
- Metal name tag
- 1 Paper bag
- Parafilm strips cut to ¾” x 4”



  - Available online at medical supply sites

- Rootstock
- Rubber grafting bands

  - Available online
- 91% Rubbing alcohol

- Scion cutting
- Scissors
- Sharpening stone
- Twist ties

When to graft

Grafting should be done after the nighttime temperature is consistently above 50 degrees Fahrenheit.

Sharpening the grafting knife

Fruit trees are hard wood, so a freshly sharpened grafting knife is extremely important. Completely sharpening the knife takes approximately 5 minutes and requires the patience to sharpen only a little bit at a time. Lay the blade flat against the sharpening stone. Raise the knife to a tiny angle. Press down on the blade with your index finger as you slide the blade across the sharpening stone. Examine and gently test the blade. Repeat until the blade is sharp.

Use 91% rubbing alcohol on a cotton ball to sterilize the knife blade prior to the first cut. Be sure not to touch the knife blade with your fingers so bacteria won't transfer from your hands to the plant.

Preparing the Scion to be grafted

Cut a 6” long scion, starting below the green wood. Remove all leaves. You will want to cut several practice pieces until you feel comfortable with the shaping technique.

Shaping the Scion

Be sure to turn the scion so that you shape the bottom end, which will be called the “graft end”. Hold the scion in one hand as shown. Starting approximately 1” from the graft end, angle the knife slightly and use a smooth single slashing motion to make the first cut.

Sterilize the knife after each cut!

Use a single smooth motion all the way to the tip.

Be careful not to touch the exposed wood with your fingers.

Turn the scion 180 degrees and make the second cut on the graft end. Use the same slashing motion to shape the graft end with small incremental changes.

Above is a side view after the first two cuts.

Make subsequent cuts to shape the end into a point.

The side facing into the rootstock will be narrower than the side facing out.

The outward facing side is shown above.

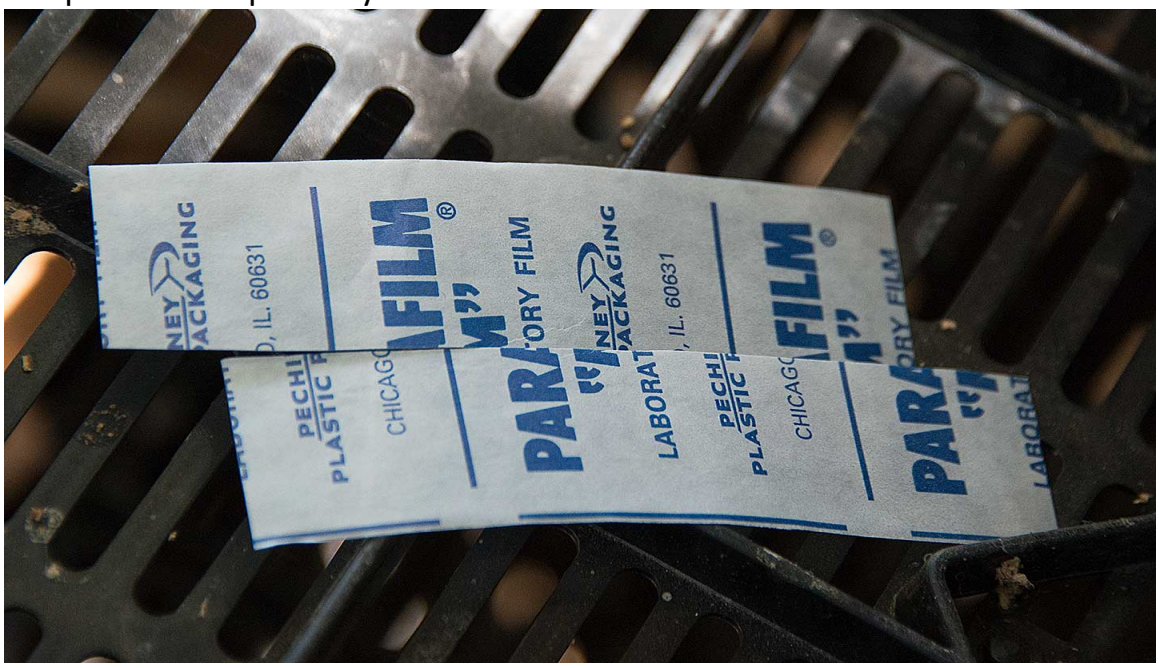
Above is another view of the inward facing side.

← Cambium

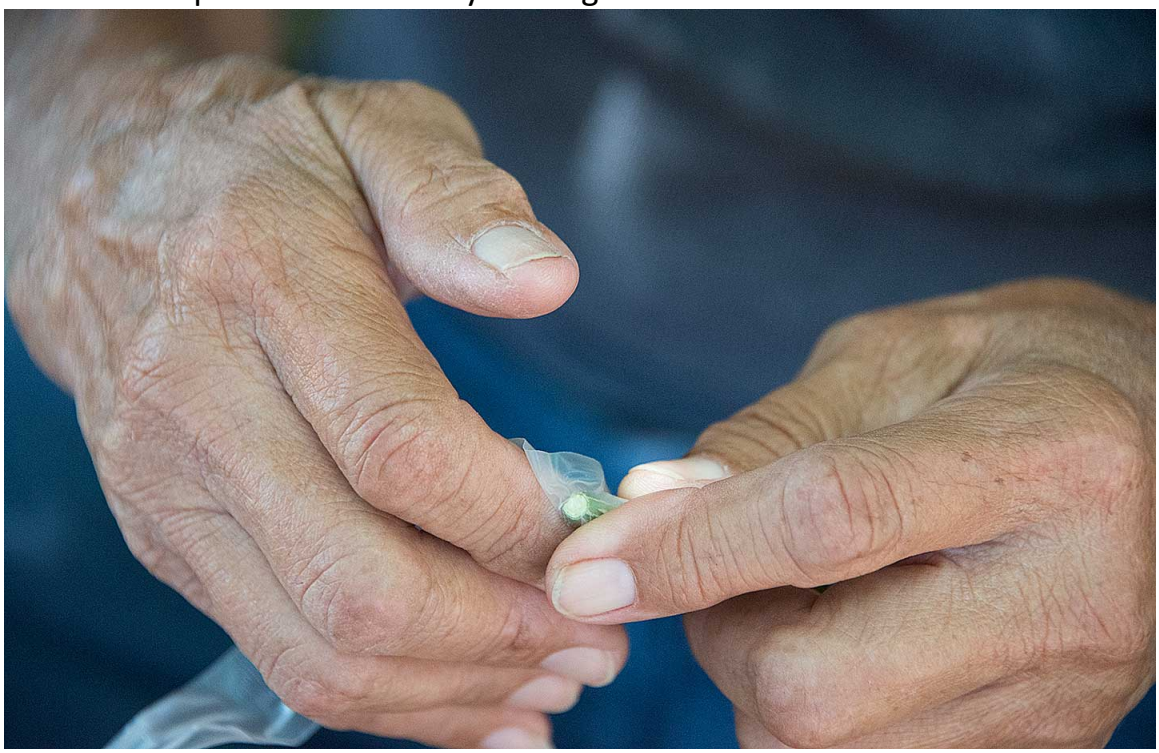
Above is a view of the cambium, which must be aligned with the rootstock's cambium.

Wrapping the Scion

Cut parafilm strips ¾” by 4”.



Peel off the paper backing. Stretch the parafilm as you cover the exposed top (non-graft) end of the scion to keep in the moisture. Be careful not to touch the exposed wood with your fingers.



Continue to stretch the parafilm as you wrap the scion, stopping just short of the shaped end.

Preparing the rootstock

Cut the rootstock at green wood where the diameter most closely matches the diameter of the scion.

Remove all leaves from the rootstock branch with the graft. Remove almost all leaves from the rest of the rootstock. This will force nutrients into the graft site.

Use a clean grafting knife to trim the graft site into a flat surface.

Cutting using a slashing motion causes fewer traumas to the plant.

Determine the direction the scion will face for a good growth shape.

Place the knife across the center of the rootstock and tap the handle of a hammer against the knife to make a single straight slice in the rootstock.

Continue making small taps of the hammer against the knife until the cut is longer than the exposed wood on the scion. Do not wiggle the knife and do not make multiple cuts.

Insert the scion’s graft end into the cut. This will require pressure (almost a shove.)

Aligning the cambium is the most critical step in grafting.

Check the contact of the cambium. The scion and rootstock must match cambiums for the graft to be successful. Check both sides of the graft to ensure there are no gaps.

Above is a view of a properly attached graft.

Wrapping It Up

← Start wrapping here

Wrap the rootstock with parafilm, starting at least 1” below the bottom of the graft and working up. **Be careful not to move the graft.**

Cover the top of the graft site with parafilm. Continue wrapping until it overlaps with the film previously applied to the scion.

← Completely wrapped with parafilm.

← Start wrapping here

Hold the parafilm in place by wrapping tightly with rubber grafting bands.

← Tie off by tucking the end under.

Use regular scissors to cut notches in the sides of the brown paper bag. This allows air circulation.

Carefully cover the graft site completely with the paper bag and tie at the bottom with a twist tie. Leave the graft covered for **20 - 30 days**. Full sun exposure is ok during that time. Provide water as normal.

After 30 days, remove the bag and the rubber grafting strips. **Do not** remove the parafilm because it will allow the graft site to dry out and die. The plant will grow through the parafilm.

The scion may already have leaves when you remove the bag. Continue to pinch off leaves from the rootstock on that branch.

Congratulations! Enjoy your multi-fruit tree.