

Grafting Heirloom Tomatoes onto Disease-Resistant Rootstocks

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Why graft heirloom tomatoes?

Heirloom tomato varieties can have superior flavor and/or interesting shapes and colors. However, they generally lack resistance to common plant pathogens present in the soil. In California, soil borne diseases often include root knot nematodes, Fusarium wilt, and Verticillium wilt. Many modern varieties are resistant to these diseases (and others), but may not have the taste or visual appeal of heirlooms. Grafting the heirloom onto a modern disease resistant variety provides a way to successfully grow heirloom tomatoes in disease-affected soils.

List of Materials Needed

- Heirloom tomato plants
- Disease-resistant tomato plants
- Zip-loc sandwich bags
- Parafilm grafting tape, (½" W)
- Single edge razor blades
- A small jar of water
- Paper towels
- Pot stakes
- Marker pen

Choosing Which Plants To Use

Choose the heirloom variety or varieties that you are interested in growing. Select a healthy plant that is at least 6" tall (1). This is the 'scion'. Choose a disease-resistant variety that grows well in your area to use as a rootstock. A few popular varieties with multiple disease resistance include: Celebrity, Beefsteak, and Better Boy. Select a robust plant of about the same size as the heirloom. Water both sets of plants prior to grafting.

Steps.

1. Using a new razor blade, cut straight across the stem of the heirloom variety about 4" below the growing point (2). Remove the large leaves from the top part of the scion, leaving just the growing point, one or two immature leaves, and the stem (3). (The bottom part of the heirloom can be saved and should generate new shoots for more grafting.)
2. On a wet paper towel over a flat surface, cut the bottom inch or so of stem into a "V" shaped wedge by making two angled cuts with the razor blade on opposite sides of the stem (4). Hold the scion with one hand and with the other make a diagonal cut down one side of the stem, starting about 1 ½ inches from the bottom. To avoid injury, cut away from the hand holding the scion. Flip the stem over and make a similar diagonal cut on the opposite side. The "V" wedge should taper down to a thin point (5). Place the cut stem in water (6).
3. Cut off the top of the rootstock below the first true leaf, where the stem is about the same width as the scion above. Discard the top and save the bottom.
4. Cut straight downward through the middle of the stem for ½ - 1" (7). The cut (cleft) should extend for about the same distance as the V-shaped part on the scion.
5. Insert the scion stem into the cleft (8). Trim the scion, if needed, so that it does not stick out either side of the cleft. Push it down until it fits snugly into place.
6. Wrap the graft joint with grafting tape by stretching the tape around the stem and wrapping several times so that the area of the cut is completely covered by tape (9, 10).

7. Cover the top with a Ziploc bag, flatten the bag to expel most of the air, and seal the Ziploc so that the stem is in the middle (11).
8. Write the name of the scion, the rootstock and the date on a pot label.
9. Keep the plant in a warm area, away from direct sunlight. Do not allow the soil to dry.
10. After 7 days, open the Ziploc bag, but leave it in place;
11. After another 2-3 days, remove the bag completely; if the top starts wilting, place the bag back on and wait a few more days. If the plant remains turgid (does not wilt) with the bag off, move it to full sun.
12. As the plant grows, break off any side shoots from the rootstock.
13. Once the graft looks fully healed and strong, transplant to the garden.

