Training & Pruning Tomatoes

Tomatoes thrive in the protected conditions of a high tunnel. Well trained and well pruned tomatoes are easy to work around, have better air circulation, optimum light penetration, and have higher yields since excess foliage is removed to focus plant energy on producing and ripening fruit. If left untrained, tomatoes will quickly form a tangled mess that is difficult to maneuver through and harvest, and problems can go unnoticed until they are too late to stop.

A well-managed planting allows room for the grower to move down the aisles for harvesting, training, and scouting to catch any pest and disease problems early. See another publication in this series, '*Optimal Spacing for High Tunnel Tomatoes*' for specifics on spacing between the plants and diagrams for laying out the rows in tunnels.
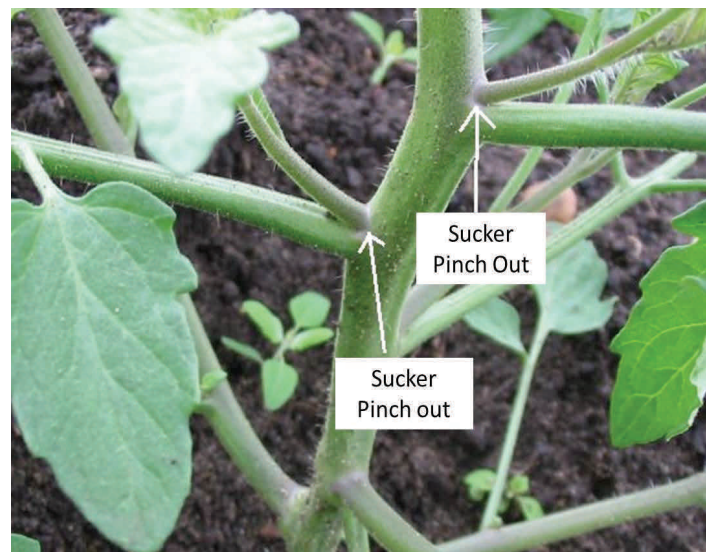
There are two key types of tomatoes based on their growth habit called determinate and indeterminate, and they are managed differently.

- **Determinate** tomatoes grow to about 4 feet high and produce most of their fruit in a few weeks, although they will continue to bear some until frost. They have a bushy habit and do best with support along their sides to hold the plant upright.
- **Indeterminate** tomatoes keep growing and bearing as long as conditions stay warm enough. They are essentially a vine and produce the most fruit when carefully pruned and trained vertically.

All tomatoes produce suckers above every leaf. Left unpruned, each sucker will grow into a shoot with leaves and fruit. If every sucker remains, all those shoots, leaves and fruit compete with each other for food, light and water. By limiting the number of suckers and leaves, plant energy is directed to the remaining shoots for optimum yield and quality. It is best to remove suckers while still small to direct plant energy upward.

As tomatoes grow taller their lower leaves become unnecessary. Removing the lower leaves allows for better air circulation for less disease pressure. The pruning methods described on pages 2-3 will explain how many lower leaves to remove.

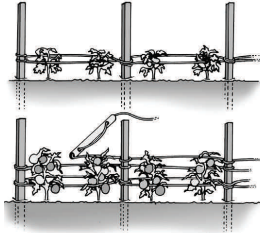# Training and Pruning Determinate Tomatoes
(ex. Red Bounty, Red Deuce*, Celebrity, Primo Red*, Volante)

* leaf mold resistant variety

Training Determinates

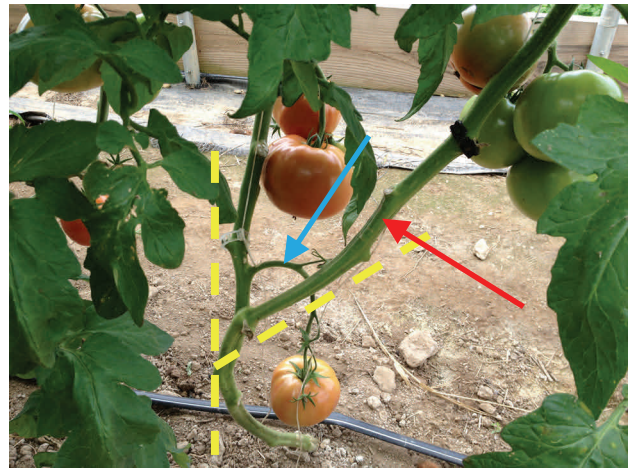### Provide <u>horizontal</u> support

1. Set the plants at the proper spacing
2. Set a 5' stake into the ground between every 2 plants (see diagram)
3. Weave the twine around and between each plant in a Figure 8 pattern, starting at 8" from the ground and repeating every 6-8" as the plants grow. The plants will grow to about 4' tall so continue adding twine to provide even support for the plants.
4. This is called the basket weave, the Florida weave, and/or the stake and weave system.

Pruning Determinates

The Strong Y (see photo, right)

1. Remove the leaves up to the first flower cluster (blue arrow).
2. Leave the sucker just under the first flower cluster (red arrow) and remove all suckers below that point.
3. The stem should now look like the letter 'Y' (yellow dotted line in Figure A).
4. No more pruning is required. Experienced growers will do some thinning through the season but newer growers should focus on training by adding more rows of twine as the plants grow.

Tip: Removing Lower Leaves

A handy method of removing leaves is to first bend the leaf upwards and then downwards. Listen for a soft 'snap' with each movement. If the leaves only bend and do not snap, use a sharp knife to cut them off close to the stem.

Snapping is preferred to cutting so the leaf can separate at its natural point of attachment. Use caution to not tear off the leaves which may leave a ragged stump or tear that will be slow to heal over. A clean snap will seal off quickly.

The photo (right) shows bare stems with plenty of air circulation and no leaves touching the ground.
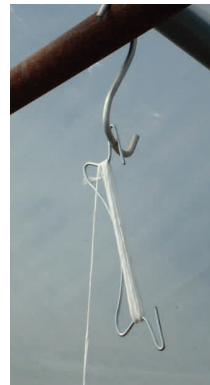
Training and Pruning Indeterminate Tomatoes
(ex. Arbason, Big Beef, Geronimo*, most Heirlooms, Panzer*, Rebelski*)

* leaf mold resistant variety

Training Indeterminates

Provide <u>vertical</u> support

1. Decide on 1 or 2 leaders per plant.
   Heirlooms and grafted plants do best with 2 leaders, newer growers find 2 leaders easier to manage. Hybrids do well as a single leader.
2. Set the plants at the proper spacing.
   Allow 24" in-row spacing between each leader.
3. Drop a line down from the overhead support, 1 line for each leader.
4. Use a tomato clip to fasten the line below the first leaves, add clips every 6-12" up the stem. Be sure the clip holds the line in its hinge.
5. Ensure the structure can bear the weight of the crop without bending the frame.
6. Consider running the lines from a spool so the plants can be lowered as they grow to facilitate harvesting. Several models are available.

Pruning Indeterminates

1. For a single leader, remove all suckers and all leaves below the first flower cluster. The result is one long vine-like leader with no side shoots.
2. For a double leader, establish **The Strong Y** as described on page 2. Each arm of the Y will become a leader, 2 leaders per plant.
3. Maintain the leaders throughout the entire growing season by continually pruning off all suckers that form. This will need to be done at least weekly, especially during the first 6 weeks.
4. Continue removing lower leaves as each fruit cluster is harvested. Remove leaves gradually, a few each week, rather than too many at once.
5. When using a spool, lower the vines as the lowest fruit clusters are harvested; this brings the ripening fruit down to a level easier to reach for harvesting and pruning. The vines will bend as they are lowered.

Additional Tips

Suckering
- When pinching out suckers, the earlier they are removed, the better. Once the suckers are thicker than a pencil they will leave a large wound behind when removed.
- Smaller suckers are easy to pinch off with fingers, using a sideways motion; larger suckers are best removed gently with a sharp knife, using care to not damage neighboring tissue.

Suckering Indeterminates
- It takes regular maintenance to keep ahead of the suckers, especially during the first 6 weeks of growth.
- Check at least twice a week during this period to catch the suckers when small. Spending a little time on a regular basis will have much better results than a larger effort, done less often.
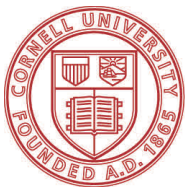
Line and Clips for Trellising
- Various types of line are available. Nylon is the most durable, natural fibers deteriorate as the weight of the crop increases. Baling twine is not suitable.
- Tomato clips come in 2 weights as well as compostable. Reviews are mixed of the compostable type in regard to durability.

Cherry-type Tomatoes

Cherry tomatoes produce rampant growth that is very difficult to control. Some growers start with a double leader system but few can maintain it through the season. Others train cherries to multiple leaders, although rigorous suckering is not practical on a large scale. Fortunately, vigor and production are usually high enough that a good yield is still achieved.

Well managed tomatoes:
Determinates on left, indeterminates on right.

Useful Websites:

Cornell High Tunnels: http://www.hort.cornell.edu/hightunnel
High Tunnels Manual – by Ted Blomgren, Tracy Frisch: http://www.uvm.edu/sustainableagriculture/hightunnels.html
Team High Tunnel Websites: http://cvp.cce.cornell.edu/greenhouse_tunnels.php
And http://enych.cce.cornell.edu/greenhouse_tunnels.php

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