



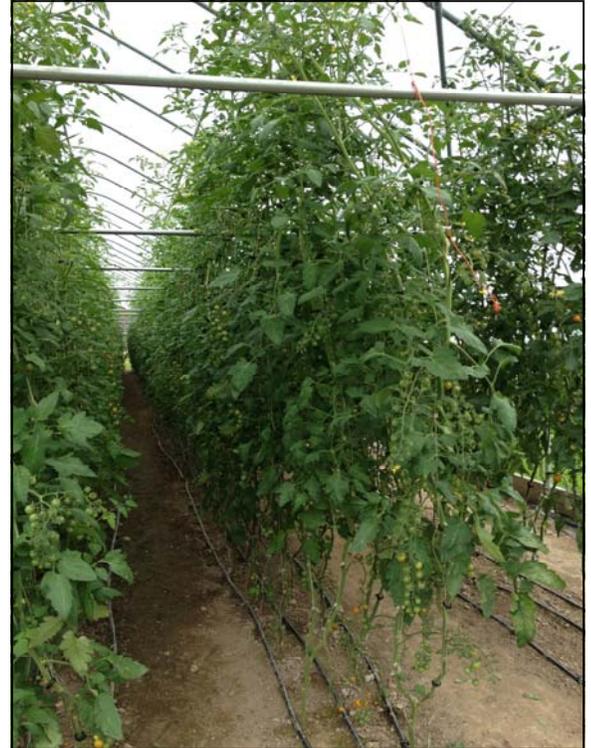
BEST MANAGEMENT PRACTICES

IN HIGH TUNNEL PRODUCTION

Cherry Tomatoes Pruning & Training

Cherry tomatoes thrive in the protected conditions of a high tunnel and are less prone to cracking where water supply is controlled. Well trained 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.

There are many types and varieties of small-fruited tomatoes. In this publication we are focused on indeterminate 'cherry' tomatoes, as compared to the larger 'slicing' tomatoes. See other publications in this series, 'Training & Pruning Tomatoes' and 'Optimal Spacing for High Tunnel Tomatoes' for specifics on managing slicing tomatoes in high tunnels. The websites listed on page 4 include these and other resources.

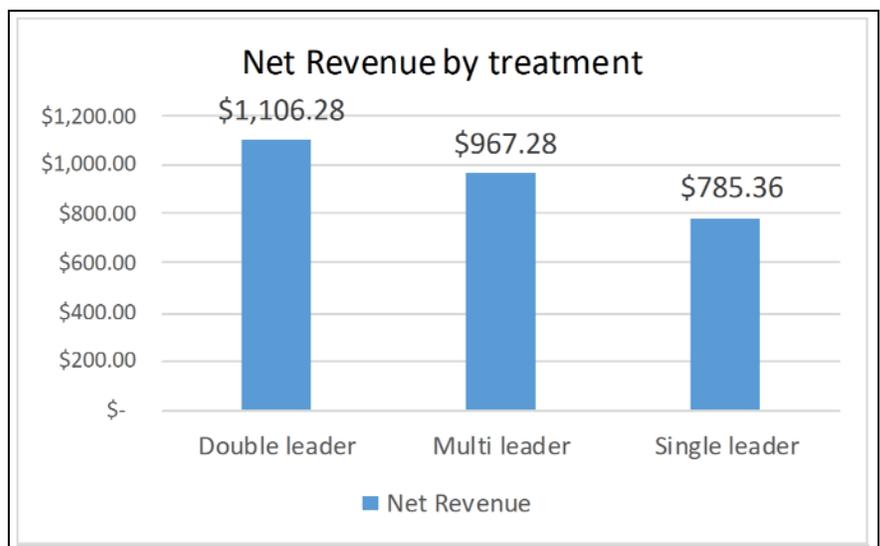


Is it worth the labor cost to prune and train? Yes!

In response to growers' questions we conducted two seasons of research, comparing three pruning/training systems: an intensively pruned single leader, a double leader and a less intensive system (dubbed multi leader) which started as a double leader and had no additional pruning once harvest began.

The double leader system proved to be optimal for yield and labor

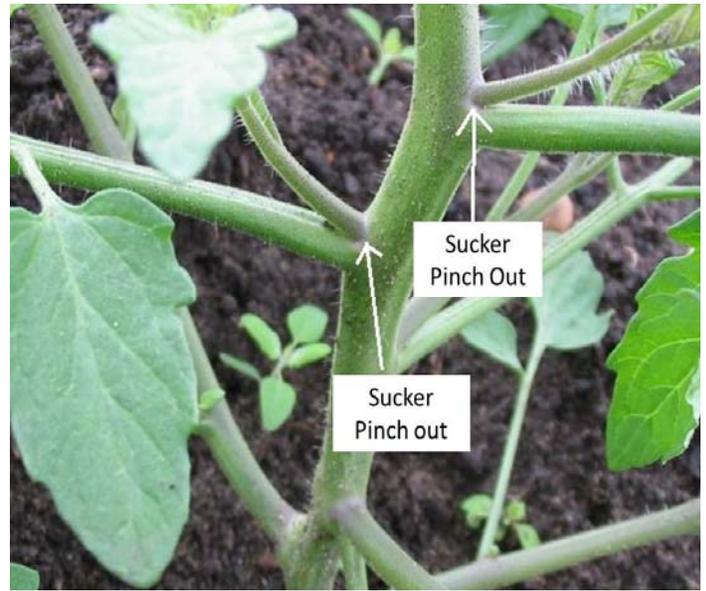
- ◆ The single leader used the least labor for pruning and harvesting but had the lowest yield
- ◆ The multi leader had a acceptable yield but took longer to harvest, reducing net profit
- ◆ The double leader was moderately efficient to harvest and had the largest yield and **largest net revenue** when labor was factored in.



How Tomatoes Grow

Cherry tomato varieties have an indeterminate growth habit. This means they keep growing and bearing as long as temperature and light allow. They are essentially a vine and produce the most fruit when carefully pruned and trained vertically.

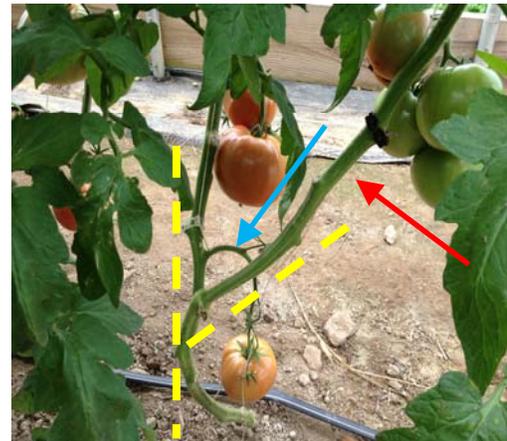
All tomatoes produce suckers above every leaf. Left unpruned, each sucker will grow into a shoot with leaves and fruit. If every sucker remains, all those shoots, leaves and fruit compete with each other for nutrition, light and water. In cherry tomatoes all these shoots become dense and tangled if left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



Pruning to the 'Strong Y'

(see photo of slicing tomato, 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).



Tip: Removing Lower Leaves

As tomatoes grow taller their lower leaves no longer contribute to plant health. Removing the lower leaves, up to the lowest fruit cluster, allows for better air circulation for less disease pressure.

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.

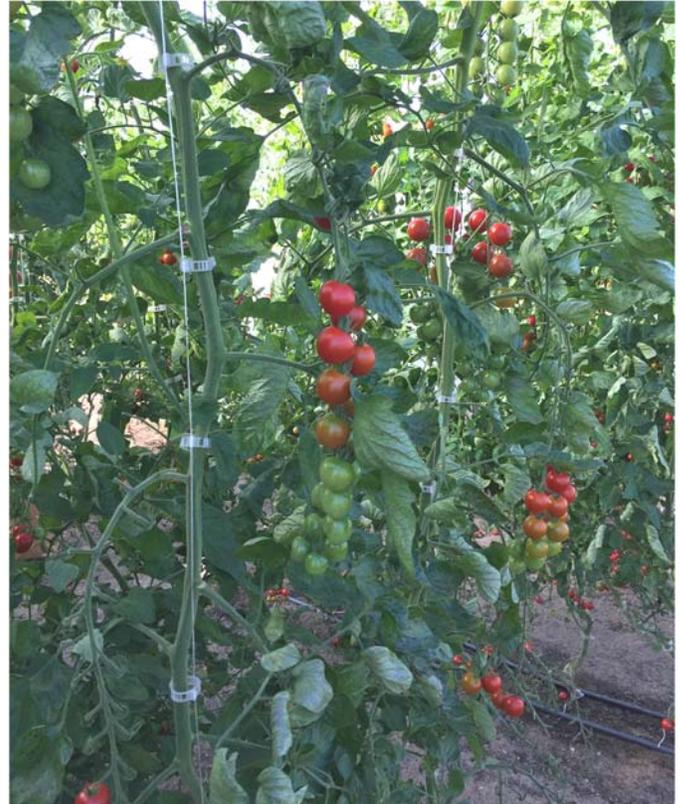
Snapping is preferred to cutting so the leaf can separate at its natural point of attachment. Use caution to not tear off the leaves which may leave a ragged stump or tear that will be slow to heal over. A clean snap will seal off quickly. And will be easier in the morning when the plants are turgid.



Training and Pruning Indeterminate Cherry Tomatoes

Training - Provide vertical support

1. Decide on 1 or 2 leaders per plant. Our research found that 2 leaders was optimal in terms of labor and yield.
2. Set the plants at the proper spacing. For cherry tomatoes allow 12" in-row spacing between each leader. This means:
 - ◆ 12" between single leader plants:
X X X X X
 - ◆ 18" between double leader plants with 2 overhead wires to spread leaders perpendicular to the row
X X X X X
 - ◆ 24" between double leader plants in a double-staggered row pattern (best use of space):
X X X X X
X X X X X
3. Drop lines 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 (see page 4 for more information about clips).



Pruning

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. This method takes the least amount of time but has a lower yield.
2. For a double leader (recommended), establish **The Strong Y** as described on page 2. Each arm of the Y will become a leader, 2 leaders per plant (see photo, right).
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, 1-2 each week, rather than too many at once.
5. If using a spool, lower the vines as the lowest fruit clusters are harvested. The vines will bend as they are lowered.



Additional Tips

Twine and Clips for Trellising

- Various types of twine 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.
- Be sure each clip holds the line in its hinge. In this way it holds the weight of the crop without sliding down the line.
- Do not place clips directly under leaves or shoots that are not yet fully formed.

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.
- 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.



Useful Websites:

Cornell High Tunnels:

<http://blogs.cornell.edu/hightunnels/>

CCE Team High Tunnel Websites:

http://cvp.cce.cornell.edu/greenhouse_tunnels.php

and

http://enych.cce.cornell.edu/greenhouse_tunnels.php

Cornell Cooperative Extension

Eastern NY Commercial Horticulture Program

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Learn more at www.nnyaqdev.org

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