

Ten tips for growers to get the most out of their greenhouses.

By Andrew Mefferd

Grafting- if you are growing tomatoes, try grafting or buying grafted plants. In our trials with grafted tomato plants in hoopouses or greenhouses, we have seen increases by as much as 30-50 percent over ungrafted plants. Results will vary, but using grafting to increase vigor and disease resistance has the ability to boost yields.

Increase planting density- your greenhouse space is precious real estate, make the most of it. One of the secrets behind high greenhouse yields is packing the plants in as tightly as possible. For fruiting crops, using double rows instead of single rows can increase the ratio of planted space to walkways. For lower crops like lettuce and greens, any way to pack the plants in tighter or reduce the number of walkways can increase the amount of yield from the same space. For example, using wider beds with higher planting density can increase planted area and crop density at the same time. Take advantage of not being rained on and use good ventilation/airflow to pack plants in tighter than is possible in the field.

Prune off old leaves- on tomatoes and eggplant, the leaves below the lowest fruit cluster are beginning to die and aren't getting that much light anyway. These leaves can be removed before they become diseased, and this will have the additional benefit of increasing airflow around the base of the crop.

Top plants 2 months before the last harvest- any tomatoes set within the last two months before the end of the crop will not have enough growing days to ripen. Topping the plants- removing the head of the plant and suckers, ending all vegetative growth- will help you get the most out of the end of your crop. All the energy that would have gone into growing more vine will go into sizing up and ripening the tomatoes that have a chance to ripen. This works well with eggplant, peppers and cucumbers, using different amounts of time before the end of the season to top the crop, based on how long it is taking to go from flower to harvest.

Use a watering timer to ensure even watering- one of the secrets to growing crack-free tomatoes is avoiding big waterings. For example, if you want to give an hour of water a day, one strategy is to give four fifteen minute waterings. This will prevent the tomatoes from swelling up with too much water at once and cracking. Even watering may even help alleviate symptoms of blossom end rot if that has been a problem. And, don't water at night unless absolutely necessary to prevent wilting. Confine watering to the time of the day when the plant is respiring and active.

Try white ground cover instead of black- in the field, black plastic is the standard to help heat up the soil under heat loving crops. In a hoopouse or greenhouse, the structure is providing your climate modification. Overheating can be the problem in the summer. Using white plastic or landscape fabric can help maintain moderate temperatures in the summertime, and also reflect light that hits the ground back up into the crop, where it can contribute to photosynthesis. If you need to suppress weeds, use white on black plastic to also block light transmission.

Use insect screens to exclude pests- covering the openings in your structure with netting can reduce or eliminate pests that are hard to deal with once they get into the greenhouse. Make sure you use a mesh small enough to exclude the pests that you are concerned with. Keep in mind that any netting will reduce airflow and may increase temperatures. Even just rolling the sides down at night will exclude tomato hornworms, which are laid by night-flying moths.

Fertigation- if not growing hydroponically, use frequent, small additions of nutrients through the water to keep the crop well fed over a long season. This also eliminates the problem of the crop being overfed at the beginning of the season and underfed at the end. One strategy is to apply half the needed fertility pre-planting, and supply the rest in regular doses throughout the growing season.

You don't need to pick tomatoes and peppers completely ripe- I think because of the reputation that tomatoes that are picked green and ripened off the vine have acquired, some growers are picking their tomatoes completely ripe. Unless the supply chain is extremely short, this may result in the tomatoes being overripe by the time they reach their destination. As long as they are mostly colored, tomatoes and peppers will reach complete ripeness without a loss of flavor or quality. You can judge for yourself- pick a tomato at a stage that is less than fully ripe, wait a few days until it is ripe and pick one ripe from the vine. Compare the flavor between the two.

Use greenhouse varieties for increased yield and disease resistance- greenhouse vegetable varieties have been selected over a period of years or even decades to perform in greenhouse environments. In some cases this may mean having specific disease resistances that are unusual in the field. In other cases it may mean simply being selected for outperforming other varieties in greenhouse settings. We all may have some field varieties that we like to grow in our greenhouses, but by and large greenhouses varieties will outperform field varieties in protected culture.i