Grafted Tomatoes

Contributed by Slim

Why graft? After multiple years of tomatoes in the same greenhouse soil, diseases are bound to build up and start causing trouble. Using a different rootstock will not only provide some disease resistance, but will increase vigour and yield as well. CPG03 tells us about his experiences with the technique.

Our standard greenhouse fruitstock (scion) is a variety called Buffalo. It is not very good in my opinion, but it’s what the customers want. You can, of course, use whatever variety you prefer. The rootstock we use is called Maxifort. The rootstock is the important part. This variety has been selected for disease-resistance and its eye-poppingly amazing vigour. I do not know about the availability of this variety in the UK, but you could try searching for tomato varieties that are bred for vigour and disease-resistance. Cherry tomato varieties fit the bill nicely.

The graft is made when the two varieties are about the same size and old enough (6-8 inches tall), by making a 35° cut upwards at the base of the scion plant. Make sure you do not cut all the way through the plant. Make the same cut, but downwards, into the side of the rootstock variety. Bring the two cut surfaces together. When finished, you want them to look like a plant with two tops, two sets of roots and a funny ‘N’ cut in the middle.

You now need to keep the plants tightly together to ensure a good graft. Homescale growers could easily come up with something, or just use an easy-to-remove tape. On our (farm) scale we use these little grafting clips.

After 5-6 days we cut the tops off the rootstock (it’s important to know which variety is on which side, but you can take off the clip and use your cuts as a guide). After another few days we remove the clips from the graft union. At this point you can cut the roots off the scion variety, if you want. We don’t, as it seems like unnecessary work for us and unnecessary stress for the plant, but it doesn’t appear to affect the disease resistance at all.

When you plant out the tomatoes, try to keep the graft union above the surface of the soil as it is a potential entryway for pathogens. The rootstock may attempt to send up shoots, so keep an eye out for them when you’re doing your normal pruning. We usually prune off all suckers, but lots of growers leave the sucker below the first fruit cluster so as to have two leaders. If you want larger fruit (our customers do), then prune your clusters down to no more than five fruits per cluster.

Greenhouse growing in general can cause some other little problems to consider. Unless you have absolutely amazing airflow, you will need to prune many, many, many more of the lower leaves than you are comfortable with. It seems crazy, but the plants are actually most productive if you keep the lower stems leaf-free as they get taller. An OK rule of thumb is to remove all the leaves below any fruit cluster that has dropped all its flowers. This will keep the plant from directing unnecessary amounts of nutrients to leaves that aren't photosynthesizing and send it to your fruit instead! The added airflow is crucial to many greenhouse operations.

These vigorous plants need plenty of support. We drop strings from the supports of the greenhouse and use plastic clips to keep the plant up on the string, though plenty of growers get by with just twisting the plants up around the string (make sure every one is twisting in the same direction or your better half may untwist the tomatoes you just twisted…). Pictures of the plastic clips can be found here.

If you are using a greenhouse to get a jump on the season you run into a few other problems. We generally provide bottom heat using a regular household water heater and black plastic piping buried about 18” below the soil level.

Because the houses are usually shut up tight to reduce heat loss, there is generally little evapo-transpiration happening at the leaves. Without that loss of water, there is little water being sucked through the plant and therefore little water entering the roots. This can mean a deficiency in K (potassium), Mg (magnesium), and sometimes Ca (calcium). The solution is venting and airflow, as you’ve obviously been providing them with good compost-rich soil in any case. The cold temperatures also mean no bees for pollination. Tomatoes are easy to pollinate as they don’t need to cross-pollinate (go from one flower to another), but the flowers do need shaking to release their pollen. The best time to do this is around noon, and on sunny days you’ll be amazed by the puffs of pollen you stir up. We have a specially-made vibrator of sorts that we touch to the flower clusters and it shakes them all quite vigorously, but I’ve seen old electric toothbrushes used to the same effect.

I think that’s about it! I hope you give it a try, if only one plant of your favorite variety on a cherry variety outdoors, as you may still be pleasantly surprised by the results. Good Luck!