

Grafting of Eggplants-Is it worth it?

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Vegetable Grafting

Grafting is a very old practice for tree fruit and is now growing rapidly in vegetable production. Grafting is the combination of a rootstock with a top portion (scion) to capture the best attributes of two varieties. Grafting is often used to add vigor, hardiness and disease resistance and is very common in hydroponic tomato greenhouses. Cucurbits are routinely grafted in Asia and Europe for field production.

Eggplant

Eggplant is a minor vegetable crop for many New York vegetable growers, but with proper water and fertilization can be grown at a profit. However eggplant suffers from one principal disease, Verticillium Wilt (*Verticillium albo-atrum*). This soilborne fungus infects many vegetable crops and can persist in the soil for 3-5 years without a host. There are not effective fungicide treatments for Verticillium Wilt. As there are tomato rootstocks with Verticillium resistance, the grafting of eggplant onto these rootstocks could be a viable management method.

In 2009 the Cornell Vegetable Program grafted Nadia eggplant onto Maxifort tomatoes. The grafts were made on seedlings at the 2-4 true-leaf stage using a top-graft approach where a 45 degree cut was made to both the scion and rootstock. These portions were then pieced together and held in place with a 2 millimeter silicon grafting clip. Grafted plants were placed immediately in a healing-chamber with 100% relative humidity and temperature of 80-84 °F for three days with no light. On day 4 the plants were placed under fluorescent lights and gradually acclimated to full sunlight on top of a greenhouse bench by day 7.

The surviving plants were transplanted into a high tunnel; disease and yield data collected. Unfortunately there was no Verticillium Wilt to measure in the crop. There were however some yield differences between grafted and ungrafted plants (see charts).



Figure 1. Eggplant grafted on Maxifort rootstock.

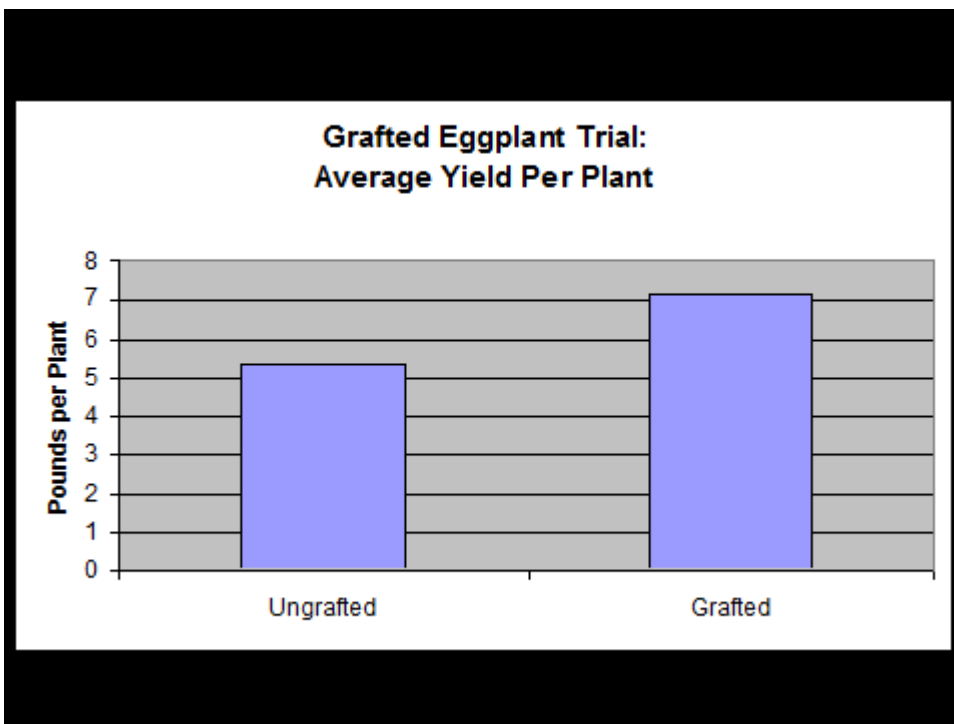


Figure 2. Grafted plants yielded slightly higher than ungrafted.

We gained about 2 fruit per plant.

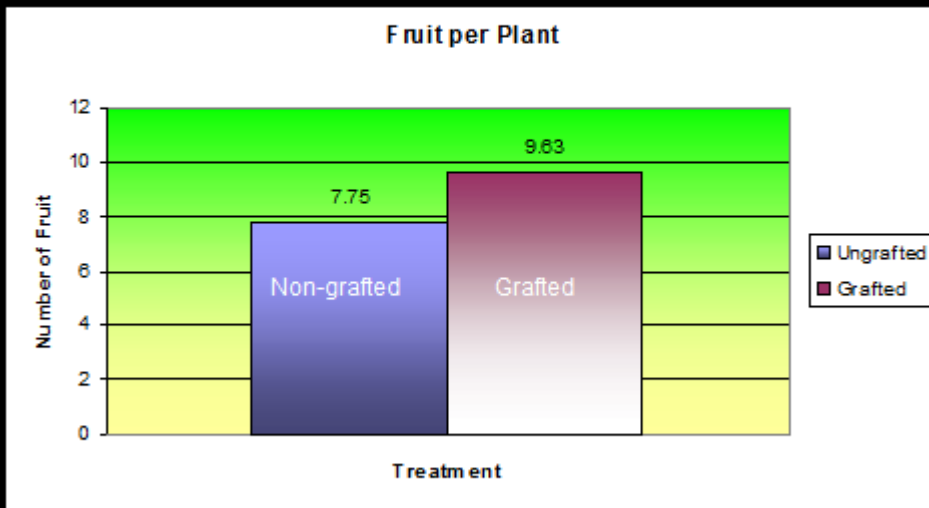


Figure 3. Slightly less than 2 additional fruit per plant on the grafted treatments.

Conclusions

We gained about 2 lbs, (or 2 fruit) per grafted plant in this project. When we look at the price of eggplant vs. the additional cost of rootstock seed, healing the grafts, and the relatively low survival rate of the grafts coming out of the chamber, it quickly became apparent that grafting was not economical, in our trial.

However, farms that have *Verticillium* levels that are restricting eggplant yields may find grafting an excellent option. Grafting has given very good returns for tomato and cucurbit growers, and may be a management tool for some eggplant growers. Yet in general, most will find that long rotations with non-host crops such as grasses; and planting a few extra row-feet of eggplant to ensure yield will be adequate management techniques with good returns.