

# Tomato Grafting

C&H PLANTS  
CHERI HAMILTON

## Grafting

Grafting is a propagation method where the tissue of two plants are fused together



## History

Grafting was thought to have started in China as early as 2000 B.C.

- Early grafting was started on trees and then progressed to vegetable crops



## Vegetable Grafting

1920's- Watermelon

1950's- Eggplants and cucumbers

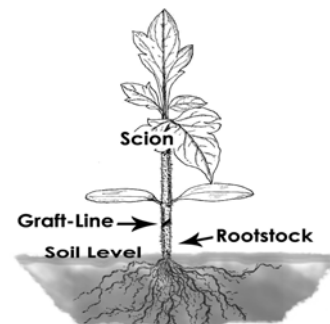
1960's- Tomatoes and peppers

In many Asian countries tomatoes are grafted onto eggplant for bacteria wilt resistant

*~Cooperative Extension- University of Arkansas*

## Positives of Grafting

- Improve Vigor
- Disease Resistant's
- Consistency in growth



## Rootstock

### Rootstock-

Refers to the bottom part of the plant that contributes roots and support

### Varieties:

- Maxifort \*
- Beaufort
- Anchor-T
- Survivor
- Arnold
- RST-04-105
- RST-04-106
- DRO141TX
- Robusta
- Estamino (organic) \*

## Rootstock Sources

### Varieties:

- Maxifort- Johnny's, Paramount, DeRuiter, Holmes Seed \$25 per 50 seeds
- Beaufort- Paramount, Johnny's, \$26 per 50 seed
- Anchor-T- Takii Seeds
- Survivor- Takii Seeds
- Arnold F1- Holmes Seed, Siegers Seed, \$57 per 100 seeds
- RST-04-105/ RST-04-106 (Non-GMO) Harris Seed, neseed, \$31 per 100 seed
- DRO141TX- Johnny's, \$28 per 50 seeds
- Robusta- Bruinsma
- Estamino (organic)- Johnny's, \$21 per 50 seeds

## Scion

### Scion-

The upper part that contributes leaves, flowers, fruits and stems

### Varieties-

- Heirlooms
- Hybrids

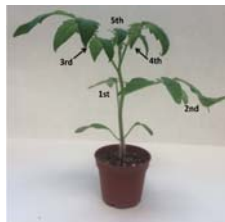
## Process

1. Seed the Scions first in 50 count trays
2. 5-7 days later seed Rootstock



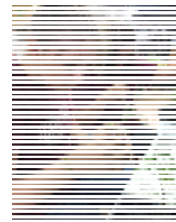
## Process

3. Allow Scions to grow to the 3-4 true leaf stage, and rootstocks to the 2-3 true leaf stage



## Process

4. In a cool and shaded area cut Scion and Rootstock stems at a 45 degree angle



### Process

5. Match the cut edges together so that the vascular bundles can heal together



### Process

6. ONCE THE SCION AND ROOTSTOCK ARE ALIGNED PLACE THE RUBBER GRAFTING CLIP OVER THE AREA.



Nebraska  
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### Process

7. PLACE GRAFTED TOMATO IN A DARK SPACE FOR 4-6 DAYS AT 85 DEGREES F AND 95% HUMIDITY



## Process

8. GRAFTED TOMATOES SHOULD BE RE-ACCLIMATED INTO THE LIGHT OVER 3-4 DAYS



## Process

9. APPROXIMATELY 6 WEEKS AFTER GRAFTING TOMATOES ARE READY FOR PLANTING

## Varieties

- Cherokee Purple
- Brandywine Red & Pink
- Krimm
- Big Beef
- Geranimo
- Mtn. Fresh
- Sun Sugar- Cherry
- Black Cherry

## Yield Increases

NON-GRAFTED	GRAFTED(25% INCREASE)
Cherokee-15-25lbs per plant x \$3.00lb= \$75	Cherokee 31.25lbs per plant x \$3.00lb= \$93.75
Brandywine Red 10-15lbs per plant x \$3.00lb= \$45	Brandywine Red 18.75lbs per plant x \$3.00lb= \$56.25
Big Beef 20-30lbs per plant x \$2.50lb= \$75	Big Beef 37.5lbs per plant x \$3.00lb= \$93.75
Sun Sugar- Cherry 15lbs per plant x \$3.50lb= \$52.50	Sun Sugar- Cherry 18.75lbs per plant x \$3.00lb= \$65.63
Black Cherry- 15lbs per plant x \$3.50lb= \$52.50	Black Cherry- 18.75lbs per plant x \$3.00lb= \$65.63

## Yield Increases- Bucket tomatoes

NON-GRAFTED	GRAFTED(25% INCREASE)
Sun Sugar- Cherry 15lbs per plant x \$3.50lb= \$52.50	Sun Sugar- Cherry 18.75lbs per plant x \$3.00lb= \$65.63
Black Cherry- 15lbs per plant x \$3.50lb= \$52.50	Black Cherry- 18.75lbs per plant x \$3.00lb= \$65.63
C&H Bucket tomatoes- (85 buckets) (15lbs x \$3.50/lb) x 85= <b>\$4462.50</b>	C&H Bucket tomatoes- (85 buckets) (18.75lbs x \$3.50/lb) x 85= <b>\$5578.55</b>

## Yield Increases- High Tunnel

NON-GRAFTED	GRAFTED(25% INCREASE)
Cherokee-15-25lbs per plant x \$3.00lb= \$75	Cherokee 31.25lbs per plant x \$3.00lb= \$93.75
Big Beef 20-30lbs per plant x \$2.50lb= \$75	Big Beef 37.5lbs per plant x \$2.50lb= \$93.75
C&H HT Heirloom tomatoes- (40 plants) (25lbs x \$3/lb) x 40=\$3,000	C&H HT Heirloom tomatoes- (40 plants) (31.25lbs x \$3/lb) x 40=\$3,750
C&H HT Hybrid tomatoes- (160 plants) (30lbs x \$2.50/lb) x 160=\$12,000	C&H HT Hybrid tomatoes- (160 plants) (37.5lbs x \$2.50/lb) x 160=\$15,000
<b>Total= \$15,000</b>	<b>Total= \$18,750</b>

## Cost comparison

### NON-GRAFTED

- Cherokee Purple \$9.70 per 500 seeds
- Big Beef \$22.45 per 500 seeds
- Sun Sugar \$25.45 per 500 seeds (\$2.55 per tray of 50)
- Black Cherry \$7.35 per 500 seeds
  - Tray and soil cost \$2.75 per tray
  - Labor \$1.00 per tray
  - Fuel \$.75 per tray
  - Total= \$7.05 per tray (based on highest priced seed)

### GRAFTED

- Maxifort Rootstock \$25 per 50 seed
  - Tray and soil cost \$2.75 per tray
  - Fuel \$.75 per tray
  - Total= \$6.05 per tray (based on highest priced seed)
  - Labor 2 min per graft/ 100 min per tray = \$16
- Total for 50 count tray \$47 or \$.94 cents per plant
- Retail for one grafted plant \$6.50 - \$15

## Investment comparison

### NON-GRAFTED

**\$7.05 per tray(50 count tray)**  
**High Tunnel plant cost (200 plants)**  
**\$28.20**

### GRAFTED

**\$47 per tray(50 count tray)**  
**High Tunnel plant cost (200 plants)**  
**\$188**

## Questions

