

Cucurbits in high tunnels



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- General considerations
- Cucumbers
- Summer squash and zucchini



High tunnel production needs:

- resistance to problems favored by tunnels:
 - Spider mites
 - Powdery mildew
- Fruit set without pollinators, or to provide pollinators
- Suitable growth habit, harvest window, productivity

High Tunnel Cucumbers

- A potentially high-value crop
 - Do varieties differ in yield and quality?
 - Varying susceptibility to tunnel diseases & insects?



Pruning HT cucumbers



No pruning
Yields higher; early peak and then decline, less labor



1-2 leaders
Lower yields, steady prolonged yield, more labor

High Tunnel Cucumbers

- seeded 5/17
- transplanted 6/1
- 4 reps of 4 plants
- pruned to single leader
- 24" spacing, 5' rows



14 varieties, 4 types:

Slicers

Beit alpha



Oriental & long slicers

Picklers

We evaluated:

per plant:

- number of fruit
- % unmarketable fruit
- weight of fruits

per plot:

- PM symptoms (0-5)
- mite damage (0-5)





Greenhouse Cucumber Variety Trial – University of New Hampshire – 2010

Seeded: 5/17/10, Transplanted: 6/1/10.

Grown in-ground in a 30'x60' high tunnel in Durham, NH. in a randomized complete block design, 4 replicates, 4 plants per plot. Plants were spaced 24" apart in rows 5' between centers and were trellised to a single leader. One application of carbaryl to control striped cucumber beetle.

Harvest period: June 28- August 13.

Cultivar*	Type	No. fruits per plant	% Not marketable	Yield (lbs) per plant	Powdery mildew	Mites	Comments
Genuine (JSS)	Slicer	27.3	13.3	13.7	1	0	
Green Finger (HM)	Slicer	9.3	31.3	8.2	0	0	Poor fruit set. Not parthenocarpic.
Saber (HM)	Slicer	30.5	17.2	12.8	1.3	0	
Tasty Jade (JSS)	Slicer (long)	26.7	21.2	15.4	1.3	0	
Tasty Green (JSS)	Slicer (round)	18.8	11.8	8.6	0	0.7	Poor fruit set

Seed costs range from \$0.04 to \$0.80 per seed.



Ballerina



Diamant



Vertina

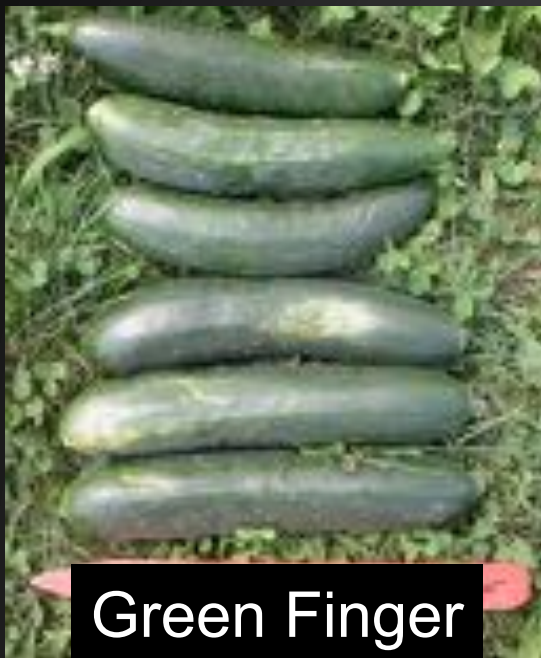
In general, the picklers produced the most fruit and had very few unmarketable fruit. All were pretty susceptible to mites, and pretty resistant to PM.



Genuine



Saber



Green Finger

Genuine and Saber looked like typical field slicers. Both had some PM but were quite tolerant to mite damage.

Green Finger had poor fruit set (not parthenocarpic) and a lot of unmarketable fruit (scarring).



Diva



Katrina

Beit alpha types had the fewest marketable fruits.

Katrina and Socrates had higher yields, but also much more mite damage.



Socrates



Tasty Green



Tasty Jade

Tasty Jade produced *many* more marketable fruit than Tasty Green.

Tasty Jade was susceptible to PM.



Know your markets – choose the right type (s)
Make sure to pick parthenocarpic varieties.

Summer squash and zucchini





Green Zucchini



- Partenon (Sultan) is parthenocarpic; pollination not needed
 - tendency to become oversized.

What about other summer squashes?

Table 1. Ability of summer squash to produce fruit without pollination

Variety	Type	Color	Total Flowers Bagged	% Fruit Set of Bagged Flowers
Golden Glory	Summer	Yellow	10	100
Dunja	Zucchini	Dark Green	12	83
Noche	Zucchini	Dark Green	15	73
Partenon	Zucchini	Dark Green	16	69
Costata	Zucchini	Dark Green	19	58



(Multipik)



Golden Glory

Recent report by Stephen Reiners, Cornell University

Questions/Comments?



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