Most protected culture breeding focuses on tomatoes, cucumbers, peppers, lettuce and eggplant.
Protected Culture Tomato Breeding Goals

- Foliar disease resistance - tomato mosaic virus, leaf mold, powdery mildew
- Yield
- Blossom end rot resistance
- Vigor
- Open plant habit, easy to maintain “low labor”
- Shelf life
- Flavor
Tomato rootstock breeding goals- high vigor, resistance to soilborne pathogens: fusarium, f. crown and root rot, corky root, nematodes, verticillium
Protected Culture Cucumber Breeding Goals

- Disease resistance: powdery mildew, downy mildew, cucumber mosaic virus
- Parthenocarpic
- Gynoecious
- Yield
- High vigor
- Early maturity
- Open plant habit
- Flavor: not as varied as tomatoes
Protected Culture Pepper Breeding Goals-

- Disease resistance: tomato mosaic virus
- Yield
- Good leaf cover
- Blossom end rot tolerance
- Level of vigor for greenhouse vs. hoophouse
- Plant habit: vining
- Shelf life
- Flavor: not as varied as tomatoes
Protected Culture Lettuce Breeding Goals

- Disease resistance - downy mildew
- Plant habit for use as head vs. salad mix
- Tip burn resistance
- Bolting resistance
- Early maturity
- Dense/compact (i.e. yield)
- Flavor
- Good color under low light conditions
Protected Culture Eggplant Breeding Goals

- Spinelessness
- Yield
- BER resistance
- Plant habit that is vining, not bushy
- Flavor- not a lot of variation
- High vigor
• Very little currently being done on greens besides lettuce/spinach
• PC growers select field varieties
• Not sure if more effort will come into greens breeding
Breeding/Selection Criteria- Other Crops

• A little bit of breeding being done in root/other crops
• Smaller/more compact tops
• Disease resistance- mildews, fungal diseases
• Tolerance to heat
• Resistance to bolting
Questions?