Backyard Farms
Madison, Maine
GUIDING PHILOSOPHIES

• **Quality over Quantity:**
  – Everything we do is about growing to maximize quality, not yield.
  – We hold ourselves to different standards and do things the right way.

• **Single Source:**
  – We only sell what we grow, we do not broker or represent any other growers.

• **Limited Distribution:**
  – Better for the consumer: Allows us to pick at optimum ripeness and deliver within 24 hours to ensure the best tasting and freshest fruit.
  – Better for the customer: With a limited number of accounts we focus on building a partnership with our customers instead of just “moving fruit”.

• **Nurture People, Not Just Plants:**
  – We provide 200 full time year-round jobs to residents of mid-Maine.
  – We pay competitive wages and provide benefits for all of our employees.
  – We have an involved, committed workforce that loves growing the best tomatoes out there.
    • Personal Garden system encourages ownership and pride in growing
    • Incentives for meeting our quality and production targets
    • We aren’t just growing tomatoes, we are growing growers
Facility Highlights

Quick Facts

➢ Production facilities are the largest single-roof structures in Maine.
  • 42 acres of growing space and packing facilities in two buildings
  • 250 miles of heating pipes to operate during winter months
  • 60 miles of growing gutters to hang plants on
  • 10 million gallon water reservoir fed by rainwater and snowmelt
  • 2 - 800,000 gallon water tanks for efficient heat storage
  • 4.4 million pounds of glass and 1.8 million pounds of raw steel in the structure
  • 450,000 drips and 120 miles of water piping for hydroponic growing
Aerial Overview

- View from the east with Kennebec River in the background (Sugarloaf Resort is visible in the distance)
- Kennebec River is permitted source for emergency irrigation water, pumped directly to 10M gallon irrigation pond (foreground)
Interior View of Central Corridor

- Access to the growing rows is by a single central corridor 14 feet wide
- Crops are supported from the ceiling, with plants sitting on water gutters that hang 3 feet above the floor
Plants

- Plants are grown to specification using a third-party plant propagator
- 8-week old seedlings are delivered to the greenhouse and immediately placed in position for an 8-month crop cycle
  - Roots grown in rock wool
  - Irrigation provides water and nutrients
- Each seedling is ‘pinch grafted’ to get two productive tomato plants from single rootstock

*Example of pinch grafting at rootstock*
Top View of Crop

• Plants are hung from strings using plastic clips around each stem that are extended as plants grow
• String is tied to guy wires along each row above the crop, and all plant weight is supported by design by roof trusses
• Greenhouse roof designed to minimize blocked sunlight, while capturing and recycling all rainwater and snowmelt for irrigation
Grow Lights

- Available sunlight is augmented by 19,600 1000W bulbs requiring 20MW of electricity
- Grow lights provide 10x more light than the sun in the winter, but the sun provides 10x more light in the summer
  - In January, crop requires 17 hours of supplemental grow light use
  - In July, crop requires little or no supplemental lighting

*In New England, sun is often at low angle to horizon*

*Growlights located to minimize shadow on crops.*
Roof Venting

- 8,400 separate roof vents are installed to provide means to “open” the roof
  - Venting is **only way** to lower interior temperature in summer months
  - Venting is **primary way** to adjust humidity by releasing air to the outside (both summer and even at times in winter months)

*View from outside over the roof – all vents wide open.*
*View from inside – vents open.*
Sustainability

• Although our model does require a substantial amount of energy so we can grow tomatoes year round, we do have the following

• Road miles. 40% of our product is picked up at the greenhouse eliminating approx. 292 53 ft. tractor trailers annually which traveled on average 1,800 miles.

• Hydroponic Growing.
  – Better controls give more fruit 68 to 72 kg/m2 vs. conventional field production which runs 52 to 128 but highly volatile.
  – Use of rain water/snow run off and no need for additional water.

• Jobs
  – Full time year round jobs with benefits. Of our 200 employees, 42% of our employees have been with us more than 3 years.

• Packaging
  – Containers for cocktail boxes produced at IP plant in Auburn, run completely on wind power. Based is recyclable board with soy based inked.