Growing in Movable High Tunnels

Reviewing five years of experience at Massaro Community Farm, Woodbridge, CT
Overview of Massaro Community Farm

- First year of production in 2010
  - Grew on 4 acres; 125 “Pioneer” CSA subscribers (16 week summer distribution, added 4 week fall distribution)
  - Built heated greenhouse in May (22’ x 36’)
  - Built high tunnel in Dec (30’ x 48’)
- Added .5 acres in 2011; built two movable high tunnels on that space (each 30’ x 48’) in fall 2011 and spring 2012
- Added .5 acres in 2012
- Added 2.5 acres in 2013
- Built three 30’ x 96’ high tunnels in fall 2014
- As of 2016, growing on ~8 acres; 200 CSA subscribers plus farmers’ markets and restaurant sales
Aerial View of Massaro, September 2014
Aerial View of Massaro, Fall 2014
Movable High Tunnels
Movable High Tunnel
Movable Tunnel Specs

• 30’ x 48’; other sizes possible
• 96’ of track to move on; could add more track
  – Each tunnel can move one position
• Roll up sides
• Roll up end walls
• Walk doors on end walls
• Sand bags every 4 feet to weigh down plastic on sides and ends
• Moving mechanism: skids, rail or v-track
• Irrigation: drip tape for fruiting crops, microsprinklers for greens and roots
Rimol Rolling Thunder Wheel
V-Track and wheels on each hoop
Diagonal braces secured to ground posts
Clamps on braces secured to ground posts
Ground posts to secure the end-walls
Why Movable?

- Crop rotation
- Soil health
- Maximize use of covered space
Crops I have grown in movable tunnels

- Tomatoes
- Peppers
- Eggplants
- Cucumbers
- Lettuce, Salad Mix (many varieties of greens)
- Beets, Radishes, Turnips
- Chard
- Spinach
- Onions
- Carrots
- Strawberries
Crops I (probably) won’t grow again in the movable tunnels

- Eggplant
- Peppers
- Onions
- Carrots
- Mache
- Claytonia
Tomato and basil
Tomato trellis and basil
Planting/Sowing Dates

• **Tomatoes**: late April planting for early harvest; mid/late June planting for late season harvest

• **Greens**: sow/transplant March for early harvest; late September/early October (by Oct 10) for fall/winter harvest. Can do later for winter/early spring harvest

• **Cucumbers**: sow late April for early harvest; sow early July for late harvest

• **Carrots**: sow March/April for late May/early June harvest; sow early August for fall/winter harvest; can sow late Dec-Feb for April/May harvest

• **Resource for planning**: The Winter Harvest Handbook by Eliot Coleman
2012 Tunnels – Year 1 with movables

- **MT 1 West**: winter cover crop -> April transplanted beets -> summer cover crop -> Oct sown salad mix (mustard greens)
- **MT 1 East**: winter cover crop -> early tomatoes -> fall planted strawberries

- **MT 2 West**: winter cover crop -> May cukes/radishes -> summer cover crop -> OW carrots
- **MT 2 East**: winter cover crop -> April planted onions -> Onions uncovered in mid May -> Oct sown salad mix (mustards)
2013 Tunnels – Year 2 with movables

• **MT 1 West**: winter spinach/salad mix -> mid March lettuce -> June planted tomatoes/peppers/eggplants-> winter cover crop

• **MT 1 East**: OW strawberries covered in mid March-> summer cover crop -> Oct sown spinach/salad mix (mustards)

• **MT 2 West**: OW carrots-> April beets-> summer cover crop, late July carrots -> Oct sown spinach/salad mix

• **MT 2 East**: winter spinach/salad mix -> mid March spinach -> late May planted tomatoes-> winter cover crop
2014 Tunnels – Year 3 with movables

• **MT 1 West**: winter cover crop -> April planted lettuce -> July sown carrots -> Oct sown salad mix (mustards)

• **MT 1 East**: winter spinach/salad mix -> early tomatoes -> fall/winter cover crop crop

• **MT 2 West**: winter spinach/salad mix -> early tomatoes -> fall planted strawberries

• **MT 2 East**: winter cover crop -> April planted lettuce -> July planted chicories -> Oct sown salad mix (mustards)
2015 Tunnels – Year 4 with movables

• **MT 1 West**: winter salad mix -> May planted Tomatoes -> winter cover crop

• **MT 1 East**: winter cover crop -> April spinach-> July lettuce -> Oct sown salad mix

• **MT 2 West**: fall planted strawberries covered mid April -> summer beets/chard -> late September sown salad mix (mustards)

• **MT 2 East**: winter salad mix -> April lettuce-> late June Cukes -> fall/winter cover crop
2016 Tunnels – Year 5 with movables

- **MT 1 West**: winter cover crop -> April lettuce -> summer lettuce/chard -> Nov transplanted kale
- **MT 1 East**: Oct sown salad mix -> April cukes-> re-planted June cukes -> fall/winter cover crop

- **MT 2 West**: winter salad mix -> April spinach -> June cukes -> re-planted July cukes -> fall/winter cover crop
- **MT 2 East**: winter cover crop -> April lettuce-> summer lettuce/escarole -> Oct sown salad mix
Challenges and trouble shooting

- Complete moving process takes us ~2 hours per tunnel
  - Building on level ground will help prevent problems
    - Consider crushed stone under tracks
  - Can do with 2 people, best with 6 or more
  - Wooden 2x4s to leverage wheels back on tracks

- Securing the endwalls

- Hurricanes, Blizzards, etc.

- New features I would add:
  - Polycarbonate end walls with sliding doors for ventilation
  - Endwall vents above doors/panels
Welding on end-wall broke
Long Lane Farm, Wesleyan University
To move, or not to move?