

2018 New England High Tunnel Survey

In 2018, Extension personnel from the Universities of Massachusetts, Vermont, New Hampshire and Rhode Island documented production practices and took soil and leaf samples from 20 tomato high tunnels in those 4 states, with support from the New England Vegetable and Berry Grower's Association. Soil and tissue samples were analyzed at the University of Maine and Massachusetts labs. Here are some guidelines for optimizing tomato production based on the data collected. NOTE this project surveyed current practices and conditions in a variety of tunnels; additional research is needed to quantify the impact of different management and fertilization practices.

Practices that may increase yield:

- # Transplant earlier, at higher density:
April 1st – May 1st with 3 ft² per leader.
- # Graft plants for stronger roots, especially if soil conditions are not optimal.
- # Avoid compaction. Sample 10 locations to 15 cm depth. If over 300 psi found, subsoil or make raised beds.
- # Provide adequate soil moisture. Install at least 2 drip lines per plant, up to 4 if sandy soil. Mulches may help keep moisture even across the soil surface.
- # Keep up with pruning. Prune side shoots when small, remove foliage to 1st cluster.
- # Track performance. Measure harvests, even if simply counting boxes. This is key to assessing management changes.
- # Set yield goal. Based on length of season, variety, etc. Reasonable goals = 3 lbs/ft². Make fertilizer applications based on goal (see tables on the reverse page)
- # Phosphorus* don't over apply, crops do not remove a lot, tunnel soils are warm.
- # Potassium* is removed in large quantities by tomatoes. Make sure adequate K is available, especially as fruits form.
- # Nitrogen* is also removed in large quantities, provides sufficient available N for biomass production through the entire growing season. Front load slow release amendments and/or apply soluble fertilizer during the season.
- # Monitor available AND reserve soil nutrients (Table 1). Take leaf samples monthly for additional guidance.
- # Fertilizer application should be based on soil test results, otherwise you are guessing!
- # Scout and Manage Pests. Do not let challenging insects (like aphids) or diseases (like powdery mildew) get ahead of you. Setup a regular scouting schedule and send samples to lab for ID as needed. Find scouting guidelines here: ag.umass.edu/vegetable/outreach/project/new_england_pest_scouting_network

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Questions? Contact Us.

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