**High Tunnel Advisory Panel Meeting Report – 3/3/21**

Summary of key actionable items:

* **Data collection for on-farm trials**
  + Most important data to collect:
    - Soil health – maintenance, improvement, improve water holding capacity of irrigated water, attributes (e.g., organic matter, microbiological community)
      * Getting a baseline of soil organic matter content is challenging because it varies widely across farm
    - How fungi interacts with crops throughout different crop cycles
    - Transferability of research to something viable to the success of farmers – limited resource farmers want evidence of success before they try any new strategies
    - Cultural management strategies to enhance yield and mitigate pests and diseases – this is helpful for limited resource farmers
  + Easiest way to get data to researchers from growers during on-farm trials:
    - Texting
    - Google sheets or excel for recordkeeping in real time
    - Include on-farm trial details in daily farm reports
* **Revisions to the grower assessment observation forms**
  + Tomato assessment observation forms:
    - Include blossom rot, taste, fragrance, texture, color (ideal color and relation of color to nutrient issues)
  + Pak choi assessment observation forms:
    - Include leaf shininess and bolting

Q&A following researcher presentations

* **Crop choice**
  + Contingent upon nutrient management and reducing leaching
  + Focus on main crops that take up significant acreage because this is critical for policy and larger adoption
* **Leafy green production** 
  + Not too much spinach bolting
  + Recommended arugula varieties – Anastazia (warm weather) and Selvatica (cooler weather)
  + Shading important for lettuce production
  + Multiple varieties grown simultaneously to satisfy consumer demand
* **Tomato yellow leaf curl**
  + Significant acreage affected last year for growers in Bainbridge, GA/Quincy, FL area that used resistant varieties (Grand Marshall) because variety doesn’t have complete resistance
  + Issue at station in Citra, FL last year as well
  + Skyway variety used in Citra has intermediate tomato yellow leaf curl and tomato spotted wilt virus resistance
* **Nutrient management**
  + N availability estimated by sampling soil after cover cropping or after adding organic material prior to sowing crop to establish a baseline of what nutrients the crops are deficient in
    - Sampling every two months randomly
  + Fertilizer applied knowing nutrients won’t necessarily be readily available in that crop cycle, but will be in subsequent crop cycles
* **Disease incidence and management**
  + Soil borne diseases in high tunnels pose the highest threat
  + Powdery mildew on cucumbers and squash common
  + Intercropping with cover crops paired with increased aeration results in a lack of insect pest and disease pressure
* **Common tomato pests**
  + Primary arthropod pests on tomatoes – hornworm, whiteflies, thrips, aphids
  + Whiteflies and thrips are common in South FL
  + Caterpillars present, but easier to control than other pests
* **Economic factors**
  + Smaller farmers who sell to farmer’s market to extend season would adopt a high tunnel, especially if the farmer’s market is year-round
  + High tunnels are a great way to practice no till methods in a small space because you can’t fit large equipment inside
  + Factors that drive the cost up:
    - Deterioration of plastic
      * Plastic lasts 3-4 years generally
      * more shading that results from using dirty plastic – tunnels can be sprayed with detergent after each season to eliminate biofilms, mold and mildew that accumulates
    - maintenance of structure

Open discussion portion

* Generally, participants felt the current research is headed in the right direction, is investigating the right factors and the correct questions are being asked. The main concern is the transferability of the research.
* Researchers plan to complete on-farm trials with limited resource farmers
* Interest expressed in:
  + best practices for irrigation in high tunnels
  + the way tomatoes are trellised
  + more alignment with farmer and scientist to progress and better manage how we move forward in the future
  + research on wind resistant coverings and securing plastic – modeling, management, alternatives
  + including trials of brassicas as a cash crop because these are important for farmer income in the winter
  + cover crops as both a rotational crop and intercropped