

## **DILMUN HILL MOVABLE HIGH TUNNEL PROGRESS UPDATE AS OF FALL 2017**

We have successfully completed our first full year of growing inside of our movable high tunnel! Our progress updates regarding education, research, and production are as follows:

### **EDUCATION:**

The presence of the high tunnel allowed Dilmun Hill to diversify and specialize our summer farm manager positions, resulting in a more productive and educational experience for the students. We now offer the summer position of a High Tunnel and Greenhouse Manager, which is partially funded by Cornell Cooperative Extension High Tunnel Specialist Judson Reid, further strengthening the educational value of the position. The High Tunnel and Greenhouse Manager uses Judson as a resource and a mentor for all things related to the high tunnel, from management to educational workshop programming.

Dilmun Hill has hosted two high tunnel workshops, the first of which focused on general high tunnel management and production, and the second of which focused on tomato nutrient management and pest prevention. We plan to continue our educational programming, and look forward to offering a robust curriculum to students this fall.

### **RESEARCH:**

At Dilmun Hill, the majority of our soil is heavy in clay, meaning that it is prone to compaction, which leads to poor drainage. Site preparation for the high tunnel required the use of some large equipment (post pounders, bulldozers, etc.) which ultimately resulted in drainage issues within the structure.

To remediate this, our High Tunnel and Greenhouse Manager is working with Judson Reid to identify best management practices. We have been making efforts to deep chisel the soil, but the uncharacteristically wet season has made this difficult. We have also dug a trench and installed a perforated tube along the side of the tunnel to assist with drainage. Our efforts this fall will be focused on outlining a thorough plan to improve our soil health and drainage.

Dilmun Hill is also conducting an experiment using heavy tarps as a method of weed and moisture control.

Perhaps the most exciting result of the high tunnel was the successful outcome of our soil dilution experiment. A large portion of the soil at Dilmun Hill has high levels of lead arsenate, a contaminant bound to the soil due to the site's previous use as an orchard. This contamination has prevented us from being able to put a large amount of the land at Dilmun Hill into vegetable production. The high tunnel allowed us to test our hypothesis that if we brought in enough compost, we could successfully dilute the lead arsenate to a level safe for students to work in.

After the tunnel was completed, we brought in enough compost from the Cornell composting facility to put an eight inch layer across the entire growing site, and used machinery to incorporate the compost into the existing soil. Subsequent foliar and soil tests indicated that

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lead arsenate levels are now at a safe level, which opens exciting opportunities to utilize this method in other areas of the farm.

### **PRODUCTION:**

The high tunnel has allowed us get an early start on cucumbers, peppers, and tomatoes and sustain the growth of these crops for longer than would be possible in an uncontrolled climate. Specific breeds are as follows:

- Cucumbers: *Lemon, H-19 Little Leaf, Tasty Jade*
- Peppers: *Hybrid Bell, Hungarian Wax, Red Rocket*
- Tomatoes: *SunGolds, Rose, Cherry Bomb, Indigo Cherry Drops, Supersweet 100, Cherokee*

We are very happy to report that our tomato crop that is currently in the tunnel is healthy! Historically, Dilmun tomatoes have succumbed to late blight, often prior to harvest. The tunnel has helped us avoid this disease, and we plan to diligently manage the tunnel so that we can continue growing tomatoes without risk of infection.

This fall, we plan to cover crop both inside of the tunnel and the adjacent site with tillage radishes, sorghum sudan, and oats in an effort to reduce soil compaction for the 2019 growing season.

We look forward to experimenting with cold-hardy greens and other crops in future seasons, with the ultimate goal of having the high tunnel in production year-round.