

**Performance of cyanobacteria biofertilizer on tomato plants – visual observation**



**Control plot – No fertilizer was applied**



**Plot with 50% cyanobacteria biofertilizer + 50% synthetic fertilizer**



**Plot with 100% cyanobacteria biofertilizer**



**Plot with 100% synthetic fertilizer (Urea and Sulfate of potash)**

**Some preliminary results**

This year we are conducting the biofertilizer experiment in FIU greenhouse. Both okra and tomato plants are still growing and are in their fruiting stages at this point (Figures 4, 5). Plant height, stem diameter, and SPAD readings for tomato plants during flowering and fruit settings are presented in Table 1. Our results (as the data collected so far) from tomato experiment clearly indicate that 100% cyanobacteria biofertilizer (T1) applied plots performed better than control plots. Average plant height (92.71 cm), stem diameter (8.47 mm), and SPAD readings (47.09) of T1 was 22%, 15%, and 20% higher, respectively, than control plots. When we compared the plant parameters of T1 with 100% synthetic fertilizer applied plots (T6), no significant differences were found. Therefore, it can be noted that 100% cyanobacteria fertilizer application is performing similar to 100% synthetic fertilizer application till this point of data collection. However, better comparative analysis can be made once we will have more plant parameters and yield data available after harvesting.

**Table 1.** Physiological parameters of tomato plants during different growth stages

Treatments	Plant height (cm)	Stem diameter (mm)	SPAD reading
<b>Flowering Stage</b>			
T0	73.66	6.95	37.78
T1	83.82	7.95	43.16
T2	79.59	7.66	44.47
T3	80.43	7.38	42.75
T4	82.97	7.77	44.36
T5	75.35	6.87	40.14
T6	86.36	7.52	43.04
<b>Fruit Setting</b>			
T0	78.55	7.79	40.55
T1	101.60	8.99	51.01
T2	96.52	8.42	49.03
T3	94.05	8.14	46.70
T4	99.91	8.59	46.20
T5	82.55	7.94	42.84
T6	107.02	8.38	48.99



As we know south Florida soils are deficient in Fe content. Our Garden plot tomato plants (control, 50% biofertilizer + 50% synthetic, 100% cyano biofertilizer, and 100% synthetic) clearly shows that yellowish color can be visible for control and 100% synthetic plots. In the greenhouse we also found that control plots for both okra and tomato plants showed possible Fe deficiency (interveinal chlorosis). This indicates that cyanobacteria biofertilizer provide Fe in the soil