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CONFIDENTIAL

RESEARCH REPORT

Investigators

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Collaborators

SYMBIOTIC SYSTEMS/
SPECTRIX GROW LIGHTS
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Research

Supplemental lighting comparisons of plant growth and yield between Spectrix Grow Light and Gavita High Pressure Sodium Grow Lights

Objectives

Evaluate plant performance from supplemental light treatments, provided to meet the light saturation point

Treatments

- SPECTRIX A at 625
- SPECTRIX B at 625
- HPS-GAVITA at 625
- SPECTRIX A at 550
- SPECTRIX B at 550
- HPS-GAVITA at 693

Plants

- Tomato
- Gerbera Daisy
- Lettuce or Basil

Planted seedling plugs into ebb and flood bench; June, 2016 and evaluations completed every 30 days.

Executive Summary

- **Tomato plants produced greater fruit yield at 90 days, grown under Spectrix lighting (Fig. 1) compared to HPS (Gavita 620 or 690 Watts).**
- **Fruit weight was greatest with Spectrix lights, which produced more fruit per plant at 120 days (Fig.2).**
- **Flower counts at 30 days were greater with Spectrix A and B at 550W, compared to higher Watt settings of 620W and 690W (Fig. 3).**
- **Fruit set per plant at 120 days was greater with Spectrix than HPS.**
- **Fruit weight was greatest with Spectrix A at 625W.**

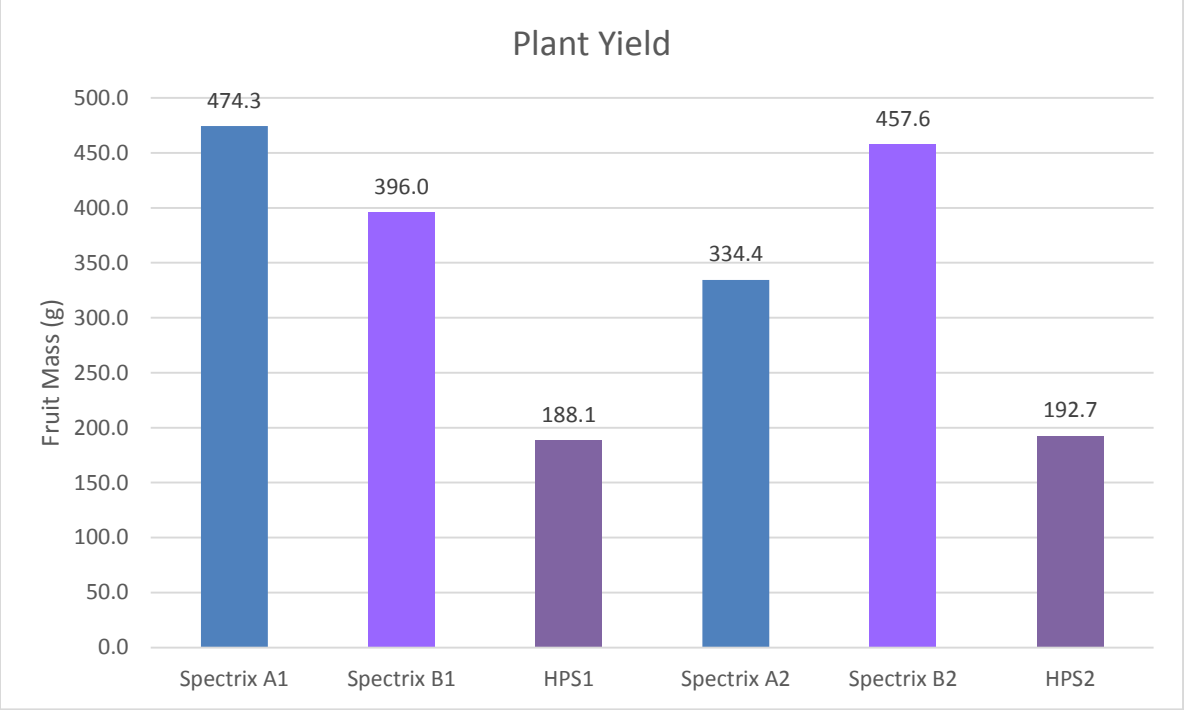

Fig. 1. Tomato plants produced greater fruit yield at 90 days with Spectrix lighting compared to HPS (Gavita 620 or 690 Watts).

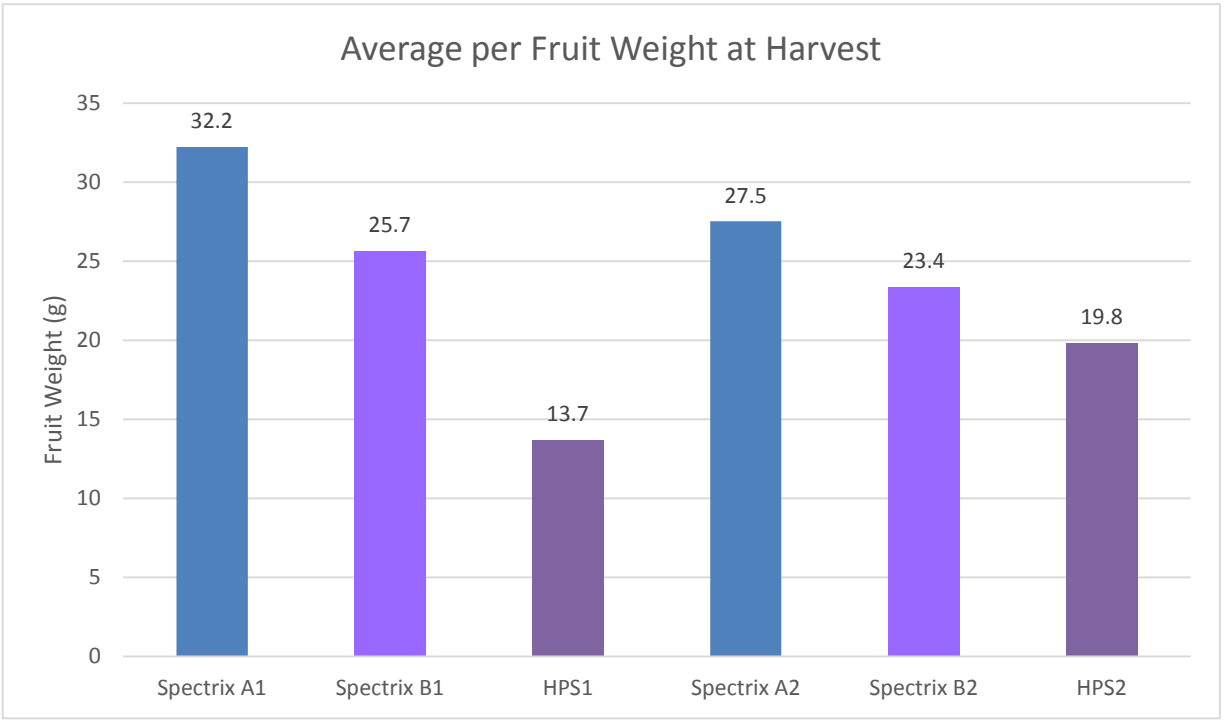

Figure 2. Fruit weight at 120 days was evaluated for Spectrix lights, which produced more fruit per plant than HPS.

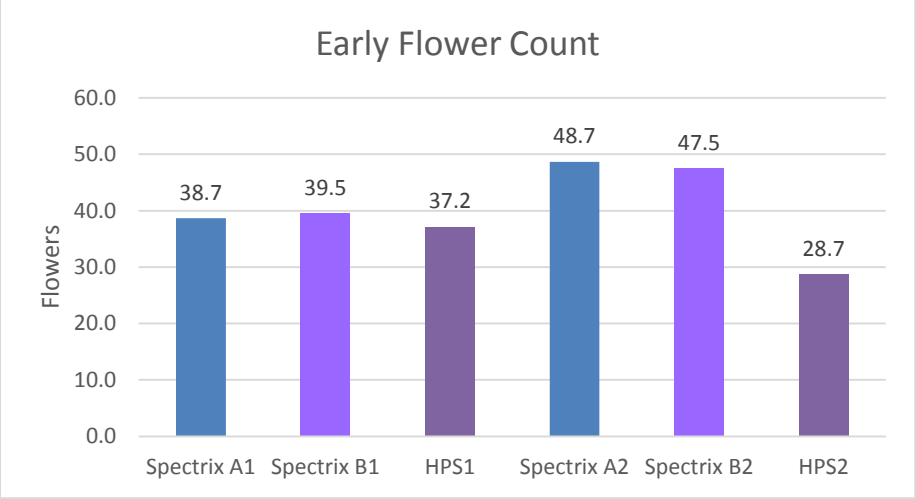

Figure 3. At 40 days, Spectrix lights produced more flowers.

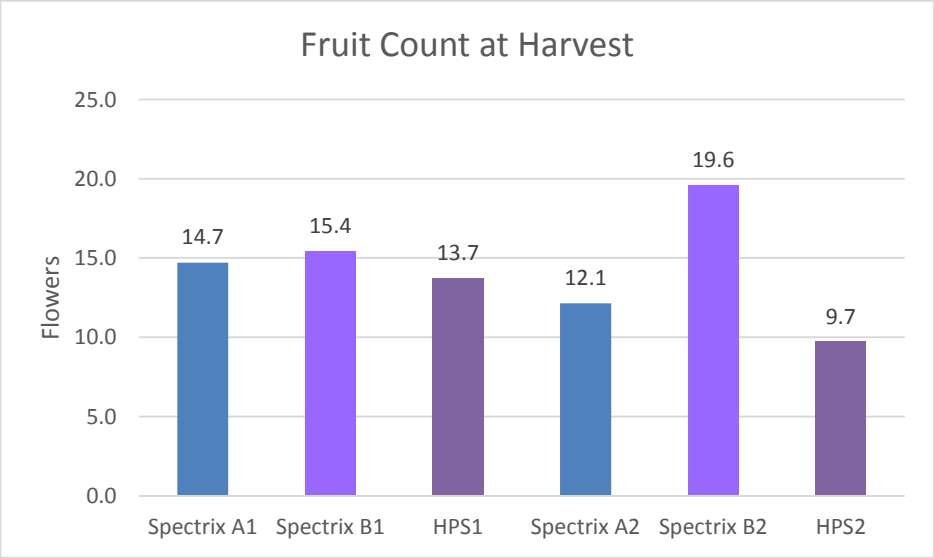

Figure 4. At 120 days, Spectrix lights produced more fruit per plant.

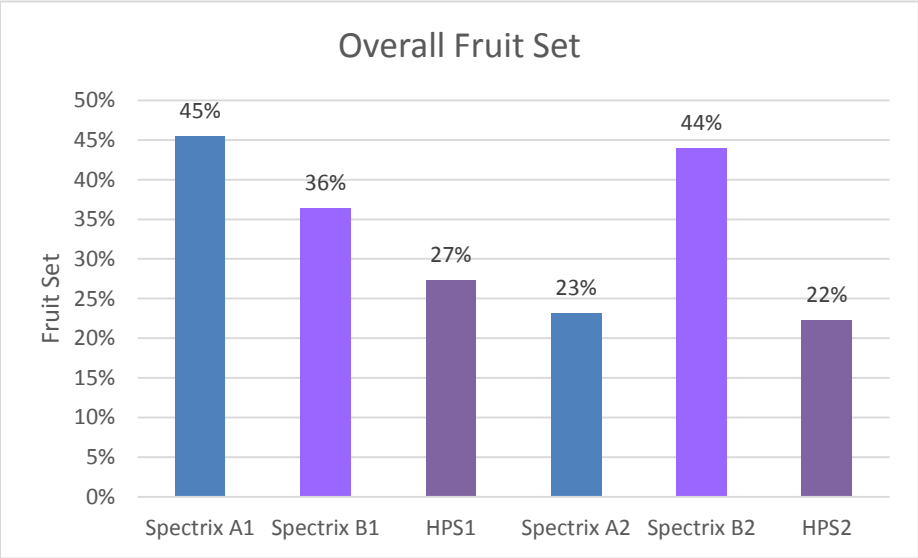

Figure 5. At 120 days, Spectrix and HPS, fruit set per flower

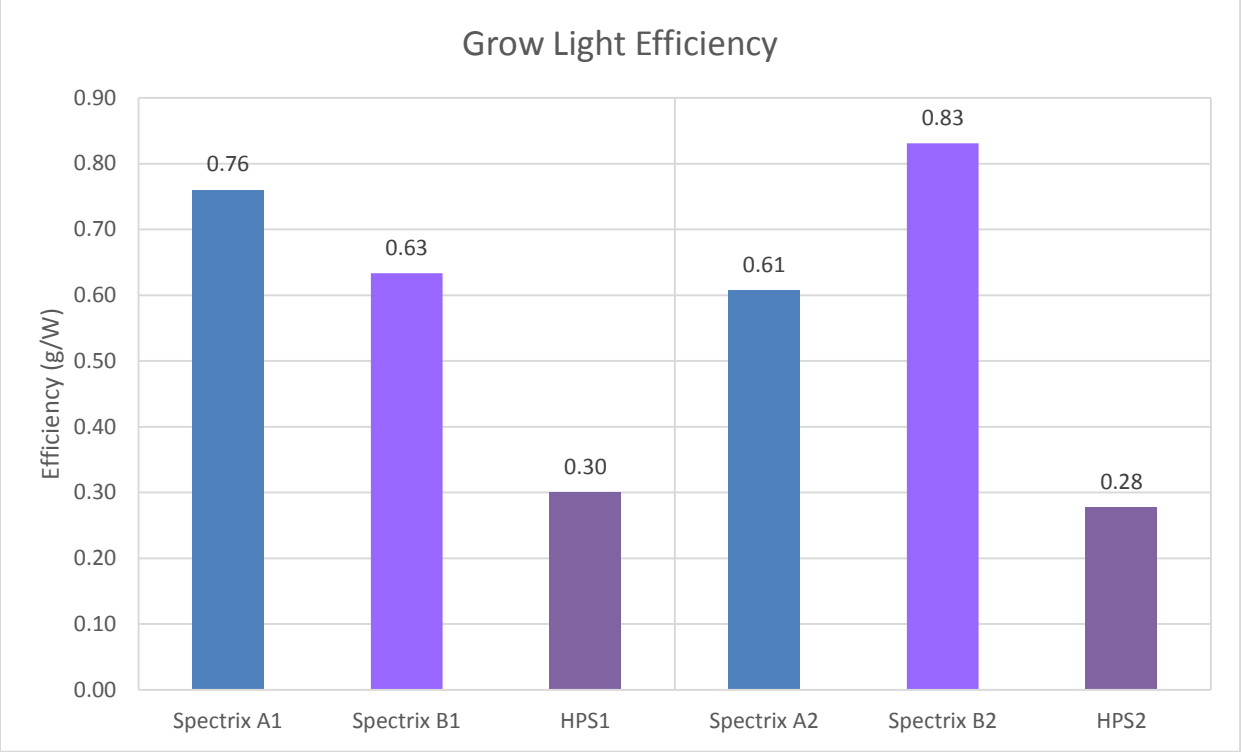

Figure 6. Grow light efficiency is calculated by dividing plant yield (measured in grams) by power consumption (measured in watts).