LumiGrow
The leader in smart horticultural lighting.

NCERA-101 Station Report

April 2012 – April 2013
LumiGrow, Inc.,Novato, CA

Please address questions to:
Melanie Yelton
melanie@lumigrow.com
33 Commercial Blvd, Novato, CA 94949
Phone: 650.465.5864

New Facilities and Equipment

LumiGrow has installed horticultural lighting systems in greenhouses and control chambers in over 1200 universities and commercial operations. We have more than 50 installations at universities including University of Wisconsin, University of Wyoming, University of Toronto, Kansas State, University of North Carolina, Stanford and Texas A&M.

Our newly completed growth room provides 110 sq. ft. for plant research. Current focus is examining comparative lighting regimes using Arabidopsis and tomato. LumiGrow is conducting plant trials with a range of plant crops at four UC Davis greenhouse facilities using Pro 325™ LED luminaires, induction fixtures and HPS lights.

In Fall 2012, LumiGrow launched a third-generation LED product line, the Pro series, for commercial greenhouses and growth chambers. The Pro 325 provides the equivalent red and blue to a 1,000-Watt HID and the Pro 650 provides the red and blue PAR of two 1,000-Watt HID lights. Both lights feature full three-channel spectral control, white-only view mode, energy-efficient power usage and a five-year warranty.

Unique Plant Responses

LumiGrow LED lights improve the efficacy of horticultural lighting by focusing light within the blue and red PAR region with additional white light for secondary plant responses. We have initiated a follow up with growers using our lighting to gather meaningful data to complement our own in-house analysis. Growers consistently report that new installations and retrofits replacing HID and fluorescent lights have resulted in comparable or better growth for their plants.

More investigation is underway to determine variations between plant species and different cultivars.

Selected Accomplishment Summaries

Rainbow Greenhouses, Chilliwack, British Columbia Canada

Rainbow Greenhouses is among the largest wholesale growers and distributors of potted plants in North America. Through the use of LumiGrow LED lighting, Rainbow Greenhouses is projected to reduce lighting-related energy consumption by 60% and achieve a return on investment within two years.

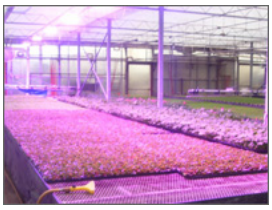
TJ Technologies, Watertown, South Dakota

TJ Technologies is an agricultural company that manufactures microbial and micronutrient products to create a foundation for optimal plant growth and yields. The R&D Team at TJ Technology retrofitted HPS lamps with 20 Pro 325 fixtures to mitigate the severe heat loads from HPS fixtures. Prior to implementing the LED solution, they were unable to reliably maintain a temperature below 85°F. With the LumiGrow LED lighting they can now maintain the desired temperature of 78°F and grow healthy crops, including alfalfa, canola, carrot, cotton, corn, and soybeans.

Heil Fruit and Produce, Norborne, Missouri

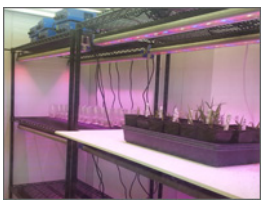
Heil Fruit and Produce is a hydroponic farm company that is now able to supply a steady year-round supply of consistently healthy lettuce using supplemental lighting between November and March. As a result, they increased farm revenue by 38%.

Barnes Greenhouses, Trenton, Missouri



Barnes Greenhouse added LumiGrow LED lighting to supplement their propagation house. Under the LED lights, the Barnes team is producing cuttings with strong stems, vibrant color, compact form and a reported 100% rooting success rate. In addition to improving crop vitality, Barnes Greenhouse is also achieving faster growth. Geranium cuttings are rooting in 10-11 days, a 28% productivity gain.

USDA, Albany, California



LumiGrow LumiBar™ LED shelf lamps replaced fluorescent lamps in a growth chamber used to grow Brachypodium. The USDA team observed that plants were much healthier and set seed production earlier under the LumiBar lamps.

In-depth LumiGrow LED application case studies are posted to:
http://www.lumigrow.com/aboutus/case-studies/

33 Commercial Blvd
Novato, CA 94949
800.514.0487

Impact Statements

Growers are experiencing comparable or better growth over traditional HID and fluorescent systems with energy savings of 40-70%. While LED lighting research continues to provide specific information for various plants, growers are proving that LumiGrow LED lighting solves the problems associated with HID and fluorescent lighting.

Published Works

Trade Publications

Wells, K. January 2013. How to Specify LED Lighting. Greenhouse Product News. http://www.gpnmag.com/how-specify-led-lighting

Wells, K. September 2012. Going Green to Stay in the Black. Making an LED Lighting Investment that Pays Off. Greenhouse Product News. http://www.gpnmag.com/going-green-stay-black

Scientific and Outreach Oral Presentations

Seals, C. G. Chan, M. McCoy. 2013. Webinar: Energy-saving Greenhouse Retrofits: University of Wyoming.

Whipple, C., N. Coppinger, G. Chan. Webinar: Hydrofarm and LumiGrow Present "Advances in LED Lights".

Wells, K. OFA 2012, Technical Session: "Greenhouse Applications of Light-Emitting Diodes"

Chan, G. ASABE 2012. Panel presentation: "LED Efficiency Gains Reduce Greenhouse Crop Product Costs".

33 Commercial Blvd
Novato, CA 94949
800.514.0487

www.lumigrow.com