

GROWERTALKS

GT in Brief

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Researchers to Study LED Lighting

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Purdue University has received a \$4.88 million grant to conduct research on LED lighting. Cary Mitchell, a professor of horticulture and project director for the grant, said Purdue researchers will collaborate with Rutgers University, the University of Arizona, Michigan State University and Orbital Technologies Corp. on the four-year project to improve and evaluate LED lighting for greenhouse use. The goal is to increase greenhouse yields and decrease producers' energy costs.

"The high-intensity discharge lamps used today are inefficient. When you have acres and acres of greenhouses with these lamps in them, it really adds up," Cary said. "With LED lighting, we should be able to do as well or better with much less energy."

The USDA Specialty Crops Research Initiative Award will include \$2.44 million from the USDA and an equal amount of in-kind contributions of equipment and services from industry partners. The project is titled, "Developing LED Lighting Technology and Practices for Sustainable Specialty-Crop Production."

Cary's work will include testing LED lighting on high-wire tomatoes. Those plants can grow taller than 20 ft., and traditional overhead lighting doesn't reach the lower parts of many plants. Cary believes that using LED lights on the sides of plants will increase photosynthesis and flowering, improving yield.

Roberto Lopez, an assistant professor of horticulture, will work with about 20 species of bedding plants to test LED lighting's ability to lower the cost of establishing new plants from cuttings and seeds. Low winter light means growers currently have to use more expensive overhead lighting to establish new plants. John Burr, a lecturer in Purdue's Krannert School of Management, will evaluate the costs and benefits associated with LED lighting.

A.J. Both at Rutgers will be responsible for developing best practices and standards for testing commercial LED lighting. Cheri Kubota at the University of Arizona will test the best wavelengths and colors for LED lighting to establish vegetable transplants, and Erik Runkle at Michigan State will test flower initiation of ornamental crops with different colors of LEDs, as well as performing project outreach.

The researchers are partnering with Robert Morrow and C. Michael Bourget of Orbital Technologies Corp. of Madison, Wisconsin, which will build the LED lights. Later phases of the research will include evaluating LED

lighting in commercial settings and developing improved LED lights that match the needs determined from those tests. **GT**