

<http://www.purdue.edu>



## Purdue gets \$4.88 million grant to study LED lighting of plants

October 25, 2010 (<http://www.addthis.com/bookmark.php>)

[Print Version \(story-print-deploy-layout 1 9014 9014.html\)](#)



A USDA grant will help Cary Mitchell study LED lighting use in greenhouses. (Purdue Agricultural Communication photo/Tom Campbell)

[Download image](#)

<http://news.uns.purdue.edu/images/2010/mitchell-led.jpg>

WEST LAFAYETTE, Ind. - U.S. Department of Agriculture representatives toured Purdue University greenhouses on Monday (Oct. 25) to get a preview of the work that will come from a \$4.88 million grant for LED lighting research.

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," Mitchell 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."

USDA officials, including Deputy Secretary Kathleen Merrigan, toured greenhouses with prototype LED lights like the ones that will be used in the research.

"The specialty crop industry plays an enormously important part in American agriculture and is valued at approximately \$50 billion every year," Merrigan said. "These projects will be key to providing specialty crop producers with the information and tools they need to successfully grow, process, and market safe and high-quality products."

Mitchell's work will include testing LED lighting on high-wire tomatoes. Those plants can grow taller than 20 feet, and traditional overhead lighting doesn't reach the lower parts of many plants. Mitchell 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. Chieri 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, Wisc., 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.

**Writer:** Brian Wallheimer, 765-496-2050, [bwallhei@purdue.edu](mailto:bwallhei@purdue.edu) (<mailto:bwallhei@purdue.edu>)

**Source:** Cary Mitchell, 765-494-1347, [cmitchel@purdue.edu](mailto:cmitchel@purdue.edu) (<mailto:cmitchel@purdue.edu>)

**Note to Journalists:** There will be photo opportunities in Purdue greenhouses. Reporters should meet in the foyer of the Horticulture Building before 4 p.m. Monday (Oct. 25) to take a tour with Cary Mitchell and Kathleen Merrigan.

**Ag Communications:** (765) 494-2722;

Keith Robinson, [robins89@purdue.edu](mailto:robins89@purdue.edu) (<mailto:robins89@purdue.edu>)

[Agriculture News Page](http://www.agriculture.purdue.edu/AgComm/public/agnews/) (<http://www.agriculture.purdue.edu/AgComm/public/agnews/>)

## Featured News

- [Purdue gets \\$4.88 million grant to study LED lighting of plants \(101025MitchellGrant.html\)](#)
- [Listeria clever at finding its way into bloodstream, causing sickness \(101025Bhunialisteria.html\)](#)
- [Purdue-led research team finds Haiti quake caused by unknown fault \(101025CalaisFreedHaiti.html\)](#)
- [Rice hulls a sustainable drainage option for greenhouse growers \(101025LopezHulls.html\)](#)
- [Purdue, Notre Dame, IEDC join efforts on state nanotechnology business plan competition \(../general/2010/101025CosierCompetition.html\)](#)
- [Science on Tap to feature Cook Biotech expert in tissue repair \(../events/2010/101025HoddeScienceonTap.html\)](#)
- [Purdue's Native American Center to celebrate heritage month \(../events/2010/101025BryantNative.html\)](#)

[More News » \(../../index.html\)](#)

[Copyright © 2009-10 Purdue University \(http://www.purdue.edu/purdue/disclaimer.html\)](http://www.purdue.edu/purdue/disclaimer.html).

[Copyright Infringement Information \(http://www.purdue.edu/securepurdue/DMCAAgent.cfm\)](http://www.purdue.edu/securepurdue/DMCAAgent.cfm)

[Purdue University is an equal access/equal opportunity university](http://www.purdue.edu/purdue/ea_eou_statement.html)

[\(http://www.purdue.edu/purdue/ea\\_eou\\_statement.html\)](http://www.purdue.edu/purdue/ea_eou_statement.html)

If you have trouble accessing this page because of a disability, please contact Purdue News Service at [purduenews@purdue.edu](mailto:purduenews@purdue.edu) (<mailto:purduenews@purdue.edu>).



[Find something interesting? Share it! \(http://www.addthis.com/bookmark.php?v=250&pub=xa-4a43c3e752c92587\)](http://www.addthis.com/bookmark.php?v=250&pub=xa-4a43c3e752c92587)

Maintained by: [UNS \(http://www.purdue.edu/newsroom\)](http://www.purdue.edu/newsroom)

[Offer Feedback \(http://purdue.qualtrics.com/SE?SID=SV\\_8ldaLIYe4JIEwGo&SVID=Prod\)](http://purdue.qualtrics.com/SE?SID=SV_8ldaLIYe4JIEwGo&SVID=Prod)