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**ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS.** Roundup Ready® crops contain genes that confer tolerance to glyphosate, the active ingredient in Roundup® brand glyphosate-only agricultural herbicides. Roundup® brand glyphosate-only agricultural herbicides will kill crops that are not tolerant to glyphosate. Genuity Design®, Genuity Icons, Roundup Ready 2 Xtend™, Roundup Ready 2 Yield®, Roundup Ready PLUS®, Roundup Ready® and Roundup® are trademarks of Monsanto Technology LLC. All other trademarks are the property of their respective owners. ©2015 Monsanto Company. R1

# Shop lighting gets update

BY DANA SCHWEITZER

**W**ITH winter approaching, the farm shop is a prime location to finish projects.

Exactly one year ago, the Iowa State University Armstrong Research Farm in southwest Iowa updated its shop lighting, and Randy Breach couldn't be happier. "It's been a year since we upgraded, and I still enjoy walking through the door and seeing those new lights flicker on," says Breach, agricultural specialist at the Armstrong farm. "The overhead fixtures and brighter workbench lighting are a welcome change for anyone doing machinery maintenance here in the farm shop during the winter."

The new workbench lighting is a combination of energy-efficient fluorescent and LED fixtures. Guidelines from the ISU fact sheet "Indoor Lighting for Livestock, Poultry and Farm shop Facilities" recommends a light output of about 100 lumens for shop workbenches. At the workbench surface, the new fixtures are providing about 95 lumens on a cloudy day, more when it's sunny.

## Maximize energy savings

To maximize energy savings, the new fixtures were fitted with motion sensors so the lights automatically turn off when the shop is empty. The LEDs were selected because they perform well in cold weather. Their light output typically increases as the temperature drops. They are also designed to save energy by providing more lumens per watt than the previous tube fluorescent fixtures.

"I can't say enough about the improvements to the lighting in the shop," says Breach. "The new light fixtures have made a big difference for everyone here at the farm."

The updated lighting offers many benefits, but dust is still the enemy of any light fixture. "Dust, humidity and fluctuating temperatures can shorten bulb life and reduce output from light fixtures over time," says Jay Harmon, ISU professor in ag and biosystems engineering. "Since lamps and fixtures on the farmstead are often exposed to humidity and other extreme conditions, maintenance and cleaning can extend their use."

## Keep dust away

As you finish up your tasks to winterize the farmstead, be sure to clean light fixtures and wipe down windows, advises Harmon. This will not only brighten up your buildings, but also extend the



**WELL-LIT WORKBENCH:** Randy Breach is better able to see what he's working on, thanks to the new lighting. "Good lighting provides a safety benefit, too," he points out.



**METER READINGS:** Using a light meter to measure how much light you are getting in an area compared to what you need is helpful. ISU Farm Energy has a fact sheet with information on lighting recommendations for different areas around the farm.



**DO IT RIGHT:** An electrician from Brown Electrical installs new light fixtures that are equipped with motion sensors to turn the lights on and off automatically at the ISU Armstrong Farm in southwest Iowa.

life of your lighting.

"Harvest creates a lot of dust that may obscure the surfaces of skylights, windows and light fixtures found in and around farm buildings," says Harmon. "To maintain a safe, well-lit working environment throughout the year, try to keep those surfaces clear of dust."

When possible, Harmon recommends keeping fixtures and bulbs clean to reduce potential damage from overheating and to improve light output. This will maintain the efficiency of your lighting and minimize costs over time. Cleaning the surfaces of windows and skylights will also maximize any available natural light.

## Do you plan to update?

If you have plans to update your own farm lighting, be sure to follow electrical codes and hire a licensed electrician, if necessary.

Look at the cost, maintenance and rated life of different fixtures and bulbs before making your final choice. Remember to ask your local electric utility provider about available rebates, too.

For more information about lighting and energy efficiency all around the farm, visit [farmenergy.exnet.iastate.edu](http://farmenergy.exnet.iastate.edu) or follow @ISU\_Farm\_Energy on Twitter.

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