

# BENSON FARMS

## A Poultry Farm Case Study

### Mathias Ag Program

Glenn Benson runs a three-house broiler farm in Bishopville, Maryland and is no stranger to his neighbors. Through Benson Farms, Glenn is directly involved with ten other farms in the immediate area. He communicates regularly with other farmers who share information and learn from each other.

Glenn spends nearly \$20,000 on electricity and another \$10,000 on propane each year to raise 335,000 birds. The Kathleen A.P. Mathias Agriculture Energy Efficiency Program provided Glenn with a chance to implement some energy efficiency projects he had in mind and reduce his operating costs. He looked forward to the opportunity to save energy in his own operation and share this experience with other growers. In 2013, Glenn made the following efficiency improvements to his farm to achieve a 21% savings in energy use:

**End door covers** help seal air leaks around the doors, reducing air infiltration and fuel use.



**Cool cells** are a form of evaporative cooling used in poultry houses. The energy savings comes from a reduction in fan run time due to the added cooling capacity of the evaporative cooling.



**LED bulbs** are dimmable and use only about 15% of the energy of incandescent bulbs. They also last much longer than any other current lighting option.



Table 1: Implemented Efficiency Measures and Associated Savings

Recommended Measure	Electric Savings (kWh)	Propane Savings (gal)	Estimated Annual Energy Cost Savings	Installed Cost	Estimated Payback in Years
<b>Lighting</b> Replace 100 watt dimmable incandescent bulbs in houses 1-3 with 12 watt dimmable LED bulbs. Replace 100 watt non-dimmable incandescent bulbs in house 3 with 40 watt non-dimmable compact fluorescent bulbs. Install 1 LED-specific dimmer per house for houses 1-3.	30,988		\$4,413	\$11,310	2.6
<b>End Door Covers</b> Purchase end door covers and cover end doors with them.		277	\$532	\$3,000	5.6
<b>Recirculating Cool Cells</b> Replace existing spray bar cool cell system with 6 inch thick recirculating cool cell system. There will be 160 feet of cool cell for house 1 and 168 feet of cool cell per house for houses 2-3.	18,837		\$2,682	\$58,900	22
<b>Totals</b>	<b>49,825</b>	<b>277</b>	<b>\$7,627</b>	<b>\$73,210</b>	<b>9.6</b>

Glenn installed the new equipment in the spring of 2013 and is pleased that the new equipment is helping put more money in his pocket. "These changes are making a real difference on the farm," said Glenn. "I'm looking forward to showing other growers what I've done so that other farms can reduce their energy costs, too."

The energy efficiency measures Benson Farms implemented can be found on many other poultry farms. Thanks to the growing affordability of LED lighting, many farms have an opportunity to improve their lighting. Before making a change, growers should ensure that all bulbs are rated for poultry applications and damp locations. They should also check with their integrator to make sure the bulbs meet the color temperature and color rendering index requirements of the birds.