



PROJECT PROFILE

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Elastomeric Roofing Systems, Inc

Project Profile, 2005

What can chickens teach us about cool roofing?

65% Energy Savings - ERSystems worked with a large University and Statesville Roofing to evaluate the effects of Cool Roofing on poultry production.

Background

High temperatures affect feed consumption, weight gain, feed efficiency, and mortality in the production of poultry. Therefore, during the summer months, the temperature in poultry houses is maintained at or below 85°F. Summer energy usage can be the highest component of production costs incurred by poultry growers. The goal of this project was to reduce the interior temperature of one of two poultry houses and document it in a side by side comparison of the two houses in North Carolina. Highly reflective elastomeric coatings have been proven to reduce interior temperatures in metal buildings (see additional Project Profiles from ERSystems).



Project Description

Two 42 x 400 foot poultry houses (side by side) were used for the study. Each house has a 19,500 bird capacity. One house utilized ERSystems Cool Roofing Technology (highly reflective white coatings keep the roof surface temperature cooler) and the other house was maintained as a control. The birds were placed in each house on June 13, 2005 for the two month trial.

Results

A table summarizing the results of the study is shown. Very large differences in the electrical use and the bird mortality were produced. **The total energy saved was just under 65% and the mortality rate was reduced by 28%.** The average daily temperature and the average weight of the birds did not show as significant differences.

	House #1 Trial House	House #2 Control
Avg Daily Temp	79.75	81.90
Mortality (birds)	890	1238
Water Consumption (gallons/1000 birds)	1,271	1,164
Electrical Use (kWh)	5,731	15,784
Average Weight (lbs)	7.46	7.38

The bird mortality rate as well as energy savings are most likely re-

Table 1— Results of study

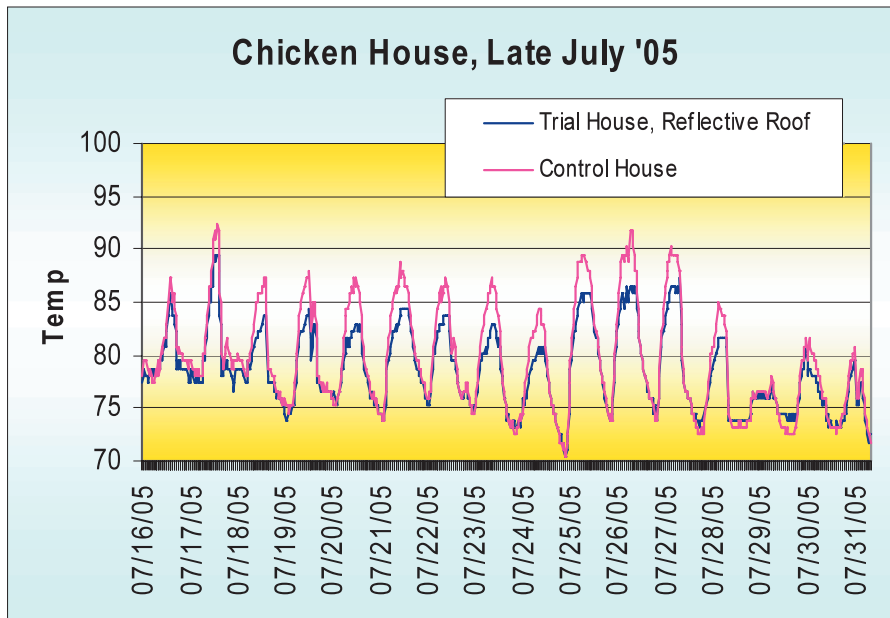
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lated to daily high temperatures. The graph in Figure 1 shows the difference between the trial and control houses. Note that the daily high temperature difference is consistently greater than 4 degrees. This temperature difference occurs during the mid day and increases the electrical consumption and the peak electrical demand.

It has been shown that even slight temperature reductions during peak periods can result in significant electrical savings both in peak demand and electrical usage.

Figure 1 - Internal House Temperatures



Data Collection

- Temperature loggers for in house ambient temperature
- Separate electrical meters on each house
- Production records for weight at sale, feed efficiency, water consumption and mortality

ERSystems Products Utilized on Project

- Eraguard 2000 Primer for Metal
- Eraguard 1000 White Finish Coat - 84% Reflectivity



Roof Coating Installation Contractor
Statesville Roofing

For more information on ERSystems products and services please contact us at 800.403.7747 or www.ersystems.com.

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