

# The Cold Facts

Spring 2005



Pictured above: Bruce Lackey, Happy Chicken Farm's owner, and RSC's Mike Donnelly are working together on Happy Chicken Farm's plant expansion.

## Happy Chicken Farms Continues to Grow!

**H**appy Chicken Farms, located in Urbancrest, Ohio, (a suburb of Columbus) has a 52-year history of providing quality products to its many customers. They supply a variety of dairy, eggs, cheeses and other items, including soon-to-be-introduced ice cream! RSC is delighted to have been chosen by Bruce Lackey, Happy Chicken Farm's owner, to construct the first building expansion since the company moved to its current location in 1998. We'll keep you posted on progress in the next few months.

## The Ultimate Defrost Solution!

Everyone understands that every evaporator coil in a low temperature room requires defrosting. We also know that the cost of a defrost can range from \$3 to \$5 on average. Naturally, there are several factors that determine this cost: coil size and energy cost are two of the primary contributors. The problem has always been how often do you need to defrost and when should the defrost start.

Obviously, the consequences of not knowing will cost you money. Too many defrosts and you're wasting energy. Too few defrosts and your evaporators are wasting money or, worse yet, they'll build an ice ball. The latter condition means your evaporator is operating at zero efficiency. Unfortunately, you'll also need to spend whatever is necessary to clean the coil, which is also expensive.

How has defrost been implemented in the past? Mechanical time clocks have been used for decades. They start the defrost at predetermined time intervals. With the advent of electronics, the time clock has gone solid state, but it still requires someone to decide how many defrosts per day and the time to start each defrost. Usually what happens is they're set for safe operation, which translates into the wrong number of defrosts—too many!

Computer technology has also advanced, making it easy to implement many other schemes. These include measuring the airdrop across the coil (assumes ice buildup will restrict the flow) or doing a defrost based on how long the liquid refrigerant feed valve has been open, just to name a few. However, every one to date has proven to be lacking.

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1770 Genessee Avenue  
Columbus, OH 43211  
Phone: (614) 263-0913  
Fax: (614) 263-6660  
[www.rsc-gc.com](http://www.rsc-gc.com)

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These methods do not address the real culprit—humidity! Humidity is the source of the ice that's removed with each coil defrost. The low temperature coil surface freezes the moisture in the air. What makes humidity so difficult to control is that it changes daily, sometimes even hourly. With high humidity, you need to defrost more often; less humidity requires defrosting less frequently.

RSC introduced Digital Infrared Frost Detectors to our customers in 1994. This device measures the amount of frost buildup on the coil tubes and is set to provide a contact closure, which then starts a defrost based on the actual amount of frost that has accumulated. These units have proven to be very successful over the last 10 years, with wide acceptance by many major companies.

*"This new device has been tested in a working environment, in an operating warehouse. We're delighted to report that it boasts some unique features, ones that provide improved performance and further savings."*

Today, we're pleased to announce that RSC is introducing the next generation, an *Analog* Infrared Frost Detector. This new device has been tested in a working environment, in an operating warehouse. We're delighted to report that it boasts some unique features, ones that provide improved performance and further savings. Unlike the original unit, which sends a signal when the set point has been reached, the new unit will provide a reading of the amount of ice buildup as it accumulates! This allows continuous monitoring of the condition of the coil.

Also, since the detector provides a measurement of the buildup, you can adjust the trigger point from the control system, remotely. What a major advantage! This eliminates the need to climb to the coil location to do any fine tuning.

AND...the software algorithm that's used provides one more unique capability. While it's constantly monitoring the ice buildup rate, it will also compensate for the change in density of the frost. The result is a unit that automatically adjusts to the varying changes in *humidity*! This is the answer we have been waiting for—a system that adjusts based upon the humidity conditions at the coil.

## **What's the result? An evaporator defrost system that provides you with:**

- An efficient evaporator at all times
- The lowest defrost frequency possible
- The lowest energy cost for your defrost needs.

## The RSC Family Tree

### RSC Cleveland, OH Branch

445 W. Liberty,  
Suite 214

Medina, OH 44256  
Phone: 330-725-5663  
Fax: 330-725-5663

### RSC Cincinnati, OH Branch

10921 Reed Hartman Hwy.  
Suite 115

Cincinnati, OH 45242  
Phone: 513-793-4463  
Fax: 513-793-4465

### RSC Nashville, TN Branch

432 Lakeview Circle  
Mt. Juliet, TN 37122  
Phone: 615-758-8617  
Fax: 615-758-8618

### RSC Headquarters

1770 Genessee Avenue  
Columbus, OH 43211  
Phone: 614-263-0913  
Fax: 614-263-6660

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www.rsc-gc.com

1770 Genessee Avenue  
Columbus, OH 43211

