



the research and development lab is located, handles smaller customized runs and uses two Blaw Knox 750 #/hour V-Bottom Box Dryers. This facility is going to receive a production boost when their new CE Rogers custom 1500 #/hour V-Bottom Box Dryer comes online in 2005.

A visit to Blue Grass Dairy & Food is both a reminder to the power of the "American Spirit" and a testament to "American Ingenuity". When faced with a difficult situation, the people at Blue Grass Dairies turned experience and customer need into a profitable niche business. And new product technology helped. "To a large degree our job here is to figure out how to accomplish commercially what the scientists say is technically possible", continues Warner. "Products like the IAC/ Corona Sonic Horn help."



## USING THE CS-10-USDA SONIC HORN TO IMPROVE PRODUCTIVITY AND REDUCE WASTE IN A DAIRY AND FOOD DRYING BUSINESS

In 1995, Billy Joe Williams came home to his wife Debbie and their three children with the unfortunate news that the milk drying plant where he worked in Glasgow, Kentucky was going to be closing - the victim of corporate consolidation. According to Gary Warner, now Project Engineer at that same facility, Billy Joe told Debbie he really had no interest in leaving the pretty little Kentucky town that had become home to his growing family, but wasn't sure exactly what to do.

Debbie, trained in accounting and finance, immediately helped hatch a plan with Billy Joe to bring a group of local investors together to save the plant for their family, the families of the other workers, and the town.

With large milk processors expanding and consolidating, Billy Joe, Debbie, and the others wondered if their futures might lie past the localized milk drying business that is typical of every dairy producing region of the country, and in the drying and evaporation of more difficult and exotic food products.

Fast forward nine years. Blue Grass Dairy & Food, LLC now operates two highly successful drying / evaporation facilities 90 miles apart, both the former targets of corporate downsizing, and both loaded with experienced personnel drying upwards of 200 different food products.

"People are the key, of course", states Billy Joe, C.E.O. "Without knowledgeable, experienced, motivated people, none of this could be possible."

"I've worked at three different facilities", says Gary Warner, recruited into Blue Grass by Billy Joe and the current Project Engineer at the plant, "and the people at this facility never say 'can't'. It is unbelievable. This is the real reason for our success. They give 150% to every project. It is never, 'we've been doing this for 20 years, and it can't be done'. It's always 'we'll we've been doing this for 20 years, but maybe there is something we can learn, and maybe we CAN make it work'. That makes all the difference in the world."

"We've tackled things others are afraid of", he continues. "Take Casein, for instance. The government launched a big program to try to create a domestic



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casein source from the federal stockpile of powdered milk reserves that were aging. Casein has traditionally been brought in from overseas. Billy Joe came to our meeting one morning and asked, 'Does anyone have any ideas on how to attack this?' That's my job, together with all the guys inside the plant – to find a way to make a laboratory process work on a large commercial scale. We started testing different techniques, eventually developed some proprietary equipment, and are now one of the few facilities in the country that can produce this product on American soil."

The patented, USDA approved IAC/Corona CS-10-USDA Sonic Horn is a big part of this success story (U.S. Patent 5,025,887). Blue Grass has thirteen IAC/Corona Sonic Horns operating in six dryers. The IAC/Corona horn was the first sonic horn approved by the U.S. Department of Agriculture, and is now installed

in hundreds of dryers in a dozen different milk producing countries. Sonic horns help keep dryers, cyclones and dust collectors clean by using high intensity, low frequency acoustic energy to reduce particle buildup.

"We wouldn't even think of putting a new spray dryer on-line without installing an IAC/Corona Sonic Horn", says Warner. "They reduce off-grade product, because dried particles can't stick to the side walls and duct. On the sloped sides of a dryer, or on the underside of the tube sheet in a baghouse, accumulated powder from the drying process will eventually become overheated, scorch, and then contaminate the final product. These are the "black specs" people talk about in the industry. Of course, they're not always "black", but they are definitely darker. On our casein product, which comes out

snowy white, a few dark specs appear just like grains of pepper in a salt shaker. It's that obvious!"

"To get rid of the specs, dryer operators have to 'stay ahead of the curve' and stop and clean out the dryer before scorched particles build up too much and show up in the final product. With the Sonic Horns we clean out less frequently, can process longer, and can generate higher yields for our customers because there are less scorched particles, and less 'off-grade' product."

"At a plant where I used to work, we went from having to shut down every 20 hours to being able to run several weeks before clean-outs. It is that dramatic. This



means that at Blue Grass we can get in long productive runs for our clients."

Blue Grass Dairy & Food's list of dried and evaporated foods includes not only your traditional milk and cheese products, but also whey, brewer's yeast, several different types of non-dairy creamers, three or four shortening powders, honey, casein, and even cayenne peppers.

"The Sonic Horns are critical to our company's success", says Debbie Williams, now President of the company. "We can dry things effectively we couldn't even consider tackling if we didn't have the horns. We love them! We can dry a wide variety of products because of the horns. This makes us a specialty supplier, and makes us different than others just drying traditional milk products."

One such product is honey. "Not everyone can dry honey", says Warner. "This stuff is nasty. Not only is it wet, it is sticky. It starts out that beautiful golden color you're used to seeing and comes out of the dryer stark white. Powdered honey is used as sweetener in a lot of food products, and honey processing is a big part of our success story here at Blue Grass."

"With our research and development facility in Springfield [Kentucky], we either design products for our customers that we then dry for them, or we test-dry different products they bring us. This gives us an extra service and extra flexibility our competitors don't have. We have a small 200 #/hour dryer there that allows us to get our processing technique down on small lots prior to the large commercial runs. We have a sonic horn installed in this dryer too! With this little test dryer, we can experiment with our nozzle pressures, our flow rates, our temperatures, and maximize the efficiency of the process on inexpensive small batches. This raises the customer's confidence in Blue Grass's ability to handle their processing, and lets us be more efficient on the 'factory floor', so to speak. It also gives us the ability to run super-small commercial jobs right in our test lab."

Out "on the floor", you'll find five different production dryers as the workhorses of the company. Each has IAC/Corona CD-10-USDA Sonic Horns installed in them. The Glasgow (Kentucky) plant operates a 2500 #/hour (water evaporation rate) CE Rogers Tower Dryer, another 1200 #/hour DeLaval Tower Dryer, and a Blaw Knox 1500 #/hour V-Bottom Box Dryer. This plant handles the large volume runs. The Springfield (Kentucky) plant, where

