CASE STUDY

POWERS COUGH DROPS

CASE HISTORY

BACKGROUND

During humid summer months, production at the Powers Pharmaceutical Company, a cough drop manufacturer in Brockton, MA, would come to a sticky halt. From Memorial Day to Labor Day, seasonal high humidity intermittently caused the hygroscopic cough drops to stick together and clog equipment. This meant production runs of up to 25 million lozenges per week could be lost and with it substantial income! Like many confectionery manufacturers, Powers simply accepted slow or nonexistent production during times of high humidity, believing that to control it required an unreasonably large investment in air handling equipment.

Above: Wrapped cough drops move smoothly through weighing and bagging equipment in a dehumidified production center.

PROBLEM 1— CONTROLLING HUMIDITY

As production at Powers reached 25 million lozenges per week, the ability of the plant to function flawlessly between Memorial Day and Labor Day became increasingly important to its profitability. But when existing HVAC equipment could not hold the relative humidity inside the plant below 30% the company's only recourse was to shut down production.

PROBLEM 2— CONTROLLING COST

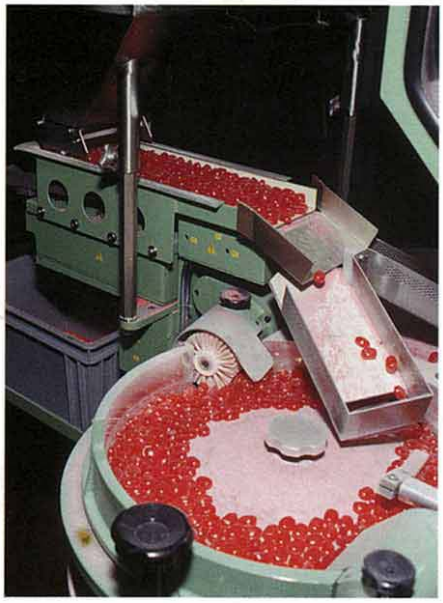
After talking to Munters Cargocaire engineers, Powers felt that a Cargocaire desiccant dehumidifier might well control their humidity problem, but were skeptical of the investment without the absolute proof of a trial period. In addition, the capital expense required was inconsistent with their financial strategy. It was clear that to place equipment at Powers, Munters would have to provide a creative resolution to these financial and operating concerns.

THE SOLUTION

Munters convinced Powers to give desiccant dehumidification a "trial run" by renting a 2250 scfm unit on a monthly basis, through its Moisture Control Services division. "The issue," recalls Ron Breau, Powers Operations Manager, "was very simple. The humidity conditions in the plant were just too high to allow us to manufacture the lozenges we normally produce each week. These lozenges are extremely hygroscopic—meaning they have a very strong tendency to absorb moisture from the air. Once they do so, they stick together so strongly that there is no practical way to separate them!" Holding conditions below 30% relative humidity in the wrapping and bagging room was easily accomplished by installing the HC-2250 dehumidifier inside the room and above the equipment from which it generally circulates dry air without special duct work. With the introduction of humidity control by Munters, Powers found production could in fact continue at full speed, even on the most humid summer days.

After renting to control humidity for two summer manufacturing seasons, Powers was ready to purchase its own equipment. Knowing that Powers was concerned about the up-front expense, a Munters Cargocaire sales engineer suggested a meeting with the Bay State Gas Company, that had an aggressive program to promote the use of gas instead of electricity. Bay State Gas was pleased to help finance the purchase of the dehumidifier, as Powers would be converting from electricity to gas. Powers purchased their desiccant dehumidifier shortly thereafter.

Says Peter Phillips, an Industrial Engineer for Bay State, "We find that our customers reduce their energy bills so dramatically that they can often pay back the loan out of their monthly savings. This was precisely the case with Powers."



Hygroscopic lozenges don't clog wrapping equipment with Munters humidity control.

Here's a look at the financial argument that convinced both Powers and Bay State that the program would work very well in this particular instance. One therm (100,000 BTUs of gas) costs about 65 cents. The same amount of electricity costs about $2.63, roughly $2 more. In as much as Powers was consuming about 300 therms of energy per month, its savings of $600 every 30 days meant that it would be able to pay back the entire loan in about three years without really having to take any money at all "out-of-pocket."

"And remember," adds Breau, "once we installed the Munters dehumidifier and simultaneously cut our energy costs, we could avoid shutting down for all or some of the time between Memorial Day and Columbus Day. Since we produce about 25 million lozenges per week, the resultant overall increase in production was very substantial."

BENEFITS OF DEHUMIDIFICATION

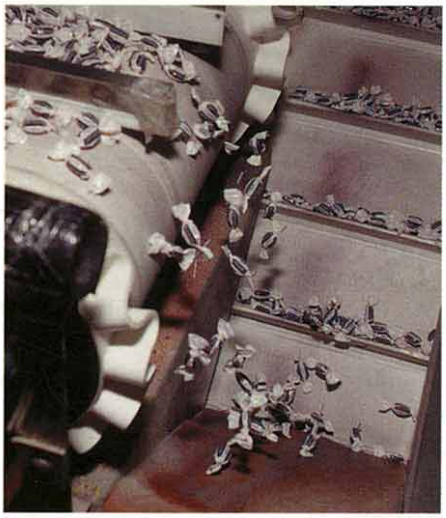
- **Increased Production**—Slowdowns or shutdowns are eliminated. Machinery does not clog, product does not stick together, and sanitation problems are greatly reduced. Wrapping and bagging activities can be maximized. You may manufacture year-round without interruption. Increased production quickly pays back the investment in dehumidification equipment.

- **Fast polypropylene wrapping**—When polypropylene wrapping material is kept in a dry environment, it does not absorb atmospheric moisture, and runs smoothly through the equipment at high speed. When dust cannot absorb moisture, the candy does not stick and clog machinery.

- **No "bridging" in weighing bins**—Because the candy wrappers do not absorb moisture, the pieces flow smoothly. They don't clump to form "bridges" which block the chutes that feed candy to the weighing bins.

- **Higher profits by eliminating overweight bags**—When friction is kept low by drying wrapping material, extra pieces are not pulled into each bag. This preserves profits by eliminating the "free" product shipped in overweight bags.

- **Humidity control with low maintenance cost**—Actual operating experience has shown that Munters equipment needs fewer than three hours of maintenance a year, and the desiccant wheel life can be more than 15 years.



Powers' production continues at full speed all year round since Munters equipment has been installed.

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