

CASE STUDY



FOOD PROCESSING: DEHUMIDIFIERS SOLVE MOISTURE PROBLEMS AFTER DAILY WASH DOWNS — FORT MYERS, FLORIDA

BACKGROUND

In reaction to the infamous E-coli outbreak in 1993, when hamburgers prepared by a fast-food chain caused food poisoning in more than 500 people throughout several western states, the USDA imposed a new safety system at facilities producing meat products.

This new safety system, known as HACCP (Hazard Analysis Critical Control Point), requires food manufacturers to find permanent solutions to potential contamination hazards such as overhead condensation. At the Ore-Ida plant, in Ft. Myers, Florida, where the popular frozen snack food Bagel Bites are made, the operations team was looking for exactly such a solution to permanently address condensation issues. Each day, a four-hour production shutdown is required when seventeen employees carefully clean with steam injected water and then work with mops and squeegees to dry the facility.

As well, Ore-Ida has its own strict internal sanitation standards along with monitoring from their on-site USDA inspector.

Above: Munters gets production moving at the Bagel Bites plant in Fort Myers, Florida, after wash downs.

THE PROBLEM

During third shift, the wash down begins with the production room temperature at 45°F. This cold air is so close to saturation that it cannot absorb the large amount of water vapor being sprayed into the room. As a result, the spray precipitates out, immediately forming fog and condensation throughout the room.

Once the wash down is completed, all equipment, walls and floors must be dry and free of any water or condensation. In particular, any overhead condensation that could drip from the ceiling onto the product must be removed. This drying is done due to the threat of contamination posed by moist, wet conditions, which can potentially promote pathogen growth.

With humidity close to 100% RH during and after the wash down, the total time needed to dry the process area exceeded four hours. Bagel Bites employees attempted to minimize drying time, with little improvement, by using cooling from the air conditioning system, circulation fans, squeegees and mops on any standing water.

THE SOLUTION

At the Ore-Ida facility there was a growing interest in shortening the lost production time, while maintaining strict, self-imposed sanitation standards. The company operation people wanted to protect their popular brand, but at the same time they wanted to shorten the drying time required to get back into production.

Ore-Ida's managers set out to find a process that would reduce the fog and condensation, while increasing operating efficiency. It was through this search that they first considered dehumidification.

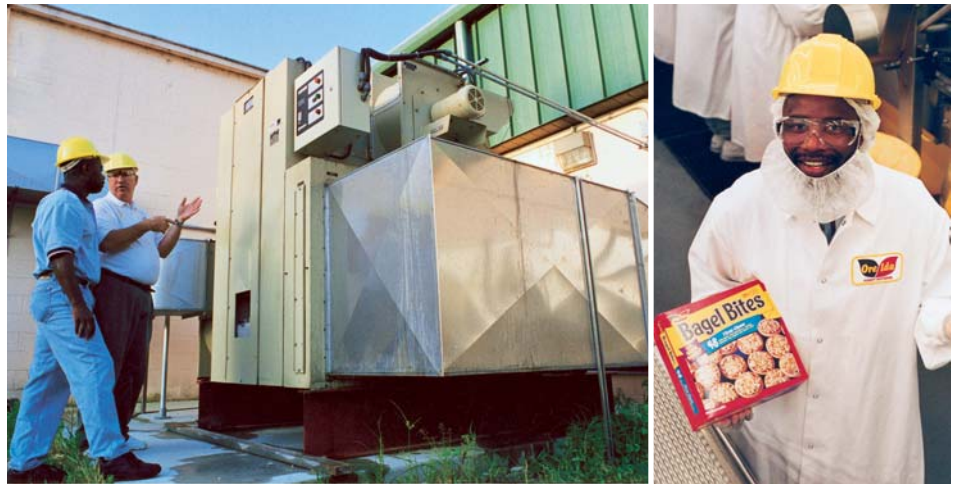
Ore-Ida was enthusiastic about the desiccant dehumidification concept for addressing their fogging and condensation issues, but was reluctant to make the capital investment in a technology they had not previously used. Munters convinced them to try desiccant dehumidification by renting an industrial dehumidifier for a one month evaluation.

"On the first day of operation with the rental unit, the wash down was started and fog was allowed to fill the area," said Andrew Galloway, production support leader. "The dehumidifier was then started. Within 15 minutes, all the fog was cleared from the room."

The fog, that had previously obscured the cleaning process and presented a hazard to workers, was eliminated and the wash down could continue at a safe and efficient pace. In addition to clearing the fog, the unit also dried the equipment, walls, floors and ceilings. With the dehumidifier in operation, the wash down took little more than two hours.

After one night of evaluation, Ore-Ida managers were convinced of the dehumidifier's capabilities. However, processing of the capital appropriation, manufacture of their permanent dehumidifier and its installation would take 11 weeks. During this time, Bagel Bites decided to retain the rental unit.

"Due to the overall effectiveness of the system, we weren't willing to give up the rental equipment until the permanent unit was installed and running," said Sam Casey, manufacturing manager for Bagel Bites. "The overall benefits of improved sanitation and safety far outweighed the rental costs."



A Munters desiccant dehumidifier was installed to permanently end moisture problems at the Ore-Ida manufacturing facility. The value of the dehumidifier was proven in advance using rental equipment from Munters MCS.

THE BENEFITS

■ Fast Response

Munters nationwide organization can provide emergency humidity and moisture control services whenever you need it. Our engineering expertise and our complete equipment line, means you will get the right equipment configured to solve your problems in just hours after you call.

■ Test Before Purchase

Ore-Ida could test the effectiveness of desiccant technology in a real time manufacturing situation before purchasing equipment. Munters MCS has provided rental solutions to long-term moisture problems as a stop-gap measure for many industrial applications. This approach has allowed improved operations, while giving customers time for a thorough cost/benefit analysis.



■ Easy Configuration

Installation in the processing area was straight forward. Conventional, ceiling mounted evaporator coils provided cooling to the area at 45°F. Dehumidification is handled independently by the Munters desiccant dehumidifier placed outside the building. The dehumidifier delivered air at 77°F at 4% RH. The cooling units operated in response to a thermostatic control. A humidistat held the room to 65% RH, an appropriate level to prevent condensation and fog, while also meeting food production specifications.

■ Additional Advantages

Along with eliminating the fog and condensation, Bagel Bites has found that their dehumidifier has benefits that reach beyond the processing area. Several freezers located inside the dehumidified area, have realized a significant reduction in both frost accumulation and defrost cycles. "Because the moisture is removed from the air, it does not accumulate as quickly on the evaporator coils and inside the freezer," said Victor Herbert, maintenance supervisor. That means the energy-consuming defrost cycles have been shortened, and the interval between them stretched out.

After daily wash downs, fog and moisture filled the Bagel Bites manufacturing center. Munters dehumidification proved an efficient solution to the problem.

MUNTERS CORPORATION MOISTURE CONTROL SERVICES

79 Monroe Street, PO Box 640
Amesbury, MA 01913-0640
TEL: 1-800-CAN-DRY [422-6379]
1-800-MUNTERS

FAX: 978-241-1215

Web Site: www.muntersamerica.com
E-mail: mcsinfo@muntersamerica.com

WESTERN REGION

LOS ANGELES, CA
PORTLAND, OR
SAN FRANCISCO, CA
SEATTLE, WA

GULF COAST REGION

HOUSTON, TX
DALLAS, TX
NEW ORLEANS, LA
SAN ANTONIO, TX

CENTRAL REGION

CHICAGO, IL
MILWAUKEE, WI
MINNEAPOLIS, MN

MIDWEST REGION

CINCINNATI, OH
CLEVELAND, OH
DETROIT, MI
INDIANAPOLIS, IN
PITTSBURGH, PA
ST. LOUIS, MO

NORTHEAST REGION

NYC/NEW JERSEY
BALTIMORE, MD
BOSTON, MA
HARTFORD, CT
PHILADELPHIA, PA

SOUTHEAST REGION

ATLANTA, GA
NORFOLK, VA
ORLANDO, FL
RALEIGH, NC

MCS CANADA

TORONTO ONT
MONTREAL PQ
VANCOUVER BC

