

By JOHN KAROLEFSKI

The results of a seventh grader's science project in Tampa recently made national news and was noted throughout the foodservice industry. The project, which won a local science fair, compared the ice served in drinks at several fast food restaurants with the water from toilet bowls in the same restaurants. The bottom line: 70% of the time, the ice contained more bacteria than the toilet water.

"Over the last few years, there have been a number of similar exposés done on television," says Garth Pearson, marketing manager for Scotsman Ice Systems. "But there are always one or more flaws in each assessment."

Nevertheless, makers of ice machines have responded to the increasing safety concerns of consumers. They have enhanced their units with cutting-edge engineering features designed to improve safety by preventing or controlling bacteria build up. Here are some of the latest improvements to consider.

EASY ACCESS FOR CLEANING

Providing easier access for cleaning the ice machines prompted a design change in the S series equipment from Manitowoc Ice. The S series is a modular machine that makes 300 to 2,000 pounds of ice. It is mounted on a bin or on a dispenser.

The company re-designed the 'food zone'—where the ice is made—to make it easier to clean and inhibit the growth of bacteria. Making the evaporator accessible for cleaning has traditionally been a difficult task.

"On our machines, we have front-facing evaporators," explains Mike Rimrodt, product manager. "So when you open up the machine, everything you need to clean is staring you right in the face. We made it removable. Unscrew some simple thumb screws and the water distribution tube comes out and separates into two pieces, so you can clean not only the outside but also the inside. To clean the water tray on the bottom, just take your thumbs, disengage the tray, and you can take that out. All of the components are made with plastic that is safe in a dishwasher. We wanted all the plastic in the 'food zone' to remain white, so it's obvious what needs to be cleaned."

The onus is clearly on the operator to maintain a regular cleaning schedule for top-notch food safety. For inherent protection, the units have three other features designed to keep bacteria at bay:



- ◆ **AlphaSan:** This silver-based anti-microbial is incorporated into the primary components of the machine to keep bacteria from colonizing.
- ◆ **Automatic Cleaning System:** The machine periodically turns on the cleaning system which will pump either cleaner or sanitizer into the water distribution area, flushes and rinses itself, and then goes back to ice making.
- ◆ **Inhibitor for Airborne Bacteria:** The unit releases chlorine dioxide to inhibit bacteria from building up in the equipment. This feature is especially effective in units that operate where there is airborne yeast such as where bread or pizza is made.

Of course, in addition to cleaning, operator error must be minimized. Handling and transport of ice within the operation must be monitored to avoid contamination from staff hands, scoops and buckets.

DESIGNED TO INHIBIT BACTERIA

The job of protecting the inside of ice machines from bacterial growth begins during the manufacturing process. Some equipment manufacturers permanently embed an antimicrobial agent into the parts that come into contact with water such as the water tubes and the drain tubes. For example, Hoshizaki America, Inc. relies on its HoshiGuard Antimicrobial Agent to inhibit the growth of bacteria, mildew, mold and other microorganisms that can cause odors, discoloration and deterioration. It is used throughout their product lines.

To erect its own line of defense, ICE-O-Matic has integrated PURE ICE, an Agion (silver-based ionic) technology, into key components of its cube ice makers. The agent is designed to inhibit the growth of bacteria and slime through several mechanisms: penetrating the microbial wall, inhibiting microbial metabolism and stopping multiplication of microbes.

“We strive to make our equipment easy to clean by including a simple sanitation process and cleaning cycle,” says David Foth, market-

ing manager at ICE-O-Matic. “We recommend the owner/operators clean their ICE-O-Matic machine on a regular basis and that they increase the frequency of cleaning and sanitizing the machine within environments of high yeast content such as baking environments or establishments selling beer products.”

KEEPING CHLORINE AT WORK

Ice machines typically use water from the municipal water system. The Aqua Patrol Water Filter, which can be installed on any ice machine from Scotsman Ice Systems, lets the chlorine already in most municipal water pass through during filtering so it can continue its function as a powerful sanitizer reducing the growth of harmful bacteria inside the ice machine.

According to Pearson, “The chlorine itself goes back into the reservoir in the ice machine while pure water is frozen into the ice. Any excess chlorine is flushed down the drain during the flush cycle.”

Another enhancement to the company’s ice machines is the Aqua Bullet. This 9-inch silver microbial wand is inserted into the reservoir where the water circulates.

“As the water circulates through the ice machines, it’s constantly exposed to the antimicrobial wand, which reduces the likelihood that something is going to grow in the ice machine. It can significantly extend the amount of time between ice machine cleanings, especially in foodservice operations where bread or pizza is baking,” Pearson says.

SAFETY IN A SEALED SYSTEM

Follett’s Horizon Chewblet ice machines make a chewable “nugget” ice in any extremely sanitary manner. Water comes into a sealed reservoir that goes right into the back of the barrel-shaped evaporator. The ice forms inside of the evaporator and gets harvested off the walls by a rotating auger. It is then extruded through a nozzle into a transport tube which comes out of the ice machine and takes the ice directly to the dispensers.

“We’re essentially a sealed system,” says Mike

Rice, product marketing manager for the maker of the new Horizon ice machines. “Virtually the entire water system is protected from exposure to molds or free-floating bacteria in the air.”

Another feature of the company’s machines is the ‘Satellite-fill capability.’ The ice machine may be placed in the back room on a wall or under a counter. The ice can travel more than 30 feet through an insulated tube into a counter-top or under-counter dispenser.

A semi-automatic cleaning system for both the icemaker and the transport system facilitates and encourages regular cleaning.

WATER FILTRATION SYSTEMS

Tainted ice isn’t always traceable to a shortcoming in the design of the ice machine itself or a lack of sanitary maintenance. Sometimes the culprit is the inbound water. The nation’s polluted waterways can contaminate the water supply. Municipal treatment facilities occasionally fail to detect and remove all of the harmful chemicals and bacteria from the water. That’s where a filtration system comes in.

Responsible foodservice operators rely on water filtration systems to remove waterborne pathogens. But choosing the right system is critical. Experts say the first step in proper selection is determining what contaminants are in the local water supply. Then select a system that removes those contaminants.

The most popular water treatment technologies are precoat filtration, granular activated carbon (GAC), carbon block, reverse osmosis (RO) and water softeners. Experts recommend selecting a water filtration system with NSF Certification.

The use of ice in foodservice is ubiquitous. The potential for food safety problems is enormous. Comparing and selecting the best ice machines and filtration systems are a necessary—and critical—part of every operator’s food safety strategy.