

CLEAN AIR – A KEY INGREDIENT



BACKGROUND

Breakfast is still the most important meal of the day. While economic downturns slow many industries product sales, cereal maintains its position as a "value" food in the minds of consumers. The demand for cereal as a thrifty food that can be eaten any time of the day has increased to over \$10 billion dollars annually.

AIB (American Institute of Baking) inspection audits mandate high standards of sanitation in food processing and handling establishments. Quality assurance that cross contamination is intercepted or eliminated is so vital to the industry that steep penalties for violations are the norm. Guidelines include Dust Collection & Filtering Devices be put in place to prevent possible contamination to food products from threads, lint, and fibers. Common dust challenges found in food processing plants include raw agricultural products, like coarse grains ground into flour, which is then moved to mixing machines and combined with fine spices and other baking additives to create an atmosphere contaminated with sticky dust, eggshells, and lint.

After dough is formed into cereal pieces or bars, it is oven baked and conveyed to finishing areas and packaging stations. Fresh from the oven food items require air cooling from fans blowing directly onto the product before packaging. As fans blow cool air, they also circulate unwanted particulates into the facility atmosphere and run the risk of cross contaminating food products as they're being processed.

CHALLENGES

In this instance, facility staff found that their air circulator fan components became covered in airborne contaminants as the equipment air intake drew in facility air, picked up the particles which then spread throughout the motor blades and fan guards, and potentially be blown back out into the facility and onto finished food products. Maintenance had to take 25+ fans apart weekly, thoroughly clean all components, and then reassemble them. Dirt, water and cleaners found their way into the sensitive motors and electronics, causing the fans to repeatedly burnout. At an average replacement cost of \$300 per fan motor, not including downtime and labor, a solution needed to be found.

The initial labor-intensive solution commonly used in many facilities was to cut a piece of disposable polyester with tackifier to the diameter of the fan, slit it for motor placement and place it onto the air intake, holding the filter in place using only the high velocity draw of air against the air intake. Unfortunately the media resistance to air flow (especially after the dirt collected on it) caused the motors to run too hot and burn out. Finished elastic edged non-woven polyester fan shroud filters were also available, but cost prohibitive due to the frequency of throwing them away after use.

RESULTS

Midwest Air Filter, of Lansing Michigan, was called in to find a better solution.

Recognizing that the Prevent[®] bonnet filter would enable the facility to pass the AIB audit, each air circulator fan was fitted with a filter.

Custom sized to fit securely on the backside of each fan, the filter wraps around the motor encasement and is held securely in place with elastic edging and hook/loop closure. Polypropylene media attracts and holds particles before they can enter the equipment, eliminating build-up and blow-off. The media's low initial resistance to air flow of 0.02 versus polyester's 0.11 in. w.g. keeps strain on the fan motor down, allowing it to run within OEM specs. **The filters are changed out with a 2nd set as needed, rinsed and reused.** Change out frequency depends on their location (i.e., powder generating flour bin is daily versus finished product cooling conveyer weekly). **Both equipment and food product stay clean.**

Production companies continually look to conserve maintenance dollars by keeping a close eye on the costs of plant and equipment upkeep without sacrificing product quality and safety. Equipment air intake filters help ensure clean processing, maximum uptime and smooth production flow critical to quality assurance and a profitable bottom line.

Washable bonnet and fan guard filters are available in black or white polypropylene. Polyester disposable fan shrouds are also available.

Control costs and airborne debris with **PreVent[®] 3D air filters.**