

Pet Food Producer Reduces Use of Sterilizing Agent by 50% and Improves Product Safety with Automated Spray System



Problem:

Naturediet, a British pet food manufacturer, needed a sterile atmosphere for the packaging of its high-quality, all-natural dog food. To prevent product contamination, aseptic packaging techniques were employed.

Air atomizing nozzles were previously used to apply a sterilizing agent (hydrogen peroxide) directly on the upper and lower strands of plastic film that combine to form the product containers and lids. However, the nozzles wasted sterilizing agent and caused spoilage when product came in direct contact with the excess hydrogen peroxide.

Solution:

Spraying Systems Co.'s solution uses an AutoJet® Modular Spray System and two PulsaJet® spray nozzles to automatically atomize a very low volume of the hydrogen peroxide solution within the filling cabinet at hourly intervals. This spray application covers all areas of the filling cabinet and maintains the sterile environment without applying the hydrogen peroxide directly to the packaging materials. Sterility is maintained between applications by over-pressurizing the cabinet with HEPA-filtered air.

Operation of the system is simple. The AutoJet Model 2050 Spray Controller regulates the liquid pressure and the atomizing air pressure to produce a 15-second spray cycle of finely atomized mist of sterilizing solution as empty packages pass through the filling chamber. The spray system utilizes Precision Spray Control (PSC) to provide precise control of the volume of sterilizing agent applied without changing spray pressure. This system offers exceptional flexibility for Naturediet since application rates can be increased or decreased easily by operators without affecting spray pattern or drop size.





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Results:

The production line using the AutoJet® Modular Spray System runs 24 hours a day and operates five days a week. Naturediet Managing Director, Daniel Masters, comments, "Our investment in advanced spray technology to perform a critical food safety operation has been justified by improved consistency, more efficient use of sterilizing liquid and elimination of product spoilage."

Consumption of the sterilizing liquid has been reduced by 50% and production downtime by 5% while sterilization has improved and product spoilage reduced. "These are real benefits that translate into cash terms. We estimate that our original investment was recovered within 18 months," says Masters.

A CLOSER LOOK AT THE SYSTEM

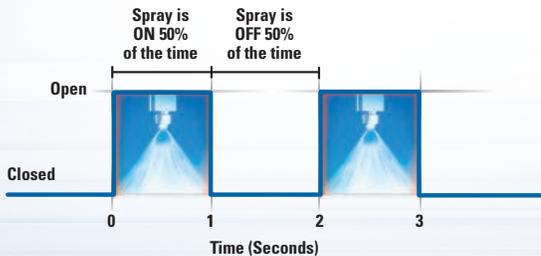
Two PulsaJet® nozzles provide a finely atomized mist of hydrogen peroxide solution.



Modular Spray System provides easy control of nozzles and cycle times up to 10,000 cycles per minute.



Precision Spray Control



Precision Spray Control (PSC) involves turning nozzles on and off very quickly to control flow rate. This cycling is so fast that the flow often appears to be constant. With traditional nozzles, flow rate adjustments require a change in liquid pressure, which also changes the nozzle's spray angle/coverage and drop size. With PSC, pressure remains constant enabling flow rate changes without changes in spray performance. PSC requires the use of electrically-actuated spray nozzles and an AutoJet spray controller.



Spraying Systems Co.®
Experts in Spray Technology

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