



Advanced Pathogen Control in Meat Processing: RGF's PHI Technology Tackles Listeria, E. coli, and Salmonella

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In today's meat processing environments, achieving comprehensive pathogen control is both an operational challenge and a regulatory necessity. The demands of maintaining zero tolerance for *Listeria monocytogenes* and reducing Shiga toxin-producing *E. coli* (STEC) and *Salmonella* on fresh meat are higher than ever. RGF® Environmental Group's Photohydroionization® (PHI) technology offers an effective, research-backed solution to help meat processors manage these persistent pathogens without impacting product quality. RGF's food sanitation devices with PHI and UVGI technologies are easily installed within the HVAC system or inside food processing spaces to deliver continuous protection against air and surface borne pathogens.

TARGETING LISTERIA IN THE PRODUCTION ENVIRONMENT

Listeria monocytogenes poses a unique threat due to its resilience and ability to thrive in cold, damp environments—exactly the conditions found in many meat processing facilities. In addition to 20+ years of real-world success, a scientific study published in the *Journal of Food Protection* confirms the efficacy of PHI technology. The study demonstrated a significant reduction of *Listeria monocytogenes* on surfaces treated with PHI, validating the technology as a viable solution for food processing facilities. The research, available on PubMed, supports RGF's claim that its PHI system continuously inactivates *Listeria*, preventing the formation of biofilm, a protective layer that allows pathogens to thrive and evade traditional chemical sanitizers. This aligns with USDA's zero-tolerance policy for *Listeria* and helps facilities meet stringent regulatory standards.

REDUCING E. COLI AND SALMONELLA ON FRESH BEEF

Pathogen control on fresh beef, particularly for *E. coli* O157 and *Salmonella*, is essential to maintaining food safety. The USDA Agricultural Research Service (USDA ARS), alongside Colorado State University and the University of California at Davis, conducted a peer-reviewed study on PHI technology, published in *Meat and Muscle Biology*. This research confirms that PHI effectively reduces *E. coli* and *Salmonella* counts by 0.3 to 1.1 log CFU/cm² in as little as 15 to 60 seconds of exposure. Importantly, this reduction is achieved without altering essential quality attributes, such as beef color or lipid stability, preserving the appearance and taste consumers expect. PHI's ability to reach irregular surfaces on beef tissue where pathogens often hide makes it a suitable last-step intervention, significantly bolstering

pathogen control measures before final packaging. PHI is a processing aid and therefore, doesn't require labeling. It's an automated, continuous dry treatment and acts without adding water or chemicals. This approach meets critical industry standards while supporting clean-label, non-thermal food safety solutions that resonate with today's consumer demand.

PHI TECHNOLOGY: BRIDGING COMPLIANCE AND INNOVATION

The beauty of PHI technology lies in its ability to integrate seamlessly with existing facility processes, enhancing sanitation in places where standard methods often fall short. While chemical interventions remain essential, PHI technology offers an additional layer of defense, particularly in high-risk areas like HVAC systems and production equipment that can easily harbor pathogens.

RGF's goal is to empower food processors to manage contamination risks in a way that aligns with USDA guidelines and consumer expectations. PHI technology offers a sustainable, compliant way to meet these demands, demonstrating that rigorous food safety does not have to come at the expense of meat quality or operational efficiency.

LOOKING FORWARD: NEXT STEPS FOR PATHOGEN CONTROL

Today's meat processing industry faces increased scrutiny and expectations from regulators and consumers alike. As foodborne illness outbreaks remain a public health concern, particularly in high-profile cases linked to *E. coli* and *Listeria*, implementing reliable and advanced pathogen control solutions has never been more important. RGF's PHI technology addresses these challenges head-on, providing a versatile solution for both environmental and surface sanitation.

For frozen foods, dairy processing, and fresh meat production alike, RGF's solutions offer a versatile and effective toolset for maintaining plant hygiene and meeting the highest safety standards. RGF is proud to offer technologies that contribute to a safer, more sustainable food supply chain.

For more details on how PHI technology can benefit your facility, please contact us at Christopher Portalatin, RGF Environmental Group – cportalatin@rgf.com or visit RGF's website www.rgf.com.