

ALERT TO ALL FRESH MUSHROOM PACKERS AND SHIPPERS

All packers and shippers are advised to review their sanitation practices immediately with special focus on the control of *Listeria* in areas where product cross-contamination can occur. Take action if your sanitation practices are not fully implemented and up-to-date. Do not delay: everyone must do what is required to minimize or prevent contamination.

***Listeria* can be deadly:**

Listeriosis, a disease caused by the bacterium *Listeria monocytogenes*, caused the deaths of 18 people in Canada last summer. The outbreak originated at a meat processing plant where the *Listeria* bacterium was found embedded deep inside slicing equipment.

Although there has never been a single reported illness of any kind related to *Listeria* and mushrooms, *Listeria* thrives in the cold and wet conditions found in mushroom operations, and has been detected on fresh mushrooms. While it is critical that you have strict cleaning and sanitizing procedures in place for your entire operation, the special focus of this advisory is certain equipment that can spread pathogens through cross-contamination: slicing machines, in-feed conveyors and exit conveyors.

Slicer heads and conveyors must be cleaned and sanitized daily:

Listeria is constantly being re-introduced to processing areas. That's why well-planned prevention programs are required and must be implemented and monitored without fail. That's why all processing lines must be cleaned and sanitized thoroughly on a daily basis. Without daily sanitation, pathogens build up and can "dig in" on any type of equipment surface, including stainless steel. When sanitation is resumed, these embedded pathogens cannot be removed with normal cleaning. Even with daily cleaning and sanitizing, extra care must be taken to remove residue material that collects inside the mechanisms of slicing equipment and conveyors.

Slicer heads require daily removal from the frame for proper cleaning and sanitizing. In-feed and exit conveyors must also be cleaned and sanitized daily. Start with a dry brush to remove visible product debris, and then clean with a thorough scrubbing or power washing using appropriate cleaning solutions. Some V-belt type in-feed conveyors have inaccessible parts and will require physical modifications of the framework to allow cleaning and sanitizing solutions to penetrate hard-to-reach areas on a daily basis. In addition, these types of in-feed conveyors must be totally disassembled, cleaned and sanitized on a monthly basis to ensure that residue build up is not occurring.

The most reliable method of sanitizing equipment is with heat. Heat may be applied to surfaces using hot water (180°F) or steam sprays. However, a good option for tools, utensils, and other small items is to use a COP (clean-out of-place) tank system. Removable slicer heads can be sanitized by completely immersing the pre-cleaned head in hot water. A general recommendation is that the circulating water temperature should be high enough (at least 170°F) to raise all surfaces within the slicer to at least 160°F for 30 seconds.

Whatever approach you use, each operation should internally validate its cleaning and sanitizing procedures by microbial testing. Don't just assume you have the right procedures or that they are being done correctly. Any time moist heat is used, make sure there is adequate ventilation to remove excess humidity since condensate may develop on ceilings and fixtures and drop onto products.

Take action now:

Included with this Alert is a copy of “**Control of *Listeria monocytogenes* in Mushroom Growing and Packing Environments**” written by Dr. Luke LaBorde, Department of Food Science, Penn State University; originally published in *Mushroom News*; 50(9): 6-14. September 2002. The guidelines, updated for 2009, include procedures for monitoring and minimizing the presence of *L. monocytogenes* in mushroom growing and packing operations. Please read them carefully! Are your cleaning and sanitizing programs effective and up to date? If not, change them now, don’t wait.

Need help?

If you have any questions about preventing *Listeria* in your operation contact Dr. Luke LaBorde at 814-863-2298 or lfl5@psu.edu. Do not wait to get the technical advice you need to run a safe operation.

For general inquiries contact the American Mushroom Institute at 202-842-4344 or ami@mwmlaw.com