Listex™, a Clean Label Processing Aid, Levels Playing Field for Organic Processors

Keeping *Listeria Monocytogenes* out of food processing areas and finished products is a daunting task. Additional measures are often needed to help control this dangerous pathogen. Though much can be accomplished with effective HACCP plans and rigorous cleaning and sanitation regimes, often this is not enough. Chemical antimicrobials are not an option for the organic food industry and several approved agents are actually under dispute with respect to being 'organic'. The toolbox for organic producers is limited compared to main stream producers but that is about to change.

An effective, all natural and organic solution is provided by **Micreos Food Safety**. The company developed LISTEX™, a culture of phages against *Listeria Monocytogenes*. LISTEX™ is OMRI-listed (Organic Materials Review Institute) and therefore suitable for use in certified organic production or food processing and handling according to the USDA National Organic Program Rule.

Phages – Greek for 'bacteria-eaters' – were discovered nearly a century ago. These micro organisms are common in our environment, including the human body and in many food products. The unique property of phages lies in the fact that they attack and kill only specific bacterial species, with no other effect. Hence, specific phages can be used against unwanted pathogens in the production and handling of food.

The LISTEX™ P100 phage has been selected from Micreos' proprietary collection of food grade phages based on its 'performance' in the elimination of a very broad selection of strains within the species of *Listeria Monocytogenes.* It is used by food processing companies around the world.

Foodborne illnesses of bacterial origin continue to be a serious food safety issue in North America. Pathogens like *Listeria, Salmonella, E. coli* and *Campylobacter* cause millions of illnesses and hundreds of deaths each year. *Listeriosis*, an infection caused by the bacterium *Listeria Monocytogenes*, may lead to invasive disease during vulnerable stages of life. The elderly and immunocompromised, as well as pregnant women are especially at risk of severe outcomes, including bacteremia, meningitis, and fetal loss.

Hospitalization is much more common than with other foodborne infections. *Listeriosis* is a leading cause of death among major pathogens transmitted commonly by food, with a fatality rate of approximately 20%. More than 1,540 cases of *Listeriosis* occur each year in the United States. In 2011, Listeria contaminated cantaloupe from a single farm caused one of the worst U.S. foodborne disease outbreaks with over 30 deaths.

Food recalls because of suspected *Listeria Monocytogenes* contamination are happening too frequently. North American recalls in 2013 included well known 'risk' foods like various deli meat and poultry products, dairy products like raw milk, Gouda cheese and gorgonzola, and a range of seafood products like salmon and herring. However, these recent recalls also included products that consumers might not associate with a potential *Listeria* risk, such as fruit salads, alfalfa-, clover- and brocco-sprouts, wheat grass, pea shoots, sunflower seeds and snack mixes. *Listeria Monocytogenes* contamination in organic produce has been demonstrated as well, for example in organic sprouts, organic cheese and organic salads.

The recent fatal *E. coli* outbreak in Germany has focused attention on the validity of the claims that organic food is healthier and safer. This outbreak has been traced to bean sprouts grown on an organic farm. As a result, concern has been growing over standards of microbiological food safety of organic foods. To meet consumer expectations and legal requirements, treatment or processing of organic food should be mild, in order to maintain the positive characteristics of the primary material as much as possible. Additives are avoided whenever possible. However, food safety precautions should not be compromised.

LISTEX™ has been confirmed as GRAS by the FDA and USDA. It can be used as a processing aid in the US, Canada and Europe and is approved by FSANZ for use in Australia and New Zealand.

LISTEX™ does not affect organoleptic properties of the treated products such as texture, taste or color. Thanks to its *Listerial* specificity it does not require a trade-off between safety and quality. It is easy to apply through dipping or spraying and withstands a wide range of food processing conditions. It can be used for a variety of food products, with anti-*Listerial* effect within hours. Because it is considered a processing aid, LISTEX™ does not have to appear on the label.

Micreos indicates that this natural solution is one of the most cost-effective interventions on the market, raising the food industry standard in the control of *Listeria Monocytogenes.* Moreover, it represents a sustainable and natural solution, increases food safety and helps build and maintain confidence in organic brands.

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