

FOOD SAFETY ISSUES FOR HANDLING & PROCESSING OF DAIRY FOODS

LISTERIA

Background

- *Listeria species are bacteria often found in the environment, particularly in soil, vegetation, animal feed and in human and animal faeces. Listeriosis is a rare illness caused by eating food contaminated with a species of listeria pathogenic to human named Listeria monocytogenes. Those most at risk are: the very young, the elderly, pregnant women & those with poorly functioning immune systems.*
- *Consumption of food containing Listeria monocytogenes may lead to the development of **Listeriosis** resulting in flu-like symptoms, nausea, vomiting, cramps, diarrhea, headache, constipation and persistent fever. Infection during pregnancy can lead to premature delivery, infection of the new born and stillbirth.*
- *Flu-like symptoms may be followed by a brain or blood infection, either of which can result in death.*

Where does Listeria monocytogenes contamination come from?

Listeria *monocytogenes* can be found in ready to eat foods such as soft and surface ripened cheeses, dips, raw milk dairy products, vegetables, fish, meat products. Listeria *monocytogenes*, unlike most other harmful bacteria, will grow slowly on foods stored in a refrigerator.

Causes of Listeria monocytogenes contamination of dairy products.

Listeria *monocytogenes* is widespread on dairy farms and the environment, and can be transported by factory personnel, visitors and transport vehicles.

The main areas where Listeria will grow or be spread, include the following -

- Cool wet areas of the manufacturing environment
- Pooled water on floors and drains
- Water sprays – avoid high pressure aerosols
- Transport vehicles (fork lifts, tankers)
- Conveyor belts
- Timber in the manufacturing environment
- Outer packaging eg cardboard boxes
- Crates
- Clothing and shoes of staff and visitors
- Pests
- Cracks and crevices in equipment

Effective means of control

Prevention is the most important control measure for dairy products which will support the growth of *Listeria monocytogenes*. *Listeria monocytogenes* is destroyed by pasteurization and therefore it is important to avoid post pasteurization contamination. *Listeria monocytogenes* can survive refrigeration, freezing, high levels of salt, and can grow in vacuum packed products.

Within the factory environment, it is essential to control the movement of produce and personnel to avoid cross-contamination between raw produce and finished produce. Floors, walls and drains need to be kept clean and a disinfectant regularly applied to avoid build-up. Air movement and aerosols must also be controlled. Critical control points such as pasteurization temperatures, equipment cleaning and sanitation, specific product washing techniques must be monitored effectively.

The key points for dairy manufacturers to address to avoid dairy product contamination with *Listeria monocytogenes* are summarised below:

- Effective cleaning and sanitation
- Control of personnel foot traffic, forklifts
- Presence of timber & cardboard
- Entry of ingredient containers eg. De-boxing in alternative areas
- Isolate receival area and personnel from processing and packing
- Visitors such as tanker drivers
- Ensure processing area sealed off
- Importance of strict personnel hygiene
- No raw product should come in contact with floor in process/pack areas
- Isolate raw milk and no cross connections to finished product eg CIP
- Walls and floor in good repair
- Maintain, clean and sanitise drains daily
- Effective pasteurisation
- Avoid Post-Pasteurisation contamination

Importance of laboratory monitoring

End product testing for *Listeria* and *Listeria monocytogenes* is essential for manufacturers to monitor product quality and safety. In addition, environmental swabbing in accordance with the *Listeria* manual is recommended so that *Listeria* can be detected in the factory environment before it gets into an end product.

A number of companies have available test kits which may be use by manufacturers to assist their *Listeria* control programs.

For more information:

ANZDAC/ADASC – “Australian Manual for the Control of *Listeria* in the Dairy Industry” (July 1999)