Listeria monocytogenes

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The Organism:

Listeria species are ubiquitous in the environment. *Listeria monocytogenes* is common in the intestinal tracts of animals and humans. In animals, the bacteria can be shed in the milk and in cattle; the bacteria can cause mastitis and abortion. Seven serotypes are associated with *Listeria monocytogenes* but only serotype 4b has been associated with food borne illness outbreaks.

Sources of the organism:

Intestinal tracts of animals and humans	Soil
Contaminated water	Manure

Associated foods:

- Unpasteurized milk
- Soft cheeses made from unpasteurized milk
- Raw fruits and vegetables
- Ready to eat deli meats and salads
- Hot dogs

Microorganism Characteristics: Gram positive rod shaped bacteria; Thrives in anaerobic and microaerophilic conditions.

Growth conditions:

- Temperature range: 1-45^{o}C (34-113^{o}F)
- Optimum Temperature: 30-37^{o}C (86-98.6^{o}F)
- pH range: 4.5-9.6
- Lowest reported A_W for growth: Unknown
- Salt Tolerance: 25.5%
- Environment: Prefers 10% Carbon Dioxide

The Disease:

Listeriosis is a potentially fatal disease which occurs most often in immunocompromised individuals and elderly. Pregnant women and their unborn fetus are at the greatest risk.

Symptoms include:

Meningitis	Spontaneous abortions	Stillbirths
Nausea	Fever	Diarrhea
Encephalitis	Vomiting	Septicemia

Onset time:

2-21 days

Infective Dose:

Small numbers (fewer than 1000 organisms) need to be consumed for symptoms of the illness to develop in a susceptible host.

Duration of symptoms:

Variable

Control:

- Thoroughly cook foods.
- Use pasteurized milk.
- Proper sanitation of food contact surfaces and utensils.
- Thoroughly wash fresh fruits and vegetables.
- Prevent cross contamination.
- Because *Listera monocytogenes* grows slowly at refrigeration temperatures, refrigerated foods need to handled and stored properly. Observe “sell by” and “use by” dated on processed foods.