The Risk of *Listeria monocytogenes* in Dairy and Beef Herds
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Developing strategic plans to control the perpetuation of *Listeria monocytogenes* infections in cattle population at the pre-harvest level depends on understanding the factors leading to the introduction, transmission, and spread of the organism. Currently, we do not fully comprehend the factors contributing to the risk of introduction and perpetuation of this pathogen on-farm and as it moves from the source to the host and finally animal products.

*Listeria monocytogenes* is a food-borne bacterial pathogen responsible for severe economical loses in animals and people. Populations at high risk include immunocompromised, pregnant, elderly, and newborns. *Listeria monocytogenes* infections can cause septicemia, meningoencephalitis, abortion and death. The organism may enter the food chain by carrier animals that shed the organism in milk and feces or via environmental contamination. To assess the on-farm potential hazard associated with this organism we carried out an epidemiologic risk assessment study in New York State dairy herds and beef operations in California. A total of 10,679 samples were collected from animals, environment, and bulk tank milk from 100 herds. Data on putative risk factors were also collected. A scenario model was developed to describe the pathway of the organism from the source to the product. The model was developed using deterministic and stochastic approaches. Sensitivity analyses were performed to identify critical control points in the production. There was a significant difference in the risk associated with this pathogen between dairy and beef populations.