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Salmonella on Dairy Farms

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A study involving 129 organic and conventional dairies in Minnesota, Wisconsin, Michigan, and New York was conducted to determine patterns of occurrence of *Salmonella* spp. and to identify risk factors for shedding.

Visits to each farm were made at two-month intervals from August 2000 to October 2001. Fecal samples from healthy cows, calves and other targeted cattle groups and samples from bulk tank milk, milk filters, water, feed sources and pen floors were collected at each visit. Microbial culture was performed at a single laboratory. *Salmonella* spp. were detected in 4.9% of 24,762 cattle fecal samples and 5.7% of 5,056 environmental samples. 93% of farms had at least one *Salmonella*-positive isolate, but 25% of farms accounted for 75% of the positive samples. More than one serogroup was identified on 68.3% of *Salmonella*-positive farms. Serotyping was performed to identify *Salmonella enterica* serotype Typhimurium and Newport isolates only. Of the *Salmonella*-positive samples, 62/1990 (3.1%) were *S. Typhimurium* and 7/1990 (0.4%) were *S. Newport*.

Analysis of herd management and cow-level factors found that herd size (≥ 100 cows) and season (primarily July-October) were associated with presence of *Salmonella* on farms on any particular herd visit, but farm type (organic vs. conventional) and cow factors such as days-in-milk or lactation number were not associated with *Salmonella* presence.

These results are critical for the direction of intervention strategies to reduce *Salmonella* occurrence on dairy cattle operations. Specifically, these results indicate:

- 1) *Salmonella* can be expected on virtually all dairy farms over time. However, *Salmonella* appears to be found at relatively high levels on a small percentage of dairy farms.
- 2) Identified factors that lead to higher probability of *Salmonella* presence on farms include herd size and season.
- 3) *Salmonella* serotypes of high public health importance (e.g., *S. Typhimurium* and *S. Newport*) are uncommon in dairy cattle on farms.