

Two Types of Raw Milk: Laboratory Testing of Raw Milk Samples for Pathogens Using PCR-based Detection

The following table compares test results from milk produced by a RAWMI-Listed farm with test results of raw milk produced by conventional dairying methods.

PCR-based Detection of Pathogens in Raw Milk								
Study	# milk samples tested	total # pathogen tests	% Samples Positive for Target Pathogens					% samples with one or more pathogens
			Campylo-bacter	E. coli STEC	Listeria monocytogenes	Salmonella spp.	Yersinia spp.	
Milk produced using conventional dairying methods								
Del Collo et al. (2017)	234	234	25	N/A ^[1]	N/A	N/A	N/A	25
Karns et al. (2005)	854	854	N/A	N/A	N/A	12	N/A	12
Karns et al. (2007) ^[3]	85	N/A	N/A	23	N/A	N/A	N/A	23
Van Kessel et al. (2011) ^[2,3]	538	N/A	N/A	29	N/A	28	N/A	N/A
Milk produced using HACCP-based RAWMI methods								
Organic Pastures Dairy (2019) ^[4]	3926	4252	0.0	0.0	0.0	0.0	N/A	0.0

Notes:

[1] N/A: test data not available.

[2] Only tests of milk samples, not filters, included in totals. Each pathogen result reported as weighted % of non-random sampling.

[3] *E. coli* STEC assay: one or more Shiga-toxin genes detected by PCR.

[4] Daily test-and-hold results for retail dairy. Only milk samples, not filters included. O157:H7 only *E. coli* STEC strain tested.

References:

Del Collo LP et al. 2017. Prevalence, antimicrobial resistance, and molecular characterization of *Campylobacter* spp. in bulk tank milk and milk filters from US dairies. *J Dairy Sci* 100:3470-3479

Karns JS et al. 2005. Prevalence of *Salmonella enterica* in bulk tank milk from US Dairies as determined by polymerase chain reaction. *J Dairy Sci* 88:3475-3479

Karns JS et al. 2007. Incidence of *Escherichia coli* O157:H7 and *E. coli* virulence factors in US bulk tank milk as determined by polymerase chain reaction. *J Dairy Sci* 90:3212-3219

Van Kessel JS et al. 2011. Prevalence of *Salmonella enterica*, *Listeria monocytogenes*, and *Escherichia coli* Virulence Factors in bulk tank milk and in-line filters from U.S. dairies. *J Food Prot* 74(5):759-768