



British Columbia Integrated Surveillance of Foodborne Pathogens (BCISFP) Annual Summary of *Salmonella* Findings

2014

Date of Publication: October, 2015



Introduction

The BC Integrated Surveillance of Foodborne Pathogens (BCISFP) was initiated in October 2006. The mission is to provide surveillance along the food chain for safer food and people in BC. For more information please visit: www.bccdc.ca/integratedfoodchainsurveillance

This is the fifth annual summary. The purpose of the summary is to provide integrated information about the occurrence of *Salmonella* in BC along the food chain.

Table 1: *Salmonella* serotypes reported in two or more sectors (human, food, abattoir, animal) in BC, 2014¹

Serotype	Human Local	Food				Abattoir ² Chicken	Animal						Total
		Chicken	Chicken Nuggets	Turkey	Other*		Cattle	Chicken and environment ^o	Exotic/ Zoo	Turkey	Wildlife**	Other [^]	
Enteritidis	246	26	5	10	0	20	0	164	0	1	4	2	478
Kentucky	0	5	1	0	0	0	0	55	0	1	0	0	62
Typhimurium	28	0	0	0	2	0	0	3	2	0	4	0	39
Liverpool	1	0	0	6	0	0	0	9	0	4	0	0	20
Heidelberg	13	1	0	2	0	0	0	0	0	0	0	0	16
Hadar	4	0	0	6	0	1	0	2	0	2	0	0	15
Infantis	8	0	2	0	0	0	0	2	0	0	0	1	13
Schwarzengrund	5	2	0	2	0	2	0	0	0	0	0	0	11
Dublin	1	0	0	0	0	0	7	0	0	0	0	0	8
Senftenberg	2	0	0	0	0	0	0	4	0	0	0	1	7
Javiana	4	0	0	0	0	0	0	0	1	0	0	0	5
Hartford	3	1	0	0	0	0	0	1	0	0	0	0	5
Agona	2	0	0	1	0	0	0	0	0	1	0	1	5
Reading	1	0	0	3	0	0	0	0	1	0	0	0	5

^oChicken and environment—in 2014, includes 165 diagnostic isolates from chickens, and 104 environmental samples taken from the chicken hatchery/farm

*Other food includes pork and shrimp

**Wildlife includes birds, raccoon, skunk, sea otter, mink, field mouse, and unknown land mammal

[^]Other animals include dog, domestic duck/goose, turkey and pig

¹only animals/food types/sources that had 3 or more positive *Salmonella* isolates of any serotype in 2014 are included as separate columns.

Not all serotypes presented in this table

²The abattoir data represent animals that were located in BC prior to slaughter; they do not reflect the location of the abattoirs

Salmonella Enteritidis

In 2014, there was an increase in *Salmonella* Enteritidis (SE) isolates compared to 2012 and 2013. This increase is likely related to the previous outbreak seen in BC between 2008 and 2011 based on similar phage types and poultry products (meat and eggs) reported as a common exposure. Strains of SE in locally-acquired human infections are also the most common strains identified in poultry meat, in abattoir chicken and from on-farm chickens and their environment (phage types 8, 13a and 13). Data from BCISFP have been used to inform the ongoing monitoring and investigation of SE since 2008 in BC.

Salmonella Heidelberg

In 2014, human infection with *S. Heidelberg* was relatively uncommon in BC. This strain represented just 4% of all *Salmonella* infections but was the third most common serotype among locally-acquired human cases reported in BC. Similarly, *S. Heidelberg* was infrequently isolated from food or animal sources in BC in 2014.

S. Heidelberg is much less common in human, food and animal sources in BC than in the rest of the country (NESP, 2012; CIPARS, 2013). The higher rates of SE in BC than in the rest of Canada may be contributing to the lower number of *S. Heidelberg* isolates detected in the province.

Salmonella Typhimurium

S. Typhimurium was the second most common serotype among human isolates and was seen in the food and animal sectors. However, no common sources were identified within or across sectors. This differs from 2012 and 2013 when a large number of *S. Typhimurium* isolates were reported in wild birds associated with bird feeders.

Comparison of *Salmonella* serotypes in chicken and turkey

There are differences among the *Salmonella* serotypes found in chicken (and environment) and turkey in animals and meat. In 2014, SE was the primary serotype observed in chicken along the foodchain: animal (61%), abattoir (87%), fresh chicken at retail (72%) and chicken nuggets (56%). The second most commonly observed serotype in chicken at both the animal level and meat at retail was Kentucky. In contrast, the *Salmonella* isolates from turkey represent a greater variety of serotypes, and SE makes up a smaller proportion. The most commonly observed serotypes in the turkey animal sector were Liverpool and Hadar, while in fresh turkey meat the most common serotype was SE.

The reason for these variations is not clear, but may reflect differences in the biology between these two bird species and their specific production systems.

Data sources

Human: BC Public Health Microbiology and Reference Laboratory

Food: Canadian Integrated Program on Antimicrobial Resistance Surveillance, Public Health Agency of Canada

Abattoir: Canadian Integrated Program on Antimicrobial Resistance Surveillance, Public Health Agency of Canada

Animal: Animal Health Centre, BC Ministry of Agriculture

For additional information on data sources please see previous annual reports at:

www.bccdc.ca/integratedfoodchainsurveillance

Suggested citation: BC Integrated Surveillance Epidemiology Sub-Group.
BC Integrated Surveillance of Foodborne Pathogens 2014 Annual Summary: *Salmonella* Findings. 2015