

# Distribution of Most Common Coagulase-Negative Species over Parity and Lactation in Canada

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Coagulase-negative staphylococci (CNS) are the most frequently isolated group of microorganisms from the bovine udder, and more information on its specific role in mastitis is needed. Our objective was to describe the distribution of CNS species over cows' lactation period and parity in Canadian herds.

Cows were selected randomly across 6 Canadian provinces in 2007 and 2008. In total, 1965 cows had udder infection with CNS, over a total of 6067 sampled in the study.

The 5 most common CNS species were *S. chromogenes* (49%), *S. simulans* (17%), *S. xylosum* (11%), *S. haemolyticus* (7%) and *S. epidermidis* (4%).

**Table 1. Relative frequency (%) of CNS species distribution over parity**

CNS species	Parity			
	1	2	3	≥4
<i>S. chromogenes</i>	60	23	24	26
<i>S. epidermidis</i>	1	3	3	5
<i>S. haemolyticus</i>	5	5	6	5
<i>S. simulans</i>	15	9	10	13
<i>S. xylosum</i>	6	9	7	10

**Table 2. Relative frequency (%) of CNS species distribution over lactation thirds**

CNS species	Lactation thirds			
	1	2	3	>305 d
<i>S. chromogenes</i>	8	8	11	11
<i>S. epidermidis</i>	1	1	0.5	1
<i>S. haemolyticus</i>	1	1.2	2	2
<i>S. simulans</i>	4	2	2	3
<i>S. xylosum</i>	1	1	2	3

*S. chromogenes* was the most isolated species across parities, with highest prevalence in heifers. *Staphylococcus epidermidis* was often isolated from older cows, and *S. haemolyticus* was equally isolated in all parities. Neither *S. simulans* or *S. xylosum* presented clear patterns across parities. The prevalence of *S. chromogenes* increased as lactation progressed, as was the case for *S. xylosum* and *S. haemolyticus*. The prevalence of other species such as *S. simulans* and *S. epidermidis* remained constant over the lactation.

The distribution of these CNS species over parities and during lactation was different. Species such as *S. chromogenes*, may be more pathogenic for heifers. Throughout lactation, it seems that most species can persist or reinfect the udder. Studying the distribution of CNS species can guide selective management practices and identify species 9.5