



# Current Advances

March 3, 2010

Providing Unique Technology for Animal Health

## Analysis of *Haemophilus parasuis* serotype prevalence 2008-2009 Ontario and Western Canada

Gallant Custom Laboratories Inc routinely receives swine samples from Western Canada and Ontario. Gallant Labs has developed expertise in isolating, identifying and serotyping *Haemophilus parasuis* from various tissue samples, offering valuable information to veterinarians and swine producers. Knowing that *Haemophilus parasuis* is present and if there is more than one serotype, is critical in developing a effective vaccination strategy. We have analyzed the data from all *Haemophilus parasuis* serotypes collected in 2008 and 2009 to determine if there is a specific prevalence of any one serotype and if there are differences between Ontario and Western Canada.

ONTARIO						
Serotype	Lung	Heart	Brain	Other	Total	% of total
2	3	2	0	0	5	5%
4	10	9	0	7	26	27%
5	5	3	1	5	14	15%
12	0	0	0	0	0	0%
5X12	0	1	0	1	2	2%
13	1	5	1	0	7	7%
14	2	3	0	1	6	6%
Untyped	15	13	2	5	35	37%
Totals	36	36	4	19	95	100%

**Table 1-** Prevalence of *Haemophilus parasuis* isolates in Ontario from Jan 2008 to December 2009 at Gallant Custom Laboratories Inc. diagnostic laboratory.

A total of 95 *Haemophilus parasuis* serotypes were analyzed from Ontario samples and the most prevalent strain is untyped at 37% of the total. In our lab we type for serotypes 2, 4, 5, 12, 13, and 14, however, there are 15 *Haemophilus parasuis* serotypes recognized and the untyped strains may be one of the types Gallant does not include in its testing. Serotype 4 is the next most common at 27% followed by serotype 5 at 15%.

These two serotypes account for 42% of all the *Haemophilus parasuis* types we isolated over the two years and when combined with the untyped isolates, the total is 79%. Therefore, in our lab, 2 serotypes and the untyped designation account for 79% of all the *Haemophilus parasuis* isolated from Ontario samples.

From Western Canada we identified 44 isolates from sample submissions and analyzed the data to determine that there are differences between the two regions. Unlike Ontario, the most prevalent serotype in Western Canada is 5 at 34%, followed by serotype 4 at 25% and untyped at 20%. The trend is similar to Ontario, in that the three most prevalent *Haemophilus parasuis* serotypes are 4, 5, and untyped and these three types make up 79% of the total isolates.

WEST						
Serotype	Lung	Heart	Brain	Other	Total	% of total
2	0	0	0	3	3	7%
4	4	2	0	5	11	25%
12	4	6	0	5	15	34%
5X12	0	1	0	0	1	2%
13	0	0	0	0	0	0%
14	3	0	0	1	4	9%
Untyped	0	0	0	1	1	2%
Totals	15	11	0	18	44	100%

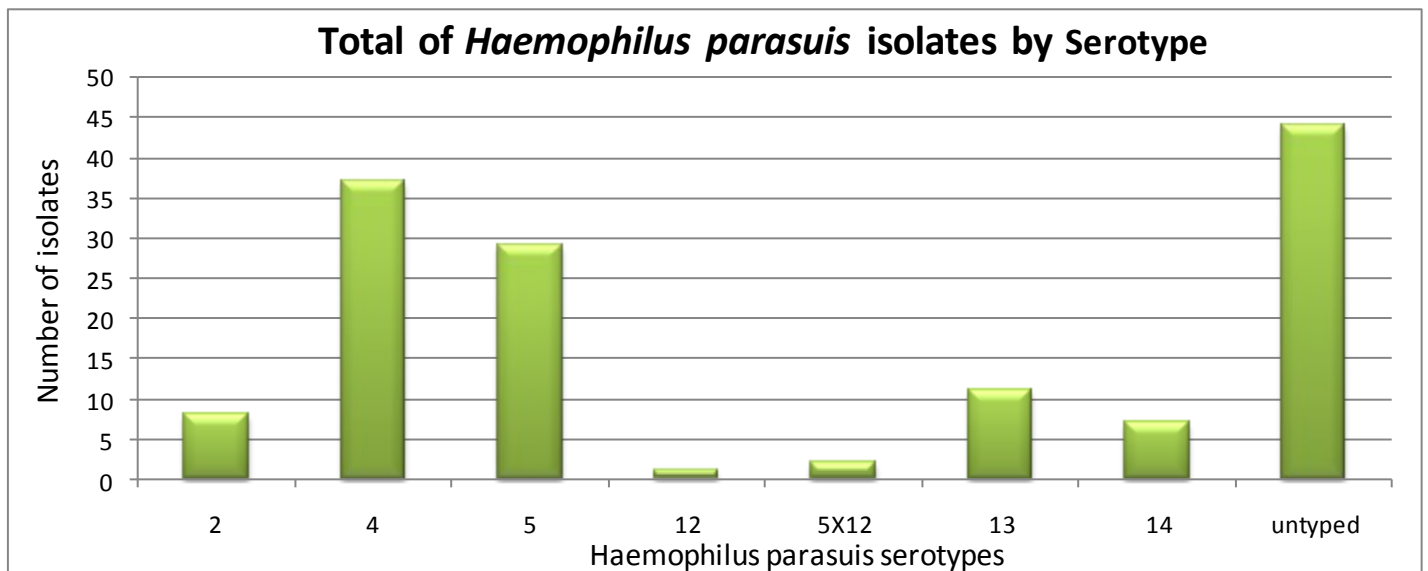
**Table 2-** Prevalence of *Haemophilus parasuis* isolates in Western Canada from Jan 2008 to December 2009 at Gallant Custom Laboratories Inc. diagnostic laboratory

The data also indicates that *Haemophilus parasuis* prevalent serotypes can be isolated from the lung and the heart. Few isolates were recovered from the brain, but this does not tend to be a common submission in our lab.

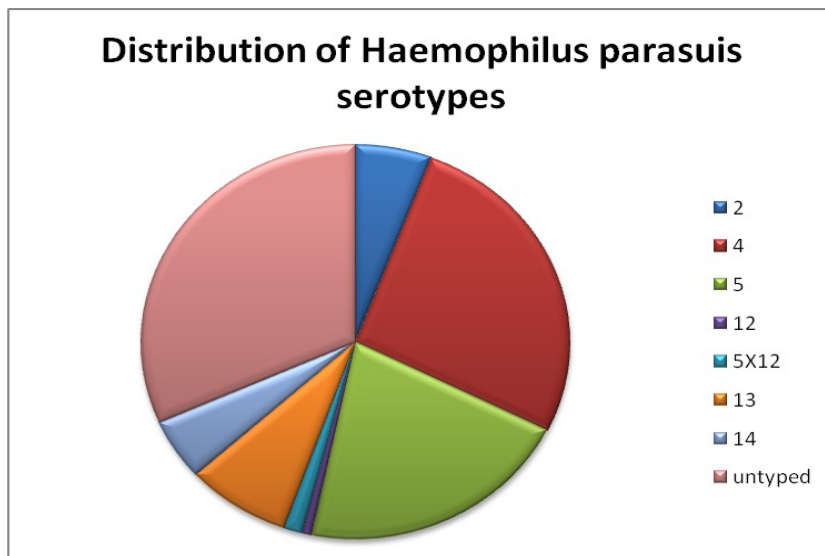
The "other" site is from joints, peritoneum or other organs and this is also a productive site to sample.

CANADA		
Serotype	Total	% of total
2	8	6%
4	37	27%
5	29	21%
12	1	1%
5X12	2	1%
13	11	8%
14	7	5%
Untyped	44	32%
Total strains	139	100%

**Table 3-** Prevalence of *Haemophilus parasuis* isolates in Canada



**Figure 1 -** Total of *Haemophilus parasuis* isolates in Ontario and Western Canada by serotype



**Figure 2 -** Distribution of *Haemophilus parasuis* serotypes identified in Ontario and Western Canada

When analyzing the combined total of Western Canada and Ontario, 49% of the isolates are serotypes 4 and 5.

The untyped designation accounts for another 32% of the isolates.

In total, 81% of the isolates from these regions of Canada were either *Haemophilus parasuis* serotype 4, 5 or untyped.